UNIVERSITY SENATE | AGENDA | MARCH 3, 2021

3:15PM – 5:00PM | ZOOM

1. Call to Order

2. Approval of the February 9, 2021 Senate Minutes (Action)

3. Report of the Chair

4. Special Order: Presidential Briefing

5. PCC Proposal to Establish a Bachelor of Science in Fermentation Science (Senate Document #20-21-34) (Action)

6. PCC Proposal to Rename the Upper-Division Certificate Program in "Women's Studies" to "Women, Gender, and Sexuality Studies" (Senate Document #20-21-36) (Action)

7. PCC Proposal to Rename the Bachelor of Arts in "Women's Studies" to "Women, Gender, and Sexuality Studies" (Senate Document #20-21-37) (Action)

8. Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy (Senate Document # 20-21-06) (Action)

9. Special Order
   William Reed
   Chair, Faculty Affairs Committee
   Feedback to Develop a Framework Associated with a Consensual Relationships Policy

10. Special Order
    Marcio Oliveira
    Assistant Vice President for Academic Technology and Innovation, Division of Information Technology
    Executive Director, Teaching and Learning Transformation Center
    UMD's Continuing Quest for Educational and Digital Innovation

11. New Business

12. Adjournment

CALL TO ORDER

Senate Chair Laura Dugan called the meeting to order at 3:17 p.m.

Dugan noted that the meeting agenda includes a Special Order presentation. She stated that the Senate Executive Committee (SEC) set the agenda with the Special Order presentation at the end of the meeting in order to ensure that the action items on the agenda could be completed while allotting the remainder of the time for the presentation. Dugan asked if there were any objections to the order of the agenda. Hearing none, she proceeded with the meeting.

APPROVAL OF THE DECEMBER 8, 2020 SENATE MINUTES (ACTION)

The minutes were approved as distributed.

REPORT OF THE CHAIR

Meeting Logistics: Chair Dugan stated that the Senate meeting was being held using the Zoom webinar format and that Senators were able to join as panelists, allowing them to fully participate in the meeting, while members of the campus community joined as attendees.

Dugan reviewed logistics that should be used during the meeting for Senators including using the "Raise Hand" to be recognized to speak and Chat box instead of the "Coffee Mug" feature to raise Points of Order that need to be addressed immediately. Dugan noted that questions, comments, or inquiries related to technical difficulties should not be posted in the Chat box because she would only be addressing Points of Order.

Dugan also stated that any attendee who wishes to speak on the Senate floor must be introduced by a Senator. She noted that both the Senator and attendee should use the "Raise Hand" feature, and she will recognize the Senator, who can then introduce the attendee that they wish to be recognized to speak. Dugan reminded Senators to look for a "request to unmute" and unmute themselves when recognized to speak.

Voting: Dugan stated that Senators must use TurningPoint to vote during Action items on the agenda. She provided instructions for logging into TurningPoint and entering the Session ID for the meeting. Dugan stated that the Session ID will change for each Senate meeting so only Senators in attendance at the meeting can vote. She noted that the Session ID will be listed on the Quorum slide at the start of the meeting and at the top of all meeting slides for any Senators who arrive late.

Elections: Dugan stated that the candidacy period for the staff, student, and single-member constituency elections ended on February 5, 2021 and noted that the election period will begin on February 22, 2021. She encouraged Senators and attendees to vote for their Senators at that time. Dugan stated that February 5th was also the deadline for the Deans to report the results of their faculty elections. She thanked the departments and Colleges who were able to meet the deadline. Dugan stated that the new faculty Senators will be eligible for nomination for elected committees, councils, and leadership positions for the 2021-2022 academic year.

Nominations for Elected Committees & Councils: Dugan stated that the Nominations Committee will be starting its work this week. The Committee is tasked with identifying potential nominees for the Senate's elected committees and councils, including the Senate Executive Committee, the Committee on Committees, the Athletic Council, and the Council of University System Faculty (CUSF). Dugan stated that Senators will receive an email in the coming days soliciting self-nominations and nominations of their colleagues. She stated that it is important to continue to have strong nominees running in all of these elections, and encouraged Senators to consider running or nominating colleagues for these important positions.

AMENDMENT TO THE UNIVERSITY OF MARYLAND GRADING SYMBOLS AND NOTATIONS USED ON ACADEMIC TRANSCRIPTS POLICY (SENATE DOCUMENT #20-21-32) (INFORMATION)

Dugan stated that in December 2020, Provost Rankin met with the Senate leadership to discuss feedback from the University community about the extended pressures and difficulties caused by the pandemic and potential options associated with the pass/fail grading option. She noted that in January 2021, the Senate leadership and Provost Rankin asked the Senate Executive Committee (SEC) to consider whether changes to University policy or practice were needed to better serve the University community, both in times of emergency and in normal circumstances.

Dugan stated that the SEC consulted with Provost Rankin and representatives of the Office of Undergraduate Studies, the Registrar's Office, Enrollment Management, and the Division of Information Technology; engaged members of the campus community; and reviewed Big 10 and peer institution data on changing the Pass minimum grade equivalent from a D- to a C- in the University of Maryland Grading Symbols and Notations Used on Academic Transcripts Policy.

Dugan stated that following discussion on the merits of the change and in recognition of the need to make any changes prior to the start of the spring 2021 semester, the SEC voted unanimously to exercise its authority under 4.3.a. of the *Bylaws of the University Senate*, to act on behalf of the Senate to amend the University of Maryland Grading Symbols and Notations Used on Academic Transcripts Policy to change the Pass minimum grade equivalent from a D- to a C- at its meeting on January 21, 2021. She stated that the amendment to the policy was subsequently approved by President Pines on January 22, 2021 on an interim basis pending Senate review.

Dugan stated that the SEC also voted to charge the Academic, Planning & Standards (APAS) Committee with a comprehensive review of the revision to the policy, which will be reviewed by the Senate before the policy can be formally codified.

EMERGENCY PASS/FAIL GUIDELINES FOR THE UNIVERSITY OF MARYLAND (SENATE DOCUMENT #20-21-33) (INFORMATION)

Dugan stated that the Senate Executive Committee's deliberations in January 2021 also included consideration of new guidelines on how the pass/fail grading system could be used during emergency conditions in order to go further in providing support to students. Provost Rankin presented major principles, constraints, decision points, and recommendations from the deans related to potential emergency pass/fail guidelines. She noted that the SEC discussed the recommended Emergency Pass/Fail Guidelines as well as the constraints with Provost Rankin and other key administrators to better understand the complexity of the issue and the need to have any revisions to policy or guidelines in place prior to the start of the Spring 2021 semester.

Dugan stated that at its January 21, 2021 meeting, the SEC discussed feedback received from its constituents and a revised draft of the Emergency Pass/fail guidelines. She noted that SEC members agreed that changing the Pass minimum grade equivalent to a C- would more appropriately reflect a student's academic progress and that new guidelines on how the pass/fail grading system could be used during emergency conditions would go further in providing support to students. Dugan stated that the SEC emphasized that these guidelines should only be invoked at the discretion of the President and the Senior Vice President & Provost during emergency situations and that at all other times, the standard grading procedure should be followed. She noted that following extensive discussion on the importance of the guidelines and in recognition of the need to invoke the guidelines for the spring 2021 semester because of the ongoing impact of the pandemic, the SEC voted unanimously to exercise its authority under 4.3.a. of the *Bylaws of the University Senate* to act on behalf of the Senate to approve the Emergency Pass/Fail Guidelines for the University of Maryland as follows:

- Students will be able to opt in to courses that they wish to take as pass/fail.
- Students will receive automatic approval when they choose the pass/fail option for up to 7 credits per semester.
- Students experiencing exceptional circumstances may request an exception to the 7-credit limit through their advisor and with the approval of their Dean.
- The deadline for both choosing the pass/fail grading option and dropping a course with a W will be extended until 10:59 PM EST on the last day of classes.
- Faculty will be encouraged to keep in-course grades current, so students have a good idea of the grade they have earned in the course by the last day of classes.
- Faculty will not be aware of which students in their course are taking it pass/fail.

Dugan stated that the Emergency Pass/Fail Guidelines were subsequently approved by President Pines on January 22, 2021 on an interim basis pending Senate review. She noted that the SEC also voted to charge the Academic, Planning & Standards (APAS) Committee with a comprehensive review of the Emergency Pass/Fail Guidelines, which would allow for campus community input through the formal Senate process before it is formally codified.

DEACTIVATION OF THE UNIVERSITY OF MARYLAND, COLLEGE PARK POLICY CONCERNING TELECOMMUNICATIONS EVALUATIONS (SENATE DOCUMENT #20-21-27) (INFORMATION)

Dugan shared that the Senate leadership, in collaboration with the President's Office and the Office of General Counsel, developed a formal process for deactivating University policies and procedures because the principles upon which they were developed, or the circumstances to which they applied have changed significantly or no longer exist.

Dugan stated that the process is similar to the one developed for technical amendments with two important distinctions: the deactivation of policies can only be initiated by the administrative unit responsible for implementation; and the policy will not be formally removed until the Senate is notified and the President has approved the deactivation.

Dugan stated that the request to deactivate the University of Maryland, College Park Policy Concerning Telecommunications Evaluations is only the second such request. Dugan stated that the University Information Technology (IT) Council, in collaboration with the Division of Information

Technology (DIT) recommends the removal of the policy because it is no longer relevant, as Telecommunications Services is now integrated with DIT Network Services.

Dugan stated that the report was an information for the Senate, but will also be sent to the President for approval of the deactivation and removal from the University's policy page, which will allow the Senate to keep a record of the deactivation.

PCC PROPOSAL TO ESTABLISH A POST-BACCALAUREATE CERTIFICATE IN LATIN AMERICAN AND CARIBBEAN STUDIES (SENATE DOCUMENT #20-21-28) (ACTION)

Valérie Orlando, Chair of the Programs, Curricula, and Courses (PCC) Committee, presented the proposal and provided background information.

Dugan thanked Orlando and opened the floor to discussion of the proposal; hearing none, she called for a vote. The result was 141 in favor, 1 opposed, and 3 abstentions. **The proposal passed**.

PCC PROPOSAL TO RENAME THE PH.D. IN "SURVEY METHODOLOGY" TO "SURVEY AND DATA SCIENCE" (SENATE DOCUMENT #20-21-29) (ACTION)

Valérie Orlando, Chair of the Programs, Curricula, and Courses (PCC) Committee, presented the proposal and provided background information.

Dugan thanked Orlando and opened the floor to discussion of the proposal.

Senator Lalwani, faculty, College of Arts and Humanities, expressed support for the proposal because data science is very big in the STEM fields, and this name change would help the University continue to recruit strong international and national students interested in data science. She noted that other Universities have already done this name change.

Senator Moradi, faculty, College of Computer, Mathematical, and Natural Sciences, asked if there was any conflict with the Graduate Certificate in Data Science in the department of Statistics in collaboration with the College of Computer, Mathematical, and Natural Sciences (CMNS).

Betsy Beise, Member of the PCC Committee and Associate Provost for Academic Planning and Programs, stated that the Graduate Certificate in Data Science in CMNS is a much more technical degree program than the program in Survey Methodology. She noted that the program in Survey Methodology is focused on the application of data science to social science. Beise also stated that the proposal matches the change in name of the master's program in Survey and Data Science, which was approved by the Senate last year.

Senator Lanford, faculty, Division of Research, introduced Jen Wachtel, graduate student in the College of Information Studies and the Department of History, and staff, University Libraries. Wachtel asked if the program name Data Science conflicts with the data science program offered in the College of Information Studies.

Beise stated that she is unaware of a masters or Ph.D. program in Data Science in the College of Information Studies.

Hearing no further discussion, Dugan called for a vote on the proposal. The result was 128 in favor, 8 opposed, and 8 abstentions. **The proposal passed**.

SPECIAL ORDER

Darryll J. Pines
President, University of Maryland
Patty Perillo
Vice President for Student Affairs
Issues Related to COVID-19

Chair Dugan welcomed Darryll J. Pines, President of the University of Maryland, and Patty Perillo, Vice President for Student Affairs, and invited them to provide their presentation.

President Pines thanked the Senate leadership and Senators for their participation in shared governance.

President Pines acknowledged members of his administration including those serving in an interim capacity:

- Ann G. Wylie, interim Senior Vice President and Provost;
- Brian Burnett, interim Chief Financial Officer;
- Brodie Remington, interim Vice President for University Relations; and
- Brian Ullmann, Acting Chief of Marketing and Communications for the Cabinet.

He also acknowledged Neil Tickner, who has been his and President Loh's speechwriter and thanked him for his service because he plans to retire.

President Pines provided an update on the search for the new Provost.

- The search for the new Provost was announced last week.
- Jeff Hollingsworth, Vice President for Information Technology and Chief Information Officer, will serve as the Chair of the search committee.
- The search is internal to the University System of Maryland (USM).
- A new Provost will hopefully be in place by July 1, 2021.

President Pines shared an update to the University's current research rankings and the status of research enterprises at the University.

<u>National Science Foundation Higher Education and Development (HERD)</u>

- The strategic partnership between the University and the University of Maryland, Baltimore initiated in 2012 under a single Vice President for Research has enabled the two institutions to share resources and combine research funding numbers as of fiscal year 2019.
- The $1.1 billion dollars of research between the two institutions ranks the University 14th overall and 8th among public universities in the HERD ranking.
- This ranking places the University in a world-class stature.
- The State of Maryland is one of only five states to have one public University and one private University each with over $1 billion in research enterprises.

<u>Sponsored Research Awards</u>

- Sponsored Research Awards for the Office of Research Administration (ORA) and non-ORA Research Awards are increasing.
    - This is a positive sign for fiscal year 2021.
    - The University will be more competitive in research impact.

Online Rankings

- The Robert H. Smith School of Business Master of Business Administration program remains ranked 10th overall in the nation in the U.S. News and World Report Ranking as it was in 2020.
- The A. James Clark School of Engineering moved up 3 slots to rank 15th overall.

President Pines shared awards received by alumni and welcomed some of University's recent hires:

- N.K. Jemison, who received a Master's in Education in 1997, received a 2020 MacArthur Fellowship;
- Marin Alsop, recipient of a 2005 MacArthur Fellowship, was hired as the Director of the National Orchestral Institute;
- Christopher Jones, who received a PhD in Aerospace Engineering in 1997; and Rajiov Loaroia, who received a master's and Ph.D. in Electrical and Computer Engineering, in 1989 and 1992, were elected to the National Academy of Engineering; and
- Prabhudev Konana was hired as Dean of the Robert H. Smith School of Business.

President Pines shared Fall 2021 admissions data:

- The University has received nearly 50,000 applications.
    - This is the largest number of applicants in University history.
    - In-state applications have risen by 2,000.
    - Out-of-state applications have risen by almost 16,000.
- The rise in applications is largely attributed to access to students through the Common Application.
    - The University is also test optional this year.
- More applications were received from students of color than at any time in University history.
- The University is targeting the same level of enrollment and a balance of in-state and out-of-state students.
    - The average GPA of admitted students is 4.38.
    - The admission rate is 37.1%.

President Pines shared information about the strategic planning process for the next decade.

- The University will work with McKinsey & Company as the facilitator.
- McKinsey & Company will meet with the President's Cabinet and colleagues from the Senate and Deans to:
    - Start building the SWOT analysis;
    - Define the University's mission and values;
    - Set 10 year aspirational goals;
    - Establish strategic pillars with measurable quantifiable targets; and
    - Develop a portfolio of strategic initiatives.

- The process will consist of three phases:
    - Focusing on strategic pillars;
    - Building a portfolio of initiatives; and
    - Establishing an implementation plan.

- The strategic plan process should be introduced in September 2021.

Dugan opened the floor to questions for President Pines.

Senators asked questions about the status of the hiring freeze at the University, and the University's plan to get feedback from campus constituencies on the strategic plan since the campus is operating virtually.

President Pines stated that the University is able to make some targeted hires. He shared that he is hopeful that there will not be any budget cuts for fiscal year 2022, which would allow the University to develop implementation plans and budget for the strategic plan. President Pines stated that the Voices of Maryland portal will be reactivated for the campus community to provide ideas and feedback about the strengths and values of the University. He shared that multiple channels will be available for the community to provide their input.

Senators expressed concern about McKinsey & Company leading the University's strategic plan effort in a direction that maximizes profit. Senators noted that almost half of the University's faculty are PTK and asked if there is a plan to seek feedback from PTK faculty on the strategic plan. Senators expressed concern that McKinsey & Company would place emphasis on fundraising and perhaps marginalize certain departments.

President Pines stated that McKinsey is being asked to engage the community as a facilitator, and has no input into the strategic plan. He stated that all input from the campus community regarding the strategic plan is welcome. President Pines noted that the Senate would be asked for nominations for a variety of committees representative of the campus community. He reminded Senators that the University modified its approach to research faculty after Ellen Williams, Chair-Elect, made a case to make sure that researchers were not harmed in the budget cuts. President Pines stated that he will take Senators' concerns about McKinsey & Company under serious advisement. He noted that the Fall 2021 semester is likely to be held significantly in person, and encouraged the campus community to consider what they might need to return to campus. President Pines encouraged Senators to focus on the future of the campus, the future of the University's impact on the world, and on conducting scholarship that will raise the excellence of the institution.

Dugan thanked President Pines. She invited Vice President Perillo to provide her presentation.

Vice President Perillo provided an update on the COVID-19 response at the University.

<u>Real-Time Response to COVID-19</u>
- President Pines, Provost Wylie, and the Vice Presidents meet daily to receive updates about real-time COVID-19 indicators;
- The Division of Student Affairs Response Team meets daily to manage daily responses;
- The Data Management & Analytics Team meets daily to identify trends and patterns so the campus can respond very quickly; and
- The Return to Campus Working Group meets weekly to review operational issues across the campus.

<u>University Resources Developed to Manage and Mitigate COVID-19</u>
- Regular PCR testing;
- A HEAL telephone line staffed by the Health Center to respond to questions about COVID-19;

- An early contact identification process for anyone who tests positive;
- Quarantine and isolation housing;
- Communicating with contacts of an individual who tests positive;
- The Family Communication Response Team; and
- A Compliance Team which refers students to the Office of Student Conduct if they do not comply with University regulations.

Testing Expectations for Spring 2021

- The University will return to teaching fully online after Spring Break.
- Students must get tested for COVID-19 prior to returning to campus.
- Students must monitor compliance on return.umd.edu.

Vaccine Administration

- After significant advocacy, including by members of the campus community, the State of Maryland shifted Higher Education to Phase 1B of the COVID-19 vaccination plan.
    - The State is now in Phase 1C of the vaccination plan.
- The University hopes to partner with a hospital or medical center to become an open point of vaccine distribution.
- The University is also developing its own plan for vaccine administration.
- Campus community members will still have to follow the 4Maryland Guidelines after they are vaccinated.

Vice President Perillo shared that the new University Health Center Director, Spiro Marinopolous was unable to attend the Senate meeting due to receiving the second dose of the COVID-19 vaccine. She stated that he plans to attend a future Senate meeting.

Dugan thanked President Pines and Vice President Perillo and opened the floor to questions.

A Senator asked when data on the COVID-19 vaccine will be available and when it will make a difference in campus procedures.

Vice President Perillo shared that the University and the Division of Information Technology (DIT) are developing a system to make vaccine data available.

President Pines shared that the University is working on collecting data from the campus community regarding which members have had the vaccine. He shared that the University's goal is to have the majority of the campus population including students vaccinated in summer 2021 to return to in-person operations in fall 2021. President Pines stated that there will be an announcement once DIT has decided how data will be collected.

Senator Sehgal, faculty, School of Public Health, stated that 70% vaccinated is the understood threshold for herd immunity. He noted that students will fall into the lower priority groups for receiving the vaccine and will likely be vaccinated over the summer.

A Senator asked if faculty who are teaching in person will receive any type of priority for the vaccine.

Vice President Perillo stated that a vaccination task force has developed a priority list for the campus. She notes that faculty teaching in person will have some priority in that lineup.

President Pines emphasized that campus community members should still continue following the 4Maryland guidelines after they have been vaccinated.

Senators suggested partnering with the University of Maryland Medical Center (UMMC) to become a point of distribution for the vaccine, and asked about the University's plans to protect campus community members who are unable to be vaccinated.

Vice President Perillo stated that the University is in active conversation to partner with UMMC. She stated that President Pines has added the matter of interventions other than the vaccine to the campus leadership agenda. Vice President Perillo shared that campus leadership is currently focusing on managing in-person classes, and the campus community will likely hear more about additional interventions in a week or two.

President Pines shared that campus leadership reviewed technological solutions for mitigating the spread of the COVID-19 virus, such as ultraviolet radiation, at a meeting earlier that morning. He stated that these solutions still require some further analysis prior to making an operational decision. President Pines stated that new masks should hopefully be provided in the fall.

Vice President Perillo clarified that the University is considered to be in Phase 1B of the Maryland State vaccination program. She stated that the vaccine will be distributed when it arrives on campus in a way that makes sense from a public health perspective.

A Senator asked what the University is doing to enforce masks and social distancing requirements by contractors who are on campus.

Vice President Perillo stated that the University is doing everything they can to educate affiliates on University regulations. She stated that campus community members can call a hotline to report those who are in violation and the University will respond.

A Senator expressed concern about standing in line for COVID-19 testing, and requested an exception to bi-weekly testing for faculty members over the age of 65 who have stayed isolated and have received both doses of the vaccine.

Vice President Perillo clarified that there is no expectation of testing for campus community members who are not coming to campus. She shared that the testing plan for the fall 2021 semester has not been developed.

A Senator asked which percentage of campus community members need to be vaccinated before in-person education will begin, and inquired when the campus may get the vaccine.

President Pines stated that the University has been working with UMMC and other hospital systems to create a point of distribution. He stated that the University is waiting for the state to provide sufficient doses of the vaccine.

Vice President Perillo shared that the University will develop a process to know who has been vaccinated, and will be able to develop fall 2021 plans after getting a better sense of the vaccination numbers.

Senators asked if Phase 1B of the vaccination plan includes graduate assistants, and if a policy will be put in place for campus community members who refuse to be vaccinated.

Vice President Perillo stated that graduate assistants will be prioritized the same way as faculty and staff, with priority going to campus community members who have significant ongoing interaction with the public. She stated that the Office of General Counsel at the University and the University System of Maryland (USM) have advised that the University cannot mandate resident students to be vaccinated, as the vaccine has been released as emergency use.

President Pines stated that he expects that the state's Office of the Attorney General will provide guidance similar to the information provided regarding COVID-19 testing.

A Senator requested more information about how to become more involved with diversity and inclusion efforts on campus.

President Pines stated that he will connect the Senator with Georgina Dodge, Vice President for Diversity and Inclusion. He thanked the Senator for his commitment to supporting inclusivity.

Senate Chair Dugan thanked President Pines and Vice President Perillo for their presentation and stated that because it was 5:00 p.m., the meeting was adjourned.

Establish a Bachelor of Science in Fermentation Science (PCC 20068)

PRESENTED BY	**Valerie Orlando, Chair, Senate Programs, Curricula, and Courses Committee**
REVIEW DATES	**SEC – February 23, 2021 | SENATE – March 3, 2021**
VOTING METHOD	**In a single vote**
RELEVANT POLICY/DOCUMENT	**NA**
NECESSARY APPROVALS	**Senate, President, University System of Maryland Board of Regents, and Maryland Higher Education Commission**

ISSUE

The Department of Nutrition and Food Science, within the College of Agriculture and Natural Resources (AGNR), proposes to establish a Bachelor of Science in Fermentation Science. The program will prepare students for workforce demand in the broadly defined fermentation industries that include beverages (beer, wine, distilled spirits and kombucha), vegetable foods (kimchi, tempeh and miso), dairy foods (cheese and yogurt) and biotechnology industries (biofuels and pharmaceuticals). The Fermentation Science major is concerned with the application of the fundamental principles of the physical, biological, and behavioral sciences and processing to understand the complex and heterogeneous materials recognized as the raw precursors or/and final food products and beverages of fermentation. The fermentation science major prepares students for careers not only in traditional food and alcoholic beverage industries, but also the biotechnology fermentation industry for pharmaceutical and nutraceutical production. Students will have a solid understanding of the microbiology of fermentation, and will be able to critically evaluate the scientific literature related to their use in fermentation production and management. They will also be well-versed in the issues related to fermentation science such that they contribute to societal debates around the future of farming, the use of microbes & phages in fermentation, sustainability of our fermentation industry, worker needs, and the scaling of fermentation enterprises up and down to meet our growing population's fermented product needs.

This program will be offered both on the College Park campus and the Universities at Shady Grove. The University of Maryland contracted with the Regional Economic Studies Institute (RESI) of the Towson University to produce a regional workforce study that identified a large increase in fermentation-related establishments in Maryland, with breweries and distilleries growing by 218% and 375%, respectively, from 2014-2018. Although the fermentation-related industries employed 21,918 Marylanders in 2018, they are still projected to have a growth rate of almost 7%, with 14,736 new jobs by 2026. The program will be supported through a targeted enhancement-funding request to the State of Maryland for workforce development and through tuition revenue.

The program requires 87-90 credits, with foundational courses in biological sciences, chemistry, nutrition and food science, plant sciences, and mathematics. Upper-level courses will be required in nutrition and food science, technical writing, and biochemistry. Specialized coursework will be required in fermented food, feed and pharmaceuticals, viticulture and enology, brewing and

distilling, and cheese and fermented dairy products. The new program has been recommended and encouraged by the AGNR Program Advisory Committee, the Brewers Association of America (MBAA), Maryland Wineries Association, Maryland Department of Commerce, and the Regional Economic Studies Institute (RESI) of Towson University.

This proposal was approved by the Senate Programs, Curricula, and Courses committee on February 5, 2021.

RECOMMENDATION(S)

The Senate Committee on Programs, Curricula, and Courses recommends that the Senate approve this bachelor's degree program.

COMMITTEE WORK

The Committee considered this proposal at its meeting on February 5, 2021. Cheng-i Wei and Sara Kao, from the Department of Nutrition and Food Science, and Joe Sullivan, from the College of Agriculture and Natural Resources, presented the proposal and answered questions from the Committee. The proposal was approved by the Committee.

ALTERNATIVES

The Senate could decline to approve this new bachelor's degree program.

RISKS

If the Senate declines to approve this degree program, the university will lose an opportunity to take advantage of additional state funding to provide students with training in a growing technological and agricultural industry that has few options for formal training in the region.

FINANCIAL IMPLICATIONS

The program will be supported through a targeted enhancement funding request to the State of Maryland, and through tuition revenue.

744: FERMENTATION SCIENCE

In Workflow

1. D-NFSC Curriculum Manager (sarakao@umd.edu; wei@umd.edu)
2. D-NFSC PCC Chair (dlei@umd.edu)
3. D-NFSC Chair (wei@umd.edu)
4. AGNR Curriculum Manager (ecooper@umd.edu; tgallman@umd.edu)
5. AGNR PCC Chair (jsull@umd.edu; mcarroll@umd.edu)
6. AGNR Dean (jsull@umd.edu)
7. Academic Affairs Curriculum Manager (mcolson@umd.edu)
8. Senate PCC Chair (mcolson@umd.edu; vorlando@umd.edu)
9. University Senate Chair (mcolson@umd.edu)
10. President (mcolson@umd.edu)
11. Board of Regents (mcolson@umd.edu)
12. MHEC (mcolson@umd.edu)
13. Provost Office (mcolson@umd.edu)
14. Undergraduate Catalog Manager (lyokoi@umd.edu; wbryan@umd.edu)

Approval Path

1. Wed, 02 Sep 2020 02:37:14 GMT
   Sara Kao (sarakao): Approved for D-NFSC Curriculum Manager
2. Wed, 02 Sep 2020 13:31:50 GMT
   David Lei (dlei): Approved for D-NFSC PCC Chair
3. Wed, 02 Sep 2020 14:31:08 GMT
   Cheng-I Wei (wei): Approved for D-NFSC Chair
4. Wed, 02 Sep 2020 15:51:54 GMT
   Tyra Monnity (tgallman): Approved for AGNR Curriculum Manager
5. Mon, 28 Sep 2020 18:12:54 GMT
   Joseph Sullivan (jsull): Rollback to Initiator
6. Tue, 03 Nov 2020 17:47:57 GMT
   Sara Kao (sarakao): Approved for D-NFSC Curriculum Manager
7. Tue, 03 Nov 2020 18:33:18 GMT
   David Lei (dlei): Approved for D-NFSC PCC Chair
8. Tue, 03 Nov 2020 19:18:52 GMT
   Cheng-I Wei (wei): Approved for D-NFSC Chair
9. Tue, 03 Nov 2020 19:20:50 GMT
   Tyra Monnity (tgallman): Approved for AGNR Curriculum Manager
10. Fri, 20 Nov 2020 15:37:09 GMT
    Mark Carroll (mcarroll): Rollback to D-NFSC Chair for AGNR PCC Chair
11. Wed, 25 Nov 2020 17:42:42 GMT
    Cheng-I Wei (wei): Approved for D-NFSC Chair
12. Wed, 25 Nov 2020 17:52:56 GMT
    Tyra Monnity (tgallman): Approved for AGNR Curriculum Manager
13. Thu, 03 Dec 2020 21:48:22 GMT
    Mark Carroll (mcarroll): Approved for AGNR PCC Chair
14. Fri, 04 Dec 2020 04:06:16 GMT
    Joseph Sullivan (jsull): Approved for AGNR Dean
15. Fri, 29 Jan 2021 21:43:17 GMT
    Michael Colson (mcolson): Approved for Academic Affairs Curriculum Manager
16. Sat, 06 Feb 2021 09:13:49 GMT
    Valerie Orlando (vorlando): Approved for Senate PCC Chair

New Program Proposal

Date Submitted: Tue, 03 Nov 2020 14:58:49 GMT

Viewing: 744 : Fermentation Science
Last edit: Wed, 03 Feb 2021 18:21:42 GMT

Changes proposed by: Cheng-I Wei (wei)

Program Name

Fermentation Science

Program Status

Proposed

Effective Term

Spring 2021

Catalog Year

2020-2021

Program Level

Undergraduate Program

Program Type

Undergraduate Major

Delivery Method

On Campus

Departments

Department
Nutrition and Food Science

Colleges

College
Agriculture and Natural Resources

Degree(s) Awarded

Degree Awarded
Bachelor of Science

Proposal Contact

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Proposal Summary

The College of Agriculture and Natural Resources seeks to establish a new undergraduate program in fermentation science in the Department of Nutrition and Food Science in collaboration with the Department of Plant Science and Landscape Architecture. The newly established program will prepare students for workforce demand of the broadly defined fermentation industries that include beverages (beer, wine, distilled spirits and kombucha), vegetable foods (kimchi, tempeh and miso), dairy foods (cheese and yogurt) and biotechnology industries (biofuels and pharmaceuticals). In addition to general education courses, students will take core required courses on fermentation science and participate in industrial internships for practical experiences and experiential learning with fermentation industries and possible placement in those companies.

The fermentation science program is expected to enroll 15 students in year one. Effort will be made to ensure that each year there will be an additional 15 students enrolled to this program. With a total of at least 60 majors, we can help fill a gap in Maryland educational system to benefit the fermentation industries through the provision of high quality graduates to meet workforce demand and for promoting state economy with high quality products. Short courses and/or certificate program in fermentation science will also be offered to industrial employees and students in the state after the program is established.

(PCC Log Number 20068)

Program and Catalog Information

Provide the catalog description of the proposed program. As part of the description, please indicate any areas of concentration or specializations that will be offered.

The newly developed fermentation science program will be housed in the Department of Nutrition and Food Science as a new major. In addition to provision to students of competencies for several areas of work, the fermentation science major is designed specifically for certain professional industrial careers including the fermented food, alcoholic beverage and pharmaceutical products.

The Fermentation Science major is concerned with the application of the fundamental principles of the physical, biological, and behavioral sciences and processing to understand the complex and heterogeneous materials recognized as the raw precursors or/and final food products and beverages of fermentation. The fermentation science major prepares students for careers not only in traditional food and alcoholic beverage industries but also the biotechnology fermentation industry for pharmaceutical and nutraceutical production.

Catalog Program Requirements:

Students enrolled in Fermentation Science Major are required to earn a grade of "C-" or better in courses applied toward satisfaction of the major. This includes all the required and elective courses.

Curriculum for the Fermentation Science Major

Course	Title	Credits
BSCI170	Principles of Molecular & Cellular Biology	3
BSCI171	Principles of Molecular & Cellular Biology Laboratory	1
BSCI223	General Microbiology	4
CHEM131	Chemistry I - Fundamentals of General Chemistry	3
CHEM132	General Chemistry I Laboratory	1
CHEM231	Organic Chemistry I	3
CHEM232	Organic Chemistry Laboratory I	1
CHEM241	Organic Chemistry II	3
CHEM242	Organic Chemistry Laboratory II	1
CHEM271	General Chemistry and Energetics	2
CHEM272	General Bioanalytical Chemistry Laboratory	2
ENGL101	Academic Writing	3
ENGL393	Technical Writing [1]	3
MATH120	Elementary Calculus I	3
NFSC112	Food: Science and Technology	3
BCHM463	Biochemistry of Physiology	3
NFSC398	Seminar	1
NFSC421	Food Chemistry	3
NFSC423	Food Chemistry Laboratory	3
NFSC430	Food Microbiology	3
NFSC431	Food Quality Control	4
PLSC110	Introduction to Horticulture	3
or PLSC112	Introductory Crop Science	
PLSC130	Did Yeast Create Civilization?	3
AGST3XX	Course AGST3XX Not Found (Viticulture and Enology)	4
AGST3XX	Course AGST3XX Not Found (Brewing and Distilling)	4
NFSC412	Food Processing Technology	4
NFSC2XX	Course NFSC2XX Not Found (Fermented Food, Feed, and Pharmaceuticals)	3
NFSC4XX	Course NFSC4XX Not Found (Fermentation Science Laboratory)	4
NFSC4XX	Course NFSC4XX Not Found (Cheese and Fermented Dairy Products)	3
NFSC386	Experiential Learning	3-6
NFSC4XX	Course NFSC4XX Not Found (Sensory Analysis Lab)	3
Total Credits		**87-90**

Total Credits for Degree: 120

Course	Title	Credits
The following courses are suggested electives:		
AREC250	Elements of Agricultural and Resource Economics	
BMGT110	Introduction to the Business Value Chain	
BMGT220	Principles of Accounting I	
BMGT360	Strategic Management of Human Capital	
BMGT364	Managing People and Organizations [1]	
COMM200	Critical Thinking and Speaking [1]	
INAG103	Agricultural Marketing	
INAG204	Agricultural Business Management	
INAG206	Agricultural Business Law	
NFSC100	Elements of Nutrition	
NFSC422	Food Product Research and Development	
NFSC434	Food Microbiology Laboratory	
ANSC410	The Gut Microbiome and its Roles in Health and Disease	
NFSC450	Food and Nutrient Analysis	
NFSC498	Selected Topics	
AGST333	Course AGST333 Not Found (Craft Beverage Crops)	

[1] High-demand course. For non-major students, these seats are assigned as "first-come, first-served". Students are encouraged to register as early as possible for a seat in these courses.

Sample plan. Provide a term by term sample plan that shows how a hypothetical student would progress through the program to completion. It should be clear the length of time it will take for a typical student to graduate. For undergraduate programs, this should be the four-year plan.

Please see the attached four-year plan

List the intended student learning outcomes. In an attachment, provide the plan for assessing these outcomes.

Learning Outcomes

The intended learning outcomes can be assessed at the program level, course level or individual student level as shown below.

#1. At Program Level
1. Careers and opportunities in fermentation science - Graduates of fermentation science undergraduate program will be well prepared for at least four career options [in beverage (beer, wine, distilled spirits and kombucha), vegetable foods (kimchi, tempeh and miso), dairy foods (cheese and yogurt) and biotechnology industries (biofuels, pharmaceuticals and nutraceuticals] based upon their UMD fermentation science training, experience and interests.
2. Fermentation science - Graduates of the undergraduate program will be able to apply fermentation science knowledge and research to enhance fermentation process, propagation and modification of fermentation microbes, fermenter design and downstream processing including effluent treatment. Students will demonstrate mastery of the manufacturing steps involved in various fermented products and gain hands-on experience in making these products at pilot scale and evaluate their quality and safety.
3. Fermented food, feed and pharmaceuticals - Graduates of the fermentation science program will be able to correctly apply their knowledge in the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. Students will be able to describe fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.
4. Fermentation science literacy - Graduates of the program will be able to select, understand, and critically evaluate scientific studies in fermentation science disciplines such that they employ research that is applicable, timely, accurate, and useful for their fermentation production and management needs.
5. Knowledge of major issues in fermentation science - Graduates of the program will be well-versed in the issues related to fermentation science such that they contribute to societal debates around the future of farming, the use of microbes & phages in fermentation, sustainability of our fermentation industry, the worker needs, and scaling fermentation enterprises up and down to meet our growing population's fermented product needs.

#2. At Course Level for the Four Major Supporting Courses (to strengthen the foundation of the fermentation science students) - The learning outcomes for these courses also reflect learning outcomes of the fermentation science program.

NFSC112 Food: Science and Technology
The course lectures are activities structured around the following objectives:
1. mponents (water, carbohydrates, protein, lipids, other components and food additives); the chemistry of changes occurring during processing, storage, and utilization To illustrate the scientific, technical, and practical aspects involved with the harvest, processing, preservation, packaging, storage, distribution, and regulation of food.
2. To teach the basic chemical, physical, and microbiological aspects of food, as well as how basic sciences are integrated in maintaining the quality and safety of food.
3. To encourage critical thinking and acquisition of credible information for active engagements in science-based discussion of current topics and/or emerging issues.

Learning Outcomes: Upon completion of the required course work in this topical area, students will be able to:
1. Apply the principles of food science and technology to control/assure the quality and safety of food products.
2. Demonstrate critical think to answer questions and explain phenomena in food processing, preservation, packaging and regulation.
3. Select, understand and critically evaluate evidence-based data from reliable sources to make science-based arguments on a food science and technology topic.

NFSC423 Food Chemistry Laboratory
Study of the structure and properties of food components (water, carbohydrates, protein, lipids, other components and food additives); the chemistry of changes occurring during processing, storage, and utilization
Learning Outcomes: Upon completion of the required course work in this topical area, students will be able to:
1. Discuss the major chemical reactions that limit shelf life of foods.
2. Explain the chemistry underlying the properties and reactions of various food components.
3. Apply food chemistry principles used to control reactions in foods.
4. Demonstrate laboratory techniques common to basic and applied food chemistry.
5. Demonstrate practical proficiency in a food analysis laboratory.
6. Explain the principles behind analytical techniques associated with food.
7. Evaluate the appropriate analytical technique when presented with a practical problem.
8. Design an appropriate analytical approach to solve a practical problem.

NFSC430 Food Microbiology
Microorganisms in food including beneficial, pathogenic, and spoilage; the influence of the food system on their growth, survival, and control

1. Learning Outcomes: Upon completion of the required course work in this topical area, students will be able to:
2. Identify relevant beneficial, pathogenic, and spoilage microorganisms in foods and the conditions under which they grow.
3. Describe the conditions under which relevant pathogens are destroyed or controlled in foods.
4. Apply laboratory techniques to identify microorganisms in foods.
5. Explain the principles involved in food preservation via fermentation processes.
6. Discuss the role and significance of adaptation and environmental factors (e.g., water activity, pH, temperature) on growth response and inactivation of microorganisms in various environments.
7. Choose relevant laboratory techniques to identify microorganisms in foods.

NFSC412 Food Processing Technology

New Program Information

Mission and Purpose

Describe the program and explain how it fits the institutional mission statement and planning priorities.

