



# UNIVERSITY OF MARYLAND

OFFICE OF THE SENIOR VICE PRESIDENT AND PROVOST

1119 Main Administration Building  
College Park, Maryland 20742-5031  
301.405.5252 TEL 301.405.8195 FAX

May 17, 2011

## MEMORANDUM

**TO:** Robert S. Gold  
Dean, School of Public Health

Steve Halperin *EWB*  
Dean, College of Computer, Mathematical and Natural Sciences

**FROM:** Elizabeth Beise  
Associate Provost for Academic Planning and Programs

**SUBJECT:** Proposal to Move the PhD Program in Toxicology from the College of Computer, Mathematical, and Natural Sciences to the School of Public Health (PCC log no. 10049)

At its meeting on May 6, 2011, the Senate Committee on Programs, Curricula and Courses approved your proposal to move the PhD program in Toxicology from the College of Computer, Mathematical, and Natural Sciences to the School of Public Health. A copy of the approved proposal is attached.

The change is effective Fall 2011. The Colleges should ensure that the change is fully described in the Graduate Catalog and in all relevant descriptive materials, and that all advisors are informed.

MDC/  
Enclosure

cc: David Salness, Chair, Senate PCC Committee  
Sarah Bauder, Office of Student Financial Aid  
Reka Montfort, University Senate  
Erin Howard, Data Administration  
Donna Williams, Institutional Research & Planning  
Anne Turkos, Archives  
Linda Yokoi, Office of the Registrar  
Thomas Castonguay, Graduate School  
Coke Farmer, School of Public Health  
Paul Smith, Computer, Mathematical, and Natural Sciences

# THE UNIVERSITY OF MARYLAND, COLLEGE PARK

## PROGRAM/CURRICULUM/UNIT PROPOSAL

• Please email the rest of the proposal as an MSWord attachment to [pcc-submissions@umd.edu](mailto:pcc-submissions@umd.edu).

PCC LOG NO.  
**10049**

• Please submit the signed form to the Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.

**College/School: SPHL / 01203300**

Please also add College/School Unit Code-First 8 digits:

*Unit Codes can be found at: [https://hypprod.umd.edu/Html\\_Reports/units.htm](https://hypprod.umd.edu/Html_Reports/units.htm)*

**Department/Program: MARYLAND INSTITUTE FOR APPLIED ENVIRONMENTAL HEALTH / 1331701**

Please also add Department/Program Unit Code-Last 7 digits:

**Type of Action (choose one):**

Curriculum change (including informal specializations)

*Renaming of program or formal Area of Concentration*

*Addition/deletion of formal Area of Concentration*

*Suspend/delete program*

*New academic degree/award program*

New Professional Studies award iteration

New Minor

X Other

*Italics indicate that the proposed program action must be presented to the full University Senate for consideration.*

**Summary of Proposed Action:**

We propose to move the assignment of the home for the University System Toxicology PhD on the UMCP Campus from CMNS to SPHL-MIAEH.

APPROVAL SIGNATURES - *Please print name, sign, and date. Use additional lines for multi-unit programs.*

- |   |  |                 |         |
|---|--|-----------------|---------|
| 1. Department Committee Chair                           |  | Amy R. Sapkota  | 4/14/11 |
| 2. Department Chair                                     |  | DONALD K MILTON | 4/14/11 |
| 3. College/School PCC Chair                             |  | Amy R. Sapkota  | 4/14/11 |
| 4. Dean   |  | Robert Gold     | 4/14/11 |
| 5. Dean of the Graduate School (if required)            |  |                 | 5/16/11 |
| 6. Chair, Senate PCC                                    |  | David Salness   | 5/6/11  |
| 7. University Senate Chair (if required)                |  |                 |         |
| 8. Senior Vice President for Academic Affairs & Provost |  |                 | 5/18/11 |

The University of Maryland Graduate Program in Toxicology was authorized by the Board of Regents in 1984 to provide a multidisciplinary training and research program within the then University of Maryland System - UMB, UMCP, UMBC, and UMES. Since its beginning the program has operated as a collaboration among five USM institutions. The Chesapeake Biological Lab of UMCES is also an active participant in addition to UMCP, UMBC, UMB, and UMES. As an inter-institutional effort, the program has developed thematic strengths in mechanistic toxicology/cell injury, neurotoxicology, aquatic toxicology, forensic toxicology, and molecular epidemiology and analytical toxicology. The University of Maryland Baltimore has been the lead institution in the Toxicology Program for the 20 years of its existence.

Participation in the program by UMCP faculty and students has primarily been from with the (former) College of Chemical and Life Sciences, and primarily by Prof. Amy Brown and Prof. Judd Nelson from the department of Entomology. However, their students have typically chosen to enroll in programs other than Toxicology in recent years as faculty research interests have shifted.