The proposed B.S. program in fermentation science at UMD will provide the students with solid foundation knowledge in a wider scope of topics related to the discipline such as beer, wine, brewing and distilling, dairy and related healthy foods products, biofuel, as well as pharmaceutical/ nutraceutical fermentation (vaccine and medicine production), given that Maryland has a varied economy with many different industries and that UMD has high quality prospective students for enrollment in this program. We expect the UMD fermentation science curriculum to have the following unique characteristics:

• The curriculum will focus on both the basic sciences underlying fermentation processes and specialized coursework on food fermentation. Therefore, the scope of the program will focus on not only the traditional food and beverage fermentation but also the incorporation of biotechnology and pharmaceutical/nutraceutical applications.

• The program will foster close relationships with fermentation industry leaders and employers in the state and region, such as the Brewers Association of Maryland, for their assistance and guidance in curriculum improvement, designs of pilot plant facilities and laboratories, and execution of experiential internship opportunities to augment student learning.

• Because of the applied and interdisciplinary nature of the fermentation science major, students will be allowed to cross-register in courses/colleges across the UMD campus such as plant science, marketing, entrepreneurship, chemistry, or engineering through registrations in a variety of electives, internships, and/or independent study.

• As we are making good progress in program development, faculty through their research and extension activities will be engaged with relevant state and federal agencies such as Maryland Department of Agriculture, Maryland Department of Commerce, the United States Department of Agriculture, and the Food and Drug Administration, to further develop career opportunities for the students and secure additional external funding for the program.

The program fits well the mission of the university and college in (1) educating the citizens for future career development, (2) promoting economic development of the state and the region, (3) establishing AGNR's leadership in teaching, research and outreach services in fermentation science areas, and (4) strengthening university's relationship with various government agencies and industries.

Program Characteristics

What are the educational objectives of the program?

To provide the students with solid foundation knowledge about fermentation science topics that include not only the traditional products such as beer, wine, brewing and distilling, dairy yogurt, kombucha, kimchi, tempeh, miso and biofuel, but also the modern biotechnology fermentation for pharmaceutical/nutraceutical and vaccine production.

To provide students with practical experience through experiential internship opportunities with fermentation industries that they become employable upon graduation.

To prepare the graduates with adequate knowledge and experiences for advanced graduate studies and future professional career development.

To use the opportunities that the fermentation industries work closely with our BS program in terms of provision of guidance for curriculum improvement, designs of pilot plant facilities and laboratories, and execution of experiential internship opportunities to augment student learning, that the college can develop win-win collaborative relationships with the industrial partners.

Describe any selective admissions policy or special criteria for students interested in this program.

The curriculum is loaded with sequential mathematics and chemistry courses, students with strong analytical capabilities and are to be enrolled as freshmen are more suitable for program completion in four years. It may take a longer time than two years for the transfer students to finish the BS degree in fermentation science.

Summarize the factors that were considered in developing the proposed curriculum (such as recommendations of advisory or other groups, articulated workforce needs, standards set by disciplinary associations or specialized-accrediting groups, etc.).

Recommendation and encouragement for the establishment of the fermentation science program came from the AGNR Program Advisory Committee, the Brewers Association of America (MBAA), Maryland Wineries Association, Maryland Department of Commerce, and the Regional Economic Studies Institute (RESI) of Towson University.

Also, the Maryland legislature funded a workforce development grant to support a joint program between the Universities at Shady Grove and Plant Science and Landscape Architecture Department – for the hiring of PTK faculty to teach agronomy and agriculture science and technology courses at Shady Grove and also for teaching space improvements.

Identify specific actions and strategies that will be utilized to recruit and retain a diverse student body.

The NFSC Departmental chair and faculty will go with AGNR recruitment program director, Ms. April Brohawn and her assistant, Ms. Kristen Coffey (coordinator), to visit high schools and discuss with the counselors and students about the scope of the fermentation science program and job opportunities for the graduates.

High school students attending the AGNR's summer joint program with USDA, the Ag Discovery, will visit the fermentation science facility/laboratory and listen to program descriptions by the instructors and student ambassadors. Similar approaches can be adapted on Maryland Day for program introduction to the general publics with a booth display of our fermentation food products and sensory tasting.

The NFSC Department will send out letters to students enrolled in the College of Undergraduate Studies, encouraging them to sit in fermentation science courses and discuss with the instructors and their friends about selection of this exciting program as their major.

The NFSC Department will promote the Fermentation Science program at various agricultural events for long-term student recruitment, taking advantage of our grassroot connection and close relationship with the Maryland Department of Agriculture, the Maryland Agricultural Education Foundation, the Farm Bureau offices of the State of Maryland and the counties, the State Fair and county fairs, etc.

The NFSC Department will encourage Maryland Wineries Association, the Brewers Association of Maryland and owners of some of the breweries and fermentation food companies to provide scholarships for our deserving students.

Relationship to Other Units or Institutions

If a required or recommended course is o#ered by another department, discuss how the additional students will not unduly burden that department's faculty and resources. Discuss any other potential impacts on another department, such as academic content that may significantly overlap with existing programs. Use space below for any comments. Otherwise, attach supporting correspondence.

The Plant Science and Landscape Architecture (PSLA) Department will collaborate with NFSC Department in making this joint program in fermentation science a success. PSLA Department will hire 1.5 FTE instructors to help develop and teach two new required courses: AGST3XX Viticulture and Enology, 4 credits and AGST 3XX Brewing and Distilling, 4 credits. Since these are new courses to be taught by newly hired faculty, there is no issue related to workload burden problem to existing faculty. PSLA faculty are currently teaching three courses (Introduction to Horticulture, 3 credits; Introductory Crop Science, 3 credits; and Did Yeast Create Civilization? 3 credits) that can also be designated as required courses for fermentation science majors who are interested in plant aspect of the program.

Many of the elective courses for fermentation science are currently taught in the College of Agriculture and Natural Resources. The initial low student number of the program will not create a big burden to the instructors of these courses.

Other colleges and departments offering general education and elective courses, such as College of Computer, Math & Natural Sciences, Robert H. Smith School of Business, Department of English, Department of Communication, Department of Agricultural and Resource Economics, Department of Animal and Avian Science, Department of Plant Science and Landscape Architecture, and Institute of Applied Agriculture, were contacted about potential teaching loads to their classes and faculty. They all provide supporting letters or email notes indicating their willingness to collaborate and help the new program and the students. (see the attachment)

Accreditation and Licensure. Will the program need to be accredited? If so, indicate the accrediting agency. Also, indicate if students will expect to be licensed or certified in order to engage in or be successful in the program's target occupation.

At this stage of program development, we are not seeking accreditation.

Describe any cooperative arrangements with other institutions or organizations that will be important for the success of this program.

At this planning stage, AGNR, in conjunction with Maryland Department of Commerce, sought assistance from the Regional Economic Studies Institute (RESI) at Towson University to conduct a workforce study to determine the feasibility of a Bachelor of Science program in Fermentation Science at UMD and received a very positive report about the potential of such a program at the UMD campus. Meanwhile, the Universities at Shady Grove and the PSLA Department have agreed to use the funded workforce development grant ($500,000/year for five years) by the Maryland legislature to hire faculty for this fermentation science program that the two institutions believe has potential to attract significant number of student enrollment.

After the fermentation science program is established, efforts will be made to establish even closer collaborative relationships for program success with the Maryland Department of Agriculture, Department of Commerce, the US Department of Agriculture (USDA), the Food and Drug Administration, the fermentation and cheese industries, the Maryland Wineries Association and the Brewers Association of Maryland. In the article "Maryland breweries continue to take flight in 2019," Secretary Kelly M. Schulz stated "our state breweries offer a unique experience for Maryland consumers and visitors alike, from producing top rated craft beverages, to providing job opportunities across the state, and becoming a key part of our local economy." In total, Maryland houses 112 craft breweries at 2.5 breweries per capita and produces a whopping 301,966 barrels of craft beer per year. The industry has an $889 million economic impact for the state in 2019 alone. (July 2020, 2020 Issue of Maryland Pulse, Maryland Department of Commerce)

Faculty and Organization

Who will provide academic direction and oversight for the program? In an attachment, please indicate the faculty involved in the program. Include their titles, credentials, and courses they may teach for the program.

The proposed 4-year B.S. program in fermentation science at UMD will be housed in the Nutrition and Food Science (NFSC) Department that offers a Bachelor of Science degree in Nutrition and Food Science with three existing options in Food Science, Dietetics, and Nutritional Science. NFSC faculty consists of five professors, six associate professors, one assistant professor and three instructors. The department has four staff members to assist Dr. Cheng-I Wei, interim chair in managing departmental administration, business, finance, and program coordination.

NFSC Department will need to hire three new faculty members to effectively manage the teaching responsibilities of the required fermentation science-related courses and provide counseling to the students enrolled in fermentation science major. These three faculty members will have split

appointments on teaching, research, extension, and program coordination responsibilities. They will be provided with an office and a laboratory in addition to a pilot plant facility that will house commercial-scale fermenters and associated processing equipment. Faculty members from the Department of Plant Science and Landscape Architecture (PSLA) and other departments of the College will also teach the required and elective courses for students majored in fermentation science.

Initially, the dean of the college (Dr. Craig Beyrouty), the associate dean for academic programs (Dr. Joseph Sullivan), the acting assistant dean (Dr. Frank Coale) and the chairs of NFSC, PSLA and Animal and Avian Sciences (ANSC) Departments will coordinate to provide academic direction and oversight for the program. In two years, after about 30 students are enrolled in this established major and some of the critical instructors for fermentation science curriculum are hired, an oversight committee consisted of the core faculty, student representatives and industrial advisory members will be formed to play the role in providing guidance and suggestions on program development, oversight and management.

Indicate who will provide the administrative coordination for the program

Initially, the chair of NFSC Department, in coordination with the dean of the college, associate dean for academic programs, the acting assistant dean and the chair of PSLA Department, will provide the administrative coordination for the program. Once the program is established and some of the critical program instructors are recruited, a program coordinator can be identified to work with NFSC chair and the advisory committee consisting of the core faculty, student representatives and industrial advisory members for program development, oversight and management.

Resource Needs and Sources

Each new program is required to have a library assessment prepared by the University Libraries in order to determine any new library resources that may be required. This assessment must be done by the University Libraries. Add as an attachment.

Library Collection Assessment for Fermentation Science

On behalf of the University of Maryland Libraries:
Stephanie Ritchie, Agriculture and natural Resources Librarian
Maggie Saponaro, Director of Collection Development Strategies
Daniel Mack, Associate Dean, Collection Strategies & Services

We are providing this assessment in response to a proposal by the Department of Nutrition and Food Science in the College of Agriculture and Natural Resources to create a new Bachelor of Science major program in Fermentation Science. The Department of Nutrition and Food Science asked that we at the University of Maryland Libraries assess our collection resources to determine how well the Libraries support the curriculum of this proposed program.

Serial Publications
The University of Maryland Libraries currently subscribe to a large number of scholarly journals — almost all in online format— that focus on fermentation science and related disciplines. The Libraries subscribe to most of the top ranked journals that are listed in the Biotechnology & Applied Microbiology and Food Science & Technology categories in the Science Edition of Journal Citation Reports*. These journals include the following, all of which are available online:

Fermentation (MDPI)
Journal of fermentation and bioengineering
Journal of fermentation technology
Food bioscience
Journal of the Institute of Brewing
Journal of biotechnology
Biotecnología aplicada (Society)
Journal of bioscience and bioengineering (Society)
Journal of industrial microbiology & biotechnology
Nature biotechnology
Trends in biotechnology
Biotechnology advances
Current opinion in biotechnology
Critical reviews in biotechnology
Bioresource technology
Metabolic engineering
Trends in food science & technology
Comprehensive reviews in food science and food safety (Society)
Annual review of food science and technology
Critical reviews in food science and nutrition
Food chemistry
Molecular nutrition & food research
Food research international
Food and chemical toxicology
Journal of food engineering
Innovative food science & emerging technologies (Society)

Articles in journals that we do not own will likely be available through Interlibrary Loan/Document Delivery (see below for details).

*Note: Journal Citation Reports is a tool for evaluating scholarly journals. It computes these evaluations from the relative number of citations compiled in the Science Citation Index and Social Sciences Citation Index database tools.

Databases
The Libraries' Database Finder (http://www.lib.umd.edu/dbfinder) resource offers online access to databases that provide indexing and access to scholarly journal articles and other information sources. Many of these databases cover subject areas relevant to this proposed program. Databases that would be most useful in the field of fermentation science are Web of Science, AGRICOLA, BIOSIS, and Reaxys.

Some of the other subject databases that would be relevant to this curriculum include EBSCO Health Source, ProQuest Public Health, Google Scholar, Medline/PubMed, SciFinder, ProQuest Biological Science, and ProQuest Materials Science & Engineering databases. Three general/multidisciplinary databases, Academic Search Ultimate, MasterFILE Premier and ProjectMUSE are also good sources of articles relevant to this topic. Food Science and Technology Abstracts can be added into the Web of Science platform, but must be licensed separately and is currently unavailable.

In many-and likely in most--cases, these indexes offer full text copies of the relevant journal articles or link into Libraries electronic subscriptions. In those instances in which the journal articles are available only in print format, the Libraries can make copies available to students through the Libraries' Interlibrary Loan service (https://www.lib.umd.edu/access/ill-article-request). (Note: see below.)

Monographs
The Libraries regularly acquire scholarly monographs in fermentation science and allied subject disciplines. Monographs not already part of the collection can usually be added upon request. Even though most library research for this course/program will likely rely upon online journal articles, students may wish to supplement this research with monographs. Fortunately, most new monographs are available as e-books. Even in instances when the books are only available in print, students will be able to request specific chapters for online delivery through the Interlibrary Loan program (Note: see below).
A search of the University of Maryland Libraries' WorldCat UMD catalog was conducted, using a variety of relevant subject terms. This investigation yielded sizable lists of citations for books that we own:

su:Alcoholic Beverages - 836
su:Food Microbiology - 396
su:Fermentation - 316
su:Yeast - 204
su:Fermented foods - 60
su:Beverages Microbiology - 12
su:Fermented beverages - 8

A further search revealed that the Libraries' membership in the Big Ten Academic Alliance (BTAA) dramatically increases these holdings and citations. As with our own materials, students can request that chapters be copied from these BTAA books if the books are not available electronically:

su:Alcoholic Beverages - 3,297
su:Food Microbiology - 1,403
su:Yeast - 1,111
su:Fermentation - 991
su:Fermented foods - 210
su:Fermented beverages - 45
su:Beverages Microbiology - 29

Interlibrary Loan Services
Interlibrary Loan services (https://www.lib.umd.edu/access/ill) provide online delivery of bibliographic materials that otherwise would not be available online. Interlibrary Loan services are available free of charge. The article/chapter request service scans and delivers journal articles and book chapters within three business days of the request--provided that the items are available in print on the UM Libraries' shelves or in microform. In the event that the requested article or chapter is not available on campus, the request will be automatically forwarded to the Interlibrary Loan service (ILL). Interlibrary Loan is a service that enables borrowers to obtain online articles and book chapters from materials not held in the University System of Maryland.

Additional Materials and Resources
In addition to serials, monographs and databases available through the University Libraries, students in the proposed program will have access to a wide range of media, datasets, software, and technology. Media in a variety of formats that can be utilized both on-site and via ELMS course media is available at McKeldin Library. GIS Datasets are available through the GIS Data Repository (https://www.lib.umd.edu/gis/data-and-resources) while statistical consulting and additional research support is available through the Research Commons (http://www.lib.umd.edu/rc) and technology support and services are available through the Terrapin Learning Commons (http://www.lib.umd.edu/tlc).The subject specialist librarians for Nutrition and Food Science and related disciplines also serve as an important resource to programs such as the one proposed (https://www.lib.umd.edu/directory/specialists/college-or-school). Through departmental partnerships, subject specialists actively develop innovative services and materials that support the University's evolving academic programs and changing research interests. Subject specialists provide one-on-one research assistance online, in-person, or via the phone. They also provide information literacy instruction and can provide answers to questions regarding publishing, copyright and preserving digital works.

For instance, to support the Fall 2020 course AGST/PLSC130: Did Yeast Create Civilization?, the subject specialist librarian created a guide at https://lib.guides.umd.edu/AGSTPLSC130 to support several assignments over the semester.

Other Research Collections
Because of the University's unique physical location near Washington D.C., Baltimore and Annapolis, University of Maryland students and faculty have access to some of the finest libraries, archives and research centers in the country vitally important for researchers in fermentation and food science. These include the Library of Congress, the National Archives, National Library of Medicine, National Agricultural Library, and the Smithsonian.

Conclusion
With our substantial journals holdings and index databases, as well as additional support services and resources, the University of Maryland Libraries have resources to support teaching and learning in fermentation science. These materials are supplemented by a strong monograph collection. Additionally, the Libraries chapter/article request and Interlibrary Loan services make materials that otherwise would not be available online, accessible to remote users in online courses. As a result, our assessment is that the University of Maryland Libraries are able to meet the curricular and research needs of the proposed fermentation science Bachelor of Science degree.

Discuss the adequacy of physical facilities, infrastructure and instructional equipment.

Fermentation science program has been identified by both the AGNR and the Universities at Shady Grove as a potential new program with the potential for significant student numbers. Shady Grove campus has a new fermentation laboratory space available for teaching. The NFSC Department is renovating a pilot plant facility in the Animal Sciences Building that can be used to house pilot-scale fermenters and equipment for teaching demonstration, student laboratory practices and research functions. The departmental laboratories and walk-in cold rooms in Marie Mount Hall and Skinner Building, after remodeling, can also be used for teaching and laboratory practice of fermentation science courses.

After the program is established and the number of enrolled students increased, efforts will be continuously made to evaluate facility and resources need for the program and to communicate with the offices of the dean and provost for additional support.

Discuss the instructional resources (faculty, staff, and teaching assistants) that will be needed to cover new courses or needed additional sections of existing courses to be taught. Indicate the source of resources for covering these costs.

Four faculty members will be needed to teach the seven new fermentation science courses: Fermented Food, Feed & Pharmaceuticals (NFSC 2XX, 3 credits), Brewing and Distilling (AGST3XX, 4 credits), Cheese and Fermented Dairy Products (NFSC4XX, 4 credits), Viticulture and Enology (AGST3XX, 4 credits), Fermentation Science Laboratory (NFSC4XX, 4 credits), Sensory Analysis Laboratory (NFSC4XX, 3 credits) and Experiential Learning (NFSC386, 4 credits); and the existing PLSC courses: PLSC130 Did Yeast Create Civilization? (3 credits), PLSC 110 Introduction to Horticulture (3 credits), and PLSC 112 Introduction to Crop Science (3 credits). In addition to classroom instructions, these faculty will also be responsible for student counseling, student internship management, research functions and extension services to the industry. Initially, a 0.5 FTE staff support will be assigned to assist the management of the fermentation science program. Two teaching assistants will be allocated for the program each semester to assist with classroom instruction/discussion and laboratory operations.

Potential source of resources for covering these personnel and management costs will be the funded workforce development grant ($500,000/ year for 5 years) by the Maryland Legislature to support a joint program between the Universities at Shady Grove and Plant Science and Landscape Architecture Department. This development grant is to be used for the hiring of PTK faculty to teach agronomy and agriculture science and technology courses at Shady Grove campus, and teaching space improvements.

Discuss the administrative and advising resources that will be needed for the program. Indicate the source of resources for covering these costs.

The NFSC Department will play a major coordination role with the dean's office, PSLA chair and representatives from the Universities at Shady Grove in providing administrative and advising resources for the program. The NFSC Department will use some of its budgetary savings (the drift accounts) to help cover these costs.

Use the Maryland Higher Education Commission (MHEC) commission financial tables to describe the program's financial plan for the next five years. See help bubble for financial table template. Use space below for any additional comments on program funding.

See the attached budget estimates for the program

Implications for the State (Additional Information Required by MHEC and the Board of Regents)

Explain how there is a compelling regional or statewide need for the program. Argument for need may be based on the need for the advancement of knowledge and/or societal needs, including the need for "expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education." Also, explain how need is consistent with the Maryland State Plan for Postsecondary Education **(**https://mhec.state.md.us/About/Documents/2017.2021%20Maryland%20State%20Plan%20for%20Higher%20Education.pdf**).**

The workforce study by the Regional Economic Studies Institute (RESI) of the Towson University showed that, over the years, Maryland had a large increase in fermentation-related establishments, with breweries and distilleries growing by 218% and 375%, respectively, from 2014-2018.

Although the fermentation-related industries employed 21,918 Marylanders in 2018, they are still projected to have a growth rate of almost 7% with 14,736 new jobs by 2026. Since there is no fermentation programs offered at any colleges in the State of Maryland, it is feasible to develop such a undergraduate fermentation science program at UMCP to train students to (1) meet the workforce demand in the state for fermentation-related industries, and (2) help maintain high quality products for elevated economic development in the state.

This undergraduate program in fermentation science could provide good job opportunities for minority and educationally disadvantaged students. It is a STEM program with practical hands-on exercises and internship opportunities at the fermentation industries for recognition of student characteristics and distinctive work ethics.

Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program. Possible sources of information include industry or disciplinary studies on job market, the USBLS Occupational Outlook Handbook **(**https://www.bls.gov/ooh/**), or Maryland state** Occupational and Industry Projections **(**http://www.dllr.state.md.us/lmi/iandoproj/**) over the next five years. Also, provide information on the existing supply of graduates in similar programs in the state (use MHEC's Office of Research and Policy Analysis** webpage **(**http://mhec.maryland.gov/publications/Pages/research/**) for Annual Reports on Enrollment by Program) and discuss how future demand for graduates will exceed the existing supply. As part of this analysis, indicate the anticipated number of students your program will graduate per year at steady state.**

Currently there are 112 craft breweries located in Maryland to produce a whopping 301,966 barrels of craft beer per year. In 2019, the brewery industry yielded an $889 million economic impact to Maryland economy (Brewer's Association State Database).

The workforce study by the Regional Economic Studies Institute (RESI) of the Towson University showed that, over the years, Maryland had a large increase in fermentation-related establishments, with breweries and distilleries growing by 218% and 375%, respectively, from 2014-2018.

In Maryland, the fermentation industries that include beverages (beer, wine, distilled spirits and kombucha), vegetable foods (kimchi, tempeh and miso), dairy foods (cheese and yogurt) and biotechnology industries (biofuels and pharmaceuticals), employed 21,918 Marylanders in 2018. The fermentation industries are projected to have a growth rate of almost 7% with 14,736 new jobs by 2026.

Presently no colleges in the state of Maryland offer fermentation science program. Within the 500-mile region of College Park, only four institutions offer bachelor's fermentation science programs to a total of 213 students. These four regional institutions are the Appalachian State University (B. S. in Fermentation Sciences), Edinboro University (B.S. in Fermentation Science), SUNY Cobleskill (B.T. in Applied Fermentation) and Virginia Polytechnic Institute and State University (B.S. in Food and Beverage Fermentation).

Thus, the number of graduates in fermentation areas in the region is unlikely to fulfill the workforce demand in Maryland. The establishment of a BS program in Fermentation Science at UMD could fill a gap in Maryland educational system to benefit the state's fermentation industries through the provision of high quality graduates in meeting the workforce demand and promoting state economy with high quality products.

The fermentation science program is expected to enroll 15 students in year one. Effort will be made to ensure that each year there will be an additional 15 students enrolled to this major. Sso by year four, there will be at least 60 students majored in fermentation science.

Identify similar programs in the state. Discuss any di#erences between the proposed program and existing programs. Explain how your program will not result in an unreasonable duplication of an existing program (you can base this argument on program di#erences or market demand for graduates). The MHEC website can be used to find academic programs operating in the state: http://mhec.maryland.gov/institutions_training/pages/HEPrograms.aspx

The search of MHEC website (http://mhec.maryland.gov/institutions_training/pages/HEPrograms.aspx) shows that there is no fermentation program offered in the state of Maryland as Bachelor's Degree program or Certificate or Advanced Study program.

Discuss the possible impact on Historically Black Institutions (HBIs) in the state. Will the program affect any existing programs at Maryland HBIs? Will the program impact the uniqueness or identity of a Maryland HBI?

The newly establish undergraduate fermentation science program at UMD will not affect any of the existing programs at Historically Black Institutions in Maryland. We plan to offer short courses and/or certificate program after the program is established and students from HBIs are welcome to attend.

Supporting Documents

Attachments

FINAL REPORT Potential for a Fermentation Science BS at University of Maryland College Park_28May2020 (1).pdf
Cheese and Fermented Dairy Foods Syllabus.docx
Fermentation Science Lab Syllabus.docx
Sensory Evaluation Laboratory Syllabus.docx
Fermented Food Feed and Pharmaceuticals Syllabus.docx
DRAFT Brewing and Distilling Draft Syllabus.pdf
DRAFT Viticulture and Enology Draft Syllabus.pdf
Fermentation Sci v3 MHEC-Budget-template-UNDERGRAD-2020 (1) (1).xlsx
Rubric for Assessment of Target Courses.docx
Letters or email notes of support Jan 27.docx
Fermentation Science 4 years plan Feb 2.xlsx

Reviewer Comments

Joseph Sullivan (jsull) (Mon, 28 Sep 2020 18:12:54 GMT): Rollback: Proposal needs additional information added before official submission

Mark Carroll (mcarroll) (Fri, 20 Nov 2020 15:37:09 GMT): Rollback: Some revision of program outcomes is needed as specified in emails sent to the NFSC chair from Joe Sullivan, on 11/19, and Mark Carroll on 11/9.

Michael Colson (mcolson) (Wed, 03 Feb 2021 18:13:04 GMT): The Fermented Food, Feed, and Pharmaceutical course has switched from a 400-level course to a 200-level course as of 2/3/2021

Key: 744

Potential for a Fermentation Science BS at University of Maryland College Park

Prepared for
University of Maryland College Park's College of Agriculture and Natural Resources and MD Department of Commerce

Regional Economic Studies Institute

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1.0 Executive Summary

The growth in fermentation science occupations in the Mid-Atlantic region has prompted University of Maryland College Park's (UMCP) College of Agriculture and Natural Resources to consider developing a fermentation science program at UMCP. The Bachelor of Science (BS) in Fermentation Science would provide students with a solid foundation in this growing occupational field.

Prior to establishing this degree, UMCP, in conjunction with the Maryland Department of Commerce (Commerce; collectively these two entities are the Client), seeks a workforce study that examines the potential need for fermentation science at UMCP. Towson University's Regional Economic Studies Institute (RESI) has completed this analysis on behalf of the Client.

To determine the potential for a bachelor's program in fermentation science at UMCP, RESI considered the demand for and the supply of workers with a background in fermentation science in the state's economy. These analyses are contextualized with industry and employment data at the state and regional level. In addition, the supply analysis examines existing programs to identify key traits or characteristics of successful educational programs.

RESI's analysis yielded these key findings:

- Consumer demand for fermented products—such as alcoholic beverages, kombucha, kimchi, tempeh, and miso—has grown significantly in recent years.
- As of 2018, industries related to fermentation science employ 21,918 Marylanders.
- Maryland has seen a particularly large increase in establishments related to fermentation science, with breweries and distilleries growing by 218 percent and 375 percent, respectively, from 2014-2018.
- Despite historically not having a competitive advantage, Maryland is increasing its specialization in the fermentation science industry, adding 194 more jobs than expected in 2018.
- Fermentation science occupations in Maryland are projected to experience a robust growth rate of almost 7 percent (14,736 jobs) by 2026.
- Despite multiple programs being within a day's drive of Maryland, there are currently no fermentation programs at colleges within the state.
- In total, only four comparable programs within 500 miles of College Park offer a bachelor's degree in fermentation science.
- UMCP should consider that the BS in Fermentation Science could fill a gap in the state's educational system, which could benefit businesses in the state's economy and incentivize students to study—and likely remain—within the state's borders.

2.0 Report Overview

The growth in fermentation science occupations in the Mid-Atlantic region has prompted University of Maryland College Park's (UMCP) College of Agriculture and Natural Resources to consider developing a fermentation science program at UMCP. The Bachelor of Science (BS) in Fermentation Science would provide students with a solid foundation in this growing occupational field.

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The report continues as follows:

- Section 3.0 presents an overview of the proposed degree program at UMCP,
- Section 4.0 presents the methods used for the analyses,
- Section 5.0 presents the demand analysis,
- Section 6.0 presents the supply analysis, and
- Section 7.0 presents the conclusion and recommendations.

The report also contains additional analysis and more detailed results in the appendices.

3.0 Proposed Program Overview

UMCP's proposed BS program in fermentation science would be housed within the College of Agriculture and Natural Resources and, more specifically, in the Department of Nutrition and Food Science. This four-year degree would allow UMCP to expand its educational offerings for Maryland residents and increase its community outreach activities and extension programming, further fulfilling its mission as the land-grant institution in the state.

The program can draw upon existing faculty at UMCP, supplementing with additional hires as needed. In addition, the program would allow for industry collaboration to both ensure that the needs of future employers are met and that students are well prepared for the workforce after they graduate.

UMCP intends to have a dedicated research facility for the fermentation science program and has identified space on campus that could be converted for this purpose. Additional specialized teaching laboratory space will strengthen educational opportunities for students. These

planned dedicated facilities provide the opportunity for the university to apply for and/or obtain additional research and program-support funding.

4.0 Existing Fermentation Science Program Components

This section will provide an overview of existing fermentation science bachelor's-level programs that are recognized by the Master Brewers Association of America.[1] While not an exhaustive list of all programs available nationally, the seven highlighted below are models of successful programs to help inform program development at UMCP.

4.1 Virginia Tech: BS in Food Science and Technology, Food and Beverage Fermentation Option

The BS in Food Science and Technology, Food and Beverage Fermentation Option degree at Virginia Tech combines core courses in basic sciences (biology, chemistry, organic chemistry, biochemistry, and microbiology), food sciences (food chemistry, quality assurance, product development, and packaging), and fermentation science in the context of food preservation and the human microbiome.[2] Additional educational opportunities for students include study abroad experiences within the major and the university-wide Cooperative Education and Internship Program.[3,4]

4.2 Appalachian State University (North Carolina): BS in Fermentation Science

At Appalachian State University, the BS in Fermentation Science is an interdisciplinary program within the Department of Chemistry in the College of Arts and Sciences.[5] Students in this major take classes in biology and chemistry, as well as marketing, business, and entrepreneurship. While there is significant focus on fermentation as it relates to beer and wine production, students also have the opportunity to take courses related to biotechnology, agriculture, and sustainable development.[6]

[1] "Diploma and Certificate Options," Master Brewers Association of America, accessed May 1, 2020, https://www.mbaa.com/education/Pages/HEC.aspx.
[2] "Program Options," Virginia Tech Department of Food Science and Technology, accessed May 1, 2020, https://www.fst.vt.edu/programs/undergraduate/Program_Options.html.
[3] "Freising, Germany: Practical and Theoretical Brewing and Culture at TUM Weihenstephan," Virginia Tech Department of Food Science and Technology, https://www.fst.vt.edu/programs/study-abroad/study-abroad-Germany.html.
[4] "Cooperative Education and Internship Program," Virginia Tech, accessed May 1, 2020, https://career.vt.edu/experience/ceip.html.
[5] "Fermentation Sciences," Appalachian State University, accessed May 1, 2020, https://fermentation.appstate.edu/.
[6] "Fermentation Sciences, BS," Appalachian State University, accessed May 1, 2020, http://bulletin.appstate.edu/preview_program.php?catoid=16&poid=6209&returnto=857.

4.3 Colorado State University: BS in Fermentation Science and Technology

Housed within the Department of Human Science and Nutrition of Colorado State University's College of Health and Human Sciences, the BS in Fermentation Science and Technology focuses on food and beverage fermentation.[7] The program prioritizes industry connections and input, requiring students to complete a capstone research project under the supervision of an industry mentor.[8] The program also has dedicated lab space that is open to both students and local industry.[9]

4.4 Metropolitan State University of Denver: BS in Brewery Operations, BS in Craft Brewing and Pub Operations

The Metropolitan State University of Denver offers two separate BS degrees: the major in Brewery Operations and the major in Craft Brewing and Pub Operations.[10] These programs are focused specifically on beer and include courses in biology, chemistry, economics, marketing, business, management, law, and engineering.[11] Students have the opportunity to interact with Denver's beer industry through the on-campus Tivoli Brewery, as well as the Quality Analysis & Quality Control (QA/QC) and Brewing Production Labs.[12]

4.5 Oregon State University: BS in Food Science and Technology, Fermentation Science Option

At Oregon State University, students pursuing a BS in Food Science and Technology can choose to study fermentation science within their major.[13] This applied science program focuses on food and beverage fermentation, though it is not solely focused on beer production. Students take courses in basic sciences (biology, chemistry, physics, mathematics), food sciences, and fermentation science. In addition to coursework, students have access to a variety of specialized facilities, including a brew house/malt house, a winery, a creamery, a baking lab, and a sensory science laboratory.[14]

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[7] "BS in Fermentation Science and Technology," Colorado State University College of Health and Human Sciences, accessed May 1, 2020, https://www.chhs.colostate.edu/fshn/programs-and-degrees/b-s-in-fermentation-science-and-technology/.

[8] "Experiential Learning—Research Opportunities," Colorado State University College of Health and Human Sciences, accessed May 1, 2020, https://www.chhs.colostate.edu/fshn/programs-and-degrees/b-s-in-fermentation-science-and-technology/experiential-learning/.

[9] "FST Custom Service Laboratory," Colorado State University College of Health and Human Sciences, accessed May 1, 2020, https://www.chhs.colostate.edu/fshn/programs-and-degrees/b-s-in-fermentation-science-and-technology/fst-custom-service-laboratory/.

[10] "Beer Industry Program," Metropolitan State University of Denver, accessed May 1, 2020, https://www.msudenver.edu/beer/.

[11] "Beer Industry Program—BS Degrees," Metropolitan State University of Denver, accessed May 1, 2020, https://www.msudenver.edu/beer/beerindustryprogramdegrees/.

[12] "Beer Industry Program—Facilities and Partnerships," Metropolitan State University of Denver, accessed May 1, 2020, https://www.msudenver.edu/beer/facilitiesandpartnerships/.

[13] "Fermentation Science Option," Oregon State University College of Agricultural Sciences," accessed May 1, 2020, https://agsci.oregonstate.edu/foodsci/fermentation-science-option.

[14] "Facilities and Equipment—Fermentation Science Option," Oregon State University College of Agricultural Sciences, accessed May 1, 2020, https://agsci.oregonstate.edu/foodsci/facilities-and-equipment-fermentation-science-option.

4.6 Southern Illinois University: BS in Fermentation Science

The BS in Fermentation Science at Southern Illinois University focuses on beverage and food fermentation.[15] Students are required to take core courses in fermentation science, basic sciences (biology, chemistry, physics, mathematics), and electives related to hospitality, economics, or management.[16] In addition to lecture and laboratory classwork, students can gain experience in the Fermentation Science Institute's Service Lab, which provides technical assistance and analytical testing for products made by local fermentation businesses.[17]

4.7 University of California Davis: BS in Food Science, Brewing Option

The University of California Davis offers a BS in Food Science, with the opportunity to focus on brewing.[18] Students in this major study basic sciences (chemistry, physics, and biology) before focusing on food science coursework. To pursue the brewing option, students are required to take courses in brewing/malting and enzymology, in addition to a variety of electives on topics such as fermented foods, viniculture, new product development, brewing and beer, or quality assurance.[19] Opportunities such as internships, a semester in Washington, DC, and independent/small group study supplement the academic curriculum.[20] The university also houses a brewery laboratory on campus and offers certificates/outreach activities focused on beer and wine through their extension programs.[21,22]

5.0 Methodology

Separate methodologies were utilized to analyze the demand for fermentation science graduates, as well as the supply of fermentation science graduates, in the state's economy.

5.1 Demand Analysis

To begin the demand analysis, RESI first defined the fermentation science industry based on existing North American Industrial Classification System (NAICS) codes. NAICS codes utilized in the analysis include those related to alcoholic beverage and fermented food production, pharmaceutical and medicine manufacturing, and research and development in the sciences.

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[15] "Fermentation," Southern Illinois University, accessed May 1, 2020, https://fermentation.siu.edu/degree-program/.
[16] "Bachelor of Science Degree in Fermentation Science," Southern Illinois University, accessed May 1, 2020, catalog.siu.edu/programs/ferm/index.pdf.
[17] "Service Lab," Southern Illinois University, accessed May 1, 2020, https://fermentation.siu.edu/services/.
[18] "Brewing Option—BS in Food Science," University of California Davis, accessed May 4, 2020, https://foodscience.ucdavis.edu/academic-programs/undergraduate/bs-major-requirements.
[19] Ibid.; "Food Science Courses," University of California Davis, accessed May 4, 2020, https://foodscience.ucdavis.edu/academic-programs/undergraduate/courses.
[2020] "Special Study Courses," University of California Davis, accessed May 4, 2020, https://foodscience.ucdavis.edu/academic-programs/undergraduate/special-study-courses.
[21] "Brewing," UC Davis Continuing and Professional Education, accessed May 4, 2020, https://extension.ucdavis.edu/areas-study/brewing.
[22] "About," UC Davis Robert Mondavi Institute for Food and Wine Science, accessed May 4, 2020, https://rmi.ucdavis.edu/about.

Once the industry was defined, RESI analyzed a variety of publicly available and government data sources to study trends of the fermentation science industry. Data of interest related to consumer demand for final goods purchased by consumers, consumer interest in fermented goods, employment trends, and potential for future growth.

5.2 Supply Analysis

A scan of existing programs was conducted to identify institutions that offer educational opportunities related to fermentation science. From this scan, programs were categorized based on various characteristics, including:

- Proximity to College Park, MD;
- Degree level (bachelor's degree, certificate, etc.); and
- Scope of coursework.

In addition, the supply analysis identified elements from other programs that UMCP should consider integrating into its potential bachelor's degree offering, as well as any characteristics that could differentiate UMCP as a leader in academic fermentation science programs.

6.0 Demand Analysis

To understand the demand for a fermentation science degree, it is important to examine the industry structure and how that structure is changing over time. Because fermentation science is not typically defined within one industry, RESI identified primary industries associated with fermentation science.

Primary industries include:

1. Breweries
2. Wineries
3. Distilleries
4. Cheese Manufacturing

In addition to these four primary industries, secondary industries are also identified for context. While fermentation science may be utilized in these industries, they are likely to only form a small percentage.

Secondary industries include:

1. All Other Miscellaneous Food Manufacturing
2. Pharmaceutical and Medicine Manufacturing
3. Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

Graduates in these secondary industries, for example, may find themselves serving as a Fermentation Lead for vaccine development or using microbial fermentation to develop anticancer drugs.[23] Those in "All Other Miscellaneous Food Manufacturing" may find themselves working at the numerous small and medium-sized companies producing fermented food products like kimchi, tempeh, and krauts.

To assess the market demand for fermentation science graduates, a three-step approach was used. First, drivers of demand for the fermentation industry were examined, which included looking at commodities of the fermentation science industry. Next, the structure of the fermentation industry was analyzed in terms of employment, establishments, and location quotients. This was done both statically and over time to show industry trends. Finally, occupational projections within the fermentation science industry were examined to understand future growth in employment.

6.1 Fermentation Product Demand

One of the most in-demand fermented products in the United States is alcoholic beverages. Over five years from 2014 to 2018, consumer expenditures on alcohol have increased faster than overall expenditures. As seen in Figure 1, this is true for all regions of the U.S. except for the West. Maryland, categorized in the South region by the U.S. Census Bureau, has seen a drastic increase in alcohol expenditures over those five years. While alcohol expenditures in the South have risen by 19 percent, overall expenditures have only risen by 9 percent. This implies that alcohol purchases continue to form a larger share of residents' total expenditures in this region.

Figure 1: Percent Change in Consumer Expenditures between 2014 and 2018

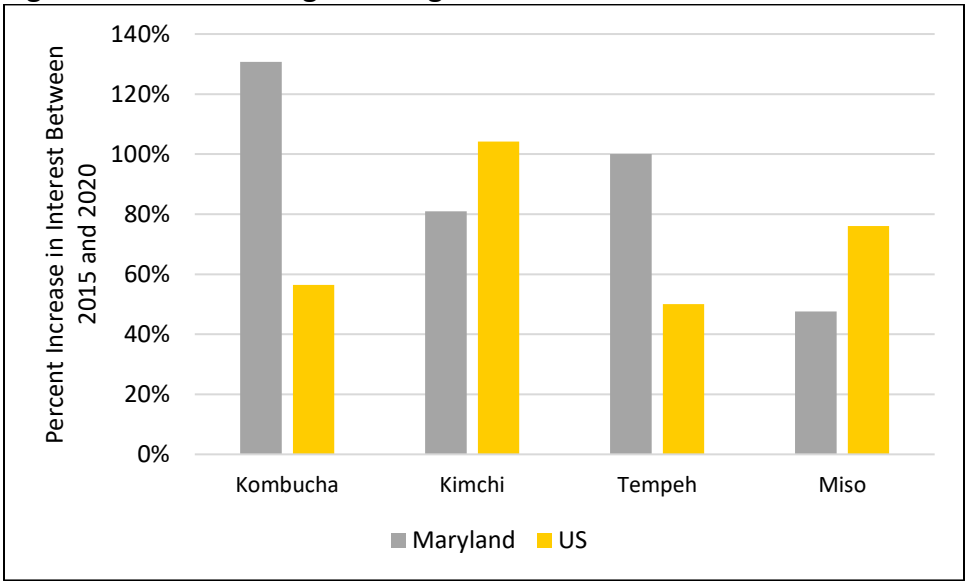
Region	Alcoholic Beverages	All Expenditures
Northeast	24%	11%
South	19%	9%
Midwest	16%	6%
West	4%	11%

Sources: US Census Bureau, RESI

[23] Production of pharmaceutical compounds through microbial fermentation, Manufacturing Chemist, accessed April 28, 2020, https://www.manufacturingchemist.com/news/article_page/Production_of_pharmaceutical_compounds_through_microbial_fermentation/61614.

Alcohol is not the only commodity driving demand in the fermentation science industry. Other non-alcoholic food and beverages—such as kombucha, kimchi, tempeh, and miso—have witnessed significant growth over the past five years.[24,25] As seen in Figure 2, there has been a sharp uptick in interest since 2015, with kombucha and tempeh trending particularly well in Maryland compared to the United States.

Figure 2: Percent Change in Google Trends Interest for Select Fermentation Products



Sources: Google Trends, RESI

6.2 Employment in the Fermentation Industry

In Maryland and across the U.S., this increased demand has led to a significant rise in both the number of establishments and employment within the industries related to fermentation science. As of 2018, almost 1,300 workers were employed in breweries, wineries, or distilleries across the state. In addition, graduates of fermentation science may find themselves in other industries, such as "All Other Misc. Food Manufacturing," "Pharmaceutical and Medicine Manufacturing," and "Research and Development," all of which have relatively high employment levels not just in Maryland, but across the region.

[24] "Kombucha Market Size & Share: Industry Analysis Report," Grand View Research, Inc, February 2020, https://www.grandviewresearch.com/industry-analysis/kombucha-market.
[25] Amelia Nielson-Stowell, "Global Fermented Food & Ingredients Market, Analysis and Forecast (2017-2023)," The Fermentation Association, December 12, 2017, https://fermentationassociation.org/global-fermented-food-ingredients-market-analysis-and-forecast-2017-2023/.

Figure 3: Employment by Fermentation Science Industry

Industry NAICS	Maryland Annual Employment Level	Region Annual Employment Level	US Annual Employment Level
31212 – Breweries	745	7,582	77,911
31213 – Wineries	324	4,773	67,832
31214 – Distilleries	213	721	15,839
311513 – Cheese Manufacturing	*	1,569	50,267
311999 – All Other Misc. Food Manufacturing	317	1,386	33,575
32541 – Pharmaceutical and Medicine Manufacturing	2,471	6,633	35,551
541715 - Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	17,848	61,342	413,853
Total	**21,918**	**84,006**	**694,828**

Sources: BLS, RESI
(*) Indicates data suppressed by BLS

Not only do the fermentation science industries employ thousands of people across Maryland, these industries continue to grow. Between 2014 and 2018, "Breweries" and "All Other Misc. Food Manufacturing" grew the most at 216 percent and 166 percent, respectively. Maryland has also seen significant growth in "Wineries," "Distilleries," and "Research and Development in the Physical, Engineering, and Life Sciences."

Figure 4: Percent Change by Industry between 2014 and 2018 for Maryland[26]

Industry	Number of Establishments	Employment	Location Quotient
Breweries	218%	216%	68%
Wineries	43%	33%	13%
Distilleries	375%	39%	-1%
Cheese Manufacturing	33%	-32%	-29%
All Other Misc. Food Manufacturing	75%	166%	132%
Pharmaceutical and Medicine Manufacturing	54%	-6%	-11%
Scientific Research and Development	8%	66%	58%

Sources: BLS, RESI

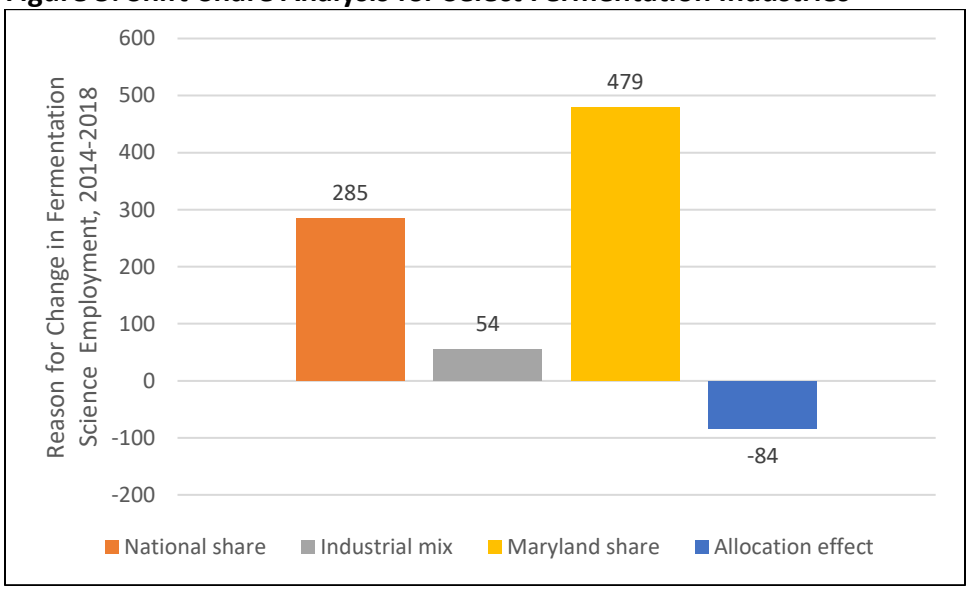
[26] The change was between 2014 and 2018. However, a number of data points were suppressed by BLS due to confidentiality concerns. For these cases, the suppressed values were assumed the same as the nearest value in the percent change calculation.

In terms of the number of establishments, Maryland has seen a particularly large increase in "Breweries" and "Distilleries," growing by 218 percent and 375 percent, respectively. Furthermore, all industries have shown growth in the number of establishments over the time period.

The location quotient is one way of assessing the competitive advantage or disadvantage a state or region may have in an industry. Maryland has seen particularly large increases in its competitive advantage in both "Breweries" and "All Other Misc. Food Manufacturing." In absolute numbers—as seen in Figure 11 in Appendix B—Maryland still does not possess a competitive advantage in these industries. However, the state's disadvantage is lessening.[27]

Another way of assessing the economic performance of industries is through a shift-share analysis, which examines how employment growth in the fermentation science industry in Maryland relates to the national economy and broader industry trends. This allows RESI to comment on whether Maryland holds an advantage in a particular industry and whether the state is experiencing growth in that particular industry. For more details regarding the shift-share analysis, see Appendix A.

Figure 5: Shift-Share Analysis for Select Fermentation Industries[28]



Source: BLS, RESI

Figure 5 presents the results for the fermentation science industry in Maryland. If employment in Maryland kept pace with employment nationwide, the industry would be expected to have added 285 jobs (represented by the orange bar). In other words, 235 of the 735 total jobs

[27] A location quotient that is less than one indicates that the industry is less concentrated compared to national levels. On the other hand, a location quotient greater than one means that the state or region has a competitive advantage since industry concentration is higher than national levels.
[28] Only industries that had complete data from 2015 to 2018 were used. These include Breweries, Wineries, Distilleries, and All Other Misc. Food Manufacturing.

added in Maryland are due to conditions at the national level. The industrial mix (represented by the grey bar) shows that 54 jobs (of the total 735 jobs added) are due to differences in the fermentation science industry composition between Maryland and the national level.

Most notably, local conditions are responsible for 479 jobs (represented by the gold bar). This indicates that Maryland is increasing its specialization in the fermentation science industry, adding 194 more jobs than expected. The allocation effect (represented by the blue bar) shows that Maryland is specializing in an industry where it does not historically hold a competitive advantage—that is, at least an additional 83 jobs would have been added if the state held a competitive advantage in the fermentation science industry.

These favorable local conditions are likely due to not only increased demand for fermentation products, but also to changes in state policy that previously held the industry back. For example, in 2017 Maryland increased the limit on brewery taproom sales from 500 barrels per year to 3,000, coinciding with a 35 percent increase in brewery employment between 2017 and 2018 (as shown in Figure 9 in Appendix B). [29]

In addition to whether national or local conditions are responsible for the growth, two other effects are noted in the shift-share analysis. The small industrial mix share shows that very little of the shift is due to changes occurring within the industry structure itself. The negative allocation effect indicates that Maryland still lacks a competitive advantage in the industries.

Coupled with the high Maryland share, this infers that Maryland is experiencing significant growth in industries where it is at a competitive disadvantage. This means that while Maryland currently does not have a competitive advantage in these industries, its advantage is growing relative to other states.

Further strengthening this potential for growth in the state are data that show the industry's resilience in light of unanticipated emergencies. As the economic impacts of COVID-19 loom over almost every industry, fermented products are currently enjoying stable growth. In fact, the Fermentation Association reports that kombucha sales increased 10 percent during March 2020.[30] The rationale for this growth is that consumers are seeking healthy foods that boost immunity with a longer shelf-life, making fermented foods a natural choice during the pandemic.[31]

In addition to industries, it is important to look at the relevant occupations in the fermentation science. To find relevant occupations, RESI used the O*NET technology skills and tools search to

[29] Chris Tomlinson, "Say 'Cheers' to Craft Beer Industry in Carroll County and Maryland," Baltimore Sun, August 18, 2019, https://www.baltimoresun.com/maryland/carroll/opinion/cc-op-tomlinson-081919-20190819-42jamovjfzbx5dtkbcdwq5wf3u-story.html.
[30] Amelia Nielson-Stowell, "Fermentation Booms During Pandemic," The Fermentation Association, April 1, 2020, https://fermentationassociation.org/fermentation-brands-experience-sales-boom-during-coronavirus/.
[31] Ibid

filter occupations by those that used fermentation technologies.[32] These occupations were then mapped to the Maryland Department of Labor's occupational projections data.[33] As seen in Figure 6, fermentation science occupations are projected to experience a robust growth rate of almost 7 percent (14,736 jobs) by 2026.This is compared to a 7.7 percent growth rate for all occupations in Maryland.

Figure 6: Fermentation Science Occupation Growth Through 2026

Occupation	Growth Through 2026	Jobs in 2026
Medical Scientists, Except Epidemiologists	9.6%	5,090
Biochemists and Biophysicists	8.6%	1,814
Bakers	5.6%	3,759
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	5.3%	474
Microbiologists	5.1%	2,059
Environmental Engineering Technicians	4.8%	374
Chemical Equipment Operators and Tenders	1.5%	1,018
Food Scientists and Technologists	1.4%	148
Total	**6.9%**	**14,736**

Sources: Maryland Department of Labor, RESI

The top growing occupations tend to be in the Life Sciences, with "Medical Scientists" and "Biochemists and Biophysicists" growing the fastest at 9.6 and 8.6 percent, respectively. Fermentation science graduates may find themselves in this burgeoning field helping to develop biofuels—this is particularly important as Maryland continues its aggressive push to reduce greenhouse gas emissions. Brewers, winemakers, and distillers (reflected in the "Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders" occupation) are also projected to grow at a healthy pace of 5.3 percent through 2026.

Through this analysis, it can be seen that while the fermentation industry is relatively small in Maryland, growth has been robust through 2018. Graduates in fermentation science will enjoy a healthy market not just in traditional industries, such as breweries, wineries, and distilleries, but also through growing niche industries, such as kombucha, kefir, tempeh, and kimchi.

As consumer preferences change to opt for higher-quality, locally sourced products, the knowledge and skills cultivated in a fermentation science program may help the industry adapt

[32] "Technology Skills & Tools Search for: Fermentation," O*NET OnLine, accessed April 28, 2020, https://www.onetonline.org/search/t2/?s=fermentation&g=Go).
[33] "Maryland Occupational Projections - 2016-2026 - Workforce Information and Performance," Maryland Occupational Projections - Office of Workforce Information and Performance (OWIP), accessed April 28, 2020, https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml).

to meet those needs. [34] In addition, Maryland's thriving biotechnology and pharmaceutical manufacturing industries could be attractive employers for any fermentation science graduates.

7.0 Supply Analysis

In order to understand the existing supply of fermentation science or related degrees and programs, RESI looked at the existing programs offered at colleges and universities across the United States. For this analysis, RESI included any programs that offered an advanced degree or formal post-baccalaureate certificate. As an example, this includes an 18-credit Brewing Science Certificate offered by the University of the Sciences, but excludes the Business of Craft Beer Certificate offered by the University of Vermont, which requires the completion of three eight-week online courses.[35,36]

There are four significant factors to consider when comparing a potential fermentation science degree at UMCP with existing programs in the United States:

1. Proximity to College Park, MD;
2. Degree level;
3. Scope of program; and
4. Enrollment / Size of program.

This section will examine each of the above factors to determine the current supply of comparable programs, as well as how these factors may inform the parameters of the program being proposed by UMCP.

7.1 Geographic Location of Comparable Programs

Distance from home is one of many factors that potentially affects where students enroll. The results of a 2016 survey showed that 56.2 percent of students attending a public four-year college remained within 50 miles of home, with an additional 12.7 percent within 100 miles of home.[37] Because of this, Maryland students are far less likely to attend comparable fermentation science programs that are not within the state. The proximity effect continues after students graduate from college, with 40 percent of graduates from state universities remaining within 50 miles of campus.[38] This limits the ability of Maryland industries to benefit from programs located outside of the state.

[34] Jill McCluskey, "Changing Food Demand and Consumer Preferences," Federal Reserve Bank of Kansas City, July 2015, https://www.kansascityfed.org/~/media/files/publicat/rscp/2015/mccluskey-paper.pdf?la=en.
[35] "Brewing Science Certificate," University of the Sciences, accessed April 23, 2020, https://www.usciences.edu/misher-college-of-arts-and-sciences/biological-sciences/brewing-science-certificate/index.html.
[36] "Business of Craft Beer Certificate," University of Vermont, accessed April 23, 2020, https://learn.uvm.edu/program/business-of-craft-beer/business-of-craft-beer-certificate/courses/.
[37] Abigail Wozniak, "Going Away to College? School Distance as a Barrier to Higher Education," EconoFact, March 22, 2018, https://econofact.org/going-away-to-college-school-distance-as-a-barrier-to-higher-education.
[38] Rob Sentz et al.,"How Your School Affects Where You Live," Emsi, accessed April 23, 2020, https://www.economicmodeling.com/how-your-school-affects-where-you-live/.

None of the current programs in Fermentation Science are offered within Maryland, and very few could be considered to be within close proximity of the state. Figure 7 shows all programs offered by schools within regional proximity of College Park, defined as a driving distance of 500 miles or less.

Figure 7: Comparable Programs Within Regional Proximity of College Park[39]

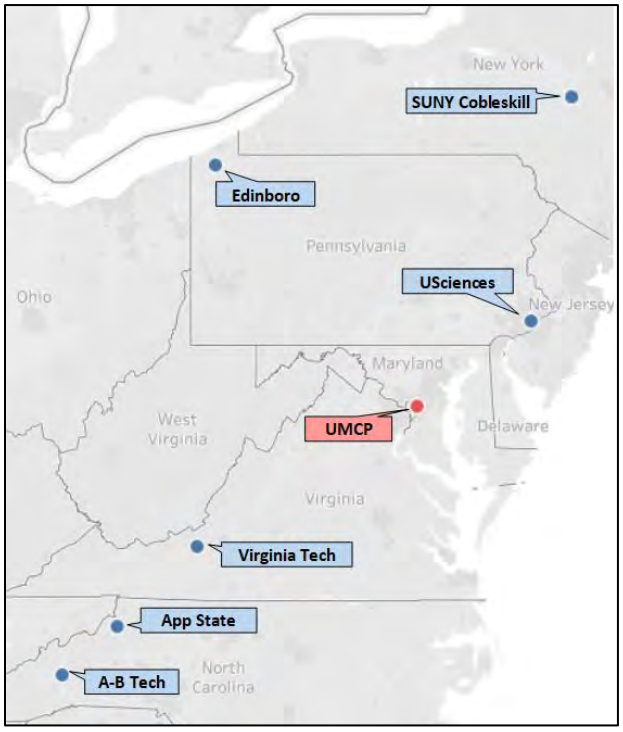
School	City	State	Degree Name	Degree Level
University of the Sciences	Philadelphia	PA	Brewing Science	Post-Bac Certificate
Virginia Tech	Blacksburg	VA	Food and Beverage Fermentation	B.S.
Edinboro University	Edinboro	PA	Fermentation Science	B.S.
SUNY Cobleskill	Cobleskill	NY	Applied Fermentation	B.T.
Appalachian State University	Boone	NC	Fermentation Sciences	B.S.
A-B Tech Community College	Asheville	NC	Brewing, Distillation, and Fermentation	A.A.S.

Sources: RESI, Program Websites

Of all the programs within Maryland's region, most are still on the edge of the defined distance, with four of the above programs being located 350 miles or further from College Park. Figure 8 visualizes the location of each program in relation to the main UMCP campus.

[39] An additional A.A.S. program in Brewing and Fermentation Science is currently being offered at the Pennsylvania College of Technology, located in Williamsport, PA. However, this program is being converted into a one-year certificate program beginning in Fall 2021. As the outline of this new program is currently unclear, it was dropped from the analysis.

Figure 8: Map of Program Locations within Regional Proximity of College Park



Sources: RESI, Tableau

When considering the location of existing programs, it is also important to consider the effect of tuition costs on the enrollment decisions of a prospective student. Most importantly, there is a significant difference between in-state and out-of-state tuition at many schools, creating a major barrier to entry for prospective students outside of the state.

The size of this barrier depends on the tuition premium charged by each school. For example, Virginia Tech more than doubles the cost of tuition for out-of-state students, while Edinboro University charges a premium of approximately 43 percent.[40,41] Notably, the University of the Sciences provides no in-state discount to PA residents.[42]

Despite multiple programs being within a day's drive of Maryland, there are currently no fermentation science programs within the state, preventing Maryland residents from taking

[40] "Expenses and Financial Aid," Virginia Tech, accessed April 28, 2020. https://vt.edu/admissions/undergraduate/cost.html.
[41] "Tuition and Fees," Edinboro University, accessed April 28, 2020, https://www.edinboro.edu/directory/offices-services/bursar/tuition-and-fees/.
[42] "Cost and Financial Aid – Students in Certificate Programs," University of the Sciences, accessed April 28, 2020, https://www.usciences.edu/admission/cost-financial-aid/information-for-students-certificate-programs.html.

advantage of in-state tuition rates.[43,44] Given the tendency for graduates to enter the workforce either close to home or close to their school, this creates a disadvantage for Maryland industries that require workers with skills and knowledge related to fermentation.

7.2 Level of Degree Offered by Comparable Programs

Even for those programs in closer proximity to Maryland, it is important to consider that not all programs in the region offer the same degree, with one program geared towards a two-year Associate of Applied Science (A.A.S.) degree, and another offering an 18-credit post-baccalaureate certificate. In contrast, the proposed UMCP degree program would award graduates a four-year bachelor's degree. These differences are important in determining the career prospects of graduates and potential workforce benefits of the specific program.

Bachelor's degree programs, such as the one proposed by UMCP, use the additional two years of education to provide knowledge in a wider variety of topics related to their discipline. These degrees are considered more valuable in a competitive job market, and allow graduates to continue their education in a master's or doctorate program. Associate degree programs use the shorter timeframe to focus more specifically on skills in a particular career field.[45]

These differences are important when considering how much each regional program overlaps with the proposed UMCP degree. Each of the non-bachelor's programs previously listed in Figure 7 address a more narrow selection of industries than the bachelor's-level programs. At A-B Tech, the program limits its focus to the beverage industries of breweries, wineries, and distilleries. At the University of the Sciences, students are prepared for multiple careers specifically within the brewing industry.

In total, only four comparable degree programs within 500 miles of College Park offer a bachelor's degree to graduates. When reconsidering proximity with this in mind, the closest fermentation science program is offered at Virginia Tech, located over four hours of driving time from College Park.

7.3 Scope of Industries Supported by Comparable Programs

As noted above, programs may provide a different scope as to the industry applications of fermentation science. Still, these differences in scope are not limited to those programs with differences in degree level.

[43] While Maryland does participate in the Academic Common Market, a program that offers some in-state reciprocity for students enrolled at out-of-state universities in programs that are not offered in their state of residence, none of the universities included in this section participate in the program.
[44] "Search and View Program Information," Southern Regional Education Board, accessed April 28, 2020, https://home.sreb.org/acm/choosestate.aspx.
[45] "Associate vs. Bachelor's: Which is the Right Degree For You?," Ashford University, accessed April 24, 2020, https://www.ashford.edu/online-degrees/online-learning/associate-vs-bachelors-which-is-the-right-degree-for-you.

Edinboro University in Pennsylvania provides an example of a wider scope, highlighting both dairy and pharmaceutical fermentation, as well as the craft beer and alcohol industries.[46] In concert with the scope, the Fermentation Science program is established under the Chemistry Department in the College of Science and Health Professions. At Virginia Tech, the Food and Beverage Fermentation program limits its emphasis to "fermented foods and beverages," such as beer, wine, and healthy foods.[47]

Notably, each of these programs offers a wider scope than non-bachelor's programs, such as the one offered by USciences. Coursework in this certificate program focuses entirely on beer, though the program may prepare students for a wider variety of careers within that specific industry.[48]

Given that Maryland has a varied economy with many different industries, it would likely benefit the state for UMCP to approach their own program with the widest possible scope in mind. As seen in the demand analysis, statewide employment in "Pharmaceutical and Medicine Manufacturing" is currently higher than employment in all combined fermentation-related food and beverage industries. In order for any new program to have the largest possible impact on Maryland's workforce, it is important that graduates have the skills and knowledge to fill jobs in all industries that utilize fermentation.

Designing a degree program to have a broad scope nevertheless means that UMCP should continue to pursue excellence in more specific areas. For example, the Master Brewers Association of America (MBAA) provides recognition to programs that prepare students for careers in both large and craft-scale brewing operations.

In four-year degree programs, recognition is based on achieving learning outcomes that cover multiple aspects of the brewing industry, including the science of brewing, operating a brewhouse, understanding flavor, and quality assurance.[49] There are also guidelines to the facilities and equipment that are made available to students, the expertise of faculty, and the completion of internships within the industry.[50]

Prospective students with a specific interest in breweries may be more likely to attend a program with this recognition, as it indicates that graduates will be qualified for jobs within the industry. Of those programs included in Figure 7, this recognition has been granted to the

[46] "Fermentation Science," Edinboro University, accessed April 23, 2020, https://www.edinboro.edu/academics/majors-and-programs/programs/fermentation-science/index.html.
[47] "Program Options," Virginia Tech, accessed April 24, 2020, https://www.fst.vt.edu/programs/undergraduate/Program_Options.html.
[48] "Brewing Science Certificate," University of the Sciences.
[49] "Summary of Essential Learning Outcomes for a Four-Year B.A. Degree in Brewing," Master Brewers Association of the Americas, accessed April 28, 2020, https://www.mbaa.com/education/Documents/4-year_BachelorDegree_LearningOutcomes.pdf.
[50] "Pathway to Recognition Program Guidelines for a Four-Year Degree in Brewing or Fermentation Science," Master Brewers Association of the Americas, accessed April 28, 2020, https://www.mbaa.com/education/Documents/4-year_BachelorDegree_Guidelines.pdf.

degrees offered at Virginia Tech and Appalachian State University.[51] UMCP should consider the guidelines set by MBAA when building their program, in order to maximize both the appeal to prospective students and the value of the program to the brewing industry in Maryland.

7.4 Regional Enrollment at Comparable Programs

Even if every existing program offered the same degree level and scope as the one proposed by UMCP, there is still demand for an additional program, as long as the number of graduates is lower than what will be required by Maryland's industries. Current enrollment figures at regional programs suggest there is still significant room for growth in this educational space.

According to enrollment data from each institution, the four programs listed in Figure 7 that offer a bachelor's degree had less than 213 total students enrolled in fermentation science programs as of Fall 2018. The highest enrollment was seen at Appalachian State, with 102 enrolled students, while SUNY Cobleskill reported only a single enrolled student in their program at that time.[52,53] Virginia Tech reported 91 students across the Food Science & Technology department, which offers four undergraduate degree options.[54] They do not report numbers for each specific option, including Food and Beverage Fermentation. The program at Edinboro University was started in 2018, and has no enrollment data available. However, Edinboro enrolls less than 4,000 undergraduates total and is therefore likely to have relatively low enrollment in their Fermentation Science program. In addition to the four-year programs, A-B Tech Community College reported enrollment of 38 students for their related associate degree.[55]

When considering the size of these enrollment figures, it is important to note that these are not annual graduates but rather total enrollment across a two-year or four-year program. Given the state-wide job growth figures provided previously in Figure 5, current enrollment in these programs is unlikely to fulfill the workforce demand in Maryland's fermentation-related industries. This is even less likely when considering that these programs are all located in neighboring states with their own workforce needs.

8.0 Conclusion

UMCP's BS in Fermentation Science would be a unique addition to Maryland's educational offerings. Currently, no such program exists within the state. While a few programs exist within

[51] "Diploma and Certificate Programs," Master Brewers Association of the Americas, accessed April 23, 2020, https://www.mbaa.com/education/Pages/HEC.aspx.
[52] "Enrollment Profiles – Public," Appalachian State University, accessed April 29, 2020, https://irap.appstate.edu/enrollment_profiles_public.
[53] "SUNY Cobleskill Program Enrollments," SUNY Cobleskill, accessed April 29, 2020, https://www.cobleskill.edu/about/institutional-research/pdfs/Enrollment_Program_2014-19.pdf.
[54] "Headcounts by Major," Virginia Tech, accessed April 19, 2020, https://www.ir.vt.edu/data/student/headcountsByMajor.html.
[55] "Curriculum Annual Program Headcounts, 2014-15 to 2018-19," A-B Tech Community College, accessed April 29, 2020, https://www.abtech.edu/sites/default/files/users/valerieddaniels/CU%20Headcount%20Annual%2018-19.pdf.

a day's drive, most are more limited in scope and/or do not prepare students at the bachelor's degree level. The UMCP program would benefit both students and the community at large through academic and extension programming, and could also allow the university to apply for and/or obtain additional external research funding for which it is currently less competitive.

Educating students in fermentation science in Maryland can also benefit the state's economy. Maryland's fermentation science industry is growing and encompasses a variety of activity in the region, including brewing and distilling, but also biofuels and vaccine or medicine production. Furthermore, occupations that require knowledge of fermentation science are expected to continue growing.

Based on existing successful programs, UMCP should consider the following recommendations as it develops its own fermentation science program:

- Establish an academic curriculum that focuses both on the basic sciences underlying fermentation and more specialized coursework on food science and fermentation;
- Engage with the MBAA to ensure that the BS in Fermentation Science is well aligned to the organization's criteria;
- Determine if the scope of the fermentation science program will focus on food and beverage fermentation or will also incorporate biotechnology and pharmaceutical applications;
- Consider allowing students to cross-register in courses/colleges across UMCP—for example, in entrepreneurship, marketing, chemistry, or engineering;
- Provide students with the initiative to customize their studies through a variety of electives, internships, and/or independent study options;
- Foster relationships with state fermentation industry leaders to augment students' learning through experiential opportunities;
- Collaborate with industry/employers in the development of facilities and laboratories for the program; and
- Engage with relevant federal agencies (the United States Department of Agriculture, the Food and Drug Administration, et cetera) to further develop opportunities for students.

With this context in mind, UMCP should consider that the BS in Fermentation Science could fill a gap in the state's educational system, which could benefit businesses in the state's economy and incentivize students to study—and likely remain—within the state's borders. Pending funding and resource availability, a dedicated program in fermentation science could be a sound investment for UMCP.

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Appendix A—Detailed Methodology

The shift-share analysis is a tool used by regional economists to assess specialization and competitive advantages in particular industries.[56] The basic premise of a shift-share is that changes in industry employment are due to a number of different factors, including how well the national economy is doing, regional conditions that are impacting growth, and patterns of change within the industry itself. The structure for this analysis follows the Esteban-Marquillas model[57]:

$$\Delta e = N + I + R + A$$

The change in employment for Maryland's fermentation industry between 2014 and 2018 (Δe), is the sum of the national share of employment growth (*N*), the share due to industrial mix (*I*), the regional share of employment growth (*R*), and the allocation (or interaction) effect (*A*).

The national share represents the employment growth for the region if the industries would have grown at the same level as the national economy. The industrial mix number represents the employment change due to differences in industry make-up of Maryland compared to the U.S. For example, this shows the growth for the brewery industry versus the national average.

The next variable—the regional share component—is often the main focal point in any shift-share analysis. This variable shows how the region or state is growing relative to the national levels, and thus represents a measure of growth in the state's competitive advantage. Finally, the allocation effect reflects the remaining contribution to the change in employment. This effect measures the job growth due to a region's competitive advantage. A positive number implies that the state or region is growing (declining) in an industry where they have a competitive advantage (disadvantage). On the other hand, a negative value indicates that a state or region is growing (declining) in an industry where the state has a competitive disadvantage (advantage).

[56] Implementation of this shift-share analysis was completed using the REAT R package: https://cran.r-project.org/web/packages/REAT/REAT.pdf.
[57] J.m. Esteban-Marquillas, "A Reinterpretation of Shift-Share Analysis," Regional and Urban Economics 2, no. 3 (1972): pp. 249-255, https://www.sciencedirect.com/science/article/abs/pii/0034333172900334.

Appendix B—Detailed Results

This appendix contains additional results from the demand and supply analyses.

B.1 Additional Demand Analysis Results

In this section, any data that are suppressed by BLS are presented with a * in the figures.

Figure 9: Maryland Annual Employment Level Changes by Industry

Year	31212	31213	31214	311513	311999	325414	541715
2014	236	*	*	60	119	*	*
2015	352	243	153	16	116	*	*
2016	450	368	90	41	305	*	*
2017	553	305	127	*	288	2,616	10,740
2018	745	324	213	*	317	2,471	17,848
Change	**216%**	**33%**	**39%**	**-32%**	**166%**	**-6%**	**66%**

Sources: BLS, RESI

Figure 10: Maryland Annual Number of Establishments by Industry

Year	31212	31213	31214	311513	311999	325414	541715
2014	22	28	4	3	8	13	*
2015	31	25	6	3	9	13	*
2016	43	30	8	4	11	15	*
2017	52	34	14	4	13	17	546
2018	70	40	19	4	14	20	589
Change	**218%**	**43%**	**375%**	**33%**	**75%**	**54%**	**8%**

Sources: BLS, RESI

Figure 11: Maryland Annual Location Quotient Level by Industry

Year	31212	31213	31214	311513	311999	325414	541715
2014	0.31	*	*	0.07	0.22	*	*
2015	0.39	0.23	0.74	0.02	0.21	*	*
2016	0.41	0.33	0.40	0.05	0.52	*	*
2017	0.44	0.26	0.50	*	0.47	4.25	1.49
2018	0.52	0.26	0.73	*	0.51	3.79	2.35
Change	**68%**	**13%**	**-1%**	**-29%**	**132%**	**-11%**	**58%**

Sources: BLS, RESI

B.2 Additional Supply Analysis Results

Prior to introducing regional proximity as a limiting factor, RESI compiled a national list of programs identified as comparable to the Fermentation Science program proposed by UMCP.

Figure 12: Full List of Comparable Programs within the Continental United States

School	City	State	Degree Name	Degree Level
U.C. Davis	Davis	CA	Food Science and Technology, with Brewing Option	B.S.
Colorado State University	Fort Collins	CO	Fermentation Science and Technology	B.S.
University of Idaho	Moscow	ID	Fermentation Science	B.S.
Southern Illinois University	Carbondale	IL	Fermentation Science	B.S.
Western Michigan University	Kalamazoo	MI	Sustainable Brewing	B.S.
A-B Tech Community College	Asheville	NC	Brewing, Distillation, and Fermentation	A.A.S.
Appalachian State University	Boone	NC	Fermentation Sciences	B.S.
Wayne State College	Wayne	NE	Fermentation Science	B.A. or B.S.
SUNY Cobleskill	Cobleskill	NY	Applied Fermentation	B.T.
Oregon State University	Corvallis	OR	Food Science Technology, Fermentation Option	B.S.
Edinboro University	Edinboro	PA	Fermentation Science	B.S.
University of the Sciences	Philadelphia	PA	Brewing Science	Post-Bac Certificate
Pennsylvania College of Technology	Williamsport	PA	Brewing and Fermentation Science	A.A.S.
Middle Tennessee State University	Murfreesboro	TN	Fermentation Science	B.S.
Virginia Tech	Blacksburg	VA	Food and Beverage Fermentation	B.S.
Washington State University	Pullman	WA	Food Science, Specialization Track in Fermentation Science	B.S.

Source: RESI, Program Websites

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Cheese and Fermented Dairy Products

NFSC 3xx (3 credits)

NFSC 3xx
Fall xxx

A scientific introduction to production of cheese and other fermented dairy products. Students will be able to analyze and demonstrate the steps in their manufacturing process, determine quality control parameters, identify food safety risks and how to mitigate them. .

COURSE OBJECTIVES: Upon completion of the course, students will be able to:

1) state and differentiate between different cheeses and fermented products.
2) describe the microbial strains used in making cheese and fermented dairy products.
3) describe how microbial physiology controls flavor and texture in cheese and other fermented dairy products.
4) identity food safety risks in manufacturing these products and describe ways to mitigate them.
5) compare processes of cheese and fermented dairy product manufacturing.
6) define components of a quality control program.

Course Resources

Information pertaining to this course will be available on the ELMS course website (ELMS.umd.edu) and through email.

Recommended Textbooks

-Microbiology and Biochemistry of Cheese and Fermented Milk, Ed. B. A. Law, Springer pub. Print ISBN 978-1-4612-8427-7, Online ISBN 978-1-4613-1121-8, available to download from UMD libraries
-Microbiology and Technology of Fermented Foods, Robert W. Hutkins, IFT press, available to download from UMD libraries
-other instructional material provided by the instructor.

Campus Policies and Resources

Basic Needs Security

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Class Meets
TBD
TBD
PLS #TBD

Office Hours
TBD

Cross listed with
NFSCxxx

Prerequisites
AGST 130; CHEM 271/272; or by Permission

Course Communication
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- Attendance and excused absences
- Grades and appeals
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Course and instructor. Course and instructor evaluations will be conducted twice during the semester (mid-semester and last week of class).

Lecture assignments and quizzes. Assignments and quizzes will be assigned randomly throughout the semester. Quizzes will cover lecture material. No makeup quizzes will be offered.

Exams. Exams are intended to assess your understanding of material covered and encourage you to think critically about the brewing and distilling industries. There will be two lecture exams and one final exam covering material from class and from assigned readings. All exams will be comprehensive, i.e., they incorporate material learned throughout the semester. You must contact the instructor one (1) week prior to an exam if you cannot take an exam at the scheduled time.

Final Grade. Student grades will be determined by combining all lecture and lab assignments, quizzes and examinations from the entire semester. Final letter grades are assigned based on the percentage of total assessment points earned.
Homework: 10%
In-class quizzes: 15%
Exam 1: 25%
Exam 2: 25%
Exam 3: 25%

+	97.00%	+	87.00%	+	77.00%	+	67.00%		
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%		

Course Topics		
1.	History and Background of cheese and fermented dairy products	
	a.	Origins
	b.	Global varieties and attitudes
	c.	Landscape of cheese and fermented dairy products in America: current trends
2.	Manufacturing of cheese products	
	a.	Manufacturing principles and general steps
	b.	Types of cheeses
	c.	Rennet and microbial cultures used in cheese making
	d.	Control of flavor and texture in soft, semi-ripened, ripened and hard cheeses
3.	Fermented dairy products	
	a.	Microbiology and biochemistry of fermented milks
	b.	Nutritional importance of fermented foods
	c.	Manufacturing of Yogurt, strained yogurt and buttermilk
	d.	Manufacturing of sour cream and kefir
	e.	Manufacturing of other cultured dairy products
4.	Operations	
	a.	Cheese and fermented dairy processing equipment and technologies
	b.	Quality control in cheese and fermented dairy products
	c.	Food Safety Risks and their mitigation
	d.	Cleaning, Disinfecting, and Environmental Monitoring
	e.	Economic analysis

Fermentation Science Laboratory

NFSC 3xx (4 credits)

NFSC 3xx
Fall xxx

A scientific introduction to fermentation process, propagation and modification of fermentation microbes, fermenter design and downstream processing including effluent treatment. Students will learn the manufacturing steps involved in various fermented products and gain hands-on experience in making these products at pilot scale and evaluate their quality and safety.

COURSE OBJECTIVES: Upon completion of the course, students will be able to:

1) describe the methods to propagate and modify fermentation microbial strains.
2) State prominent steps in fermentation and downstream processing.
3) describe how various fermented foods are manufactured.
4) prepare various fermented foods at lab scale.
5) analyze quality of various fermented foods manufactured during labs.
6) define components of a quality control program for various fermented foods.

Course Resources

Information pertaining to this course will be available on the ELMS course website (ELMS.umd.edu) and through email.

Recommended Textbooks

-Food, Fermentation and Microorganisms by Charles W. Bamforth and David J. Cook, Wiley Pub. ISBN: 978-1-405-19872-1

-Principles of Fermentation Technology by Peter F. Stanbury, Allan Whitaker and Stephen J. Hall, Elsevier pub. ISBN: 978-0-08-036131-4

-other instructional material provided by the instructor.

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PLS #TBD

Office Hours
TBD

Cross listed with
NFSCxxx

Prerequisites
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Lecture assignments and quizzes. Assignments and quizzes will be assigned randomly throughout the semester. Quizzes will cover lecture material. No makeup quizzes will be offered.

Laboratory assignments and quizzes. Laboratory assignments are designed to give you a "hands-on" experience with several aspects of the brewing and distilling process. There will be two laboratory quizzes, one administered near the middle of the semester and one administered at the end of the semester.

Exams. Exams are intended to assess your understanding of material covered and encourage you to think critically about the brewing and distilling industries. There will be two lecture exams and one final exam covering material from class and from assigned readings. All exams will be comprehensive, i.e., they incorporate material learned throughout the semester. You must contact the instructor one (1) week prior to an exam if you cannot take an exam at the scheduled time.