The Maryland Institute of Applied Environmental Health (MIAEH) was established in 2006 with a mission to carry out research on a broad range of environmental factors and their effect on human health. Faculty members in MIAEH collaborate with state, federal, international and private agencies to develop research solutions that address pressing environmental health problems. MIAEH currently offers students flexible and individualized programs of study that lead to the Master of Public Health in Environmental Health Sciences. Faculty research within MIAEH is also well-aligned with the goals of the Toxicology program, and thus MIAEH would be a more natural home for students interested in pursuing doctoral research in this area. CMNS Dean Stephen Halperin (in consultation with department chairs from the former CLFS) and SPHL Dean Robert Gold, have both agreed that moving the program to MIAEH would re-invigorate the program and provide new opportunities for UMCP students. This move does not involve any move of faculty or students (there are no UMCP students currently enrolled). MIAEH director Dr. Donald Milton is currently working with the UMB program director, Katherine Squibb, to outline a new suite of curricular offerings at UMCP to strengthen our local participation, which will be submitted at a later time as a separate PCC action item. Current guidelines for the program are attached in the following pages.



# UNIVERSITY OF MARYLAND

SCHOOL OF PUBLIC HEALTH

*Maryland Institute for Applied and Environmental Health*

2234V School of Public Health Bldg  
College Park, Maryland 20742-2611  
301.405.5509 TEL, 301.405.8397 FAX

February 12, 2011

Deans Gold and Halperin  
University of Maryland  
College Park, MD, 20742

RE: College Assignment for Toxicology Doctoral Program

Dear Deans Gold and Halperin:

There is a Toxicology Ph.D. program on the UMCP campus listed in the Academic Affairs Academic Program Inventory on this campus: <http://www.provost.umd.edu/ProgDocs/APIalpha7-1-10.pdf>. The program is a system wide program joint with UMAB, UMBC, and UMES. The program is assigned to CLFS (as of July 1, 2010) without further assignment to a specific department. Dr. Amy Brown and Dr. Judd Nelson in Entomology have been the faculty on this campus most involved. However, their students have chosen to enroll in the MEES or other UMCP programs rather than the Toxicology program. Thus, although the program is officially "active", no UMCP students have enrolled and the courses listed under TOXI in the graduate catalog have not been offered in many years. As a result, the Associate Provost for Academic Planning and Programs as identified it as an "underperforming" program.

The Toxicology Ph.D. would be well suited to SPHL students in the Maryland Institute for Applied Environmental Health. MIAEH faculty members met with the Toxicology Ph.D. program director in Baltimore and are very enthusiastic about rejuvenating the degree program on this campus. We already have two promising candidates.

We have initiated the process of making all primary MIAEH faculty members also members of the Toxicology Program faculty. One of the previously involved faculty, Dr. Brown, is also an affiliate member of the MIAEH faculty. As a result, there will soon be nearly complete congruence between Toxicology program faculty and MIAEH faculty. MIAEH faculty will also advise all of the students next year. Therefore, we would like to have the program officially assigned to SPHL-MD Institute for Applied Environmental Health. Dr Beise advised us that this can be easily done if the two Deans involved agree and send her a memo requesting the reassignment. Thus, we write to request that you generate that memo and help us to renew the Toxicology program at UMCP.

Sincerely,

Donald K. Milton, MD, DrPH  
Professor and Director  
Maryland Institute for Applied  
Environmental Health

Amy E. Brown, PhD  
Professor Entomology  
Affiliate Professor Maryland Institute for  
Applied Environmental Health

Betsy

I support this action as well and will look to our Maryland Institute to lend leadership to the future of this program.

Bob

Robert Gold  
Dean  
301.405.2437

On 2/18/2011 4:32 PM, Donald K. Milton wrote:

Dear Steve,  
Thank you very much for moving this along quickly. We in MIAEH are very excited to move forward with rejuvenating the doctoral program.  
Regards,  
Don

**From:** Stephen Halperin  
**Sent:** Friday, February 18, 2011 4:22 PM  
**To:** Donald K. Milton  
**Cc:** Robert S. Gold; Amy E. Brown; Blakely Ruth Pomietto; Dushanka V. Kleinman  
**Subject:** Re: Transfer of Toxicology Doctoral Program from CLFS(CMNS) to SPHL-MIAEH

Dear Don,  
I have consulted the CLFS chairs and can confirm that CMNS is happy to agree to the transfer.  
steve

On 2/16/2011 2:42 PM, Donald K. Milton wrote:  
Deans Gold and Halperin:  
Please see attached letter requesting transfer of the Toxicology Ph.D. Program.  
Don Milton