Final Grade. Student grades will be determined by combining all lecture and lab assignments, quizzes and examinations from the entire semester. Final letter grades are assigned based on the percentage of total assessment points earned.
Homework: 10%
In-class quizzes: 10%
Lab activities: 20%
Exam 1: 20%
Exam 2: 20%
Exam 3: 20%

+	97.00%	+	87.00%	+	77.00%	+	67.00%		
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
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Course Topics		
1.	Basic principles of industrial fermentation processes	
	a.	Isolation, Preservation and Improvement of Fermentation Microorganisms
	b.	Fermenter design
	c.	Instrumentation and Control
	d.	Recovery and purification of fermentation products
	e.	Effluent treatment
2.	Manufacturing of fermented food ingredients	
	a.	Rennet
	b.	Vitamins and nutraceuticals
	c.	Preservatives
	d.	Microbial biomass proteins
3.	Meat and Vegetable Fermentation	
	a.	Factors impacting vegetable and meat fermentations
	b.	Variety of vegetable fermentations
	c.	Variety of meat fermentations
4.	Miscellaneous fermented foods from the world	
	a.	Fermented foods from Asia
	b.	Fermented foods from Europe
	c.	Fermented foods from Africa
	d.	Fermented foods from South and Central America

Lab Activities		
1.	Pilot scale manufacturing of fermented products	
	a.	Fermented vegetable products
	b.	Fermented meats
	c.	Cheese
	d.	Fermented dairy products
	e.	Food additives
2.	Quality control methods for fermented products	
	a.	Microbiological methods
	b.	pH, water activity and moisture measurement
	c.	Distillation and other separation techniques
	d.	Shelf-life valuation

Sensory Evaluation Laboratory

NFSC 4xx (3 credits)

NFSC4XX
Fall xxx

This course provides an in-depth introduction to building students' sensory evaluation skills and developing a greater understanding of the science behind food sensory perception. Students will be introduced to the various aspects of sensory evaluation, from human taste and flavor perception, to sample preparation, the various sensory testing methods, and analyzing data obtained from sensory analyses using a combination of hands-on demonstration and experiential learning.

COURSE OBJECTIVES: Upon completion of the course, students will be able to:

1) Differentiate between the five *basic* qualities of taste perception
2) Analyze the sensory mechanisms of taste-odor interactions
3) Identify how a flavor component affects individual hedonic responses to food
4) Develop the practical skills necessary to set up a sensory evaluation test (including food preparation and participant segregation) to evaluate food products
5) Evaluate and interpret the results of a sensory analysis using descriptive statistics

Course Resources

Information pertaining to this course will be available on the ELMS course website (elms.umd.edu) and through email.

Recommended Textbooks

Lawless, H. T. and H. Heymann. Sensory Evaluation of Food – Principles and Practices, Springer Intl. 2010 – ISBN 978-1441964878

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Class Meets
TBD
TBD
MMH/SKN #TBD

Office Hours
TBD

Cross listed with
NFSCxxx

Prerequisites
NFSC112; NFSC431; or by Permission

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Course and instructor. Course and instructor evaluations will be conducted during the last week of class.

Laboratory assignments. Laboratory assignments are designed to give you a "hands-on" experience with several aspects of the sensory analysis process.

Laboratory quizzes. A laboratory quiz will be administered five times throughout the semester, and will test students' understanding of the laboratory guides, as well as their learning in developing an independent laboratory test.

Paper review. The paper review is intended to inculcate scientific reading and information gathering skillsets in the students. The students will provide an in-depth review of a published scientific journal article (*not* a review article) in the field of sensory science and sensory evaluation, with a focus on the methodology, results obtained, and potential drawbacks.

Group term project. The term project is intended to assess students' understanding of the material covered and critical thinking skills. Students will develop and present a plan to conduct a full-scale sensory evaluation of an assigned product. Students will develop a testing hypothesis; determine the test method, facilities required to conduct the test, number of participants, and sample preparation protocols; and identify the quantitative methods to be used to compile the data.

Final Grade. Student grades will be determined by combining the grades of laboratory assignments, quizzes, paper review, and the final term project. Final letter grades are assigned based on the percentage of total assessment points earned.

Class assignments	**Percent of grade**
Laboratory assignments	40%
Laboratory quizzes	15%
Paper review	15%
Group term project	30%
TOTAL	**100%**

Final Grade Cutoffs

A+ 97.00%	B+ 87.00%	C+ 77.00%	D+ 67.00%	
A 94.00%	B 84.00%	C 74.00%	D 64.00%	F <60.0%
A- 90.00%	B- 80.00%	C- 70.00%	D- 60.00%	

Laboratory Activities		
1.	Concepts training – to be conducted over the course of the semester prior to laboratory activity	
	a.	Introduction to sensory analysis
	b.	Sensory attributes and their perception – appearance, aroma, taste, flavor, texture, mouthfeel
	c.	Flavor and taste perception – hedonistic effect on overall perception
	d.	Setting up a sensory evaluation – requirements, limits, trained vs. untrained panels
	e.	Discrimination testing
	f.	Descriptive testing
	g.	Hedonic testing
	h.	Psychological errors
	i.	Descriptive statistics
2.	Flavor perception: Identifying flavor components and their effect on individual perception of taste-odor interactions	
3.	Taste perception:	
	a.	Identifying primary tastes
	b.	Identifying the role of sense of taste in identifying simple sugars and artificial sweeteners
	c.	Differentiating between presence and lack of sense of "umami"
	d.	Differentiating between different food acids and their impact on overall taste
4.	Descriptive testing – test set-up, panelist identification, sample preparation, testing, statistical analyses	
5.	Discrimination testing – test set-up, panelist identification, sample preparation, testing, analyses	
	a.	Triangle test
	b.	Duo-trio test
	c.	Paired comparison test
6.	Hedonic testing – test set-up, panelist identification, sample preparation, testing, analyses	
7.	Determining the difference between using trained vs. untrained (general public) panelists – test set-up, sample preparation, testing, analyses	
8.	Term project presentation	

Fermented Food, Feed and Pharmaceuticals

NFSC 3xx (3 credits)

NFSC3XX
Fall xxx

This course provides an introduction to the microbiology and biotechnology involved in the production of fermented food, feed, and pharmaceuticals. Students will gain important knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students will learn about the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.

COURSE OBJECTIVES: Upon completion of the course, students will be able to:

1) understand the basic concepts involved in fermenter design
2) identify the microorganisms involved in the fermentation of specific food commodities
3) describe the effect of different processing and environmental conditions on product outcome, including secondary metabolite formation and spoilage
4) identify and describe the downstream processing methods required to maximize on flavor and aroma metabolites (secondary metabolites) in the product
5) solve spoilage-related issues in fermentation from a microbial, physical, and biochemical perspective
6) identify the applications of fermentation in the pharmaceutical industry

Course Resources

Information pertaining to this course will be available on the ELMS course website (elms.umd.edu) and through email.

Recommended Textbooks

Bamforth, C. W. Food, Fermentation, and Microorganisms, Blackwell Science 2004 – ISBN 9780470995266
Hui, Y. H. Handbook of Food and Beverage Fermentation Technology, Marcel-Dekker 2004 – ISBN 0824747801
Tamang, J. P. and Kailasapathy, K. Fermented Foods and Beverages of the World, CRC Press 2010 – ISBN 9781420094954

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TBD
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MMH/SKN #TBD

Office Hours
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Cross listed with
NFSCxxx

Prerequisites
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Professional Development. Student behavior and interactions affect your and other students' learning. Be sure to follow classroom etiquette and civility requests. Be respectful of students' learning needs, such as not talking or using other disruptive actions in class (no excessive gum chewing, eating and/or drinking; NO Cell phones, laptops, tablets, etc. open during class or lab unless requested); follow instructions carefully; turn off your cell phone unless in case of an emergency and then inform the instructor prior to the class period; and use respect and courtesy to others - allowing for an excellent learning environment.
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Course Evaluation and Grading

Grades are not given, but earned. Your grade is determined by your performance on the learning assessments in the course and is assigned individually (**not curved**). All assessment scores will be posted on the course ELMS page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please email me to schedule a time for us to meet in my office.

Course and instructor. Course and instructor evaluations will be conducted during the last week of class.

Assignments. Assignments will be designed to gauge students' understanding and applicability of the lecture material and assigned reading material. These will be assigned randomly throughout the semester and students will be given one week to complete the assignments.

Lecture quizzes. Pop quizzes will cover lecture material. No makeup quizzes will be offered.

Term paper. The term project will assess the students' ability to apply the knowledge gained in this course in developing a small-scale fermentation facility for a food/feed/pharmaceutical product. Primary focus will be given to the microbiology and chemistry of the fermentation process, with some minor focus on the development and control activities that may be encountered during the fermenter setup.

Exams. Exams are intended to assess your understanding of material covered and encourage you to think critically about the brewing and distilling industries. There will be one midterm and one final exam covering material from class **and** from assigned readings. All exams will be comprehensive, i.e., they incorporate material learned throughout the semester. You must contact the instructor one (1) week prior to an exam if you cannot take an exam at the scheduled time.

Final Grade. Student grades will be determined by combining assignments, quizzes, term paper and exams from the entire semester. Final letter grades are assigned based on the percentage of total assessment points earned.

Class assignments	**Percent of grade**
Exams (2)	
Midterm Exam	30%
Final Exam	30%
Term Paper	25%
Lecture quizzes	10%
Assignments	15%
TOTAL	**100%**

Final Grade Cutoffs

A+	97.00%	B+	87.00%	C+	77.00%	D+	67.00%		
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%

A- 90.00%	B- 80.00%	C- 70.00%	D- 60.00%	

Course Topics		
1.	History and Background of Fermentation	
2.	Introduction to Fermentation Processes	
3.	Lactic acid bacteria - physiology, metabolites, and inhibitors	
4.	Fungi – physiology, metabolites, and inhibitors	
5.	Factors affecting Fermentation – Aeration, Temperature, pH, water activity, oxygen, introduction of secondary microbial culture, etc.	
6.	Fermenter Design	
	a.	Media formulation and quantification
	b.	Fermenter sterilization and Fermentation conditions
	c.	Downstream processing
7.	Fermented foods	
	a.	Fermented drinks – beer, wine, cider, vinegar
	b.	Fermented dairy – yogurt, cheese
	c.	Fermented meat – sausage, salami
	d.	Fermented vegetables – pickle, sauerkraut, kimchi,
	e.	Sourdough bread
	f.	Other assorted fermentations important to the food industry – cocoa, soy, coffee, tea
	g.	Indigenous fermented foods from around the world
8.	Fermented feeds	
	a.	Solid state fermented feeds – silage; corn-soybean meal and other cereal/legume mixes; oil cakes
	b.	Liquid state/submerged fermented feeds – spent yeast, potato pulp, cassava pulp, poultry by-products
	c.	Impact on animal gut microbiota and health, meat/egg production
9.	Medical applications of fermentation	
	a.	Microorganisms and drug discovery
	b.	Fermented pharmaceuticals – therapeutic proteins, antibiotics, vaccines, intermediate compounds (citric acids, amino acids)

Brewing and Distilling

AGST 3xx (4 credits)

AGST 3xx
Fall xxx

A scientific introduction to beer production and distillation of spirits, societal influence, the science of fermentation, brewery and distillery operations, and economics of scale. Students will be able to analyze and demonstrate the steps in the brewing process like grain handling, wort production, starch conversions, boiling, filtration, pumping, fermentation, and distillation.

COURSE OBJECTIVES: Upon completion of the course, students will be able to:

1) state the physiological, psychological and social effects of alcohol.
2) describe the basic biology, chemistry, and physics associated with brewing beer.
3) assess the significance of beer as it applies to historical and social aspects of society.
4) solve problems in brewing science as they relate to the design of a brewery.
5) compare and contrast different processes/methods of beer brewing.
6) define the key components of a quality control/quality assurance program.
7) distinguish between styles of beer based on BJCP (Beer Judge Certification Program) guidelines.

Course Resources

Information pertaining to this course will be available on the ELMS course website (ELMS.umd.edu) and through email.

Recommended Textbooks

Mosher, M. and K. Trantham. Brewing Science, Springer Intl. 2016 – ISBN 9783319463933

Campus Policies and Resources

Basic Needs Security

If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live and believe this may affect your performance in this course, please visit http://go.umd.edu/basic-needs for information about resources the campus offers you and let me know if I can help in any way.

Help is Available!

Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit tutoring.umd.edu to learn more about the wide range of campus resources available to you. In particular, everyone can use some help sharpen their communication skills (and improving their grade) by visiting ter.ps/writing and schedule an appointment with the campus Writing Center. You should also know there are a wide range of resources to support you with whatever you might need (see go.umd.edu/assistance), and if you just need someone to talk to, visit counseling.umd.edu or one of the many other resources on campus. Most services are free because you have already paid for it, and **everyone needs help**… all you have to do is ask for it.

Class Meets
TBD
TBD
PLS #TBD

Office Hours
TBD

Cross listed with
NFSCxxx

Prerequisites
AGST 130; CHEM 271/272; or by Permission; Students must be 21 years of age by the first day of instruction of the semester to enroll in this course.

Course Communication
Information pertaining to this course will be available in ELMS and email. Contact me via email to discuss questions, absences, or accommodations. For guidance on writing professional emails follow this link (ter.ps/email).

Names/Pronouns and Self Identifications. The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit trans.umd.edu to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- Academic integrity
- Student and instructor conduct
- Accessibility and accommodations
- Attendance and excused absences
- Grades and appeals
- Copyright and intellectual property

Please visit www.ugst.umd.edu/courserelatedpolicies.html for the Office of Undergraduate Studies' full list of campus-wide policies and follow up with me if you have questions.

Course-Specific Policies

Attendance. Expectations are that you will attend lecture sessions at all times. If you must miss a lecture it is your sole responsibility to find out what was done that day, including administrative announcements. I will not catch you up!

Excused Absences. University policy excuses the absences of students for illness (self or dependent), religious observances, participation in university activities at the request of university authorities, and compelling circumstances beyond the student's control. Student must request the excuse in writing and supply appropriate documentation. Students with written, excused absences are entitled to a makeup exam at a time mutually convenient for the instructor and student.

No computers, phones or tablet devices are permitted during our class meetings**.** I understand and have considered arguments for permitting laptop and tablet computers in the classroom. However, in my experience (and based on the research evidence) the reality is that they present an irresistible distraction and detract from the cooperative learning environment. Researchers have found that these distractions do in fact interfere with learning and active participation. For that reason, the use of computers and phones will not be permitted during class meetings (except when required for ADS accommodations). If a computer is needed to accomplish a class objective for the day I will provide it or give you advanced notice to bring one with you.

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Course and instructor. Course and instructor evaluations will be conducted twice during the semester (mid-semester and last week of class).

Lecture assignments and quizzes. Assignments and quizzes will be assigned randomly throughout the semester. Quizzes will cover lecture material. No makeup quizzes will be offered.

Laboratory assignments and quizzes. Laboratory assignments are designed to give you a "hands-on" experience with several aspects of the brewing and distilling process. There will be two laboratory quizzes, one administered near the middle of the semester and one administered at the end of the semester.

Exams. Exams are intended to assess your understanding of material covered and encourage you to think critically about the brewing and distilling industries. There will be two lecture exams and one final exam covering material from class and from assigned readings. All exams will be comprehensive, i.e., they incorporate material learned throughout the semester. You must contact the instructor one (1) week prior to an exam if you cannot take an exam at the scheduled time.

Final Grade. Student grades will be determined by combining all lecture and lab assignments, quizzes and examinations from the entire semester. Final letter grades are assigned based on the percentage of total assessment points earned.

Class assignments	**Percent of grade**
Exams (3)	
Exam 1	20%
Exam 2	20%
Final Exam	20%
Lecture assignments and quizzes	10%
Laboratory assignments and quizzes	30%
TOTAL	**100%**

Final Grade Cutoffs

+	97.00%	+	87.00%	+	77.00%	+	67.00%		
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%		

Course Topics		
1.	History and Background of Brewing	
	a.	Origins
	b.	Social attitudes and cultural preferences in beer
	c.	Beer in America
2.	Ingredients used in beer	
	a.	*Humulus* sp. - Common Hop (biology and phenolics)
	b.	Starchy raw materials
	c.	Yeast and Malting
	d.	Brew water
	e.	Postharvest handling, storage, environmental requirements, and food safety
3.	Brewing Science and Technology	
	a.	Wort Production
	b.	Fermentation, Maturation, Storage
	c.	Filtration and Stabilization
	d.	Properties and Quality
	e.	Analysis and Quality Control
4.	Operations	
	a.	Malthouse and Brewing Planning
	b.	Cleaning and Disinfecting
	c.	Federal, State, and Local Beer and Alcohol Regulations
	d.	Home brewing
	e.	Economic analysis

Laboratory Activities		
1.	Postharvest Handling: Field trip to local brewery and distillery	
2.	Brewing Activities	
	a.	Introduction to lab equipment; properties of a finished beer
	b.	Starch digestion by amylase; enzyme kinetics of amylase
	c.	Sensory quality analysis and the flavor wheel
	d.	Calculation of Beer Recipes; grain sampling and inspection
	e.	Alpha acid extraction from hops and UV/Vis Spectroscopy
	f.	Wort Production and Evaluation
	g.	Test and evaluation of fermentation
3.	Distilling	
	a.	Characteristics and differentiation of the primary ingredients; basic raw materials
	b.	Alcoholic fermentations
	c.	Yeast maintenance and propagation; natural fermentations
	d.	Proofing and distilling (equipment, heads, hearts, tails)
	e.	Aromas and compounds that smell
	f.	Finishing spirits

Viticulture and Enology

AGST 3xx (4 credits)

AGST 3xx
Spring xxx

A scientific introduction to viticulture (grape-growing) and enology (wine-making). Topics include grape biology, species and cultivars, vineyard establishment and maintenance, fermentation and aging, wine classification, production, evaluation, storage and service, regulations, wine as food.

COURSE OBJECTIVES: Students will be able to:

1) State the physiological, psychological and social effects of alcohol
2) Name key grape species, cultivars, and wine from different geographic locations
3) Describe the cultural practices of growing grapes and grape pest management
4) Define classifications of wine and understand wine laws and regulations
5) Describe the production processes, fermentation, quality and sensory attributes of different wines
6) Describe aspects of wine health and consumption of wine as a food

Course Resources

Information pertaining to this course will be available on the ELMS course website (ELMS.umd.edu) and through email.

Recommended Textbooks

Johnson, H. and Robinson, J. 2013. The World Atlas of Wine 7th Edition. Mitchell Beasley, London, UK ISBN: 1-84000-332-4.

Zabadal et al. 2007. Winter Injury to Grapevines and Methods of Protection. Michigan State Univ. Ext. Bulletin E2930. http://shop.msu.edu/product_p/bulletin-e2930.htm

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Class Meets
TBD
TBD
PLS #TBD

Office Hours
TBD

Cross listed with
NFSCxxx

Prerequisites
PLSC 100 or PLSC 101; AGST 130; CHEM 271/272 or by Permission; Students must be 21 years of age by the first day of instruction of the semester to enroll in this course.

Suggested pre-requisites or co-requisites
PLSC 201

Course Communication
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Laboratory assignments and quizzes. Laboratory assignments are designed to give you a "hands-on" experience with several aspects of viticulture and enology. There will be two laboratory quizzes, one administered near the middle of the semester and one administered at the end of the semester.

Exams. Exams are intended to assess your understanding of material covered and encourage you to think critically about the viticulture and enology industries. There will be two lecture exams and one final exam covering material from class and from assigned readings. All exams will be comprehensive, i.e., they incorporate material learned throughout the semester. You must contact the instructor one (1) week prior to an exam if you cannot take an exam at the scheduled time.

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Exam 2	20%
Final Exam	20%
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Lecture quizzes	30%
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-	90.00%	-	80.00%	-	70.00%	-	60.00%		

Lecture Topics		
1	Introduction to course	
2	Vitaceae Family: *Vitis* sp. – wine and table grape	
	a.	History and biology

	b.	Morphology
	c.	Overview of wine regions
	d.	Viticulture and the environment
	e.	Soils and geology
	f.	Establishing the vineyard (training systems, row spacing, materials)
	g.	Vine balance (balanced pruning, yield prediction, spur vs. cane)
	h.	Production and management (canopy management, irrigation, fertility, IPM)
	i.	Fruit ripening and maturity
	j.	Postharvest handling, storage, environmental requirements, and food safety
3	Enology	
	a.	Wine Sensory Attribute and Styles
	b.	Sensory Evaluation
	c.	Wine Production: Red, White, Sparkling
	d.	Fortified and Dessert Wine Production
	e.	Winemaking: Fermentation
	f.	Winemaking: Clarification, fining, filtration, stabilization
	g.	Winemaking: Aging, barrels, bottling, packaging
	h.	Wine as alcohol: labels, laws, and regulations
4	Industry Perspective Roundtable	
	a.	Vineyard Operation
	b.	Winery Operation

Laboratory Activities		
1.	Viticulture Field Labs	
	a.	Vineyard planning (12 month calendar) – on campus
	b.	Vine Balance: balanced pruning, yield prediction – off campus, UMD vineyard
	c.	Spur vs. Cane pruning; training systems – off campus, UMD vineyard
	d.	Vineyard Equipment Operations – off campus, commercial vineyard
	e.	Canopy Management: shoot thinning, yield management – off campus, UMD vineyard
	f.	Climate Stations – off campus, UMD Research and Education Station
2.	Enology Laboratory Activities	
	a.	Harvest sampling, basic juice analysis – on campus, Food Science lab
	b.	Introduction to sensory analysis, grape must analysis – on campus, Food Science lab
	c.	Wine taste components – on campus, Food Science lab
	d.	Wine microbiology and taints/defects – on campus, Food Science lab
	e.	Measuring SO_2, winemaking antimicrobials and sensory effects – on campus, Food Science lab
	f.	Wine fining and additives, protein and tartrate stability – on campus, Food Science lab
	g.	Wine aromas and flavors – on campus, Food Science lab
	h.	Filtration and bottling – on campus, Food Science lab

TABLE 1: RESOURCES

Resources Categories	Year 1 - FY22	Year 2 - FY23	Year 3 - FY24	Year 4 - FY25	Year 5 - FY26
1.Reallocated Funds	$330,000	$330,000	$250,000	$250,000	$250,000
2. Tuition/Fee Revenue (c+g below)*	$53,561	$95,867	$197,487	$218,760	$241,133
a. #FT Students**	3	5	10	11	12
b. Annual Tuition/Fee Rate	$ 14,046	$ 14,468	$ 14,902	$ 15,349	$ 15,809
c. Annual FT Revenue (a x b)	$ 42,139	$ 72,339	$ 149,018	$ 168,838	$ 189,712
d. # PT Students**	2	4	8	8	8
e. Credit Hour Rate	$ 475.90	$ 490.18	$ 504.88	$ 520.03	$ 535.63
f. Annual Credit Hours	12	12	12	12	12
g. Total Part Time Revenue (d x e x f)	$ 11,422	$ 23,528	$ 48,469	$ 49,923	$ 51,420
3. Grants, Contracts, & Other External Sources***	$ 267,260	$ 267,260	$ 267,260	$ 267,260	$ 267,260
4. Other Sources	$ -	$ -	$ -	$ -	$ -
TOTAL (Add 1 - 4)	**$650,821**	**$693,127**	**$714,747**	**$736,020**	**$758,393**

* University of Maryland College Park (UMCP) is not anticipating overall enrollment growth as a result of this new major, more so a shift in major selection by matriculating students. No new UMCP tuition revenue is assumed in identifying resources. The tuition revenue has been set to zero for UMCP students enrolled in the program. Resouces will come from redirection of UMCP tuition revenue at the campus level, redirection of instructional resources from the collaborating departments, from Workforce Development Initiative funds for enhancement of programs at the Universities at Shady Grove (USG) and from other reallocated resources within the University. Students enrolled in this new major through USG will be new students to the University and will generate new tuition revenue. Revenue details for UMCP and USG students are presented below.

Tuition/Fee Revenue detail					
2. Tuition/Fee Revenue, UMCP students (c+g	$0	$0	$0	$0	$0
a. #FT UMCP revenue generating students	0	0	0	0	0
b. Annual Tuition/Fee Rate	$ 14,046	$ 14,468	$ 14,902	$ 15,349	$ 15,809
c. Annual FT Revenue (a x b)	$ -	$ -	$ -	$ -	$ -
d. #PT UMCP revenue generating students	0	0	0	0	0
e. Credit Hour Rate	$ 475.90	$ 490.18	$ 504.88	$ 520.03	$ 535.63
f. Annual Credit Hours	0	0	0	0	0
g. Total Part Time UMCP Revenue (d x e x f)	$ -	$ -	$ -	$ -	$ -

2. Tuition/Fee Revenue, USG students (c+g	$53,561	$95,867	$197,487	$218,760	$241,133
a. #FT USG Students	3	5	10	11	12
b. Annual Tuition/Fee Rate	$ 14,046	$ 14,468	$ 14,902	$ 15,349	$ 15,809
c. Annual FT Revenue (a x b)	$ 42,139	$ 72,339	$ 149,018	$ 168,838	$ 189,712
d. #PT USG Students	2	4	8	8	8
e. Credit Hour Rate	$ 475.90	$ 490.18	$ 504.88	$ 520.03	$ 535.63
f. Annual Credit Hours	12	12	12	12	12
g. Total Part Time USG Revenue (d x e x f)	$ 11,422	$ 23,528	$ 48,469	$ 49,923	$ 51,420
TOTAL new tuition/Fee revenue, UMCP+USG	$53,561	$95,867	$197,487	$218,760	$241,133
** Projected student enrollment					
#FT UMCP students	5	10	20	25	30
#PT UMCP student	2	4	8	8	8
#FT USG students	3	5	10	11	12
#PT USG students	2	4	8	8	8
TOTAL student enrollment	12	23	46	52	58

*** Workforce Development Initiative funds for USG program enhancement. Total award=$500,000 per year. Portion applicable to Fermentation Science program=$267,260 per year.

Undergraduate (FY2021)	**Full time annual**	**Part Time per credit hour**	**inflation**	**Full time % in-state**	**Part time**
resident tuition	$ 8,824.00	$ 367.00	1.03	0.80	0.90
non-resident tuition	$ 34,936.00	$ 1,456.00		0.20	0.10
diff'l addition (BMGT, ENGR, CS)	$ 2,856.00	$ 118.00			

Graduate (FY2021)	**annual**	**per credit hour**
resident	$ 19,179.00	$ 731.00
non-resident	$ 40,635.00	$ 1,625.00

TABLE 2: EXPENDITURES

Expenditure Categories	Year 1 - FY22	Year 2 - FY23	Year 3 - FY24	Year 4 - FY25	Year 5 - FY26	
1. Faculty (b+c below)	$478,800	$493,164	$507,959	$523,198	$538,894	**salary estimates**
a. #FTE	4.0	4.0	4.0	4.0	4.0	$90,000
b. Total Salary	$360,000	$370,800	$381,924	$393,382	$405,183	
c. Total Benefits	$118,800	$122,364	$126,035	$129,816	$133,710	
2. Admin. Staff (b+c below)	$39,900	$41,097	$42,330	$50,866	$52,392	
a. #FTE	0.5	0.5	0.5	0.5	0.5	$60,000
b. Total Salary	$30,000	$30,900	$31,827	$38,245	$39,393	
c. Total Benefits	$9,900	$10,197	$10,503	$12,621	$13,000	
3. Total Support Staff (b+c below)	$79,800	$82,194	$84,660	$87,200	$89,816	
a. #FTE	1.0	1.0	1.0	1.0	1.0	$60,000
b. Total Salary	$60,000	$61,800	$63,654	$65,564	$67,531	
c. Total Benefits	$19,800	$20,394	$21,006	$21,636	$22,285	
4. Graduate Assistants (b+c)	$0	$44,474	$45,809	$47,183	$48,598	
a. #FTE	0.0	1.0	1.0	1.0	1.0	$24,000
b. Stipend	$0	$24,720	$25,462	$26,225	$27,012	
c. Tuition Remission	$0	$19,754	$20,347	$20,957	$21,586	
5. Equipment	$40,000	$20,000	$20,000	$15,000	$15,000	
6. Library	$0	$0	$0	$0	$0	
7. New or Renovated Space	$0	$0	$0	$0	$0	
8. Other Expenses: Operational Expenses	$12,321	$12,198	$13,990	$12,574	$13,693	
TOTAL (Add 1 - 8)	**$650,821**	**$693,127**	**$714,747**	**$736,021**	**$758,393**	
						net
resources - expenditures	($0)	$0	($0)	($0)	($0)	($1)

These budget estimates are resources and expenditures to the University overall, and not to the program or unit. Do not include revenue-sharing agreements between units, between unit and college, or with the university (e.g., for entrepreneurial programs) as an expenditure.

benefits	0.33
inflation	1.03

Faculty

Admin Staff

Support Staff

GA stipend

Letters or email notes from various academic units indicating their support and challenges in offering the required general education or elective courses to undergraduate students majoring in fermentation science

Dr. Joelle Presson, Assistant Dean
College of Computer, Math & Natural Sciences
Dr. Amanda Bailey, Professor and Chair
Department of English

Dr. Shawn J. Parry-Giles, Professor and Chair
Department of Communication

Dr. Brian Horick, Assistant Dean
Undergraduate Program
Robert H. Smith School of Business

Dr. Lori Lynch, Professor and Chair
Agricultural and Resource Economics

Dr. Chad Stahl, Professor and Chair
Department of Animal and Avian Science

Ms. Glori Hyman, Director
Institute of Applied Agriculture

Dr. John Erwin, Professor and Chair
Department of Plant Science and Landscape Architecture

Dr. Joelle Presson, Assistant Dean
College of Computer, Math & Natural Sciences

October 23, Dr. Wei to Dr. Presson

Dear Dr. Presson:

This note is prepared by Cheng-I Wei, acting chair of the Department of Nutrition and Food Science (NFSC) to seek your assistance in providing a supporting correspondence for our application for PCC approval of a new undergraduate major in Fermentation Science, that is being developed in the College of Agriculture and Natural Resources (AGNR).

Students majoring in this new program will take many required general education courses offered by faculty from your college (see the table below). We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and CMNS' departmental resources.

I appreciate your support of this new program and look forward to your college's letter of support. Please provide either an email or letter to me for inclusion in the PCC package. We appreciate your response at your earliest convenience. If you need further information in considering our request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

BCHM463	Biochemistry of Physiology
BSCI170	Principles of Molecular & Cellular Biology
BSCI171	Principles of Molecular & Cellular Biology Laboratory
CHEM131	Chemistry I – Fundamental of General Chemistry
CHEM132	General Chemistry I Laboratory
CHEM231	Organic Chemistry I
CHEM232	Organic Chemistry I Laboratory
CHEM241	Organic Chemistry II
CHEM242	Organic Chemistry II Laboratory
CHEM271	General Chemistry and Energetics
CHEM272	General Bioanalytical Chemistry Laboratory
MATH120	Elementary Calculus I

On Wed, Jan 27, 2021 at 3:54 PM Joelle C. Presson <jpresson@umd.edu> wrote:

Hello Cheng-I,

I have formal agreement from the three programs involved - BSCI, CHEM/BCHM/ and MATH-- that your students can take these courses with the appropriate pre-requisites.

Joelle Presson, Ph.D.
Assistant Dean, Undergraduate Academic Programs
College of Computer, Mathematical, & Natural Sciences
University of Maryland
1322 Symons Hall
College Park, MD 20742
301-405-6892
advising appointments link: https://booknow.appointment-plus.com/7m4cbs18/

Dr. Amanda Bailey, Professor and Chair
Department of English

October 21, Dr. Wei to Dr. Bailey

Dear Dr. Bailey:

This note is written by Cheng-I Wei, acting chair of the Department of Nutrition and Food Science (NFSC) to seek your assistance in providing a supporting correspondence for our application for PCC approval for development of a new undergraduate major in Fermentation Science at the College of Agriculture and Natural Resources.

Students majoring in this new program will take two required general education courses, ENGL101 "Academic Writing" and ENGL393 "Technical Writing," offered by your departmental faculty. We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your departmental resources.

I appreciate your support of this new major and look forward to your letter of support. Please provide either an email or letter to me for inclusion in the PCC package. We appreciate your response at your earliest convenience. If you need further information in considering our request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 21, Dr. Bailey to Dr. Wei

Dear Dr. Wei,

Before responding to your request, which seems reasonable, I want to consult with English's Director of Academic and Director of Professional Writing.

I will get back to you soon.

Best,
Amanda

October 23, Dr. Bailey to Dr. Wei

Dear Cheng-I Wei,

As I expected, my Associate Chair and the Directors of Academic and Professional Writing had a series of questions about your request.

Much hinges on whether you are requesting dedicated sections of each of these courses specific to students enrolled in your new major, or whether you are requesting that your students enroll in any given section ENGL101 and 393, knowing that spaces can be competitive in these

courses. If you are interested in having your students enroll in sections that are already being offered as part of, but not in addition to, the English Department's commitment to the campus' fundamental studies requirements that is fine.

The Director of Professional Writing also wanted to know whether your expectation would be that students would take Engl 393 in their junior or senior year and whether Engl 393 is to be a prerequisite for any of their courses, Ex: Taking 393 before the capstone course in the major? Again, I think the issue here is about over-subscription.

Lastly, we were wondering if you could share with us your students' course plan?

Thank you

Best,
Amanda

October 21, Dr. Wei to Dr. Bailey

Dear Dr. Bailey,

Thanks for your response and your checking with your folks.

We are only requesting that students enrolled in the new major be able to enroll in sections of ENGL101 and 393 that are being offered as your department's commitment to the campus' fundamental studies requirements. We know spaces for these two courses can be competitive.

As for ENGL393, students will take the course in the fall semester of the second year in our four-year study plan at this moment. But this arrangement can be changed after we hire more faculty members for the program. They will have opportunities to provide their inputs. The tentative four-year study plan is attached for your reference.

Thanks again for the discussion and your help.

Cheng-i Wei

October 27, Dr. Bailey to Dr. Wei

Dear Cheng-i Wei,

I appreciate your patience while we sort this through.

The challenge we are facing is that our own program is bottle-necking around ENGL 393, which consistently has a wait list of 15+ students per section. We are working on getting more instructors who can teach the course and more funding from campus so that we can offer more sections, but at this point, we can't guarantee reserving spots for your students. My Associate

Chair pointed out that the fall term is particularly impacted and perhaps you would be willing to spread this requirement for your students out over the fall and the spring semesters.

Enrolling in already existing Academic Writing (ENGL 101) courses should be straight orward enough, again with the caveat that we are often over-subscribed in these courses in the fall term.

Best,
Amanda

October 27, Dr. Wei to Dr. Bailey

Dear Dr. Bailey,

Thanks for the response explaining the situation and challenges you are facing all the time. I understand and I also heard it indirectly before. Please let me know if you need a cheerleader when you are pushing for more resources in order to offer more sections for students to take.

We will follow your advice to alert the students about the very challenging situation for enrollment in your classes and also spread the requirements for our students out over the fall and the spring semesters. Thanks again.

Cheng-i Wei

Dr. Shawn J. Parry-Giles, Professor and Chair
Department of Communication

October 21, Dr. Wei to Dr. Parry-Giles

Dear Dr. Parry-Gilesi:

This note is written by Cheng-I Wei, acting chair of the Department of Nutrition and Food Science (NFSC), to seek your assistance in providing a supporting correspondence for our application for PCC approval for development of a new undergraduate major in Fermentation Science at the College of Agriculture and Natural Resources.

Students majoring in this new program will be encouraged to take COMM200 "Critical Thinking and Speaking" offered by your departmental faculty. We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your departmental resources.

I appreciate your support of this new program and look forward to your letter of support. Please provide either an email or letter to me at your convenience for inclusion in the PCC package. If you need further information in considering my request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 21, Dr. Parry-Giles Bailey to Dr. Wei

Dear Dr. Wei,

Hi there. Thank you for your email and interest in COMM 200. I will say that COMM 200 tends to be a very popular class because it counts for the oral comm gen ed requirement. My assumption is it will remain a first come, first serv option for your students. Or are you asking that we reserve certain seats for your students? Thanks for clarifying.

Shawn Parry-Giles

October 21, Dr. Parry-Giles Bailey to Dr. Wei

Dear Dr. Parry-Gilesi:

Thanks for your quick response. We are still developing the program and we hope new students can enroll in fall, 2021. But before that, we need to receive approval through the PCC process.

We are not asking for special favor from you all at this time. It is fair to apply "first come, first serve option" for our future students. Thanks. Cheng-I Wei

October 21, Dr. Parry-Giles Bailey to Dr. Wei

Hi there. Here's the letter ... Let me know if you need it in a word document instead. I did not realize we were neighbors in

Skinner! Good luck. Shawn

COLLEGE OF
ARTS & HUMANITIES
COMMUNICATION

2130 Skinner Building
College Park, Maryland 20742-7635
301.405.8979 TEL 301.314.9471 FAX
www.comm.umd.edu

October 21, 2020

Dr. Cheng-I Wei

Interim Department Chair of Nutrition and Food Science

College of Agriculture and Natural Resources

Skinner Building Suite 0112

University of Maryland,

College Park, MD 20742

Dear Dr. Wei:

I am writing to provide support for your new major in Fermentation Science. The Department of Communication would welcome students from this new major enrolling in COMM200: Critical Thinking and Speaking.

Please feel free to follow up with questions at spg@umd.edu or (301) 405-6527.

Cordially,

Shawn Parry-Giles

Shawn J. Parry-Giles

Chair and Professor

Dr. Brian Horick, Assistant Dean
Undergraduate Program
Robert H. Smith School of Business

October 23, Dr. Wei to Dr. Horick

Dear Dr. Horick:

My name is Cheng-I Wei and I am the acting chair of the Department of Nutrition and Food Science (NFSC). I am sending this note to seek your assistance in providing a supporting correspondence for our application for PCC approval of a new undergraduate major in Fermentation Science. The newly developed program will be located in the College of Agriculture and Natural Resources (AGNR).

Students majoring in this new program will be encouraged to take BMGT220 "Principles of Accounting", BMGT360 "Strategic Management of Human Capital" and BMGT364 "Managing People and Organization" that are offered by faculty of your school. We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your school's resources. We are not requesting a special favor for class seating for our students. We know it will be on the first-come first-serve policy for class enrollment.

I appreciate your support of this new program and look forward to receiving your school's letter of support. Please provide either an email or letter to me at your convenience for inclusion in the PCC package. If you need further information in considering our request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 26, Dr. Horick to Dr. Wei

Dr. Wei,
I reviewed your request with our Assistant Dean of Undergraduate Academic Affairs, Dr. Phil Evers. Both BMGT220 and BMGT360 are open to any UMD student and are fine to list as options. So students in this new major can access both of these courses without any special permission. However, the majority of our BMGT364 seats in the fall and spring semesters are restricted to Smith majors or minors. Given the popularity of this course across campus and the number of requests that we receive from other departments and colleges, we could not provide special permission for students in this new major to access this course prior to the start of the semester. We do offer a holdfile for students who are interested in this course and when restrictions are lifted each semester (typically the 2nd day of classes), students on the holdfile could access the course on a space available basis.

If you want to just list BMGT364 as an option, we are ok with that; however, we don't want there to be an expectation among students, faculty, and staff in this new major that special permission is expected for this course. So I believe that some note would be appropriate to list with this course that explains that access to this course is on a space available basis during the fall and spring semesters (BMGT364 is open to any student in winter and summer sessions).

Also, you might want to consider listing BMGT110 Introduction to the Business Value Chain as an option for students in this new major as well. This course is open to any student and it provides a great introduction to business with an emphasis on inter-organizational and intra-organizational coordination of core business processes.

Please let me know if you have any questions.
Sincerely,
Brian Horick

October 26, Dr. Wei to Dr. Horick

Dear Dr. Horick,

Thanks a lot for the information and help. It is clear and helpful.

I will follow your suggestion to include a "special permission" statement with the course BMGT364 and also add BMGT110 "Introduction to the Business Value Chain" as another elective option for students in this new major.

Cheng-i Wei

Dr. Lori Lynch, Professor and Chair
Agricultural and Resource Economics

October 21, Dr. Wei to Dr. Lynch

Dear Lori:

I am writing this note to seek your assistance in providing a supporting correspondence for our application for PCC approval of a new undergraduate major in Fermentation Science, that is being developed in our College of AGNR.

Students majoring in this new program will be encouraged to take AREC250 "Elements of Agricultural and Resource Economics" offered by your departmental faculty. We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your departmental resources.

I appreciate your support of this new program and look forward to your letter of support. Please provide either an email or letter to me for inclusion in the PCC package. We appreciate your response at your earliest convenience. If you need further information in considering my request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 21, Dr. Lynch to Dr.Wei

Dear Cheng-I Wei - AREC is happy to support the new undergraduate major in Fermentation Science. We have sufficient capacity in AREC250 to welcome these students to the class. Good luck with your efforts to move forward. Please let me know if I can be of any further assistance.

Lori Lynch

Dr. Chad Stahl, Professor and Chair
Department of Animal and Avian Science

October 23, Dr. Wei to Dr. Stahl

Dear Chad:

I am writing this note to seek your assistance in providing a supporting correspondence for our application for PCC approval of a new undergraduate major in Fermentation Science, that is being developed in our College of AGNR.

Students majoring in this new program will be encouraged to take ANSC410 "Gut Microbiome and its Roles in Health and Disease" offered by your departmental faculty. We believe an initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your departmental resources.

I appreciate your support of this new program and look forward to your letter of support. Please provide either an email or letter to me for inclusion in the PCC package. We appreciate your response at your convenience. If you need further information in considering my request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 30, Dr. Stahl to Dr. Wei

Dear Cheng-I,
Please accept this email as my support for the new undergraduate major in Fermentation Science in AGNR. I feel this major will be an excellent enhancement to our undergraduate curriculum. I agree that ANSC410, taught by Dr. Biswas will be a valuable class for undergraduates in this new major. Currently, ANSC410 offers 20 seats in the class and typically is fully enrolled. I can certainly work with Dr. Biswas to increase the number of seats offered in this course, but adding 15 seats to this class will require a substantial reworking of his course. I am highly supportive of this new major, so ANSC will work to try and make this possible. However, in these difficult budgetary times and with ANSC already having the largest current number of undergraduates in the college, our ongoing efforts to increase enrollment in our major, and our efforts to increase our offerings of general education seats for the University, this will be a big lift.
Sincerely,

Chad

October 30, Dr. Wei to Dr. Stahl

Dear Chad,

Thanks for your help and support. I understand the potential challenge you described. We can help each other when we reach the point of having to deal with the student numbers.

Cheng-i Wei

Ms. Glori Hyman, Director
Institute of Applied Agriculture

October 21, Dr. Wei to Ms. Hyman

Dear Glori:

I am writing this note to seek your assistance in providing a supporting correspondence for our application for PCC approval for the development of a new undergraduate major in Fermentation Science in our College of AGNR.

Students majoring in this new program will be encouraged to take INAG103 "Agricultural Marketing", INAG204 "Agricultural Business Management" and INAG206 "Agricultural Business Law" offered by your faculty. We believe the initial enrollment of no more than 15 students a year for this new major will not burden your faculty and your unit resources.

I appreciate your support of this new program and look forward to your letter of support. Please provide either an email or letter to me for inclusion in the PCC package. We appreciate your response at your earliest convenience. If you need further information in considering my request, please do not hesitate to call (240-475-3801) or email me at wei@umd.edu.

Cheng-I Wei

October 23, Ms. Hyman to Dr. Wei

Dr. Wei:

Happy to help. Please see the attached letter. Let me know if there's anything else we can do.

Thanks,
Glori

INSTITUTE OF
APPLIED AGRICULTURE

2123 Jull Hall, Building 227
College Park, Maryland 20742-2525
301.405.4686 TEL 301.314.9343 FAX
http://iaa.umd.edu HOMEPAGE

October 23, 2020

Dear Dr. Wei and PCC Review Committee:

I am witting to offer our support for the new proposed undergraduate major in Fermentation Science in the College of Agriculture and Natural Resources.

It is our understanding that students majoring in this new program will be encouraged to take three of our courses:

- INAG103: Agricultural Marketing
- INAG204: Agricultural Business Management
- INAG206: Agricultural Business Law

At this time, we can accommodate the additional students and we welcome them to take our courses. We are supportive of the new major within the college. Please let me know if you have additional questions.

Sincerely,

Glori D. Hyman

Director

Dr. John Erwin, Professor and Chair
Department of Plant Science and Landscape Architecture

October 26, Dr. Erwin to Dr. Wei

Hello Cheng-I,

Please find a support letter for the Fermentation Science Major from PSLA attached here. Let me know if you need anything else.

All the best,
John

UNIVERSITY OF MARYLAND

2102 Plant Sciences Building
4291 Fieldhouse Road
College Park, Maryland 20742
301.405.6244 TEL 301.314.9308 FAX

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
Department of Plant Science and Landscape Architecture

October 24, 2020

Professor Cheng-I Wei,

The Department of Plant Science and Landscape Architecture (PSLA) met on October 9, 2020 to discuss the possibility of being involved in a new Fermentation Science major. That major would be administered and offered by the Department of Nutrition and Food Science. PSLA would provide a supportive role in providing required and elective courses for this new major.

PSLA is currently teaching 4 of the courses listed as required/elective courses for the

Fermentation Science major: Introduction to Horticulture (PLSC100); Introduction to Crop

Science (PLSC101); Did Yeast Create Civilization (AGST130) and Craft Beverage Crops (AGST333). Enrollment in PLSC100 &101 regularly exceeds 100. Enrollment in AGST130 and AGST333 both have the current maximum enrollment at 30 students each.

At the October 9th faculty meeting, PSLA faculty voted to support the new Fermentation Major and agreed to teach two additional courses to contribute to that major ("Brewing and Distilling" (AGSTxxx) and "Viticulture and Enology" (AGSTxxx)) should funds be provided to hire 2 additional instructors. Syllabi for both courses have been developed.

Please feel free to contact me if you have any further questions/needs. Thank you in advance for your efforts.

All the Best,

John Erwin

Chair and Professor

Flowering Physiology and Controlled Environment Agriculture

RUBRICS for DETERMINING PROFICIENCY in FERMENTATION SCIENCE LEARNING OUTCOMES

1. **Careers and opportunities in Fermentation Science** - Graduates of the fermentation science program will be able to describe many career paths available to them with the knowledge, skills, and experience they receive as undergraduates in the program. Graduates will be able to devise useful, feasible plans for courses, experiential learning, networking, and skill development leading to careers or advanced education programs that match their abilities, experience, and interests.

   Target assessment:
   NFSC112 Food: Science and Technology
   Careers nights run by the NFSC department.
   200-level Critical Thinking and Speaking (COMM200)
   NFSC386 Experiential Learning (Internship Experience in fermentation science)
   Advanced FS electives with relevant content

   - **No evidence**: Student demonstrates minimal to no competency in this area.
   - **Beginning**: Student struggles to define the fermentation science discipline and the types of careers it includes. Student may be able to name one or a few jobs outside of food industry related to fermentation science.
   - **Developing**: Student can name several careers or areas of further study and connect those opportunities to the knowledge, skills, and experience they receive as an undergraduate.
   - **Approaching proficiency**: Student is able to describe several career options available to them and makes deep connections between the knowledge, skills, and experience they receive as an undergraduate and specific job or educational opportunities.
   - **Proficient**: Student can describe many career paths available to them with the knowledge, skills, and experience they receive as an undergraduate in the fermentation science program. Student is able to devise plans for courses, experiential learning, networking, and skill development leading to careers or advanced education programs aligned with their unique abilities, experience, and interests.
   - **Advanced**: Student is successful in obtaining a job in an fermentation science-related discipline that requires a minimum of a bachelor's of science degree, or in earning admission to a program of advanced study.

   Scoring: Optimal score aimed to be attained within 4 years after the establishment of the fermentation science program (Optimal score attained by food science major in NFSC112 Food: Science and Technology & NFSC386 Experiential Learning (Internship Experience in fermentation science).

2. **Fermentation Science**

Graduates of the undergraduate program will be able to apply fermentation science knowledge and research to enhance fermentation process, propagation and modification of fermentation microbes, fermenter design and downstream processing including effluent treatment. Students will learn the manufacturing steps involved in various fermented products and gain hands-on experience in making these products at pilot scale and evaluate their quality and safety.

Targeted assessment:

NFSC112 Food: Science and Technology (3)
NFSC421 Food Chemistry (3)
NFSC423 Food Chemistry Lab (3)
NFSC412 Food Processing Technology (4)
NFSC430 Food Microbiology (3)
NFSC434 Food Microbiology Lab (3)
NFSCxxx Fermentation Science Laboratory (4)

- **No evidence**: Student demonstrates minimal to no knowledge, skills or abilities in this area
- **Beginning**: Student can list the principle of fermentation process, propagation and modification of fermentation microbes, fermenter design and downstream processing including effluent treatment.
- **Developing**: Student can describe, in more detail, the general fermentation process, propagation and modification of fermentation microbes, fermenter design and downstream processing including effluent treatment.
- **Approaching proficiency**: Student combines knowledge of manufacturing steps involved in various fermented products and attains limited hands-on experience in making these products at pilot scale and evaluating their quality and safety.
- **Proficient**: Student can provide a detailed description of manufacturing steps involved in various fermented products and attains entry-level hands-on ability in making these products at pilot scale and evaluating their quality and safety.
- **Advanced**: In addition to proficiently describing the very detailed steps in manufacturing involved in various fermented products, the student demonstrates advanced proficiency in hands-on ability in making these products at pilot scale and evaluating their quality and safety.

Scoring: All target courses listed above, except NFSCxxx Fermentation Science Laboratory (4), have attained optimal scoring for the Food Science program in NFSC. Optimal score for NFSCxxx Fermentation Science Laboratory (4) in the program is aimed to be attained within 4 years after the establishment of the fermentation science program.

3. **Fermented Food, Feed and Pharmaceuticals** - Graduates of the fermentation science undergraduate program will be able to correctly apply their knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students will learn about the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.

   Targeted assessment:
   NFSC421 Food Chemistry (3)
   NFSC423 Food Chemistry Lab (3)
   NFSC430 Food Microbiology (3)
   NFSC434 Food Microbiology Lab (3)
   200-level management courses
   300 advanced electives and internships (NFSC386)
   NFSCxxx Fermented Food, Feed & Pharmaceuticals (3)

   - **No evidence**: Student demonstrates minimal to no knowledge, skills or abilities in this area.
   - **Beginning**: Students can list knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students will learn about the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.
   - **Developing**: Students can briefly describe knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students will start to develop knowledge about the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations
   - **Approaching proficiency**: Students can describe knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students' knowledge is approaching proficient in the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.
   - **Proficient**: Students can describe accurately knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students can describe in depth the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.
   - **Advanced**: Student can expertly describe knowledge on the use of prokaryotic and eukaryotic microorganisms in the fermentation of dairy, vegetables and fruits, meat, and grains (food), feed, and pharmaceuticals. The students can expertly describe their knowledge in the science of fermentation, fermenter design and scale-up, fermentation byproducts and downstream processing, and different types of fermentations.

   Scoring: All target courses listed above, except NFSCxxx Fermented Food, Feed & Pharmaceuticals (3), have attained optimal scoring for the Food Science program in NFSC. Optimal score for NFSCxxx Fermented Food, Feed & Pharmaceuticals (3), is aimed to be attained within 4 years after the establishment of the Fermentation Science program.

4. **Fermentation Science literacy**- Knowledge of major issues in fermentation science. Graduates of this program will be well-versed in the issues related to fermentation science such that they contribute to societal debates around the future of farming, the use of microbes & phages in fermentation, sustainability of our fermentation science industry, worker needs of the industry, and scaling fermentation science enterprises up and down to meet our growing population's needs for fermented products. Graduates of this undergraduate program will also be able to select, understand, and critically evaluate scientific studies in fermentation science disciplines such that they employ research that is applicable, timely, accurate, and useful for their fermentation science and management needs.

   Targeted assessment:
   NFSC112 Food: Science & Technology (3)
   NFSC412 Food Processing Technology (4)
   NFSC421 Food Chemistry (3)
   NFSC423 Food Chemistry Lab (3)
   NFSC431 Food Quality Control (4)
   NFSC430 Food Microbiology (3)
   NFSC434 Food Microbiology Lab (3)
   NFSCxxx Fermented Food, Feed & Pharmaceuticals (3)
   AGST3xx Viticulture and Enology (4)
   AGST3xx Brewing and Distilling (4)
   NFSCxxx Cheese and Fermented Dairy Products (3)
   NFSCxxx Fermentation Science Laboratory (4)
   NFSCxxx Sensory Analysis Laboratory (3)

   - **No evidence**: Student demonstrates minimal to no knowledge, skills or abilities in this area.
   - **Beginning**: Student can correctly name and order the steps of the scientific method and explain the value of critical source evaluation.
   - **Developing**: Student can describe the principle strengths and weaknesses of several types of scientific study designs. Student can describe the role of different types of bias in our interpretation of research findings. Student can explain the scientific method and the process of scientific discovery.
   - **Approaching proficiency**: Student can evaluate the 2-3 principal strengths and weaknesses of a study design and identify sources of bias in the study's methodology and data analysis. Student can document a laboratory experiment or exercise using standard scientific formatting, basic data presentation methods, and scientific language and relate this process to the reporting of research in scientific journals.
   - **Proficient**: Student is able to select, understand, and critically evaluate scientific studies in fermentation sciences disciplines such that they employ research that provides the highest quality of evidence available for their information needs. Student is able to write about scientific research in using evidenced based research.
   - **Advanced**: Student can create scientific grant proposals, professional presentations, review papers, or other professional analyses of scientific evidenced based research

   Scoring: All target courses listed above, except those with NFSCxxx and AGST3xx labeled courses, have attained optimal scoring for the Food Science program in NFSC. Optimal scores for those with NFSCxxx and AGST3xx labelled courses are aimed to be attained within 4 years after the establishment of the Fermentation Science program.

5. **Knowledge of major issues in Fermentation Science** - Graduates of the fermentation science program will be well-versed in the issues related to fermentation science such that they contribute to societal debates around them. Student will be able to describes, analyze, and critically evaluate the scientific, ethical, legal, and social dimensions of these issues.

   Targeted assessment:
   NFSC112 Food: Science & Technology (3)
   NFSC412 Food Processing Technology (4)
   NFSC421 Food Chemistry (3)
   NFSC423 Food Chemistry Lab (3)
   NFSC431 Food Quality Control (4)
   NFSC430 Food Microbiology (3)
   NFSC434 Food Microbiology Lab (3)
   NFSCxxx Fermented Food, Feed & Pharmaceuticals (3)
   AGST3xx Viticulture and Enology (4)
   AGST3xx Brewing and Distilling (4)
   NFSCxxx Cheese and Fermented Dairy Products (3)
   NFSCxxx Fermentation Science Laboratory (4)
   NFSCxxx Sensory Analysis Laboratory (3)

   - **No evidence**: Student demonstrates minimal to no knowledge, skills or abilities in this area.
   - **Beginning**: Student can name a few major controversies related to fermentation science.
   - **Developing**: The student can describe several key controversies related to fermentation science, including the history of the issue, the major stakeholders' positions, and the arguments they have in support of their point of view.
   - **Approaching proficiency**: The student can describe several core controversies related to fermentation science and identify key stakeholders and their positions in those debates. Students start to apply scientific, ethical, legal, and social analysis to their evaluation of the issues in class lectures and assignments.
   - **Proficient**: The student can describes, analyzes, and critically evaluates the scientific, ethical, legal, and social dimensions of the controversial issues surrounding fermentation science in class lectures and assignments.
   - **Advanced**: Student can lead others in respectful, accurate, and relevant debates regarding controversial issues in animal science in class lectures. The student can propose feasible, useful avenues for addressing these issues.

   Scoring: All target courses listed above, except those with NFSCxxx and AGST3xx labeled courses, have attained optimal scoring for the Food Science program in NFSC. Optimal scores for those with NFSCxxx and AGST3xx labelled courses, are aimed to be attained within 4 years after the establishment of the Fermentation Science program.

Nutrition and Food Science - Fermentation Science Four Year Academic Plan

Year 1	Fall			Spring		
		Credit	Grade		Credit	Grade
Benchmark Requirements	MATH120 (MA/AR)	3	_____	PLSC110/112	3	_____
completed by 2 semesters	PLSC130 (HS/IS)	3	_____	History/Social Science (HS)*	3	_____
CHEM231/2	CHEM131/132 (NL)	4	_____	CHEM231/232	4	_____
BSCI170/171	ENGL101 (AW)	3	_____	BSCI170/171	4	_____
	INAG110	3	_____			
	TOTAL	**16**		**TOTAL**	**14**	
Year 2						
Benchmark Requirements	NFSC112	3	_____	CHEM271/272	4	_____
completed by 4 semesters	CHEM241/242	4	_____	SP (non-major)*	3	_____
CHEM271/2	BSCI223 (IS)	4	_____	Humanities (HU)*	3	_____
BSCI223	Humanities (HU)*	3	_____	elective	3	_____
				NFSC2XX Fer Fd& Phar	3	_____
	TOTAL	**14**		**TOTAL**	**16**	
Year 3						
BCHM463	BCHM463	3	_____	AGST3XX	4	_____
at least two of	ENGL393 (PW)	3	_____	NFSC431	4	_____
NFSC421,423,430,431	AGST3XX	4	_____	elective	3	_____
and AGST3XX	NSFSc 430	3	_____	NFSC4XX Che Fer Dai Pro	3	_____
	elective	3	_____	elective	2	_____
	TOTAL	**16**		**TOTAL**	**16**	
Year 4						
Major Requirements	NFSC4XX Fer Sci Lab	4	_____	NFSC412	4	_____
	NFSC4XX Sen Anan Lab	3	_____	NFSC386	4	_____
	NFSC421	3	_____	NFSC398	1	_____
	NFSC423 (SP)	3	_____	Elective	3	_____
			_____	Elective	3	_____
	TOTAL	**13**		**TOTAL**	**15**	

TOTAL CREDITS 120

**All students must complete two Distributive Studies courses that are approved for I-series courses. The Understanding Plural Societies (UP) and Cultural Competence (CC) courses may also fulfill Distributive Studies categories.*

NFSC4XXs are not restricted electives.

NFSC (Fermentation Science Major)

General Education Requirements (Grade of (D-) or higher is required)				Major Requirements (Grade of (C-) or higher is required)		
Fundamental Studies				*Requirements*	*Credits*	*Grade*
Requirements: 15 credits	Course	Credits	Grade	**Benchmark 1 Requirements**		
Academic Writing AW	ENGL101	3		CHEM231/232	4	
Professional Writing PW	ENGL393	3		BSCI170/171	4	
Oral Comm. OC		3				
Math MA	MATH113	3				
Analytic Reasoning AR	MATH120	3		**Benchmark 2 Requirements**		
Distributive Studies						
Requirements: 25 credits	Course	Credits	Grade	CHEM271/272	4	
Natural Sciences Lab NL	CHEM131/132	4		BSCI223	4	
Natural Sciences NS	NFSC112	3				
History/Social Sciences HS	PLSC130	3				
History/Social Sciences HS		3				
Humanities HU		3				
Humanities HU		3		**Major Requirements**		
Scholarship in Practice SP	NFSC423	3		MATH120,	3	
Scholarship in Practice SP (non major)		3		CHEM131/2, 231/2, 241/2, 271/2	16	
I-Series				BSCI170/171, 223	8	
Normally double counted with Distributive Studies				PLSC130	3	
Requirements: 6 credits	Course	Credits	Grade	PLSC110 or 112	3	
I-Series IS	PLSC130	3		BCHM463	3	
I-Series IS	BSCI223	3		NFSC112, 386, 398, 412, 421, 423, 430, 431, 2XX, 4XX, 4XX, 4XX	39	
Diversity (overlap permitted with Distributive Studies and/or I-series)						
Requirements: 4-6 credits	Course	Credits	Grade	AGST3XX, 3XX	8	
Understanding Plural Soc. UP		3 or 6				
Understanding Plural Soc.UP or Cultural Competence CC		0 to 3				
Experiential Learning- opitional (overlap permitted with other requirements/courses)				**Major Supporting Sequence (6 credits)**		
				MATH120	3	
Requirements: 0-3 credits	Course	Credits	Grade	BCHM463	3	
Students must earn a minimum of 120 credits to complete a degree.						
Requirements for Graduation:						
☐ At least 30 credits must be earned at UMD						
☐ 15 of the final 30 credits must be earned at the 300-400 level						
☐ 12 upper level major credits must be earned at UMD						

Note: Students with MATH120 eligibility do not need to take MATH113. NFSC4XXs are uper level fermentation science courses.

Rename the Upper Division Certificate in "Women's Studies" to "Women, Gender, and Sexuality Studies" (PCC 20078)

PRESENTED BY	**Valerie Orlando, Chair, Senate Programs, Curricula, and Courses Committee**
REVIEW DATES	**SEC – February 23, 2021 | SENATE – March 3, 2021**
VOTING METHOD	**In a single vote**
RELEVANT POLICY/DOCUMENT	**NA**
NECESSARY APPROVALS	**Senate, President, University System of Maryland Chancellor, and Maryland Higher Education Commission**

ISSUE

Last year, the Department of Women's Studies within the College of Arts and Humanities was renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This proposal is to rename the Upper Division Certificate in "Women's Studies" to "Women, Gender, and Sexuality Studies." The proposal will not only align the program with the department name, but also reflect the current scope of the program. In 2020, the program modified its curriculum to recognize the breadth of study of interlocking systems of oppression comprising the expansive field of women, gender, and sexuality studies. The new curriculum added greater flexibility by adding new and updated foundational course options as entry points to the certificate: LGBT200 Introduction to Lesbian, Gay, Bisexual and Transgender Studies; WMST200 Introduction to WGSS: Gender, Power, and Society; WMST250 Introduction to WGSS: Art and Culture, WMST263 Introduction to Black Women's Studies, and WMST298D Bodies in Contention. The program also added multiple options to fulfill the program's 12 credit specialization requirement, including Social Justice; Transnational Politics and Perspectives; Race, Ethnicity and Class; Bodies, Genders and Sexualities; Arts, Technologies and Cultural Production; Lesbian, Gay, Bisexual, Transgender and Queer Studies, or a student-designed specialization. The new name of the program, therefore, more accurately reflects the inclusiveness of the curriculum.

This proposal was approved by the Senate Programs, Curricula, and Courses committee on February 5, 2021.

RECOMMENDATION(S)

The Senate Committee on Programs, Curricula, and Courses recommends that the Senate approve this name change.

COMMITTEE WORK

The committee considered this proposal for its meeting on February 5, 2021. Ashwini Tambe and Gwen Warman of the Harriet Tubman Department of Women, Gender, and Sexuality Studies, along

with ARHU Associate Dean Ralph Bauer, presented the proposal and answered questions. The committee approved the proposal.

ALTERNATIVES

The Senate could decline to approve this new program title.

RISKS

If the Senate declines to approve this program title change, the current program will not adequately describe the program curriculum.

FINANCIAL IMPLICATIONS

There are no significant financial implications for program title changes.

501: WOMEN, GENDER, AND SEXUALITY STUDIES CERTIFICATE

In Workflow

1. D-WMST Curriculum Manager (gwarman@umd.edu)
2. D-WMST PCC Chair (rzambran@umd.edu)
3. D-WMST Chair (rzambran@umd.edu)
4. ARHU Curriculum Manager (bauerr@umd.edu; myuen@umd.edu)
5. ARHU PCC Chair (acaneque@umd.edu; bauerr@umd.edu; myuen@umd.edu)
6. ARHU Dean (bauerr@umd.edu; myuen@umd.edu)
7. Academic Affairs Curriculum Manager (mcolson@umd.edu)
8. Senate PCC Chair (mcolson@umd.edu; vorlando@umd.edu)
9. University Senate Chair (mcolson@umd.edu)
10. President (mcolson@umd.edu)
11. Chancellor (mcolson@umd.edu)
12. MHEC (mcolson@umd.edu)
13. Provost Office (mcolson@umd.edu)
14. Undergraduate Catalog Manager (lyokoi@umd.edu; wbryan@umd.edu)

Approval Path

1. Wed, 05 Aug 2020 20:57:56 GMT
   Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
2. Tue, 11 Aug 2020 18:23:38 GMT
   Ruth Zambrana (rzambran): Rollback to D-WMST Curriculum Manager for D-WMST PCC Chair
3. Wed, 12 Aug 2020 19:21:15 GMT
   Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
4. Wed, 12 Aug 2020 20:13:18 GMT
   Ruth Zambrana (rzambran): Approved for D-WMST PCC Chair
5. Wed, 12 Aug 2020 20:14:26 GMT
   Ruth Zambrana (rzambran): Approved for D-WMST Chair
6. Wed, 25 Nov 2020 18:29:41 GMT
   Betsy Yuen (myuen): Approved for ARHU Curriculum Manager
7. Wed, 13 Jan 2021 22:47:37 GMT
   Ralph Bauer (bauerr): Approved for ARHU PCC Chair
8. Wed, 13 Jan 2021 22:48:44 GMT
   Ralph Bauer (bauerr): Approved for ARHU Dean
9. Fri, 29 Jan 2021 21:43:27 GMT
   Michael Colson (mcolson): Approved for Academic Affairs Curriculum Manager
10. Sat, 06 Feb 2021 09:13:05 GMT
    Valerie Orlando (vorlando): Approved for Senate PCC Chair

History

1. Oct 18, 2019 by William Bryan (wbryan)
2. Mar 26, 2020 by William Bryan (wbryan)

Date Submitted: Wed, 05 Aug 2020 19:53:21 GMT

Viewing: 501 : Women, Gender, and Sexuality Studies Certificate
Last approved: Thu, 26 Mar 2020 18:00:48 GMT
Last edit: Mon, 25 Jan 2021 14:43:53 GMT

Changes proposed by: Gwen Warman (gwarman)

Proposed Action

Rename Program

Program Name

Women, Gender, and Sexuality Studies Certificate

Program Status

Active

Effective Term

Fall 2020

Catalog Year

2020-2021

Program Level

Undergraduate Program

Program Type

Undergraduate Certificate

Delivery Method

On Campus

Departments

Department
Women's Studies

Colleges

College
Arts and Humanities

Program/Major Code

9Z004

MHEC Inventory Program

Women's Studies

CIP Code

050207 - Women's Studies.

HEGIS

499905

Degree(s) Awarded

Degree Awarded
Certificate, Upper Division

Proposal Contact

Ruth Enid Zambrana

Proposal Summary

To change the name of the program from Women's Studies Certificate to Women, Gender, and Sexuality Studies Certificate (PCC Log Number 20078)

Program and Catalog Information

Provide the catalog description of the proposed program. As part of the description, please indicate any areas of concentration or specializations that will be offered.

The Women's Studies Certificate Program consists of an integrated, interdisciplinary curriculum on women and gender that is designed to supplement a student's major. Any student in good standing may enroll in the certificate program by declaring their intention to the Women's Studies Department.

Catalog Program Requirements:

To qualify for a certificate in Women's Studies, a student will be required to earn 21 credits in Women's Studies courses, twelve of which must be at the 3xx/4xx level. No more than nine credits that are applied toward a major may be included in the certificate program. No more than nine credit hours may be taken at institutions other than the University of Maryland. Each student must obtain a grade of "C-" or better in each course that is to be counted toward the certificate. An overall GPA of 2.0 in the certificate is required for graduation. A list of courses offered can be found here: http://wmst.umd.edu/academics/courses (http://wmst.umd.edu/academics/courses/). Of the 21 credits, courses must be distributed as follows:

Course	Title	Credits
Foundation Courses:		
One of the following courses:		3
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
WMST200	Introduction to WGSS: Gender, Power, and Society	
WMST250	Introduction to WGSS: Art and Culture	
WMST263	Introduction to Black Women's Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D Bodies in Contention)	
WMST302	Feminist, Critical Race, and Queer Theories	3
Capstone Course		**3**
WMST488	Senior Seminar	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies	
Any 400-level course from thematic concentrations		
Thematic Concentration [1]		**12**
Total Credits		**21**

[1] Thematic concentrations:

- Social Justice
- Transnational Politics and Perspectives
- Race, Ethnicity and Class
- Bodies, Genders and Sexualities
- Arts, Technologies, and Cultural Production
- Lesbian, Gay, Bisexual, Transgender and Queer Studies
- Student Designed

Consult the department for eligible courses in each area.

Program Modification Information

Impact on current students. It should be specifically acknowledged that students enrolled in the program prior to the effective date of any curriculum change may complete their program under the old requirements if they wish. The courses required must remain available, or suitable substitutions specifically designated.

There are no curricular changes in this proposal, so there is no impact on the students.

Linked Programs

Renaming Program

Provide a rationale for renaming the program.

The Department of Women's Studies has been renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This change will bring the certificate and department into alignment. In addition, the WMST course prefix is also being changed to WGSS. Once finalized the changes to the program name and course prefix can be updated as needed in the text of the undergraduate catalog.

Supporting Documents

Attachments

WGSS Certificate New Catalog Description.docx

Reviewer Comments

Ruth Zambrana (rzambran) (Tue, 11 Aug 2020 18:23:38 GMT): Rollback: Requires further edits

Betsy Yuen (myuen) (Wed, 25 Nov 2020 04:35:40 GMT): Attached new catalog description as a Word doc. CIM would not allow me to edit the current catalog description.

Key: 501

Program Change Request

Date Submitted: 08/05/20 3:53 pm

Viewing: **501 : Women, Gender, and Sexuality**

~~Women's~~ Studies Certificate

Last approved: 03/26/20 2:00 pm

Last edit: 01/25/21 9:43 am

Changes proposed by: Gwen Warman (gwarman)

Catalog Pages Using this Program

Women's Studies Certificate

Proposed Action **Rename Program** ~~Curriculum Change~~

Program Name

In Workflow

1. D-WMST Curriculum Manager
2. D-WMST PCC Chair
3. D-WMST Chair
4. ARHU Curriculum Manager
5. ARHU PCC Chair
6. ARHU Dean
7. Academic Affairs Curriculum Manager
8. Senate PCC Chair
9. University Senate Chair
10. President
11. Chancellor
12. MHEC
13. Provost Office
14. Undergraduate Catalog Manager

Approval Path

1. 08/05/20 4:57 pm Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
2. 08/11/20 2:23 pm Ruth Zambrana (rzambran): Rollback to D-WMST Curriculum

Manager for D-WMST PCC Chair
3. 08/12/20 3:21 pm Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
4. 08/12/20 4:13 pm Ruth Zambrana (rzambran): Approved for D-WMST PCC Chair
5. 08/12/20 4:14 pm Ruth Zambrana (rzambran): Approved for D-WMST Chair
6. 11/25/20 1:29 pm Betsy Yuen (myuen): Approved for ARHU Curriculum Manager
7. 01/13/21 5:47 pm Ralph Bauer (bauerr): Approved for ARHU PCC Chair
8. 01/13/21 5:48 pm Ralph Bauer (bauerr): Approved for ARHU Dean
9. 01/29/21 4:43 pm Michael Colson (mcolson): Approved for Academic Affairs Curriculum Manager
10. 02/06/21 4:13 am Valerie Orlando

(vorlando): Approved for Senate PCC Chair

History

1. Oct 18, 2019 by William Bryan (wbryan)
2. Mar 26, 2020 by William Bryan (wbryan)

Women, Gender, and Sexuality ~~Women's~~ Studies Certificate

Program Status	Active
Effective Term	Fall 2020
Catalog Year	2020-2021
Program Level	Undergraduate Program
Program Type	Undergraduate Certificate
Delivery Method	On Campus

Departments

Department
Women's Studies

Colleges

College
Arts and Humanities

Program/Major Code	9Z004
MHEC Inventory Program	Women's Studies
CIP Code	050207 - Women's Studies.
HEGIS	499905
MHEC Recognized Area(s) of Concentration	
Degree(s) Awarded	

Degree Awarded
Certificate, Upper Division

If other, new degree award:

Proposal Contact

Ruth Enid Zambrana

Proposal Summary

To change the name of the program from Women's Studies Certificate to Women, Gender, and Sexuality Studies Certificate

(PCC Log Number 20078)

Program and Catalog Information

Provide the catalog description of the proposed program. As part of the description, please indicate any areas of concentration or specializations that will be offered.

The Women's Studies Certificate Program consists of an integrated, interdisciplinary curriculum on women and gender that is designed to supplement a student's major. Any student in good standing may enroll in the certificate program by declaring their intention to the Women's Studies Department.

Catalog Program Requirements:

To qualify for a certificate in Women's Studies, a student will be required to earn 21 credits in Women's Studies courses, twelve of which must be at the 3xx/4xx level. No more than nine credits that are applied toward a major may be included in the certificate program. No more than nine credit hours may be taken at institutions other than the University of Maryland. Each student must obtain a grade of "C-" or better in each course that is to be counted toward the certificate. An overall GPA of 2.0 in the certificate is required for graduation. A list of courses offered can be found here: http://wmst.umd.edu/academics/courses. Of the 21 credits, courses must be distributed as follows:

Course	Title	Credits
Foundation Courses:		
One of the following courses:		3
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
WMST200	Introduction to WGSS: Gender, Power, and Society	
WMST250	Introduction to WGSS: Art and Culture	

Course	Title	Credits
WMST263	Introduction to Black Women's Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D Bodies in Contention)	
WMST302	Feminist, Critical Race, and Queer Theories	3
Capstone Course		3
WMST488	Senior Seminar	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies	
Any 400-level course from thematic concentrations		
Thematic Concentration 1		12
Total Credits		21

1 Thematic concentrations:

Social Justice

Transnational Politics and Perspectives

Race, Ethnicity and Class

Bodies, Genders and Sexualities

Arts, Technologies, and Cultural Production

Lesbian, Gay, Bisexual, Transgender and Queer Studies

Student Designed

Consult the department for eligible courses in each area.

List the intended student learning outcomes. In an attachment, provide the plan for assessing these outcomes.

Program Modification Information

Impact on current students. It should be specifically acknowledged that students enrolled in the program prior to the effective date of any curriculum change may complete their program under the old requirements if they wish. The courses required must remain available, or suitable substitutions specifically designated.

There are no curricular changes in this proposal, so there is no impact on the students.

Linked Programs

Indicate in the space below all programs to which this program is formally linked (e.g., approved combined bachelor's/master's programs, dual master's programs, or joint-programs with other universities). If the proposed modification will affect the linked program, provide as an attachment the new curriculum for each arrangement and provide supporting correspondence from the director of the linked program.

Renaming Program

Provide a rationale for renaming the program.

The Department of Women's Studies has been renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This change will bring the certificate and department into alignment. In addition, the WMST course prefix is also being changed to WGSS. Once finalized the changes to the program name and course prefix can be updated as needed in the text of the undergraduate catalog.

Supporting Documents

Attachments

WGSS Certificate New Catalog Description.docx

Administrative Documents

Reviewer Comments

Ruth Zambrana (rzambran) (08/11/20 2:23 pm): Rollback: Requires further edits

Betsy Yuen (myuen) (11/24/20 11:35 pm): Attached new catalog description as a Word doc. CIM would not allow me to edit the current catalog description.

Key: 501

WGSS Certificate New Catalog Description:

The Women, Gender and Sexuality Studies Certificate Program offers a flexible, intersectional and interdisciplinary curriculum that centers the study of structural inequity, as grounded in hierarchies of gender, race, sexuality, ethnicity, nationality, and ability. The interdisciplinary nature of the certificate makes it an excellent supplement to a wide cross-section of majors at the University of Maryland. WGSS Certificate students use their certificate to pursue careers in a wide range of areas, including non-profit management, social justice advocacy, law, health-related fields, student affairs, and government and public policy. Any student in good standing may enroll in the certificate program by declaring their intention to the Harriet Tubman Department of Women, Gender, and Sexuality Studies.

UNIVERSITY SENATE | **TRANSMITTAL | #20-21-37**

Senate Programs, Curricula, & Courses (PCC) Committee

Rename the Bachelor of Arts in "Women's Studies" to "Women, Gender, and Sexuality Studies" (PCC 20079)

PRESENTED BY	**Valerie Orlando, Chair, Senate Programs, Curricula, and Courses Committee**
REVIEW DATES	**SEC – February 23, 2021 | SENATE – March 3, 2021**
VOTING METHOD	**In a single vote**
RELEVANT POLICY/DOCUMENT	**NA**
NECESSARY APPROVALS	**Senate, President, University System of Maryland Chancellor, and Maryland Higher Education Commission**

ISSUE

Last year, the Department of Women's Studies within the College of Arts and Humanities was renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This proposal is to rename the Bachelor of Arts in "Women's Studies" to "Women, Gender, and Sexuality Studies." The proposal will not only align the program with the department name, but also reflect the current scope of the program. In 2018, the program modified its curriculum to focus on issues of women, gender, and sexuality in a critical race perspective. Students take foundational courses in gender, race, and queer studies, and specialize in one of several areas, including Social Justice; Transnational Politics and Perspectives; Race, Ethnicity and Class; Bodies, Genders and Sexualities; Arts, Technologies and Cultural Production; Lesbian, Gay, Bisexual, Transgender and Queer Studies, or a student-designed specialization. The new name of the program, therefore, more accurately reflects the inclusiveness of the curriculum.

This proposal was approved by the Senate Programs, Curricula, and Courses committee on February 5, 2021.

RECOMMENDATION(S)

The Senate Committee on Programs, Curricula, and Courses recommends that the Senate approve this name change.

COMMITTEE WORK

The committee considered this proposal for its meeting on February 5, 2021. Ashwini Tambe and Gwen Warman of the Harriet Tubman Department of Women, Gender, and Sexuality Studies, along with ARHU Associate Dean Ralph Bauer, presented the proposal and answered questions. The committee approved the proposal.

ALTERNATIVES

The Senate could decline to approve this new program title.

RISKS

If the Senate declines to approve this program title change, the current program will not adequately describe the coursework and activities of the program.

FINANCIAL IMPLICATIONS

There are no significant financial implications for program title changes.

502: WOMEN, GENDER, AND SEXUALITY STUDIES MAJOR

In Workflow

1. D-WMST Curriculum Manager (gwarman@umd.edu)
2. D-WMST PCC Chair (rzambran@umd.edu)
3. D-WMST Chair (rzambran@umd.edu)
4. ARHU Curriculum Manager (bauerr@umd.edu; myuen@umd.edu)
5. ARHU PCC Chair (acaneque@umd.edu; bauerr@umd.edu; myuen@umd.edu)
6. ARHU Dean (bauerr@umd.edu; myuen@umd.edu)
7. Academic Affairs Curriculum Manager (mcolson@umd.edu)
8. Senate PCC Chair (mcolson@umd.edu; vorlando@umd.edu)
9. University Senate Chair (mcolson@umd.edu)
10. President (mcolson@umd.edu)
11. Chancellor (mcolson@umd.edu)
12. MHEC (mcolson@umd.edu)
13. Provost Office (mcolson@umd.edu)
14. Undergraduate Catalog Manager (lyokoi@umd.edu; wbryan@umd.edu)

Approval Path

1. Wed, 05 Aug 2020 20:58:00 GMT
   Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
2. Tue, 11 Aug 2020 18:28:43 GMT
   Ruth Zambrana (rzambran): Rollback to D-WMST Curriculum Manager for D-WMST PCC Chair
3. Wed, 12 Aug 2020 20:21:14 GMT
   Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
4. Wed, 12 Aug 2020 20:27:59 GMT
   Ruth Zambrana (rzambran): Approved for D-WMST PCC Chair
5. Wed, 12 Aug 2020 20:29:16 GMT
   Ruth Zambrana (rzambran): Approved for D-WMST Chair
6. Wed, 25 Nov 2020 18:29:36 GMT
   Betsy Yuen (myuen): Approved for ARHU Curriculum Manager
7. Wed, 13 Jan 2021 22:47:45 GMT
   Ralph Bauer (bauerr): Approved for ARHU PCC Chair
8. Wed, 13 Jan 2021 22:48:53 GMT
   Ralph Bauer (bauerr): Approved for ARHU Dean
9. Fri, 29 Jan 2021 21:43:44 GMT
   Michael Colson (mcolson): Approved for Academic Affairs Curriculum Manager
10. Sat, 06 Feb 2021 09:13:15 GMT
    Valerie Orlando (vorlando): Approved for Senate PCC Chair

History

1. Aug 4, 2019 by clmig-jwehrheim
2. Oct 18, 2019 by William Bryan (wbryan)
3. Jan 16, 2020 by William Bryan (wbryan)

Date Submitted: Wed, 05 Aug 2020 19:53:49 GMT

Viewing: 502 : Women, Gender, and Sexuality Studies Major
Last approved: Thu, 16 Jan 2020 13:39:48 GMT
Last edit: Mon, 25 Jan 2021 14:58:17 GMT

Changes proposed by: Gwen Warman (gwarman)

Proposed Action

Rename Program

Program Name

Women, Gender, and Sexuality Studies Major

Program Status

Active

Effective Term

Fall 2020

Catalog Year

2020-2021

Program Level

Undergraduate Program

Program Type

Undergraduate Major

Delivery Method

On Campus

Departments

Department
Women's Studies

Colleges

College
Arts and Humanities

Program/Major Code

49905

MHEC Inventory Program

Women's Studies

CIP Code

050207 - Women's Studies.