Donald K Milton, MD, DrPH  
Professor and Director  
Maryland Institute for Applied Environmental Health  
School of Public Health  
University of Maryland  
SPH Building 255  
College Park, MD 20742-2611  
[dmilton@umd.edu](mailto:dmilton@umd.edu)  
<http://www.sph.umd.edu/miaeh/>  
(301) 405-0389 phone  
(301) 314-1012 fax

# **UNIVERSITY OF MARYLAND SYSTEM-WIDE PROGRAM IN TOXICOLOGY GRADUATE PROGRAM REVIEW SELF STUDY**

**April 2004**

## **Executive Summary**

The University of Maryland System-Wide Program in Toxicology is an interdisciplinary graduate training program in mechanistic and applied fields of environmental and medical toxicology. Established as an intercampus University of Maryland (UM) program in 1984, the Program in Toxicology encompasses faculty and resources at the University of Maryland Baltimore, College Park, Baltimore County, and Center for Environmental Studies' Chesapeake Biological Laboratory campuses. The inclusion of the research programs, faculty and resources of these institutions into one graduate program forms one of the most comprehensive Toxicology Programs in the nation.

The mission of the UM Program in Toxicology is to provide high quality graduate education for students wishing to enter the fields of toxicology and environmental health. Through its interdisciplinary courses and research opportunities, the Program in Toxicology trains highly qualified individuals for careers in research, teaching, regulatory affairs and service related to understanding and mitigating the ecological and human health impacts of exposure to hazardous chemicals.

The Program in Toxicology offers thesis and non-thesis MS, PhD and MD/PhD degrees in the following areas of specialization: Mechanisms of Cell Injury and Carcinogenesis, with an emphasis in Neurological, Reproductive and Immunotoxicology; Molecular Epidemiology; Aquatic Toxicology and Forensic Toxicology. Future plans include the development of a new track in Analytical Toxicology with a research focus on chemical metabolism, and a dual JD/MS degree in Risk Assessment and Environmental Law that addresses the critical need for toxicologists trained in risk assessment and regulatory toxicology.

To date, 11 Masters of Science 33 PhD and 1 MD/PhD degree students have graduated from the Program. These graduates have advanced into positions of leadership in academia, federal and state agencies, private companies and foundations. The Program currently has an average of 25 graduate students, primarily PhD candidates. Financial support for the administration of the program and student support is derived from dedicated state funds, an NIEHS training grant, faculty grant funding, NIH student training programs and departmental administrative support.

The greatest strength of the Program in Toxicology is the interdisciplinary training we provide our students. The diversity of our Toxicology faculty gives students the ability to cross train in a number of disciplines, bringing different approaches to bear on their research questions. The initiation of the environmental law/science program with the UM School of Law offers a unique training opportunity for students wanting to work on regulatory and policy issues. From basic research to applied professions in toxicology, our students are prepared to grapple with the difficult environmental and human health issues facing our country today.

## Program in Toxicology

### PROCEDURE FOR PhD COURSE WORK, RESEARCH PROPOSAL AND DISSERTATION TIMELINE

#### Year 1-2:

Complete Courses- 30 Credits Required

Three Rotations

Select Mentor: Start your thesis work with the selected Mentor.

Complete Qualifying Exam

#### Qualifying Exam Procedure:

Set up Graduate Committee consisting of five-six faculty members. The mentor and track director (Molecular & Mechanistic or Environmental) are automatically selected members of the committee. One member has to be outside the home department. Mentor serves as chair.

Take Qualifying Exam

Write Abstracts for three non-thesis proposals

Submit to the Track Co-Director who will take a committee vote. Abstract with maximum votes will be selected for student to write full-length proposal (Maximum 15 Pages including figures and references).

Student submits the detailed proposal at least 15 days before the date of qualifying exam.

Set a date for qualifying exam. Student presents the proposal before the committee. Student will be tested on the proposal and other questions related to courses taken and the current affairs in science.

Grades will be PASS, MARGINAL PASS and FAIL. Complete requirements of changing MARGINAL PASS to PASS. Retake a second and final time exam in case of FAIL.

#### Year 03-Until Completion:

After admission to candidacy, a student should assemble a thesis committee in consultation with their mentor. The committee will be the same as their qualifying examination committee in case of students who joined the toxicology program after 2008 or different in case of students who joined the program before 2008. The mentor and track director (Molecular & Mechanistic or Environmental) are automatically selected members of the committee. The student will need to select 3-4 additional members to serve on the committee, including at least one from outside the mentor's department. The mentor will serve as chair of the committee. The names of the faculty members on the committee should be given to Linda Horne, Program Coordinator. The Graduate School form "Nomination of Members of Final Doctoral Examining Committee" should also be completed and turned into the Graduate School.

The student should then:

- Organize their research proposal meeting with members of their thesis committee no longer than six months after completing their qualifying exam.
- Finish writing their research proposal.