HEGIS

499905

Degree(s) Awarded

Degree Awarded
Bachelor of Arts

Proposal Contact

Ruth Enid Zambrana

Proposal Summary

To change the name of the degree from Women's Studies to Women, Gender, and Sexuality Studies

(PCC Log Number 20079)

Program and Catalog Information

Provide the catalog description of the proposed program. As part of the description, please indicate any areas of concentration or specializations that will be offered.

Women's Studies is an interdisciplinary field of inquiry analyzing structures of power, especially as they are grounded in gender, race, sexuality, ethnicity, nationality, ability, and other inequalities, and as they configure historical and contemporary struggles for social change. The department sees itself as a force for change in the world, change which leads toward intellectual freedom, social justice, and equality for all people. We do this

by providing an outstanding education in women, gender, race, and sexuality studies through excellent teaching, engaged mentoring, path-breaking research and scholarship, and dedicated community service.

The Women's Studies major offers students a coherent but flexible program of study examining scholarship and theory on the history, status, contributions, and experiences of women in diverse cultural communities; the lives, experiences, identities, and representations of lesbian, gay, bisexual, and transgender people; the significance of gender as a social construct and as an analytical category; and an understanding of race as a structural and historical formation in the context of power.

The B.A. degree prepares students for work in a wide range of areas, including non-profit management, social justice advocacy, law, health-related fields, student affairs, and government and public policy. We seek to develop a new generation of scholars and leaders who, with us, will work to acknowledge, understand, and critically interrogate human differences.

To achieve these goals each student meets every semester with an academic advisor to plan a course of study tailored to individual interests and goals.

In addition to the B.A. in Women's Studies, the department also offers two certificate programs and two minors.

Courses offered by this department may be found under the following acronyms: WMST, LGBT.

Catalog Program Requirements:

Students will earn a total of 37 credit hours, distributed as indicated below. Drawing from approximately fifty courses, many of which are cross-listed with other academic units, students will have the opportunity to design an emphasis within the major relevant to their special interests. A number of courses may count in more than one category. At least 31 credits must be at or above the 3xx level. No course with a grade less than "C-" may be used to satisfy the major. An overall GPA of 2.0 in the major is required for graduation. Students will design their programs in consultation with a Women's Studies advisor.

Course	Title	Credits
College Requirements (https://academiccatalog.umd.edu/undergraduate/colleges-schools/arts-humanities/#collegerequirementstext)		
Introductory Courses		
Select one of the following courses:		3
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
WMST200	Introduction to WGSS: Gender, Power, and Society	
WMST250	Introduction to WGSS: Art and Culture	
WMST263	Introduction to Black Women's Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
Foundation Courses		
WMST301	Introduction to Research in Gender, Race, and Queer Studies	3
WMST302	Feminist, Critical Race, and Queer Theories	3
WMST319	Workshops in Gender, Race, and Queer Studies	3
Thematic Concentrations		
Select at least four courses from the following thematic concentrations (see courses below). [1]		12
Area 1: Social Justice		
Area 2: Transnational Politics and Perspectives		
Area 3: Race, Ethnicity, and Class		
Area 4: Bodies, Genders, and Sexualities		
Area 5: Arts, Technologies, and Cultural Production		
Area 6: Lesbian, Gay, Bisexual, Transgender and Queer Studies		
Capstone		
WMST487	Advanced Research Seminar in Gender, Race, and Queer Studies	3
Select one of the following courses:		3
WMST489	Course WMST489 Not Found	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies	
WMST488	Senior Seminar	
WMST486	Advanced Feminist, Critical Race, and Queer Theories	
Scholarship in Practice		
Select one of the following courses:		3
WMST385	Course WMST385 Not Found	
WMST386	Course WMST386 Not Found	
WMST387	Course WMST387 Not Found	

Professional Development		**1**
WMST497	Professional Development	
Cognate		**3**
Three upper level credits in a course outside LGBT/WMST that provides supporting context for the thematic concentration. [2,3]		
Total Credits		**37**

1 Nine of the 12 Thematic Concentration credits must be upper level. Six of the 12 credits may overlap with courses fulfilling other major requirements. Regardless of the overlap of courses between the categories of the major, students must complete a minimum of 37 credits in the major.

2 Students with a double major will be considered to have fulfilled their cognate requirement.

3 In fulfilling the above requirements, students must complete nine hours of upper-level credit in courses that provide the following perspectives (three hours each): historical, transnational, cultural production.

Social Justice

Course	Title	Credits
WMST250	Introduction to WGSS: Art and Culture	
LGBT285	Homophobia in the U.S. Society in the New Millennium	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
LGBT350	Lesbian, Gay, Bisexual, and Transgender People and Communication	
HIST360/WMST498M	Women and the Civil Rights Movement	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
JOUR/WMST452	Women in the Media	
HIST467	Women and Reform Movements in the Twentieth-Century United States	
WMST468	Feminist Cultural Studies (WMST468C: Feminist and Queer Theatre and Performance Art in Theory and Practice)	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
WMST488	Senior Seminar	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498X: Doing Social Justice Research)	

Transnational Politics and Perspectives

Course	Title	Credits
HIST212	Women in Western Europe 1750-Present	
HIST215	Women in Western Europe to 1750	
ITAL241	Course ITAL241 Not Found	
CMLT/WMST275	World Literature by Women	
GERM/WMST281	Course GERM281 Not Found	
LGBT291	International Perspectives on Lesbian and Gay Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
JAPN316	Women and Japanese Literature: Japanese Literature in Translation	
GERM360	Course GERM360 Not Found	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	
HIST412	History of Women and Gender in Africa	
SPAN412	Women in the Middle Ages: Myths and Daily Life	
JAPN416	Course JAPN416 Not Found	
SPAN433	Women and Culture in Colonial Latin America	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
SPAN459	Latin American Women Writers	

WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)
SPAN471	United States Latina Fiction
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean Context)
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)
HIST492/WMST456	Women and Society in the Middle East
HIST493/WMST453	Course HIST493 Not Found
LGBT/WMST494	Lesbian Communities and Differences
HIST495/WMST455	Women in Medieval Culture and Society
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)

Race, Ethnicity, and Class

Course	Title	Credits
HIST/WMST211	Women in America Since 1880	
WMST263	Introduction to Black Women's Studies	
WMST265	Constructions of Manhood and Womanhood in the Black Community	
WMST267	Introduction to Black Women's Cultural Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
WMST314	Black Women in United States History	
HIST360/WMST498M	Women and the Civil Rights Movement	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	
AAST/WMST420	Asian American Women: The Social Construction of Gender	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST470	Course WMST470 Not Found	
AASP483	Course AASP483 Not Found	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Space and Media Cultures)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean Context)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST488	Senior Seminar	
AASP493	Feminist and Nationalist Thought in Black Communities	
WMST496	African-American Women Filmmakers	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies	

Bodies, Gender and Sexualities

Course	Title	Credits
HIST213	History of Sexuality in America	
WMST263	Introduction to Black Women's Studies	
WMST265	Constructions of Manhood and Womanhood in the Black Community	
WMST267	Introduction to Black Women's Cultural Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
BSCI342/WMST326	Biology of Reproduction	
PSYC/WMST336	Psychology of Women	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	

LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)
HLTH/WMST471	Women's Health
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean as Context)
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)
WMST488	Senior Seminar
JWST492/WMST498W/ LGBT448W	Sex, Gender, and Jewish Identity
LGBT/WMST494	Lesbian Communities and Differences
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)

Arts, Technologies, and Cultural Production

Course	Title	Credits
FREN241	Women Writers of French Expression in Translation	
WMST250	Introduction to WGSS: Art and Culture	
ENGL250/WMST255	Reading Women Writing	
LGBT265	LGBTQ+ Literatures and Media	
WMST267	Introduction to Black Women's Cultural Studies	
CMLT/WMST275	World Literature by Women	
GERM/WMST281	Course GERM281 Not Found	
LGBT291	International Perspectives on Lesbian and Gay Studies	
LGBT327	Lesbian, Gay, Bisexual, and Transgender Film and Video	
LGBT359	Special Topics in Lesbian, Gay, Bisexual, and Transgender Literatures	
GERM360	Course GERM360 Not Found	
ENGL408	Literature by Women Before 1800	
FILM423	Women and French Cinema	
ENGL/WMST444	Feminist Critical Theory	
ENGL/WMST448	Literature by Women of Color	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
ENGL458	Literature by Women After 1800	
SPAN459	Latin American Women Writers	
ENGL/LGBT465	Theories of Sexuality and Literature	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST468	Feminist Cultural Studies (WMST468C: Feminist and Queer Theatre and Performance Art in Theory and Practice)	
WMST470	Course WMST470 Not Found	
SPAN471	United States Latina Fiction	
WMST488	Senior Seminar (WMST488P: Gendering Postmodern Performance)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST496	African-American Women Filmmakers	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498O: Women and Film)	
LGBT/WMST494	Lesbian Communities and Differences	

Lesbian, Gay, Bisexual, Transgender and Queer Studies

Course	Title	Credits
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
LGBT265	LGBTQ+ Literatures and Media	
LGBT285	Homophobia in the U.S. Society in the New Millennium	
LGBT291	International Perspectives on Lesbian and Gay Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
LGBT327	Lesbian, Gay, Bisexual, and Transgender Film and Video	
LGBT350	Lesbian, Gay, Bisexual, and Transgender People and Communication	
LGBT359	Special Topics in Lesbian, Gay, Bisexual, and Transgender Literatures	
WMST410	Women of the African Diaspora	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
LGBT465	Theories of Sexuality and Literature	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean as Context)	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
JWST492/WMST498W	Sex, Gender, and Jewish Identity	
LGBT/WMST494	Lesbian Communities and Differences	

List the intended student learning outcomes. In an attachment, provide the plan for assessing these outcomes.

Learning Outcomes
An ability to critically analyze issues related to women, race/ethnicity, gender, sexuality, and class
A demonstrated engagement with the practices of feminist, critical race, and LGBTQ social action
An ability to do independent research using appropriate methods
An ability to use effective forms of communication

Program Modification Information

Impact on current students. It should be specifically acknowledged that students enrolled in the program prior to the effective date of any curriculum change may complete their program under the old requirements if they wish. The courses required must remain available, or suitable substitutions specifically designated.

This proposal includes no curricular changes and no impacts on students.

Linked Programs

Renaming Program

Provide a rationale for renaming the program.

The Department of Women's Studies has been renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This change will bring the major and department into alignment. In addition, the WMST course prefix is also being changed to WGSS. Once finalized the changes to the program name and course prefix can be updated as needed in the text of the undergraduate catalog.

Supporting Documents

Attachments

WGSS major 4-year sample plan.xlsx
WGSS BA New Catalog Description.docx

Reviewer Comments

Ruth Zambrana (rzambran) (Tue, 11 Aug 2020 18:28:43 GMT): Rollback: edits required

Betsy Yuen (myuen) (Wed, 25 Nov 2020 04:33:28 GMT): Attached new catalog description as a separate file. CIM will not allow me to edit the current catalog description.

Key: 502

Program Change Request

Date Submitted: 08/05/20 3:53 pm

Viewing: **502 : Women, Gender, and Sexuality**

~~Women's~~ Studies Major

Last approved: 01/16/20 8:39 am

Last edit: 01/25/21 9:58 am

Changes proposed by: Gwen Warman (gwarman)

Catalog Pages Using this Program

Women's Studies Major

Proposed Action **Rename Program**

Program Name

In Workflow

1. D-WMST Curriculum Manager
2. D-WMST PCC Chair
3. D-WMST Chair
4. ARHU Curriculum Manager
5. ARHU PCC Chair
6. ARHU Dean
7. Academic Affairs Curriculum Manager
8. Senate PCC Chair
9. University Senate Chair
10. President
11. Chancellor
12. MHEC
13. Provost Office
14. Undergraduate Catalog Manager

Approval Path

1. 08/05/20 4:58 pm Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
2. 08/11/20 2:28 pm Ruth Zambrana (rzambran): Rollback to D-WMST Curriculum

Manager for D-WMST PCC Chair
3. 08/12/20 4:21 pm Gwen Warman (gwarman): Approved for D-WMST Curriculum Manager
4. 08/12/20 4:27 pm Ruth Zambrana (rzambran): Approved for D-WMST PCC Chair
5. 08/12/20 4:29 pm Ruth Zambrana (rzambran): Approved for D-WMST Chair
6. 11/25/20 1:29 pm Betsy Yuen (myuen): Approved for ARHU Curriculum Manager
7. 01/13/21 5:47 pm Ralph Bauer (bauerr): Approved for ARHU PCC Chair
8. 01/13/21 5:48 pm Ralph Bauer (bauerr): Approved for ARHU Dean
9. 01/29/21 4:43 pm Michael Colson (mcolson): Approved for Academic Affairs Curriculum Manager
10. 02/06/21 4:13 am Valerie Orlando

(vorlando): Approved for Senate PCC Chair

History

1. Aug 4, 2019 by clmig-jwehrheim
2. Oct 18, 2019 by William Bryan (wbryan)
3. Jan 16, 2020 by William Bryan (wbryan)

Women, Gender, and Sexuality ~~Women's~~ Studies Major

Program Status	Active
Effective Term	Fall 2020
Catalog Year	**2020-2021**
Program Level	Undergraduate Program
Program Type	Undergraduate Major
Delivery Method	On Campus

Departments

Department
Women's Studies

Colleges

College
Arts and Humanities

Program/Major Code	49905
MHEC Inventory Program	Women's Studies
CIP Code	050207 - Women's Studies.
HEGIS	499905
MHEC Recognized Area(s) of	

Concentration

Degree(s) Awarded

Degree Awarded
Bachelor of Arts

If other, new degree award:

Proposal Contact

Ruth Enid Zambrana

Proposal Summary

To change the name of the degree from Women's Studies to Women, Gender, and Sexuality Studies

(PCC Log Number 20079)

Program and Catalog Information

Provide the catalog description of the proposed program. As part of the description, please indicate any areas of concentration or specializations that will be offered.

Women's Studies is an interdisciplinary field of inquiry analyzing structures of power, especially as they are grounded in gender, race, sexuality, ethnicity, nationality, ability, and other inequalities, and as they configure historical and contemporary struggles for social change. The department sees itself as a force for change in the world, change which leads toward intellectual freedom, social justice, and equality for all people. We do this by providing an outstanding education in women, gender, race, and sexuality studies through excellent teaching, engaged mentoring, path-breaking research and scholarship, and dedicated community service.
The Women's Studies major offers students a coherent but flexible program of study examining scholarship and theory on the history, status, contributions, and experiences of women in diverse cultural communities; the lives, experiences, identities, and representations of lesbian, gay, bisexual, and transgender people; the significance of gender as a social construct and as an analytical category; and an understanding of race as a structural and historical formation in the context of power.
The B.A. degree prepares students for work in a wide range of areas, including non-profit management, social justice advocacy, law, health-related fields, student affairs, and government and public policy. We seek to develop a new generation of scholars and leaders who, with us, will work to acknowledge, understand, and critically interrogate human differences.
To achieve these goals each student meets every semester with an academic advisor to plan a course of study tailored to individual interests and goals.
In addition to the B.A. in Women's Studies, the department also offers two certificate programs and two minors.
Courses offered by this department may be found under the following acronyms: WMST, LGBT.

Catalog Program Requirements:

Students will earn a total of 37 credit hours, distributed as indicated below. Drawing from approximately fifty courses, many of which are cross-listed with other academic units, students will have the opportunity to design an emphasis within the major relevant to their special interests. A number of courses may count in more than one category. At least 31 credits must be at or above the 3xx level. No course with a grade less than "C-" may be used to satisfy the major. An overall GPA of 2.0 in the major is required for graduation. Students will design their programs in consultation with a Women's Studies advisor.

Course	Title	Credits
College Requirements		
Introductory Courses		
Select one of the following courses:		3
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
WMST200	Introduction to WGSS: Gender, Power, and Society	
WMST250	Introduction to WGSS: Art and Culture	
WMST263	Introduction to Black Women's Studies	

Course	Title	Credits
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
Foundation Courses		
WMST301	Introduction to Research in Gender, Race, and Queer Studies	3
WMST302	Feminist, Critical Race, and Queer Theories	3
WMST319	Workshops in Gender, Race, and Queer Studies	3
Thematic Concentrations		
Select at least four courses from the following thematic concentrations (see courses below). 1		12
Area 1: Social Justice		
Area 2: Transnational Politics and Perspectives		
Area 3: Race, Ethnicity, and Class		
Area 4: Bodies, Genders, and Sexualities		
Area 5: Arts, Technologies, and Cultural Production		
Area 6: Lesbian, Gay, Bisexual, Transgender and Queer Studies		
Capstone		
WMST487	Advanced Research Seminar in Gender, Race, and Queer Studies	3
Select one of the following courses:		3
WMST489	Course WMST489 Not Found	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies	
WMST488	Senior Seminar	
WMST486	Advanced Feminist, Critical Race, and Queer Theories	
Scholarship in Practice		
Select one of the following courses:		3
WMST385	Course WMST385 Not Found	
WMST386	Course WMST386 Not Found	
WMST387	Course WMST387 Not Found	
Professional Development		1
WMST497	Professional Development	
Cognate		3
Three upper level credits in a course outside LGBT/WMST that provides supporting context for the thematic concentration. 2,3		
Total Credits		37

1Nine of the 12 Thematic Concentration credits must be upper level. Six of the 12 credits may overlap with courses fulfilling other major requirements. Regardless of the overlap of courses between the categories of the major, students must complete a minimum of 37 credits in the major.

2Students with a double major will be considered to have fulfilled their cognate requirement.

3In fulfilling the above requirements, students must complete nine hours of upper-level credit in courses that provide the following perspectives (three hours each): historical, transnational, cultural production.

Social Justice

Course	Title	Credits
WMST250	Introduction to WGSS: Art and Culture	
LGBT285	Homophobia in the U.S. Society in the New Millennium	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
LGBT350	Lesbian, Gay, Bisexual, and Transgender People and Communication	
HIST360/WMST498M	Women and the Civil Rights Movement	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
JOUR/WMST452	Women in the Media	
HIST467	Women and Reform Movements in the Twentieth-Century United States	
WMST468	Feminist Cultural Studies (WMST468C: Feminist and Queer Theatre and Performance Art in Theory and Practice)	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
WMST488	Senior Seminar	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498X: Doing Social Justice Research)	

Transnational Politics and Perspectives

Course	Title	Credits
HIST212	Women in Western Europe 1750-Present	
HIST215	Women in Western Europe to 1750	
ITAL241	Course ITAL241 Not Found	
CMLT/WMST275	World Literature by Women	
GERM/WMST281	Course GERM281 Not Found	
LGBT291	International Perspectives on Lesbian and Gay Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
JAPN316	Women and Japanese Literature: Japanese Literature in Translation	
GERM360	Course GERM360 Not Found	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	
HIST412	History of Women and Gender in Africa	

Course	Title	Credits
SPAN412	Women in the Middle Ages: Myths and Daily Life	
JAPN416	Course JAPN416 Not Found	
SPAN433	Women and Culture in Colonial Latin America	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
SPAN459	Latin American Women Writers	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
SPAN471	United States Latina Fiction	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean Context)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
HIST492/WMST456	Women and Society in the Middle East	
HIST493/WMST453	Course HIST493 Not Found	
LGBT/WMST494	Lesbian Communities and Differences	
HIST495/WMST455	Women in Medieval Culture and Society	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	

Race, Ethnicity, and Class

Course	Title	Credits
HIST/WMST211	Women in America Since 1880	
WMST263	Introduction to Black Women's Studies	
WMST265	Constructions of Manhood and Womanhood in the Black Community	
WMST267	Introduction to Black Women's Cultural Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
WMST314	Black Women in United States History	
HIST360/WMST498M	Women and the Civil Rights Movement	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	
AAST/WMST420	Asian American Women: The Social Construction of Gender	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST470	Course WMST470 Not Found	

Course	Title	Credits
AASP483	Course AASP483 Not Found	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Space and Media Cultures)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean Context)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST488	Senior Seminar	
AASP493	Feminist and Nationalist Thought in Black Communities	
WMST496	African-American Women Filmmakers	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies	

Bodies, Gender and Sexualities

Course	Title	Credits
HIST213	History of Sexuality in America	
WMST263	Introduction to Black Women's Studies	
WMST265	Constructions of Manhood and Womanhood in the Black Community	
WMST267	Introduction to Black Women's Cultural Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
BSCI342/WMST326	Biology of Reproduction	
PSYC/WMST336	Psychology of Women	
WMST360	Caribbean Women	
WMST410	Women of the African Diaspora	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
HLTH/WMST471	Women's Health	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean as Context)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST488	Senior Seminar	
JWST492/WMST498W/LGBT448W	Sex, Gender, and Jewish Identity	

Course	Title	Credits
LGBT/WMST494	Lesbian Communities and Differences	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	

Arts, Technologies, and Cultural Production

Course	Title	Credits
FREN241	Women Writers of French Expression in Translation	
WMST250	Introduction to WGSS: Art and Culture	
ENGL250/WMST255	Reading Women Writing	
LGBT265	LGBTQ+ Literatures and Media	
WMST267	Introduction to Black Women's Cultural Studies	
CMLT/WMST275	World Literature by Women	
GERM/WMST281	Course GERM281 Not Found	
LGBT291	International Perspectives on Lesbian and Gay Studies	
LGBT327	Lesbian, Gay, Bisexual, and Transgender Film and Video	
LGBT359	Special Topics in Lesbian, Gay, Bisexual, and Transgender Literatures	
GERM360	Course GERM360 Not Found	
ENGL408	Literature by Women Before 1800	
FILM423	Women and French Cinema	
ENGL/WMST444	Feminist Critical Theory	
ENGL/WMST448	Literature by Women of Color	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
ENGL458	Literature by Women After 1800	
SPAN459	Latin American Women Writers	
ENGL/LGBT465	Theories of Sexuality and Literature	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST468	Feminist Cultural Studies (WMST468C: Feminist and Queer Theatre and Performance Art in Theory and Practice)	
WMST470	Course WMST470 Not Found	
SPAN471	United States Latina Fiction	
WMST488	Senior Seminar (WMST488P: Gendering Postmodern Performance)	
WMST488	Senior Seminar (WMST488T: Girlhood: A Transnational Historical Perspective)	
WMST496	African-American Women Filmmakers	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498N: Religion, Militarism and Gender)	
WMST498	Advanced Special Topics in Women, Gender, and Sexuality Studies (WMST498O: Women and Film)	

Course	Title	Credits
LGBT/WMST494	Lesbian Communities and Differences	

Lesbian, Gay, Bisexual, Transgender and Queer Studies

Course	Title	Credits
LGBT200	Introduction to Lesbian, Gay, Bisexual, and Transgender Studies	
LGBT265	LGBTQ+ Literatures and Media	
LGBT285	Homophobia in the U.S. Society in the New Millennium	
LGBT291	International Perspectives on Lesbian and Gay Studies	
WMST298	Special Topics in Women, Gender, and Sexuality Studies (WMST298D: Women's Bodies in Contention)	
LGBT327	Lesbian, Gay, Bisexual, and Transgender Film and Video	
LGBT350	Lesbian, Gay, Bisexual, and Transgender People and Communication	
LGBT359	Special Topics in Lesbian, Gay, Bisexual, and Transgender Literatures	
WMST410	Women of the African Diaspora	
LGBT448	Special Topics in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT448B: Queer Space and Media Cultures)	
LGBT465	Theories of Sexuality and Literature	
WMST468	Feminist Cultural Studies (WMST468B: Sonic Representations of Gender and Sexuality in the African Diaspora)	
WMST488	Senior Seminar (WMST488D: Feminist Questions Queer Research: The Caribbean as Context)	
LGBT488	Seminar in Lesbian, Gay, Bisexual, and Transgender Studies (LGBT488D: Queer Theory and the Politics of Death)	
JWST492/WMST498W	Sex, Gender, and Jewish Identity	
LGBT/WMST494	Lesbian Communities and Differences	

Sample plan. Provide a term by term sample plan that shows how a hypothetical student would progress through the program to completion. It should be clear the length of time it will take for a typical student to graduate. For undergraduate programs, this should be the four-year plan.

List the intended student learning outcomes. In an attachment, provide the plan for assessing these outcomes.

Learning Outcomes
An ability to critically analyze issues related to women, race/ethnicity, gender, sexuality, and class
A demonstrated engagement with the practices of feminist, critical race, and LGBTQ social action
An ability to do independent research using appropriate methods

Learning Outcomes
An ability to use effective forms of communication

Program Modification Information

Impact on current students. It should be specifically acknowledged that students enrolled in the program prior to the effective date of any curriculum change may complete their program under the old requirements if they wish. The courses required must remain available, or suitable substitutions specifically designated.

This proposal includes no curricular changes and no impacts on students.

Linked Programs

Indicate in the space below all programs to which this program is formally linked (e.g., approved combined bachelor's/master's programs, dual master's programs, or joint-programs with other universities). If the proposed modification will affect the linked program, provide as an attachment the new curriculum for each arrangement and provide supporting correspondence from the director of the linked program.

Renaming Program

Provide a rationale for renaming the program.

The Department of Women's Studies has been renamed the Harriet Tubman Department of Women, Gender, and Sexuality Studies. This change will bring the major and department into alignment. In addition, the WMST course prefix is also being changed to WGSS. Once finalized the changes to the program name and course prefix can be updated as needed in the text of the undergraduate catalog.

Supporting Documents

Attachments

WGSS major 4-year sample plan.xlsx

WGSS BA New Catalog Description.docx

Administrative Documents

Reviewer

Comments

Ruth Zambrana (rzambran) (08/11/20 2:28 pm): Rollback: edits required

Betsy Yuen (myuen) (11/24/20 11:33 pm): Attached new catalog description as a separate file.

CIM will not allow me to edit the current catalog description.

Key: 502

Women, Gender, and Sexuality Studies Four Year Academic Plan

	Fall	Spring
Benchmark 1 Requirements	**Year 1**	
One WGSS course	ENGL 101 (AW)* {Min. Grade: C-}	Natural Sciences (NS)***
	Math (MA)*	Analytic Reasoning (AR)
	History/Social Sciences (HS)***	Humanities (HU)***
	ARHU 158	WGSS Introductory Course
	Elective 1xx-4xx	Elective 1xx-4xx
Benchmark Review _____ (sem.)	*Must attempt by 30 cr.	
Benchmark 2 Requirements	**Year 2**	
1. An additional WGSS course	Humanities (HU)***	Oral Communication (OC)
2. WGSS Introductory Course: LGBT 200, WGSS 200,	Global Engagement # 1	Scholarship in Practice (SP) #1***
WGSS 250, WGSS 263, or WGSS 298D	WGSS 301	Global Engagement #2
	Elective 1xx-4xx	WGSS Thematic 1xx-4xx
Benchmark Review _____ (sem.)	Elective 1xx-4xx	Elective 1xx-4xx
Year 3		
	Natural Science Lab (NL)*** (4 credits)	History/Social Sciences (HS)***
	WGSS 302	WGSS Thematic 3xx-4xx
	WGSS 319	WGSS 358, 368, or 378
	Scholarship in Practice (SP) #2***	Cognate 3xx-4xx
	Elective 1xx-4xx	Elective 1xx-4xx
Acknowledgement of Benchmarks	**Year 4**	
Advisor Initials_____	Professional Writing (PW)	WGSS Thematic 3xx-4xx
	WGSS Thematic 3xx-4xx	WGSS 487
	WGSS 486, WGSS 489, LGBT 488, or WGSS 488	WGSS 497 (1 credit)
	Elective 3xx-4xx	Elective 3xx-4xx
Student Initials_____	Elective 3xx-4xx	Elective 3xx-4xx
		Elective 1xx-4xx (1 credit)

Notes:

- **WGSS is a 37 cr. Major; see WGSS advisor for details**
- **Minimum Grade Requirement: Major courses & ENGL 101= C-; Arts and Humanities (ARHU) and General Education = D- . (Subject to change). See current catalog for details.**
- **In order to graduate, you must have <u>at least</u> a 2.0 G.P.A. Students sometimes exceed 120 credits in order to fulfill all graduation requirements.**
- **If you repeat a course in which you have received at least a "D -", you will <u>not</u> receive any additional credit.**
- ***All students must complete two Distributive Studies courses that are approved for I-series courses. The Understanding Plural Societies and Cultural Competence courses may also fulfill Distributive Studies categories.**

NOTE: You must meet with and submit this form to an ARHU advisor (1120 KEY) within 90 days of your major advisor's signature/date.

Name _____ UID _____ Matriculation date _____

(Please print) (Semester started at UM)

College of Arts and Humanities & Women, Gender, and Sexuality Studies
Academic Plan Checklist

*** = NEEDS TO COMPLETE**

Major Code: 49905

General Education Requirements

Fundamental Studies

Requirements: 15 credits/5 courses	Course	Sem.	Grade
Academic Writing (AW) {Min. Grade: C-}			
Professional Writing (PW)			
Oral Comm. (OC)			
Math (MA)			
Analytic Reasoning (AR)			

Distributive Studies

Requirements: 25 credits/8 courses	Course	Sem.	Grade
Natural Science Lab (NL)			
Natural Sciences (NS)			
History/Social Sciences (HS)			
History/Social Sciences (HS)			
Humanities (HU)			
Humanities (HU)			
Scholarship in Practice (SP)			
Scholarship in Practice SP (non major)			

I-Series (May overlap with Distributive Studies)

Requirements: 6 credits/2 courses	Course	Sem.	Grade
I-Series (IS)			
I-Series (IS)			

Diversity (May overlap with Distributive Studies)

Requirements: 4-6 credits/2 courses	Course	Sem.	Grade
Understanding Plural Soc. (UP)			
Understanding Plural Soc. (UP) or Cultural Competency (CC)			

ARTS AND HUMANITIES

Global Engagement	Course	Sem.	Grade
Language Sequence, Exemption Score, or Study Abroad Contract			

ARHU 158 or equivalent (if applicable)			

45 Upper Level (3xx -4xx) Credit Requirement:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

Major Requirements

Requirements	Course	Sem.	Grade
I. Introductory Course (3 credits)			
WGSS 200, WGSS 250, LGBT 200, WGSS 263, or WGSS 298D			
II. Foundational Courses (9 credits)			
WGSS 301			
WGSS 302			
WGSS 319			
III. Thematic Concentration (Select a Concentration with your WGSS Advisor; 12 credits)			
DEPT 1xx-4xx (#1)			
DEPT 3xx-4xx (#2)			
DEPT 3xx-4xx (#3)			
DEPT 3xx-4xx (#4)			
IV. Capstone (6 credits)			
WGSS 487			
WGSS 489, LGBT 488, WGSS 488, or WGSS 486			
V. WGSS/LGBT Scholarship in Practice (3 credits)			
WGSS 358, 368, or 378			
VI. Professional Development (1 credit)			
WGSS 497			
VII. Cognate (3 credits)			
DEPT 3xx-4xx (must be outside of WGSS/LGBT)			

Elective credits as needed in order to earn at least 37 credits in the major (6 of the 12 Thematic Concentration credits may overlap with courses that fulfill other major requirements. Regardless of overlap between the categories of the major, students must complete a minimum of 37 credits in the major).

Additionally, in fulfilling the above requirements, students must complete 9 hours of 3xx-4xx level credit in courses that provide the following perspectives (3 credits each): historical, transnational, cultural production.

Major Advisor's Notes:

Major Advisor Signature/Stamp/Date:

To complete change major process, go to ARHU - Student Affairs 1120 FSK KEY, 301-405-2108

ARHU Credit Audit:

If you successfully complete your _____ semester courses, with _____ , you will need _____ *new* credits to reach 120 (_____ new credits to reach 150); of these, you will need _____ *new* upper level credits to reach 45.

(# of credits/ upper level credits)

College Advisor Signature/Stamp/Date: **2.** _____

Student Signature /Date: **3.** _____

New Catalog Description:

Rooted in the academic and political histories of Women's Studies, the Women, Gender, and Sexuality Studies B.A. centers the study of structural inequity, as grounded in intersecting hierarchies of gender, race, sexuality, ethnicity, nationality, and ability. The WGSS major provides students with an opportunity to develop a scholarly and applied understanding of social justice, honing a radical vision for political, economic, and societal freedom. Students will take courses informed by intersectional scholarship and methodologies from the arts and humanities, social sciences, public health, psychology, government, and public policy, among others. Women, Gender and Sexuality Studies offers students a flexible program of study in which there is focused attention on building students' analysis and critique of the most pressing issues of the day, such as anti-black racism, reproductive justice, discriminatory practices against lesbian, gay, bisexual and transgender people, xenophobia and antisemitism, silencing of indigenous communities and structural exclusion by practices of ageism and ableism.

Our introductory courses, which offer the option of focusing on social sciences or artistic methods, equip students with the tools and vocabulary to both analyze and respond creatively to social problems. Upper-division courses, which are usually run as small-size seminars, focus on building students' research skills for pursuing topics of special interest. The final year of the B.A. degree specifically prepares students for jobs through guided internship courses that involve regular interaction with both a worksite supervisor and an assigned faculty member. Senior-level seminars focus on the development of skills and knowledge that can inform careers in a wide range of areas, including non-profit management, social justice advocacy, digital and media expression, law, health-related fields, student affairs, academia, and government and public policy. We seek to shape a new generation of scholars and leaders who, with us, will work to acknowledge, understand, and critically interrogate hierarchies of difference, while imagining more just futures.

Courses offered by this department may be found under the following acronyms: WGSS, LGBT.

UNIVERSITY SENATE | TRANSMITTAL | #20-21-06

Senate Faculty Affairs Committee

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy

PRESENTED BY	**Will Reed, Chair**
REVIEW DATES	**SEC – February 23, 2021 | SENATE – March 3, 2021**
VOTING METHOD	**In a single vote**
RELEVANT POLICY/DOCUMENT	**II-4.00(A) – University of Maryland Policies and Procedures Governing Faculty Grievances**
NECESSARY APPROVALS	**Senate, President**

ISSUE

In August 2020, a proposal was submitted seeking to alter the administration of the adjudication phase of the University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]). The proposal asks that the University Senate ("Senate") consider placing responsibility for the adjudication phase at the level of the University rather than with the Executive Secretary & Director of the Senate ("Senate Director"). The proposal noted that the details of logistics and management of the grievance process do not require the expertise of the Senate Director, and stated that the strict timeline for the adjudication process established in the policy significantly diminishes the Senate Director's ability to carry out duties of the Senate. On August 19, 2020, the Senate Executive Committee (SEC) voted to charge the Faculty Affairs Committee with review of the proposal.

RECOMMENDATION(S)

The Faculty Affairs Committee recommends that its proposed revisions to the University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]) be revised as shown immediately following this report.

The Faculty Affairs Committee recommends that the Senate Director should develop a pool of individuals who may be designated to administer the adjudication process, with individuals who work outside of the President's and Provost's Offices. The Senate Director should establish procedures for assigning designees to specific grievance cases in order to ensure that there are no associated conflicts of interest.

The Faculty Affairs Committee recommends that the Senate Director should develop processes and materials to ensure that each potential designee is appropriately trained on the policy and procedures and on their responsibilities in coordinating and advising the Faculty Grievance Hearing Board.

COMMITTEE WORK

The Faculty Affairs Committee (FAC) began reviewing its charge at its meeting on September 18, 2020. The committee met with the proposer, Senate Director, Associate Vice President for Finance and Personnel; consulted with representatives from the Office of Faculty Affairs, the President's Office, University Human Resources, and the Faculty Ombuds Officer; reviewed current University policy and University System of Maryland (USM) policy; reviewed past Senate action on the policy; reviewed processes at Big 10 and other peer institutions; and reviewed how similar adjudication processes at the University of Maryland are administered.

The FAC found that there is value in having the Senate as an organization strongly involved in the grievance process, as it is an independent body that is perceived to be without bias. The committee also recognized that the adjudication process has tight timelines which must be attended to, and the time commitment and attention needed for the Senate Director to administer the grievance process can put the Senate's work at risk. The current policy leaves no flexibility to have an individual step in to administer the process if the Director is unavailable due to Senate obligations, illness, or leave.

After considering various options for which administrative unit is best suited to administer the adjudication process, including the Senate, Provost's Office, and President's Office, the FAC agreed to revise the policy to indicate that the Senate Director "or designee" is responsible for coordinating and advising the Faculty Grievance Hearing Board. In this approach, the Senate Director would maintain ultimate responsibility, but would be able to delegate the responsibility as needed to ensure that both the grievance process and the Senate's work are attended to. The committee developed administrative recommendations to encourage the development of procedures and processes that articulate the specifics of the new structure, including the new process to create a pool of individuals from which the designees may be drawn, in order to avoid any real or perceived conflicts of interest.

The FAC developed revisions to two timelines in the adjudication process in order to minimize administrative burdens while ensuring a fair process for all parties. The committee also developed revisions to establish a process for written responses and exceptions.

The FAC consulted with the Office of General Counsel on its proposed recommendations in February 2021. After due consideration, the FAC voted to approve its recommendations and revisions to the policy through an email vote concluding on February 19, 2021.

ALTERNATIVES

The Senate could choose not to accept the recommendations. However, the University would lose an opportunity to address the problems identified in the proposal and by the committee, including the risks to the Senate's work in having the Senate Director as the only individual able to administer the formal grievance adjudication process. The University would also lose the opportunity to establish additional procedural elements to ensure a fair process for all parties.

RISKS

There are no known risks to the University in adopting these recommendations.

FINANCIAL IMPLICATIONS

There are no known financial implications to adopting these recommendations.

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy

2020-2021 Committee Members

Will Reed (Chair)
John Bertot (Ex-Officio Provost's Rep)
Michele Eastman (Ex-Officio President's Rep)
Marc Pound (Ex-Officio CUSF Rep)
Jackie Richmond (Ex-Officio Director of UHR Rep)
Ellin Scholnick (Ex-Officio Ombuds Officer)
Saverio Giovacchini (Faculty Senator)
Tracy Huard (Faculty Senator)
Agisilaos Iliadis (Faculty Senator)
Nicole LaRonde (Faculty Senator)
Mark Fuge (Faculty)
Jessica O'Hara (Faculty)
Kevin Roy (Faculty)
Beth St. Jean (Faculty)
Wendy Stickle (Faculty)
Donald Webster (Faculty)
Mary Shelley (Staff)
Naette Lee (Graduate Student)
Autumn Perkey (Graduate Student)
Shawn Nijjar (Undergraduate Student)

Date of Submission

February 2021

BACKGROUND

In August 2020, a proposal was submitted seeking to alter the administration of the adjudication phase of the University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]). The proposal asks that the University Senate ("Senate") consider placing responsibility for the adjudication phase at the level of the University rather than with the Executive Secretary & Director of the Senate ("Senate Director"). The proposal noted that the details of logistics and management of the grievance process do not require the expertise of the Senate Director, and stated that the strict timeline for the adjudication process established in the policy significantly diminishes the Senate Director's ability to carry out duties of the Senate. On August 19, 2020, the Senate Executive Committee (SEC) voted to charge the Faculty Affairs Committee with review of the proposal (Appendix 1).

CURRENT PRACTICE

The University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]) ("the Policy") establishes informal and formal processes for considering grievances between the University and faculty members. Grievances may be submitted by faculty on the grounds that an action or inaction was unfair, discriminatory, or improperly reached.

The informal processes detailed in the Policy are administered by the Faculty Ombuds Officer, who serves as a neutral party to provide confidential and informal assistance to faculty as they seek to resolve concerns related to their work. The Faculty Ombuds Officer is charged to be impartial and cannot advocate for any party.

In cases where informal resolution fails, the grievant may submit the grievance for adjudication. The adjudication process involves a review by a Faculty Grievance Hearing Board ("the Board"), which is composed of Faculty Senators and formed by the Senate Chair-Elect. The process is

administered by the Senate Director; the Policy indicates that the "Executive Secretary and Director of the Senate shall serve as the coordinator of and advisor to the Faculty Hearing Board" and that the Director's office is assigned responsibilities related to record-keeping, notification of the parties, and monitoring compliance with the procedures.

Administration of the grievance process requires managing logistics; coordinating between parties, administrators, offices, and the Board; and advising on policy and process. There are many logistical tasks given to the Senate Director by the Policy, including scheduling meetings, hearings, and witnesses and organizing and disseminating materials to all of the parties and the Board. Serving as the coordinator of the Board, the Senate Director develops, disseminates, and maintains records for the Board; coordinates with the Office of General Counsel (OGC) to ensure the Board has access to legal advice and can find answers to questions from a legal perspective; and communicates with the parties on behalf of the Board and its Chair, after consulting with the OGC. The Senate Director also plays a critical role in advising the Board and its Chair on the scope and limitations of the Policy, and works to ensure their consideration of the case is in alignment with the Policy. In addition, the Senate Director collaborates with the Board Chair and the Board members in the process of drafting, reviewing, and revising the final report of the Board.

COMMITTEE WORK

The Faculty Affairs Committee (FAC) began reviewing its charge at its meeting on September 18, 2020. It reviewed the proposal, the current University policy, and the University System of Maryland (USM) Policy on Faculty Grievances (II-4.00). It also reviewed how similar processes at Big 10 and other peer institutions are administered, as well as how the University of Maryland (UMD) manages and administers other existing adjudication processes such as termination, suspension, and scholarly misconduct processes. During its review, it met with the proposer, a Past Senate Chair, as well as with the Senate Director, and the Associate Vice President for Finance & Personnel in the Provost's Office, who is the Senate Director's immediate supervisor. It also consulted with its ex-officio representatives from the Office of Faculty Affairs, the President's Office, University Human Resources, and the Faculty Ombuds Officer throughout its review. In addition, the FAC consulted with the Office of General Counsel (OGC) on its proposed recommendations in February 2021.

In the course of its review, the FAC learned that placing responsibility for the administration of the adjudication process with the Senate Director diminishes their ability to carry out the core functions of the Senate. The adjudication process places a significant administrative burden on the Senate Director, through timelines that must be attended to and considerable responsibilities related to coordinating with the Board, its Chair, the OGC, and the parties. The Senate Director's core obligation is to the Senate and its work, but the time commitment and attention needed to administer the grievance process can put the Senate's work at risk. In addition, the size of the Senate Office Staff and the skillsets required for the Senate Director's work with the Senate, the Senate Leadership, and the University administration make it difficult to redistribute their responsibilities to accommodate the intense needs of the grievance adjudication process, especially when cases arise during peak times for the Senate, such as during the spring semester elections period.

The FAC also raised concerns about the fact that the Policy identifies only one individual who is able to administer the process. Since the Policy names a specific individual, there is no flexibility to have another individual step in to administer the process if the Senate Director were unavailable due to illness or on leave. Additionally, if multiple grievances were submitted at the same time or in

an overlapping fashion, it would be impossible for one individual to manage both or all grievances in accordance with the Policy while still attending to the business of the Senate.

The workload involved in administering the formal grievance adjudication process involves only one to two cases per year, but cases typically involve a significant number of work hours when they arise. The number of cases is entirely dependent on the nature of the cases themselves; the Faculty Ombuds Officer typically sees about 50 grievance complaints per year and the cases that escalate to the adjudication process are the most difficult and complex of those cases. Formal grievances may be submitted at any time during the academic year, and must be attended to immediately. The Policy states that the grievance procedure calendar excludes the time period from the end of the spring semester to the start of the following fall semester, which requires that all cases be heard during the academic year.

Peer institutions take different approaches to administration of faculty grievance processes (Appendix 2). Of the 14 institutions surveyed, three institutions assign administration responsibilities to the Senate Director or the Senate Office; seven institutions assign responsibilities to other University offices including those within Academic Affairs; and four institutions use a combination approach, where the administrator depends based on the type of grievance that is presented. At the seven institutions where offices outside of the Senate are relied upon to administer the process, the committee found that only two institutions have faced issues with potential conflicts of interest in the person administering the process, and in both cases were able to find ways to remove the specific individual from the process. The FAC noted that peer institution information is helpful in assessing options, but it is also limited by the fact that other institutions have different structures. UMD's policy is shaped around the existence of a Faculty Ombuds Officer and the primacy of informal methods of resolution, but many peers have different models of considering grievances, which limits their utility as a model for UMD's process.

The FAC explored past Senate action on the Policy, in the interest of determining whether the Senate Director was tasked with this responsibility for a specific reason (Appendix 3). Records indicate that the Senate Director was involved in grievance processes in some way in the 1970s and 1980s prior to the creation of the Policy, and was incorporated into the Policy when it was first developed. However, no documentation was found that indicates that the Senate Director was chosen to administer the process for a specific reason or due to specific expertise. The FAC also considered how similar adjudication processes are administered at UMD (Appendix 4). Examples in other processes are limited; the FAC found that policies on suspension and termination do not name an administrator and some processes may have dedicated officers within the policy and process, like in the case of scholarly misconduct.

In its charge, the FAC was asked to consider what administrative unit is best suited to administer the adjudication process defined in the faculty grievance Policy. It considered various options, from the University Senate to the Provost's Office to the President's Office. In considering placing the responsibility for administering the process at the level of the University, as suggested by the proposal, the FAC found that such a change could cause real or perceived conflicts of interest. The Board makes a recommendation to the President, so the committee felt strongly that the coordinator and advisor to the Board could not be a staff member from the President's Office. In most cases, the respondent(s) are academic administrators, and so the committee felt that a coordinator and advisor who worked in the Provost's Office could have a real or perceived conflict of interest, in that they may work closely with or have a particular perception of the respondent(s) in a specific case. The FAC did recognize that multiple peer institutions administer the process through the Provost's Office and have reported no significant issues related to conflicts of interest; however, the

committee felt that in this instance, peer institutions may not be instructive since they may be operating in different contexts.

The FAC found that there is value in having the Senate as an organization strongly involved in the grievance process, as it is an independent body that is perceived to be without bias. The FAC felt the Senate brings value and legitimacy to the process as a neutral body, just as the Faculty Ombuds Officer brings value and legitimacy to the informal grievance processes through their impartial and independent nature. However, the FAC took seriously the problems it identified regarding the detrimental effect this process can have on the Senate's work by taking the Senate Director away from their core responsibilities, and began to explore options for keeping the role within the Senate while lessening the impact on the Senate Director.

The FAC developed an alternate solution in response to the issue raised by the proposal. The FAC proposes that the Senate Director should retain responsibility for the administration of the grievance process, but should be able to designate another individual to assume their responsibilities if necessary to attend to both the grievance process and the Senate's work. The committee agreed to revise the policy to indicate that the Senate Director "or designee" is responsible for coordinating and advising the Faculty Grievance Hearing Board. Under this proposed remedy, the Senate Director would work with her immediate supervisor, the Associate Vice President for Finance & Personnel, to identify a small pool of individuals who would be appropriate administrators for specific cases under this process. The pool would be trained on the Policy and procedures, and given resource materials and best practices to guide them through the process. When a case is submitted, the Senate Director may select a specific designee from the pool and assign them to carry out the responsibilities specified in the Policy. In considering this approach, the committee considered as potential designees past Senate Chairs, past Senate Parliamentarians, emeriti faculty, or other engaged campus citizens who have the capacity to serve the University in this way.

This alternate solution would provide more flexibility so the process does not require the Senate Director for each case, especially if they are completely unavailable at the time, thus mitigating the cost to the Senate of the Senate Director being directly involved in the grievance process. The Senate Director would maintain ultimate responsibility, but would be able to delegate the responsibility, as needed. This approach would also address situations where multiple grievances are submitted concurrently. Given the committee's concerns regarding conflict of interest, the designee would need to be an individual outside of the President's or Provost's Office, but this would allow some level of flexibility to select a designee on a case by case basis. The committee developed administrative recommendations to encourage procedures and processes articulating the specifics of this new structure.

In order to minimize administrative burdens while ensuring a fair process for all parties, the FAC agreed to revise two timelines in the adjudication process. After the submission of the formal grievance, the current Policy gives the Senate Director five days to notify the respondent, the Associate Provost for Faculty Affairs, and the Faculty Ombuds Officer. At this point, the Senate Director begins having discussions with the grievant to identify a respondent or otherwise ensure that the documentation surrounding the grievance is complete; with the OGC to plan and to develop communications to those involved; and with the Faculty Ombuds Officer to inform next steps, all of which can take time. The FAC determined that ten days would be a more realistic timeline for this stage in the process. At the conclusion of the process, the current Policy directs the Board to prepare a written report and submit it within ten days. Developing the report can be time-consuming, as it involves a great deal of discussion and drafting with the Board Chair, Board members, and the OGC. The FAC found that it would be reasonable to expand this timeline in order to ensure that the

report can be thorough, clear, and complete. The committee agreed to revise the timeline to twenty days.

In its review, the FAC learned that the Policy does not articulate a process for the parties to submit written statements, but in practice written responses are often included in the process. The Policy does not specify that the parties should have an opportunity to respond in writing to either the formal grievance or the motion to dismiss, and does not clarify whether the other party then has an opportunity to respond in writing to the response. In the lack of clear guidance from the Policy, the practice has been to allow written responses when they are requested. This adds administrative burdens in determining whether a party is going to submit a response and when they expect to do so before a meeting of the Board or a hearing can be scheduled. The FAC agreed that the Policy should provide clarity on this issue, and it considered how to develop a reasonable process for allowing written responses. The committee felt that allowing the formal grievance or the motion to dismiss and a written response from the other party would give both sides an equal opportunity to articulate their argument. The FAC determined that setting a clear limitation in the Policy would be fair, as long as it gives both sides an opportunity to provide written information and provides exceptions in exceptional circumstances, as determined by the Chair of the Faculty Grievance Hearing Board. The FAC developed revisions to the Policy to establish a process for written responses and exceptions.

In developing its draft recommendations, the FAC consulted with the Senate Director to ensure its recommendations were feasible. The FAC also consulted with the OGC on the draft policy language. After due consideration, the FAC voted to approve its recommendations and revisions to the policy through an email vote concluding on February 19, 2021.

RECOMMENDATIONS

The Faculty Affairs Committee recommends that its proposed revisions to the University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]) be revised as shown immediately following this report.

The Faculty Affairs Committee recommends that the Senate Director should develop a pool of individuals who may be designated to administer the adjudication process, with individuals who work outside of the President's and Provost's Offices. The Senate Director should establish procedures for assigning designees to specific grievance cases in order to ensure that there are no associated conflicts of interest.

The Faculty Affairs Committee recommends that the Senate Director should develop processes and materials to ensure that each potential designee is appropriately trained on the policy and procedures and on their responsibilities in coordinating and advising the Faculty Grievance Hearing Board.

APPENDICES

Appendix 1 — Charge from the Senate Executive Committee
Appendix 2 — Peer Institution Information
Appendix 3 — Past Senate Action
Appendix 4 — Administration of Other UMD Processes

II-4.00(A) UNIVERSITY OF MARYLAND POLICIES AND PROCEDURES GOVERNING FACULTY GRIEVANCES

(Passed by the Campus Senate, April 23, 1990 and approved by the President, December 13, 1990; Amended March 4, 2002; Amended April 5, 2018; Amended February 7, 2020. This procedure replaces all faculty grievance procedures previously in effect at all administrative levels of the University of Maryland College Park.)

I. INTRODUCTION

A. Purpose

Legitimate problems, differences of opinion, conflicts, or complaints sometimes arise in the relationship between the University, as an employer, and its faculty. Both the faculty member with a grievance and the University benefit when the University responds to grievances promptly and fairly. This grievance procedure attempts to handle grievances as informally as possible and at a level in the University structure that is accessible to faculty members. The procedure also attempts to handle grievances in a timely, consistent, and simple manner.

B. Who May File a Grievance?

All persons with faculty status irrespective of their administrative duties or assignments at the time of the action or inaction prompting the grievance may use this grievance procedure. The faculty members covered by the Grievance Procedures are all those whose titles are in the University of Maryland Policy on Appointment, Promotion and Tenure Policy II-1.00(A) or in the University System Policy II-1.00, whether that person is full-time or part-time, as long as the faculty appointment is the person's primary position at the University of Maryland.

Grievances by more than one faculty member may be put together in a single grievance if each faculty member signs the grievance and the material actions or inactions and issues are substantially the same for each.

C. What is a Grievance?

Faculty members may file a grievance under this procedure for issues including but not limited to academic freedom, salary, assignments, and the nature and conditions of a faculty member's work. Specific limitations on grievance complaints can be found in section I.D of this Policy. Grievances cannot be filed against written campus and System

policies. Grounds for a grievance are limited to actions or inactions by an administrator or a faculty member that are believed to be:

1. Unfair, which shall mean arbitrary and capricious, lacking in justifiable cause or basis in official policy, inequitable with respect to treatment, or excessive in relation to what would be a reasonable and available alternative course of action;

2. Discriminatory, which shall mean that the action or inaction was made on the basis of a protected status (e.g., race, ethnicity, gender, age, religion, sexual orientation, etc.); or

3. Improperly reached, which shall mean the decision was reached either in violation of University policy or without the consultations or approvals required by departmental or college regulations prior to making such decisions.

D. Limitations

No complaint shall be reviewed under these faculty grievance procedures if:

1. The complaint pertains to a subject that is reviewable under, or is specifically excluded from review by any other System or institutional policy, or pertains to a finding or decision reached through a process established in a University policy that includes an appeal mechanism, such as policies on sexual misconduct, non-discrimination, promotion and tenure, and scholarly misconduct;

2. The complaint pertains to a disciplinary action, including termination or suspension, imposed following the outcome of an institutional investigatory or compliance process;

3. The complaint pertains to an official policy, regulation, or procedure of the System or the institution; a decision or action by the Board of Regents, the Chancellor, or the President; or any matter the remedy for which would contravene or interfere with an official policy, regulation, procedure, decision, action, or institutional legal obligation;

4. The complaint pertains to a fiscal irregularity finding, broad fiscal management, organization, or structure of the University System of Maryland or constituent institutions; or

5. The complaint pertains to an issue or proposes a remedy that is not under the control of the institution and/or of the University System of Maryland.

A faculty member may not use any other University grievance procedure simultaneously or successively with respect to the same or substantially similar issue or complaint, or with issues or complaints arising out of or pertaining to the same set of facts. In addition, no other University grievance procedure may be used to challenge the actions,

determinations, or recommendations of any person(s) or board(s) acting pursuant to these procedures. A faculty member who elects to use this procedure for the resolution of a grievance agrees to abide by the final decision arrived thereunder, and shall not subject this decision to review under any other procedure within the University System of Maryland.

A grievant may choose to pursue resolution under this process and pursue resolution through civil or criminal means, at their own initiation and expense. Administrative processes are separate from and have different standards than legal processes. Legal processes and the University's internal administrative process will proceed separately and independently.

E. The Faculty Ombuds Officer

The University of Maryland shall have a Faculty Ombuds Officer, who serves as a neutral and impartial officer to provide confidential and informal assistance to faculty and administrators in resolving concerns related to their work. Operating outside ordinary administrative structure, the Faculty Ombuds Officer shall serve as a counselor, fact-finder, mediator, and negotiator, but not as an advocate for any party to a dispute.

The Faculty Ombuds Officer shall serve all faculty and academic administrators. They shall attempt to resolve disputes informally before they enter formal grievance channels, and shall advise those who seek information about what constitutes a grievance and what the grievance procedures are. The Officer shall have access to suitable legal counsel, and should prepare an annual report and offer recommendations for policy change to the University Senate and the President.

The Faculty Ombuds Officer shall to the extent possible respect the confidentiality and privacy of faculty pursuing resolution under this grievance procedure. However, the Faculty Ombuds Officer may communicate with others on a need to know basis, as is appropriate to facilitate the grievance process or to attempt to address a complaint.

The Faculty Ombuds Officer shall be appointed by the President following a search conducted by a committee jointly appointed by the Senate Executive Committee of the University Senate and the President. Removal shall be by mutual consent of the President and a majority of the elected faculty members of the Senate Executive Committee.

II. PROCEDURES

A. Definitions

A *grievance allegation* is a preliminary informal statement of a grievable issue presented to the Faculty Ombuds Officer. It is based on the same standards as a grievance complaint, but seeks a remedy through the process of private discussion and consultation rather than formal grievance.

A *grievance complaint* is a formal written statement of a grievable issue using a prescribed form available from the Faculty Ombuds Officer. The grievance complaint should clearly articulate the grounds and scope of the grievance as well as the desired remedy.

A *formal grievance* is the formal written statement that is submitted to begin the adjudication process, after the mediation phase has concluded.

A *grievant* is the faculty member or members initiating a grievance allegation or grievance complaint.

The *respondent* is the person or persons whose actions or inactions are the focus of the grievance allegation or grievance complaint.

A *mediation agreement* is a formal written statement agreed upon by both the grievant and respondent that serves to resolve a grievance complaint.

Bad faith means an allegation that is knowingly false and/or is made or done with a knowing or reckless disregard for information that would negate the allegation.

Retaliation means an adverse action taken against an individual who has submitted a grievance and/or participated in the grievance process in good faith, where there is a clear causal link between the grievance and an adverse action. In determining whether retaliation has occurred, the individual needs to provide documentation supporting a claim of retaliation; the other party needs to articulate a legitimate reason for the adverse action.

Days in the calendar of complaint procedures shall mean business days. The grievance procedure calendar excludes Saturdays, Sundays, days on which the University is officially closed, and the time period from the end of the spring semester to the start of the following fall semester.

B. Information about Procedures

The Faculty Ombuds Officer is responsible for providing information regarding the preliminary consultation, mediation, and adjudication procedures and their relation to other policies and procedures of the University. This officer shall explain, in response to inquiries by faculty members, the conditions for using the various steps of the grievance procedure.

The grievance process consists of three phases. The Preliminary Consultation phase will normally proceed over a period of fifty (50) days. Once it has been determined that the consultation cannot achieve a satisfactory result through informal discussion, the grievant will have fifteen (15) days to file a grievance complaint to enter mediation. The Mediation phase will normally last up to twenty-five (25) days, though it can be extended

with the consent of both parties. The Adjudication phase may proceed after mediation concludes, and will move forward as expeditiously as possible.

Faculty are expected to begin the grievance process within seventy-five (75) days of a grievable action or inaction, or within seventy-five (75) days of first learning of the action or inaction, whichever is later. Such action or inaction may be the latest in a long standing pattern or practice, in which case the pattern may be considered as part the grievance, if the grievance is submitted within seventy-five (75) days from the most recent example of a pattern of action or inaction.

Grievants will not be reprimanded or discriminated against in any way for initiating a legitimate allegation or complaint. University administrators and faculty shall not engage in or threaten retaliation. Complaints of retaliation should be referred to the appropriate administrator, who would normally be the supervisor of the individual alleged to be engaging in retaliation, for review and any appropriate disciplinary action. Grievants who bring forward allegations that are found to be in bad faith may be subject to appropriate disciplinary actions.

The process for addressing a grievance set forth in these procedures is confidential. The parties, witnesses, members of committees involved in the process, advocates, and administrators who are informed of the grievance on a need to know basis, are expected to preserve confidentiality at all stages of the process, including preliminary consultation, mediation, and adjudication.

1. **Preliminary Consultation.** The preliminary consultation stage should normally proceed over a period not to exceed fifty (50 days), and is initiated by a grievance allegation brought to the Faculty Ombuds Officer. During this stage, the Faculty Ombuds Officer reviews the allegation with the grievant and the respondent, provides information and resources to the grievant, clarifies with the grievant the nature of the complaint, and counsels the grievant on their options for resolving the grievance as well as the process for engaging in mediation and adjudication should their allegation rise to the level of a formal complaint. In some cases, the grievant may have attempted to resolve the dispute privately prior to consulting with the Faculty Ombuds Officer, but such private attempts are not required in order to engage the assistance of the Faculty Ombuds Officer.

   If through preliminary consultation with the parties, the allegation is settled to the satisfaction of all parties, no formal record need be filed with the Faculty Ombuds Officer, but a written record of such agreement may be filed at the request of the grievant. If the grievance allegation is not settled through preliminary consultation and the grievant wishes to proceed to mediation, the grievant must file a grievance complaint with the Faculty Ombuds Officer before the timeframe for preliminary consultation ends in order to proceed to mediation.

   It is the responsibility of the Faculty Ombuds Officer to determine the essential nature of the dispute so that it can be resolved; the essential nature of the dispute may in fact

differ from that described in the allegation. Following counsel with the Faculty Ombuds Officer, the grievant's allegation should be revised as appropriate during the development of the grievance complaint.

2. **Mediation.** Mediation begins when the grievant files the written grievance complaint with the Faculty Ombuds Officer. The complaint shall contain a clear and concise statement of the action(s) or inaction(s) giving rise to the grievance, including the date of the action(s) or inaction(s) and the name(s) of the respondent(s) responsible. Also, the complaint should specify the adverse effect that the action(s) or inaction(s) has had or may have on the faculty member, and the remedy sought. The complaint should include the grievant's contact information.

   From the time that the grievance complaint is filed, the Faculty Ombuds Officer shall have twenty-five (25) days in which to conduct mediation. If needed and by mutual consent of the parties, the Faculty Ombuds Officer may take additional time for mediation. The Faculty Ombuds Officer shall mediate the dispute by working with the parties to seek a solution satisfactory to both. All parties are expected to make good faith efforts at mediation. If mediation fails to produce a satisfactory solution, mediation may end unless both parties agree to continue.

   If mediation results in a resolution of the conflict, a confidential written report and mediation agreement shall be forwarded to all parties to the dispute. The original copy of the report shall be retained by the Faculty Ombuds Officer.

   The grievant may withdraw from the grievance process at any point by giving the Faculty Ombuds Officer written notice. If the grievant withdraws from the grievance process prior to the end of mediation, the grievant may not proceed to adjudication.

   If, at any time during the mediation period, the Faculty Ombuds Officer believes the parties cannot reach agreement, or if the mediation fails to produce a satisfactory solution after the initial mediation period of twenty-five (25) days and any additional time agreed to by both parties, the mediation effort shall cease and the grievant may submit the dispute to adjudication.

3. **Adjudication.** Upon receipt of notice to the grievant by the Faculty Ombuds Officer of failure of the mediation process, the grievant shall have fifteen (15) days to revise the grievance complaint and submit the formal grievance to the Executive Secretary and Director of the University Senate for adjudication. Within **ten** ~~five~~ days (**10**~~5~~) of the receipt of the formal grievance, the Executive Secretary and Director **or designee** shall inform the respondent(s), the Associate Provost for Faculty Affairs, and the Faculty Ombuds Officer of the grievant's action and request that the Faculty Ombuds Officer provide a summary statement of the mediation effort and an assessment of whether the allegations within the grievance are within the jurisdiction of the grievance policy. The Faculty Ombuds Officer shall submit the assessment within ten (10) days of the Executive Secretary and Director **or designee**'s request. **The Executive Secretary and Director or designee shall also inform the respondent(s)**

of their right to respond in writing to the formal grievance, and shall request that any written responses be submitted within twenty-five (25) days. The formal grievance and any written response by the respondent(s) will be the only written responses that will be considered by the Hearing Board at this phase of the process, unless further responses are authorized by the Chair of the Faculty Grievance Hearing Board.

a. Administration:

The **University Senate** Office ~~of the Executive Secretary and Director of the Senate~~ shall be assigned responsibility for keeping a record of the grievance, initial notification of persons involved, and monitoring compliance with procedures. The Executive Secretary and Director of the Senate shall serve as the coordinator of and advisor to the Faculty Hearing Board**, and may designate another impartial individual to carry out these responsibilities on their behalf**.

A confidential complete record shall be kept by the **University Senate Office** ~~Executive Secretary and Director~~ of all hearings and documents referenced during the adjudication process for **five** ~~three~~ (**5**~~3~~) years following the end of the grievance process.

b. Forming the Faculty Grievance Hearing Board

All elected Faculty Senators are eligible to serve on the Faculty Grievance Hearing Board. Hearing Boards should include a diverse group of tenured and tenure-track (T/TT) and professional track (PTK) faculty, whenever possible and as appropriate to the case. The Senate Chair-Elect is responsible for ~~facilitating~~ the formation of the Hearing Board.

Within fifteen (15) days of submission of the formal grievance, the Executive Secretary and Director **or designee** shall send the list of elected Faculty Senators to the parties for review. The parties will have five (5) days to notify the Executive Secretary and Director **or designee** of any elected Faculty Senators who may have a conflict of interest and should be ineligible to serve on the Hearing Board**, and the parties must provide an explanation for the conflict**. The Executive Secretary and Director **or designee** will promptly communicate any conflicts to the Chair-Elect.

The Chair-Elect shall then appoint three voting members of the Hearing Board and two alternate members from the unchallenged potential members.

The five members of the Faculty Grievance Hearing Board (three voting and two alternates) shall elect, by majority vote, one voting member to chair the Hearing Board. If a voting member cannot serve to completion of the grievance hearing, an alternate shall then be appointed as a voting member by the Chair of the

Hearing Board. If an alternate member cannot serve to completion of the grievance hearing, the Hearing Board may proceed with one alternate.

b. Faculty Grievance Hearing Board Procedures

The Faculty Grievance Hearing Board shall hear all arguments on substantive and procedural matters and shall make necessary written findings.

The grievant shall be responsible for demonstrating the merits of the grievance. They must demonstrate that the action or inaction occurred and that the action or inaction adversely affects them. The grievant shall have the right to review and use any legally available part of their personnel files.

The Executive Secretary and Director **or designee** shall establish a schedule of hearings for the Hearing Board that will allow the body to complete its work as expeditiously as possible. The Hearing Board should first convene its members to review the formal grievance as well as **any responses to the grievance,** the summary statement of mediation efforts**,** and **the** assessment of grievance grounds. **After the initial assessment of all materials,** ~~T~~the Hearing Board may decide to dismiss the case if all three voting members agree that the dispute is frivolous, without merit, submitted in bad faith, or insufficiently related to the concerns of the academic community. If the case is dismissed, the Executive Secretary and Director **or designee** will notify the parties, the Faculty Ombuds Officer, and the Associate Provost for Faculty Affairs. If the case is not dismissed, the grievance will proceed.

Both parties may choose to be assisted during the adjudication process by an advocate of their choice, who may be peer counsel or an attorney, at their own initiation and expense. The advocate may provide advice and consultation to the party. If necessary, a party may request a recess during hearings in order to speak privately with an advocate. The advocate may not be an active participant; the advocate may not speak for the parties in person or in writing, serve as a witness, provide information or documentation in the case, cause delay, communicate with the Chair or Executive Secretary and Director **or designee** on behalf of the party, or otherwise interfere with the process.

At any step of the grievance procedure, the Hearing Board may request advice of the Office of General Counsel on procedural concerns or significant legal issues raised in the grievance. A legal officer who has provided legal advice or service to the respondent may not provide legal advice or service to the Hearing Board.

At any point, the respondent may request **in writing** that the Hearing Board dismiss the case based on issues related to the grievability of the action or inaction involved. **The grievant shall be given an opportunity to respond in writing to the motion to dismiss the case. No further written responses or replies will be considered prior to the Hearing Board's decision, unless authorized by the**

Chair of the Faculty Grievance Hearing Board. The Hearing Board will review the ~~request~~ **motion to dismiss and any response from the grievant,** and can **decide to** dismiss the case if all three voting members agree. If the case is dismissed, the Executive Secretary and Director **or designee** will notify the parties, the Faculty Ombuds Officer, and the Associate Provost for Faculty Affairs. If the case is not dismissed, the grievance will proceed.

The Chair of the Faculty Grievance Hearing Board shall be responsible for overseeing and facilitating the hearings and may order the proceedings in such manner as they deem appropriate. Hearings shall be closed. The Chair shall make determinations on all questions concerning the course of the proceedings. **The Chair may also consider requests for additional written responses beyond the number specified in this policy.** The Chair has the discretion to set time limits for statements, testimony, or other aspects of the hearings and exclude redundant or irrelevant evidence including witness testimony.

During the hearings, each party will have an opportunity to make an opening and closing statement. The grievant shall first make a brief opening statement outlining the grounds for the grievance as indicated in the formal grievance; the respondent will then make a brief opening statement in response. Each party will be given an opportunity to share information or documentation to support their case, and all documentation shall be shared with the other party.

Both parties have the right to call witnesses in pursuance of their cases. If the parties intend to call witnesses, they are expected to submit their names and relevance to the case **to the Executive Secretary and Director or designee** in advance of the hearing. The Faculty Ombuds Officer cannot be called as a witness. The Hearing Board can neither compel witnesses to participate nor assure the presence of witnesses requested by either party.

Members of the Hearing Board may ask questions of the grievant, respondent, and their witnesses. The Board may call witnesses when relevant to the issues in the case.

c. Findings of the Grievance Hearing Board

Only information discussed during the hearings that is determined by the Board to be relevant to the case shall be considered in the determination of the case. After review of the relevant information, the Hearing Board shall make a determination on its findings by a majority vote. The Hearing Board's findings should include an assessment of whether the grievance has merit and whether the action or inaction that formed the basis of the grievance was justifiable.

The Board shall prepare a written report of its findings, including the reasons for the findings and any dissent. The report shall be forwarded to the President within **twenty** ~~ten~~ (**20**~~10~~) days after the conclusion of the hearing. Confidential

copies of the report shall be sent to the grievant and to the respondent, as well as to the Associate Provost for Faculty Affairs and the Faculty Ombuds Officer. Adjudication of a faculty grievance is a confidential process. All parties are expected to maintain the confidentiality of the process, proceedings, and documentation except as otherwise compelled by law.

d. Resolution

Within thirty (30) days, the President shall make a final determination in writing on the decision in the matter, and what remedy, if any, will be implemented. The President will normally consult with academic administrators in determining appropriate remedies. It is expected that the President will give great weight to the findings of the Hearing Board. However, if the findings of the Hearing Board are not accepted, in whole or in part, an explanation of this decision should be provided. Notification will be sent to both parties to the grievance, to the Chair of the Hearing Board, and to the Hearing Board, as well as to the Executive Secretary and Director **and designee, if appropriate**, the Associate Provost for Faculty Affairs and the Faculty Ombuds Officer.

The decision of the President shall be final.

Should the President decide that the grievance is justified and a remedy should be implemented, the grievant shall, before receiving any such remedy, enter into a written agreement recognizing the remedy to be satisfactory and waiving any claims to causes of action arising out of the grievance.

Appendix 1 - Charge from the Senate Executive Committee

UNIVERSITY SENATE **CHARGE**

Charged: September 17, 2020 | Deadline: February 5, 2021

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy (Senate Document #20-21-06)
Faculty Affairs Committee | Chair: William Reed

The Senate Executive Committee (SEC) and Senate Chair Dugan request that the Faculty Affairs Committee review the adjudication section of the University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]).

The Faculty Affairs Committee should:

1. Review the University System of Maryland (USM) Policy on Faculty Grievances (II-4.00).
2. Review the Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy (Senate Document #20-21-06).
3. Review the report from the Review of the University of Maryland College Park Policies and Procedures Governing Faculty Grievances (Senate Document #17-18-13).
4. Review similar adjudication processes in other university policies (i.e. research misconduct and Title IX).
5. Review the adjudication process within faculty grievance policies and procedures at Big Ten and other peer institutions.
6. Consult with the proposer.
7. Consult with the Executive Secretary & Director of the University Senate.
8. Consult with a representative of the Office of Faculty Affairs.
9. Consult with a representative of the Office of the President.
10. Consult with the Faculty Ombudsperson.
11. Consult with the Associate Vice President for Finance and Personnel.
12. Consult with University Human Resources.
13. Consider what administrative unit is best suited to administer the adjudication process defined in the faculty grievance policy.
14. Consider whether the responsibility for administering the adjudication process defined in the faculty grievance policy should remain with the Executive Secretary & Director's role or moved under another administrative role.

15. Consult with a representative of the Office of General Counsel on any proposed revisions to the policy.

16. If appropriate, recommend whether the policy should be revised and submit recommended revisions by **February 5, 2021** for Senate consideration.

UNIVERSITY SENATE **PROPOSAL**

Submitted on: AUGUST 11, 2020

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy

NAME/TITLE	Pamela Lanford, Past Chair, University Senate; Director of Animal Research Support, & IACUC Administrator		
EMAIL	planford@umd.edu	PHONE	240-535-2709
UNIT	Division of Research	CONSTITUENCY	PTK VPR

DESCRIPTION OF ISSUE

The University Of Maryland Policies And Procedures Governing Faculty Grievances (II-4.00[A]) describes the process by which faculty members may grieve actions or inactions that are “Unfair,” ”Discriminatory,” or ”Improperly Reached.” This process is intended to provide a mechanism through which faculty may seek resolution of conflicts “between the University, as an employer, and its faculty.” The policy stipulates that the grievance process be carried out via a Hearing Board comprised of Faculty Senators (T/TT and PTK) appointed by the Chair-Elect of the Senate, and that the Executive Secretary and Director of the Senate (“Director”) serves as the Coordinator of the Hearing Board. Specifically, the Director is responsible for record-keeping, initial notifications, scheduling of Hearing Board sessions and witnesses, and final notifications upon decision by the board.

DESCRIPTION OF CHANGE YOU WOULD LIKE TO SEE

This proposal seeks to alter the administrative procedures of the Adjudication phase of the policy; specifically, it seeks to place responsibility for administering the Hearing Board process at the level of the University, rather than with the Director of the Senate and/or the Senate Office. This proposal ***does not*** seek to alter the composition of the Hearing Board (T/TT and PTK Faculty Senators) or the role of the Chair-Elect in appointing the Board. The reasons for this change include:

1. The details of logistics and management of the grievance process do not require knowledge or crafting of University policy, nor do they require the expertise and/or depth of institutional knowledge that the Director provides to other Senate functions. The strict timing of the Adjudication process (the Board must be formulated and submitted to the parties within 15 days of submission of the formal grievance and be carried out “as expeditiously as possible”) and the time commitment required during peak Senate business requires a degree of administrative involvement that significantly diminishes the Director’s ability to carry out other functions of the University Senate for which the Director’s expertise and knowledge *are* required.
2. The involvement of the Director in the process has led to the false impression (by the grievant and other parties) that the Director is representing the University’s interests and is directly responsible for any outcome or decision made by the Hearing Board instead of being a neutral facilitator of the process. By incorporating the Director into this process in the manner described, the current policy inadvertently places the Director at risk of potential legal actions that may arise from the outcome of the process. Since the grievance is, per the definition set in the policy, between the University and the grievant, positioning the Director as a potential target

for retaliatory legal action is inappropriate and establishes an undue personal burden on the Director.

A second component of this proposal is to include revisions to the policy that clarify the process of Hearing Board selection, including the process by which the Chair-Elect selects potential Board members and the vetting process associated with the final seating of the Board. The reason for this change is to ensure transparency and to align the policy with current practice.

Under this proposal, *no changes* are recommended regarding the provisions that stipulate the role of the Senate in the selection and appointment of the members of the Hearing Board, including:

1. the role of the Chair-Elect in the selection process
2. support for that process as provided by the Senate Office

SUGGESTION FOR HOW YOUR PROPOSAL WOULD BE PUT INTO PRACTICE

The University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A]) should be revised to remove the Executive Secretary & Director from the Adjudication process as described above. A review should be conducted, in consultation with the Faculty Ombuds Officer, the Office of Faculty Affairs, and the Director of the Senate, to determine the appropriate administrative unit to administer the Adjudication process defined in the policy. The section of the policy on Hearing Board selection should be revised to reflect the complete selection process and align the policy with current practice.

ADDITIONAL INFORMATION

NONE

Appendix 2 - Peer Institution Information

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy
Peer Institution Research

Peer research for this report included the Senates of Big 10 institutions along with two additional public R1 institutions (UNC Chapel Hill and UC Berkeley). It is important to note that most Big 10 and peer institutions have a faculty Senate model, not a University Senate model that is inclusive of faculty, staff, and students like the University of Maryland. At UMD, the process is administered by the Executive Secretary and Director of the University Senate.

Question: Where do peer institutions place responsibility for administering the faculty grievance process?

1. There is no uniform way that faculty grievance procedures are handled at our peer institutions. Instead, there are multiple formats, and different offices that have the responsibility to administer the process.

This table shows the primary offices that administer the process at 14 peer institutions.

Main Administrating Office(s)	**Universities**	**Total # of Universities**
Senate Office	UNC Chapel Hill, Wisconsin, Penn State	3
Not Senate Office	Purdue, Northwestern, U Pitt, Iowa, U Michigan, Michigan State, Ohio State	7
Combination	UC Berkeley, Indiana Bloomington, Illinois, Minnesota	4

2. The below table indicates where the administration responsibilities lie for the 7 institutions where the Senate Office does not administer the process.

Institution	**Primary Office Administering Faculty Grievance Procedures**
Iowa	President's Office, Specialized investigator who is an attorney
Michigan State U	Faculty Grievance Office
Northwestern	Provost Office
Ohio State	Provost Office, Human Resources, Legal Affairs
Purdue	Provost Office
U Michigan	Academic Human Resources
U Pitt	Provost Office

3. All 14 peer institutions have procedures that include hearing processes where the grievant may be heard by peers. Our peer institutions, like us, have a committee consisting of peer faculty. Most often, the members of this committee come from the Senate member pool, even at institutions where the Senate office is otherwise not involved.
4. At the Universities where the Provost's Office or President's Office is the primary administrating unit, conflict of interest does not seem to be an issue and/or can be mitigated.
    a. Ohio State responded that this has not yet been an issue, but if it were to arise, the individual who may have a conflict of interest would be recused from the process, and someone else deemed without bias would step in from the Office of Academic Affairs, which includes the Provost office and Academic Human Resources.
    b. University of Pittsburgh has had the conflict of interest issue arise, and provided an explanation of how they handled the issue. There is an individual who has two roles as Dean of the medical school and the Senior Vice Chancellor for Health Sciences. As Dean, he has to help at the department level review, therefore he cannot also handle the appeal process with objectivity (he would be reviewing a decision he helped to make) so when grievances emerge from this department, he is replaced in the process by someone else chosen by the Office of the Provost.

Question: Do peers have a process that is generally the same (with Ombuds/informal processes), or is it a completely different model?

UMD's policy establishes informal methods as the first and second stages, which must be completed prior to the third phase of adjudication. Most institutions have a process that includes informal processes, though in many cases the informal processes are not strictly required as they are in our process. In most cases, Ombuds officers or similar individuals can assist in the informal processes, but again, it is often not required that their services be engaged.

Institution	**Informal Process Prior to Formal?**	**Ombuds Role?**
University of Illinois at Urbana-Champaign	Informal processes encouraged but not required prior to formal process. Faculty are given resources/contacts (equivalents to UHR and FSAP) to help facilitate informal resolution at the lowest level possible, and can approach any member of the committee for informal advice, consultation, and/or mediation.	No discussion of Ombuds officer taking on a role similar to that of UMD's process.