- Fix a date to meet with their committee to present and defend their proposal.
- Submit their research proposal to their committee members at least two-weeks before the proposal defense meeting.
- Finalize their research plan based on the discussions with their committee members at the proposal defense.
- Complete their research, meeting on a regular basis with their committee (at least every 6 months). In addition, after each 6 month committee meeting, the student's mentor should submit a report summarizing the student's progress to the program coordinator with signatures from the committee members.
- When the student and mentor agree that the student is close to completing their research plan, a committee meeting should be held to develop a plan for finishing the project.
- Write their dissertation, working closely with their mentor.
- Schedule a date for their dissertation defense.
- Submit their dissertation to the designated readers on their committee at least 4 weeks prior to their defense date. When approved by the readers, the student should obtain their signatures on the graduate school form "Certification of Completion of the Doctoral Dissertation" and submit this to the Graduate School. The thesis, revised if necessary, should then be submitted to the remaining members of their committee at least 2 weeks prior to their defense date.
- Present their research at their dissertation defense as a formal seminar open to the public, the UMB research community and their committee members, followed by a closed door meeting/evaluation with their committee. All committee members must be present and sign the final document.
- Complete the final dissertation, incorporating revisions discussed by the committee at the student's dissertation defense and following graduate school guidelines.



**TOXICOLOGY PROGRAM PH.D.**

**REQUIREMENT OF CORE COURSES AND ELECTIVES**

<b>COURSES</b>	<b>MECHANISTIC TOXICOLOGY CREDITS TOTAL REQUIRED-30</b>	<b>ENVIRONMENTAL HEALTH AND TOXICOLOGY CREDITS TOTAL REQUIRED-30</b>
GPILS 601 CORE COURSE – MECHANISMS IN BIOMEDICAL SCIENCE	8	E
GPILS 623 MOLECULAR TOXICOLOGY	3	E
TOXI 601 ADVANCED TOXICOLOGY	E	3
TOXI 611 EXPOSURE, RISK AND PUBLIC HEALTH	X	2
ELECTIVES IN ENVIRONMENTAL HEALTH AND TOXICOLOGY CONCENTRATION (see list of suggested electives)	X	6
PHARMACOLOGY  GPILS 607 FUNDAMENTALS OF PHARMACOLOGY  PHAR 600 PRINCIPLES OF DRUG DISCOVERY  PHAR 601 PRINCIPLES OF DRUG DEVELOPMENT  PHAR 602 PHARMACOKINETICS	E	3
PATH 603 GENERAL PATHOLOGY (Fall)	3	3
ANALYTICAL CHEMISTRY  CHEM (UMBC)	X	E
STATISTICS  GPILS 622 INTRO TO BIOSTATISTICS  PREV 621 PRINCIPLES OF BIOSTATISTICS	3	3
TOXICOLOGY SEMINAR	3	3
TOXI 609 METHODS IN TOXICOLOGY (Lab Rotation)	2	2
General ELECTIVES (see list of Suggested Electives)	8	5
<b>TOTAL</b>	<b>30</b>	<b>30</b>

**SUGGESTED ELECTIVES FOR MECHANISTIC TOXICOLOGY TRACK**

GERO 711	Biology of Aging (Fall, Spring)	3
GPLS 616	Molecular Mechanisms of Signal Transduction (Fall)	3
GPLS 624	Molecular Oncopharmacology (Spring)	3
GPLS 633	Pathways in Neuroscience (Fall, Spring, Summer, Winter)	1
GPLS 665	Special Topics in Cancer Biology (Fall)	3
GPLS 701	Advanced Molecular Biology (Fall)	3
GPLS 702	Basic Immunology (Spring)	3
GPLS 705	Basic Human Genetics I (Fall)	4
GPLS 709	Advanced Biochemistry (Spring)	3
GPLS 717	Molecular Genetics and Development in Model Organisms (Fall)	2
GPLS 721	Imaging Methods in Membrane Biology (Spring)	2
GPLS 769	Advances in Immunology (Fall)	2
GPLS 790	Advanced Cancer Biology (Spring)	3
HGEN 601	Human Genetics I (Fall)	4
PHAR 600	Principles of Drug Discovery	
PHAR 601	Principles of Drug Development	
PHAR 602	Pharmacokinetics	
TOXI 601	Advanced Toxicology I	3

**SUGGESTED ELECTIVES FOR ENVIRONMENTAL HEALTH AND TOXICOLOGY**

TOXI 602 ADVANCED TOXICOLOGY II		3
TOXI 607 FORENSIC TOXICOLOGY		3
TOXI 623 MOLECULAR TOXICOLOGY		3
TOXI 625 AQUATIC TOXICOLOGY		3
PREV 780 MOLECULAR EPIDEMIOLOGY		3
PREV 600 PRINCIPLES OF EPIDEMIOLOGY		3