Indiana University--Bloomington	Informal processes exist through a Faculty Mediation Committee, but are encouraged and not required. Faculty may choose to bypass informal routes, but the Faculty Board of Review may also choose to defer action until after informal processes like mediation have taken place.	An Ombudsman can confidentially advise on specific situations.
University of Iowa	Informal processes are expected to be pursued prior to formal processes, and the Ombudsman is a resource for those informal processes. Two stages (informal discussion, exchange of letters) occur prior to a formal review.	A University Ombudsperson can assist with mediation efforts.
University of Michigan	Informal processes are strongly encouraged but not required prior to a formal process, though the Grievance Hearing Board has the authority to remand the case to informal resolution if it deems appropriate.	There is a University Ombuds Officer and an Ombuds Officer in each College (individual Colleges maintain their own grievance procedures).
Michigan State University	Informal processes take place prior to formal resolutions.	The Faculty Grievance Official serves in a role similar to that of an Ombuds officer, and is involved in the formal process as well.
University of Minnesota--Twin Cities	Informal processes take place prior to formal resolutions.	The Office of Conflict Resolution serves in a role similar to that of an Ombuds officer.
University of Pittsburgh	Informal processes take place prior to formal resolutions and include informal efforts at the unit level and then campus level, before moving to informal mediation by a Senate committee. Formal processes involve a written complaint with the Provost.	No discussion of Ombuds officer taking on a role similar to that of UMD's process.
Northwestern University	Informal steps should precede formal processes.	There is currently no Ombuds officer, but there is an intention of creating an Ombuds role.
Ohio State University	Informal processes take place prior to formal processes.	A Faculty Ombudsperson can assist with mediation efforts.

Pennsylvania State University	Informal resolution should be pursued prior to formal procedures. Policy indicates that only when those efforts have failed should the formal procedures be used, and the Committee may choose not to hear a case if it feels informal methods should be attempted first.	An Ombudsperson in each College, School, or unit serves to help mediate disputes.
Purdue University	Informal processes must take place prior to formal processes.	The Faculty Ombudsperson is available to assist with mediation prior to entering the grievance process. In the informal phase of the grievance procedures, a member of the Faculty Mediation Committee will be appointed as Mediator.
University of Wisconsin - Madison	Informal resolution at the unit level and the College level should be pursued first. If that fails, then formal processes can be utilized.	The Ombuds Office has multiple officers who can help mediate disputes.

Question: For institutions where the Senate is not involved in administration, what is the model for resolving grievances? Who manages those processes? Are there links to relevant information that can be shared?

Institution	**Primary Office Administering Faculty Grievance Procedures**	**Grievance Model**
Iowa	President's Office, Specialized investigator who is an attorney	Informal processes are expected to be pursued prior to formal processes. The Ombudsman is a resource for those informal processes.
Michigan State U	Faculty Grievance Office: https://fgo.msu.edu/	Informal processes take place prior to formal resolutions. The Faculty Grievance Officer serves in a role similar to that of an Ombuds officer.
Northwestern	Provost's Office See Faculty Handbook, starting on page 22: https://www.northwestern.edu/provost/docs/faculty	Informal steps should come before formal processes. Ombuds process: https://www.northwestern.edu/faculty-senate/documents/2010-

	_handbook_2016.pdf	2011/GFC_Ombudsman_Guidelines.pdf (This still doesn't seem to have been implemented. The below announcement from 2019 shares more on the upcoming commitment and plans - https://www.northwestern.edu/leadership-notes/2019/creating-an-ombuds-office.html)
Ohio State	Provost's Office, Human Resources, Legal Affairs	Informal processes should come before formal processes. Faculty Ombuds Officer can assist with mediation efforts.
Purdue: Primary source was the faculty handbook: https://www.purdue.edu/faculty_staff_handbook/employment/grievance.php	Provost's Office Policy: https://www.purdue.edu/policies/academic-research-affairs/ib1.html	Informal processes must come before formal resolution processes. The Faculty Ombuds Officer can assist prior to the grievance procedures being invoked. The informal grievance procedure includes an appointed Mediator.
U Michigan	Academic Human Resources	Informal processes are strongly encouraged but not required prior to a formal process, though the Grievance Hearing Board has the authority to remand the case to informal resolution if it deems appropriate. Ombuds officers at University and unit levels can assist.
U Pitt	Provost's Office Policy: https://www.policy.pitt.edu/policies-and-procedures/administrative-and-governance/university-policy-faculty-grievances	Informal processes take place prior to formal resolutions and include informal efforts at the unit level and then campus level, before moving to informal mediation by a Senate committee. Formal processes involve a written complaint with the Provost.

Appendix 3 - Past Senate Action

Proposal to Review the Administration of the Adjudication Process for the Faculty Grievance Policy
Past Senate Action / History of the Faculty Grievance Policy

Question: Why was the administration of the adjudication phase of the Faculty Grievance Policy given to the Executive Secretary & Director of the Senate? Was a conscious decision made to do so, and was there a rationale associated with that decision?

Based on the review of historical documents available, there iss no documentation that indicates that the Executive Secretary & Director was chosen for a specific reason or to uphold a specific principle.

- The Executive Secretary was involved in the grievance process in some way since its initial form in the 1970s and 1980s.
- In the 1980s, the Procedures provided for initial review at the divisional level, and a possibility of a review at the University level if the complaint was not resolved. The University-level review process included a Faculty Grievance Panel, supported by the Executive Secretary of the Senate. However, no information can be found about why that process or individual was selected.
- The Executive Secretary of the Senate (as the role was then called) was included in the 1990 policy. However, the documentation the Senate has does not suggest that there was any specific reason for this, other than as a continuation of the prior procedures.
    - "The Office of the Executive Secretary of the Senate shall be assigned responsibility for keeping a record of grievance actions, initial notification of persons involved, and monitoring compliance with procedures. The Executive Secretary of the Senate shall serve as secretary of the Faculty Grievance Panel."
- The review in 2018 did change language related to the Director's role, in order to clarify her role in the policy language. However, the committee did not make any changes to the Director's role in practice, and did not discuss whether the Director should administer the process.

Question: What is the history of the faculty grievance process and Policy?

Initial Development of University-wide Grievance Process: 1970s-1990s

1972-1983: Faculty Grievance Procedures initially developed

- In 1972, the Senate convened an Ad Hoc Committee to Study Grievance Procedures.
- The committee found that no general faculty grievance procedure existed; instead, faculty were able to grieve specific actions related to contract terms, like termination for misconduct in office.
- A Faculty Grievance Procedure was developed and approved by the Senate in 1979. It was not implemented by the Chancellor's office, which was concerned that the procedure lacked legal sufficiency.

    - According to Minutes of the Faculty Affairs Committee from February 8, 1983 and subsequent memo from FAC Chair to Chancellor Slaughter on February 9, 1983.
    - The Faculty Affairs Committee asked the Chancellor's Office to make suggestions on how to revise the Procedure to make it legally sufficient.
    - Subsequent documentation indicates that concerns focused on what types of issues are grievable, rather than the process for conducting grievances.

1983: Faculty Handbook Procedures

- On December 7, 1983, procedures for Faculty Grievances were approved by President Toll and added to the Faculty Handbook.
- The procedures included flexibility for individual review processes within specific academic divisions, and escalation up to the University level if the matter is not resolved at the lower level.
    - The procedures called for each of the five academic divisions to develop written procedures for the consideration of grievances from faculty within those divisions.
    - If the faculty member goes through the divisional review process and is not satisfied, the procedures provided an opportunity for them to appeal the decision to the Vice Chancellor for Academic Affairs.
    - The Vice Chancellor could: grant the requested relief, deny the grievance, or "refer the matter to the Executive Secretary of the Senate for hearing by a Faculty Grievance Hearing Board…"
    - The Procedures indicated "The office of the Executive Secretary of the Senate shall be assigned responsibility for record keeping of grievance actions, notification of persons involved, and monitoring compliance with procedures. The Executive Secretary of the Senate shall serve as Executive Secretary of the Faculty Grievance Panel."
    - The Procedures detail the hearing process, and indicate that the Faculty Grievance Hearing Board will make a decision on the grievance, which is then forwarded to the Chancellor.
- In 1986, there was an academic reorganization of the University, which led to (interim) revisions to the Handbook procedures related to at which level a grievance should be heard.

1987: Senate Report on Revising Grievance Procedures for Faculty at the University of Maryland (Senate Document #86-87-13)

- On December 5, 1986, the Senate Faculty Affairs Committee was charged with a proposal to amend the procedures to make them more consistent with the recent academic reorganization.
- The committee found that the grievance procedures "are not working in the way they were originally intended, and that they need extensive revision in order to accomplish their basic objective…"
    - The report from the committee outlines extensive concerns with the process, scope, adversarial nature, legal assistance, and other issues.

    - The report does not mention anything related to the involvement of the Executive Secretary, though one of its recommendations for restructuring the process details a three-level process (like UMD's current process in 2020) that involves adjudication as a third stage of review.
        - It recommends that in the adjudication phase, "the existing" Senate Grievance Hearing Board should be involved and should make a recommendation to the Chancellor.
        - The Grievance Hearing Board would also be involved in an appeal from the grievant based on the Chancellor's action to the President of the University.
- The Faculty Affairs Committee recommended a campus-level should be established by the Chancellor and the Senate to revise the existing grievance procedures to address the problems raised by the report and to consider the recommended restructuring of the process.
- The report was sent to the SEC on September 2, 1987 for consideration for the Senate Agenda.
    - From subsequent documentation, it looks as if the recommendations were approved by the Senate on October 12, 1987.

1989: USM Policy on Faculty Grievances adopted (Senate Document #89-90-92)

- On November 30, 1989, the USM adopted a Policy on Faculty Grievances.
- At the December 7, 1989 Senate meeting, the Senate approved a resolution to formally approve the Faculty Grievance Procedures in the Faculty Handbook, which were previously approved by the Senate and President in 1983, as an interim Policy, in order to be incompliance with the USM Policy while allowing time for a broader revision to the grievance procedures.

1990: Senate Recommendations on a new Faculty Grievance Procedures (Senate Document # 89-90-114A)

- The Senate approved a new Faculty Grievance Procedure at its meeting on April 23, 1990.
- President Brit Kirwan reviewed the proposed new Procedure and had a number of suggestions for modifications.
    - Kirwan sent his suggestions to the Senate Chair on October 1, 1990 and welcomed comment from the Senate.
    - The Ad Hoc Committee on Faculty Grievance Procedures reconvened to consider the suggestions, and was in agreement with all but one suggestion where it recommended a slight modification (via memo to Campus Senate Chair on October 31, 1990).
- After some back and forth, the President approved the final version of the new Faculty Grievance Procedure as the University's policy on December 13, 1990.
    - This is largely the same in scope and process as it is now in 2020.

Subsequent Revisions to the Policy: 2002, 2018, 2020

2002 Revision: Senate Document #00-01-55

- Minor revision focused on:
    - Replacing the list of titles eligible for use of the grievance process with a reference to the APT policy as the source of titles for faculty who are eligible, and a notation that part-time faculty are eligible to use the grievance process.
    - Replacing “Ombuds Officer” with “Faculty Ombuds Officer” in every instance after the creation of that role was finalized.
- Approved by the Senate on March 4, 2002. President Mote approved it on March 8, 2002.

2018 Revision: Senate Document #17-18-13

- This was a comprehensive review of the policy and procedures.
- Summary of changes:
    - Changes to language related to finality, to ensure that the decision reached at the end of the process is final and the grievant cannot pursue further action through a different University policy/process.
    - Clarifications to grounds for a grievance.
    - Clarifications to the two initial phases of informal consideration of the grievance through negotiation and mediation, changes more accurately reflecting the purpose of the first stage.
    - Additional information on the role of legal counsel, change to ensure that attorneys serve in an advisory capacity to the party only, and cannot speak on behalf of the party, present evidence, or challenge actions of the Board.
    - Change in determination of remedies, to give responsibility for determining an appropriate remedy to the President rather than having the Hearing Board recommend a remedy.
    - Changes to allow the Faculty Ombuds Officer to communicate with other administrators about the case on a “need to know” basis, in order to fully understand the issue and be better able to facilitate mediation or negotiation. Related changes to allow the Ombuds Officer to notify the Senate Director nad/or the Associate Provost for Faculty Affairs that a grievance is being reviewed and may move to formal processes.
    - Changes in development of the Grievance Hearing Board
        - Streamlining the process
        - In prior policy, all Faculty Senators constituted a Faculty Grievance Panel, from which a Chair is chosen. The Chair was responsible for selecting a Faculty Grievance Hearing Board from the Panel membership. This process was found to be too complex for cases that arise infrequently.
        - Change was made to have the Senate Chair-Elect form the Board from the pool of Faculty Senators, while allowing the parties to identify conflicts.
        - Note: The FAC considered broadening eligibility beyond Senators. However, the FAC could not determine a solution that would allow

broader participation while limiting the administrative burden in creating the Board. The list of Senators is diverse, and the FAC considered that it was efficient to have a pre-defined and deep pool of potential candidates.

- Amended and approved by the Senate on April 4, 2018. Approved by President Loh on April 5, 2018.
    - The Senate amendment focused on clarifying that grievances related to patterns of behavior can be initiated up to seventy-five days after the latest instance in the pattern.

2020 Revision: Senate Document #19-20-28

- Minor revision focused on:
    - Clarifying the limitations of the policy, to indicate that the grievance process should not be used to reconsider issues that have been investigated and adjudicated through another process on campus (like scholarly misconduct, sexual misconduct, non-discrimination, promotion and tenure, etc).
    - Language was changed in II.D to exclude complaints related to findings or decisions reached in other processes; disciplinary action (including termination or suspension) imposed following another institutional process; institutional legal obligations; or fiscal irregularity findings.
- Approved by the Senate on February 5, 2020. Approved by President Loh on February 7, 2020.

Appendix 4 - Administration of Other UMD Processes

	Who administers, according to the Policy?	What is the role, in practice?	How is the reviewing body chosen?	Conflict of Interest
University of Maryland Policies and Procedures Governing Faculty Grievances (II-4.00[A])	The Executive Secretary & Director of the Senate	Serves as coordinator of and advisor to the Faculty Hearing Board; facilitates work by the Senate Chair-Elect in forming the Hearing Board.	Faculty Senators are eligible to serve. The Executive Secretary & Director sends the list of Faculty Senators to the parties for identification of any conflicts of interest. The Senate Chair-Elect then appoints 5 members to a Faculty Grievance Hearing Board with 3 voting and 2 alternate members; the Board elects its own chair.	The policy discusses the process for the parties to identify potential conflicts of interest among those who are eligible to be selected for the Hearing Board. The policy does not discuss a conflict of interest by those administering the process.
University of Maryland Policies and Procedures Concerning Scholarly Misconduct (III-1.10[A])	The Research Integrity Officer (RIO)	Coordinates implementation of the policy, serves as an advisor to the Inquiry Committees and Investigation Committees. May provide logistical support, recruit expert witnesses, and arrange for legal advise to the committees.	The RIO appoints a committee of at least 3 members; committees normally are composed of University faculty, but may include others with experience or expertise useful to the issue at hand. The committees elect their own chairs. The policy also includes a process for each party to challenge the appointment of committee members based on conflict of interest.	The policy discusses conflicts of interest for other parties/those with other roles, but does not discuss a process when the RIO is perceived to have a conflict of interest.
University of Maryland Policy on Suspension of Faculty (II-9.00[A])	No specific administrator is named.	No specific roles are indicated. It is unclear whether the Board of Review is coordinated or facilitiated by anyone other than the Board members themselves.	The Chair of the Senate in consultation with the SEC will form a three-member Faculty Board of Review. All tenured faculty with no close personal or professional relationships to those involved in the case are eligible. The Senate Chair will develop a list of seven potential board members to the faculty member and the unit head to allow them to exclude up to two potential board members. The Senate Chair appoints the board from among the remaining potential members. The Faculty Board of Review elects its own chair.	
Termination Procedures within the UMD APT Policy (II-1.00[A])	No specific administrator is named.	No specific roles are indicated. It is unclear whether the faculty board of review is coordinated or facilitiated by anyone other than the board members themselves.	In cases of termination for cause where the faculty member requests review by a hearing officer, the President appoints the hearing officer from a College or School other than that of the faculty member, with the advice and consent of the faculty members of the SEC. If the faculty member requests a hearing by a faculty board of review, the members are appointed by the faculty members of the SEC. Eligible faculty are tenured Professors who do not have administrative duties.	No discussion of conflict of interest, though the policy does specify that the hearing officer cannot be from the same College or School.

Feedback to Develop a Framework Associated with a Consensual Relationships Policy

BACKGROUND

In March 2019, a proposal recommending the development of a policy prohibiting consensual relationships between faculty and the students they supervise or instruct was submitted to the Senate. The proposer noted that a conflict of interest arises when faculty develop amorous/sexual relationships with students in their classes, in campus organizations, or in any situation in which the student might fear reprisals or expect special treatment. The proposer also stated that there is an inherent power imbalance between faculty and students and that perceptions of retaliation or favoritism and liability for the University could ensue as a result of these relationships.

The proposal recommends developing a policy that prohibits consensual relationships between faculty and the students that they supervise or instruct because the University's Sexual Misconduct Policy "discourages" but does not prohibit these types of relationships. The proposal also included links to stand-alone consensual relationship policies at other institutions.

The SEC reviewed the proposal and voted to charge the Faculty Affairs Committee (FAC) with its review. In fall 2020, it was determined that the number of matters under review by the FAC was so substantial that some charges should be referred to a subcommittee. The charge on the proposal for a consensual relationship policy was among the matters referred to the subcommittee.

FEEDBACK NEEDED FROM THE SENATE

The subcommittee considered the feedback provided by the SEC and FAC as well as the Student Affairs Committee. Based on these considerations, the subcommittee now is considering whether to propose a policy based on the following principles:

- Prohibiting dating and romantic relationships between faculty and undergraduate students under the age of 21; and
- Prohibiting dating and romantic relationships between faculty and students where faculty members are aware that they have or can reasonably expect to have academic or supervisory authority over the other relationship participant.

The FAC and its subcommittee are seeking input from the Senate on the following:

1. Should all consensual relationships between faculty and undergraduate students be prohibited?

2. Should consensual relationships between faculty and undergraduate students of a certain age be prohibited? If so, what age would be an appropriate threshold (e.g., under 18 years old or under 21 years old)?

3. Should marriage be excluded from the definition of consensual relationship (and therefore allowed without reporting or management) or should marriage between faculty and students be an exception to the policy that must be requested by a faculty member?

4. Should consensual relationships between faculty and graduate students or post-doctoral associates be prohibited when an academic or supervisory relationship exists between them?

UNIVERSITY SENATE | CHARGE

Charged: November 25, 2019 | Deadline: November 6, 2020

Proposal to Establish a Consensual Relationships Policy (Senate Document #18-19-37)

Faculty Affairs Committee | Chair: Daniel P. Lathrop

The Senate Executive Committee (SEC) and Senate Chair Lanford request that the Faculty Affairs Committee review the *Proposal to Establish a Consensual Relationships Policy*.

Specifically, it asks that you:

1. Review the University of Maryland Sexual Misconduct Policy & Procedures (VI-1.60[A]).
2. Review policies regarding consensual relationships and sexual misconduct at Big 10 and other peer institutions.
3. Consult with the proposer.
4. Consult with a representative of the Office of Faculty Affairs.
5. Consult with a representative of University Human Resources.
6. Consult with a representative of the Office of Civil Rights and Sexual Misconduct (OCRSM).
7. Consult with a representative of the Office of General Counsel on the legal implications of consensual relationships between employees and students.
8. Consider whether consensual relationships should be prohibited between employees (i.e. faculty, graduate assistants, staff) and students (i.e. undergraduate, graduate).
9. If the committee determines that relationships between employees and students should be prohibited, it should:
    a. Consult with a representative of the Office of Civil Rights and Sexual Misconduct (OCRSM) on how best to incorporate such a prohibition in University policy.
    b. Consider what types of employees and in what situations (i.e. instructional, supervisory) a consensual relationships policy should apply.
    c. Consider whether the policy should be limited to relationships that involve a power imbalance or a conflict of interest.
    d. Consider whether the policy should provide a mechanism for requesting/approving exceptions from prohibitions and a process for how relationships with exceptions will be managed once they are approved.
    e. Consider whether a prohibition on consensual relationships should be addressed in the University's sexual misconduct policy or whether a separate policy should be developed.

f. Consider how a prohibition on consensual relationships should be implemented.

10. If the committee determines that a consensual relationships policy should be developed and it should apply to multiple constituencies, the committee should form a subcommittee with representatives from the relevant Senate constituency-based committees to develop a draft policy for review by each of the three committees before it is finalized by the Faculty Affairs Committee.

11. Consult with a representative of the Office of General Counsel on any proposed changes to University policy.

12. Provide a preliminary update to the Senate Executive Committee in May 2020.

13. If appropriate based on the committee's consideration of the above items, recommend whether the University should establish a consensual relationships policy or whether existing University policy should be revised.

We ask that you submit a report to the Senate Office no later than **November 6, 2020**. If you have questions or need assistance, please contact Reka Montfort in the Senate Office, extension 5-5804.

UNIVERSITY SENATE | PROPOSAL

Submitted on: March 28, 2019

Proposal to Establish a Consensual Relationships Policy

NAME/TITLE	Steve Rolston, Professor and Chair		
EMAIL	rolston@umd.edu	PHONE	X55946
UNIT	Physics	CONSTITUENCY	Faculty

DESCRIPTION OF ISSUE

A conflict of interest arises when faculty develop amorous/sexual relationships with students in their classes, in campus organizations, or in any situation in which the student might fear reprisals or expect special treatment. Perceptions of retaliation or favoritism and liability for the University could ensue.

The University's Sexual Misconduct Policy includes a section on Consensual Relationships and Professional Conduct (XIII) as follows:

Sexual relationships that occur in the context of educational or employment supervision and evaluation present potential conflicts of interest. Relationships in which one party maintains a supervisory or evaluative responsibility over the other also reflect an imbalance of power, leading to doubt as to whether such relationships are truly consensual. For these reasons, the University strongly discourages such relationships.

Because of the potential conflicts of interest, persons involved in consensual sexual relationships with anyone over whom they have supervisory and/or evaluative responsibilities must inform their supervisor(s) of the relationship(s). Supervisory or evaluative responsibilities may be reassigned, as appropriate. While no relationships are expressly prohibited by this policy, failure to self-report such relationships in a timely manner, as required by this policy, may result in disciplinary action.

DESCRIPTION OF CHANGE YOU WOULD LIKE TO SEE

The University's Sexual Misconduct Policy "discourages" but does not **prohibit** these types of relationships between faculty and students. There have been cases where these types of relationships have been problematic, so it is important for the University to consider this issue specifically.

SUGGESTION FOR HOW YOUR PROPOSAL WOULD BE PUT INTO PRACTICE

Develop a specific policy to prohibit consensual relationships between faculty and the students that they supervise or instruct, because of the inherent conflict of commitment and power imbalance.

ADDITIONAL INFORMATION

University of Maryland Sexual Misconduct Policy & Procedures VI-1.60(A)

Sample Policies at other Institutions:
http://theuniversityfaculty.cornell.edu/dean/report-archive/consensual-relationships-policy-committee/final-6-x/
http://policies.cua.edu/eeo/sexharass.cfm
http://counsel.cua.edu/fedlaw/nacuanoteamorousrelationships.cfm

https://policies.utexas.edu/policies/consensual-relationships#responsibilities-procedures
https://www.wisconsin.edu/regents/policies/consensual-relationships/
https://policies.northwestern.edu/docs/Consensual_Relations_011314.pdf
https://provost.illinois.edu/about/committees/advisory-to-vice-chancellor-for-academic-affairs-and-provost/consensual-relationship-policy-task-force/

UMD's Continuing Quest for Educational and Digital Innovation

Empowering Learning Experiences at UMD

Marcio A. Oliveira
Assistant Vice President
Academic Technology & Innovation

Overview

Institutional accomplishments

Lessons Learned

So what?

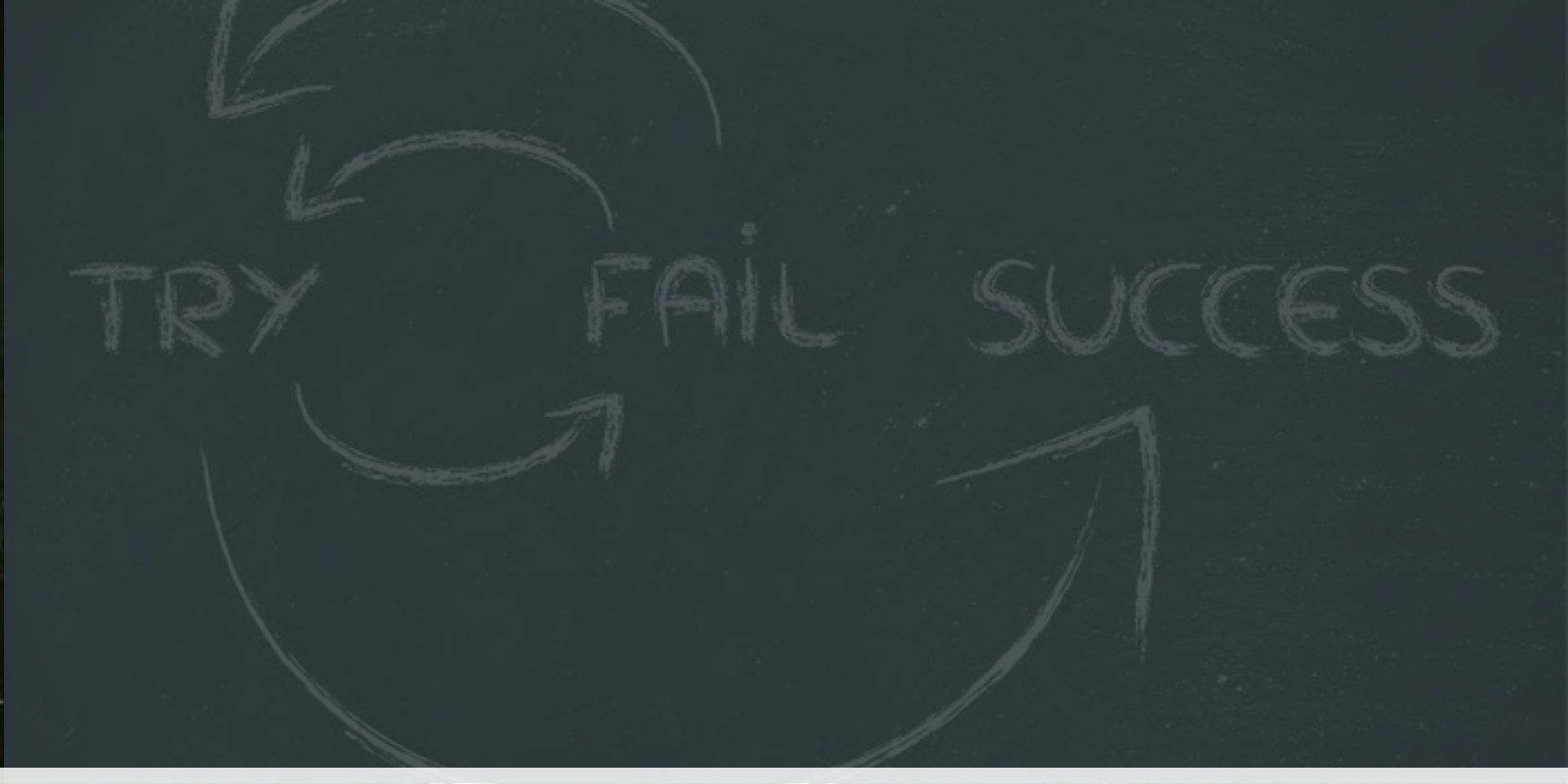
Teaching Innovations

New creative educational practices

Opportunities & Challenges

What is next?


REFLECT
LEARN
CHANGE



We have faced extraordinary challenges.
We succeeded in many different and extraordinary ways.

1

Expanded our educational resources

2

Higher levels of digital competencies

3

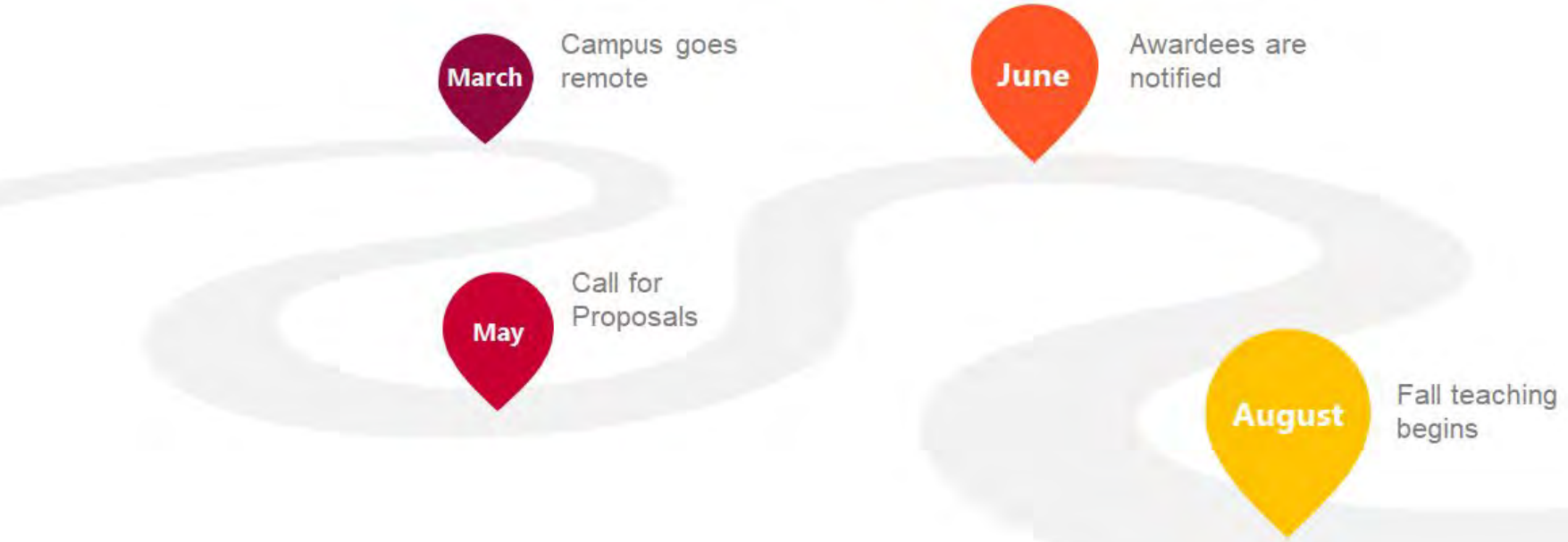
Content Delivery | Course Engagement

4

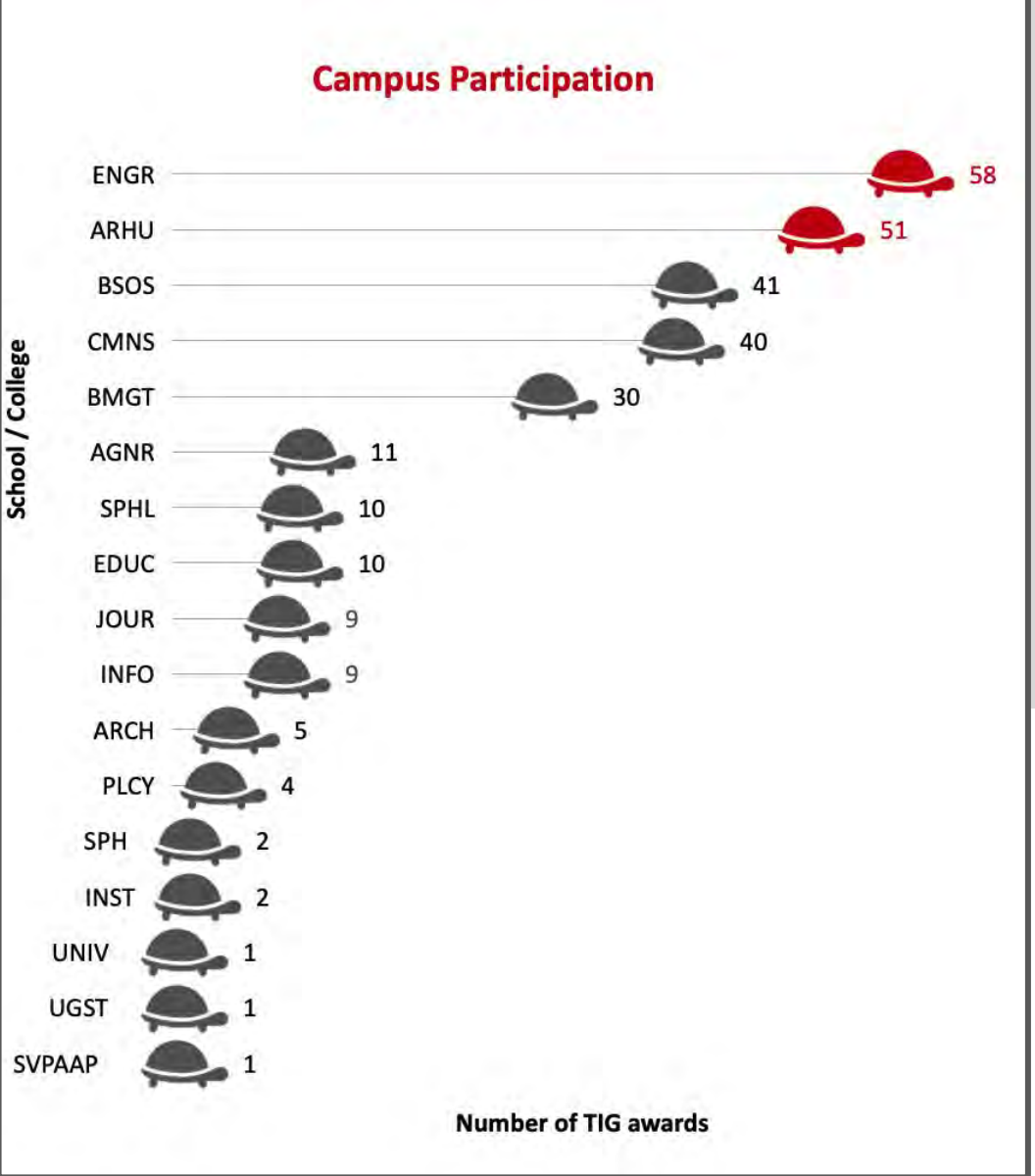
New and creative instructional practices

2020 Fast-Track Grant Milestones

The Teaching Innovation Grant was a rapid response to the emergency need for excellent online instruction in Fall 2020.



How could we best support course redesign activities that our instructors considered to be feasible?

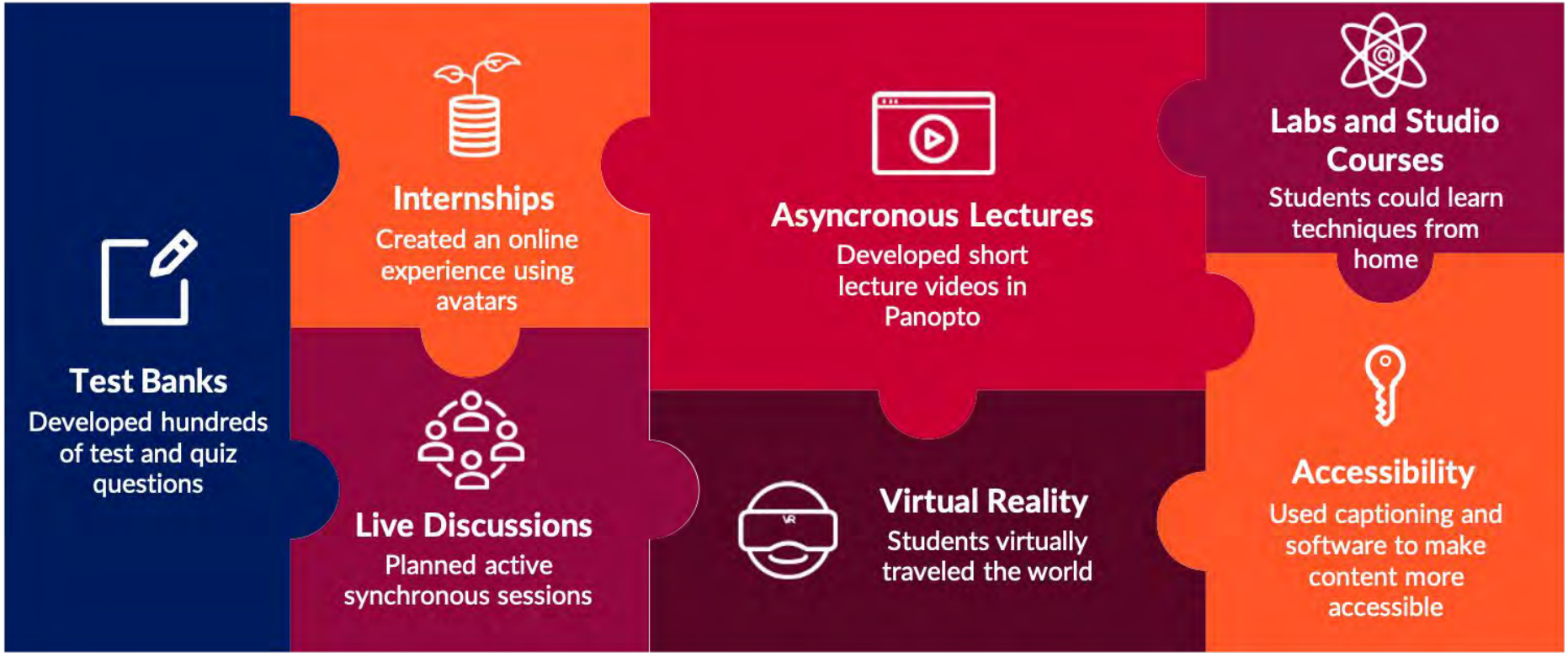


Instructors were highly committed to curating, creating, and offering a highly engaging course to their students

285 AWARDS

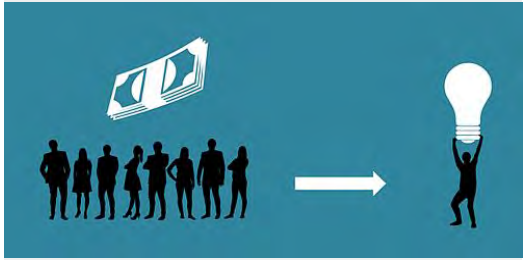
Thank You

Types of Innovation



What was funded?

The most common request was to fund instructors to do the major lift necessary to redesign their courses



Course Design Stipends
Instructors had a tremendous summer workload redesigning courses.

GA/UG Stipends
Graduate Assistants were essential for completing the redesigns.

Hardware
Video and audio equipment.

Software
Virtual Reality software, library resources, and other licenses.

Learning Kits
Mailing lab materials to students for hands on learning.

External Consultants
Video and webpage editing and other consultation services.

TIG Summer 2020 - IMPACT

- **630 instructors** worked on approximately **600 courses.**
- More than **65,000 course-seats** benefitted from this initiative in Fall 2020.
- By the end of Summer 2020, more than **415** instructors participated in the TLTC Course Design Sprints. **123** were tenured faculty.
- Participants taught classes with over **22,000 student** registrations in Fall 2020.
- By the end of summer 2020, more than **457 instructors** attended our workshops and webinars.

Additional accomplishments from the past year

- ✓ **A treasure trove of online resources (videos, modules, assignments).**
- ✓ **Designed and deployed scalable services and resources**.
- ✓ **95% of our UG students agreed that they had the resources needed to engage in their coursework.**
- ✓ **77% of instructors felt prepared to teach remotely at the beginning of the semester.**
- ✓ **69% of faculty teaching on campus felt able to teach effectively with the safety measures in place.**


what's
next
?


Short Term
Long Term

What is needed to keep the momentum generated during this past year?

UMD class experience

UnGoogleable

How can we strengthen and empower learning experiences at UMD?


QUALITY
of learning
experiences

UNIVERSITY OF MARYLAND

What kind of education is going to be worth our students' commitment of time and our own investment of scarce resources?

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Thank you… and let’s connect

"It takes two flints to make a fire"

Louisa May Alcott

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