

2020 STRATEGIC PLAN UPDATE of the UNIVERSITY OF MARYLAND

Introduction

In 2008, the University of Maryland (UMD) developed a comprehensive and bold 10-year strategic plan, “Transforming Maryland: Higher Expectations.” In the years since, UMD has achieved a number of these goals, experiencing a remarkable rise in accomplishment and reputation. By any measure, UMD is now one of the nation’s front-rank public research universities.

New opportunities now promise even greater attainments. *The 2020 Strategic Plan Update* capitalizes on this momentum and builds on the 10-year plan (2008-2018) that was adopted by the University Senate in May 2008.

Many elements of that plan remain relevant. The **mission** of the University as stated in the 2008 plan is to foster the education, critical thinking and intellectual growth of students; create and apply new knowledge via research, scholarship and the creative arts; enhance the economic development of the state; and improve the surrounding world.

The **action principles** identified in 2008 still apply: to build an inclusive community; embrace the power of technology; act with entrepreneurial spirit; partner with others locally and globally; foster transformational change; enhance contributions to society; elevate our rank among world-class universities; attract the best faculty, staff and students; become an international center of excellence; create a vibrant surrounding community; sustain and strengthen the state’s competitive capacity; and serve Maryland as its flagship institution with worldwide reach.

The **strengths and opportunities** identified in 2008—UMD’s location, flagship status, high quality and breadth of academic programs, diversity, increasing excellence, a culture of innovation, collaboration and partnership—are even more relevant today. UMD’s 2012 strategic partnership with the University of Maryland, Baltimore (UMB) and the 2013 affiliation with the Big Ten Conference and its Committee on Institutional Cooperation (the academic consortium of member institutions) create greatly expanded opportunities for collaborations in education, research, innovation, and administration.

Some of the **weaknesses and threats** identified in 2008 remain, such as chronically unstable and unpredictable state funding and a flawed budget allocation process. The risks posed by deferred maintenance of UMD’s physical and virtual campuses have grown to exceed \$1 billion and is a significant impediment to progress.

The University community can take pride in **the progress toward realizing the goals set in 2008**. Areas of weakness in the general education curriculum, graduate studies, and the international program have been addressed. Undergraduate and graduate programs have become more rigorous and selective, attracting an increasingly talented and diverse student body. Retention and graduation rates continue to improve. The student achievement gap has declined. Experiential and blended learning environments have become a major focus of educational improvements campus-wide. Expanded active learning, international study, and interdisciplinary opportunities now enhance our students’ education and success.

The University's research portfolio has grown and diversified through the efforts of UMD's outstanding faculty and by major new relationships with corporate, federal and international partners. Through these partnerships, UMD leverages its location and extends the reach and impact of its programs. UMD has achieved world leadership in fields such as quantum computing, language science, health disparities, digital humanities, traffic control and climate modeling, to name only a few. Research expenditures and grants reached an all-time high in FY 2015, despite Federal budget constraints and increased national competition for the limited funding.

In cooperation with local, county and state officials, UMD has made significant advances in the revitalization of the College Park community with respect to public safety, public education, public is helping to create a new innovation ecosystem to support startups and mature businesses interested in partnering with UMD faculty and students. The future of UMD is intertwined with the future of its surrounding community. Around the state, new initiatives have expanded the University's role in economic development, pursuant to its land-grant mission.

The updated strategic goals for 2020 outlined in this plan are grounded on those of 2008 and the University's progress over the past seven years.

In designating UMD the state's flagship institution, the state charged UMD to be "equal to the best." The updated goals in the following areas are intended to achieve this ongoing pursuit of excellence:

- I. Education (p. 3)
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NOTE—Sections yet to come:

- Cost of implementation and ideas for obtaining resources;
- More specific program details;
- Updated summary restating our shared vision and goals

I. EDUCATION

UNDERGRADUATE EDUCATION

The University of Maryland provides a world-class education that emphasizes academic excellence, student engagement and innovative teaching. Across 10 colleges, it offers 90 undergraduate majors, scores of minors, certificate programs as well as living and learning communities that cover a great variety of disciplines. High-quality academic programs lead UMD graduates to successful careers and productive lives. Enhancing those programs will, in the words of the 2008 plan, make UMD a “magnet for the most promising students of the next generation.”

Progress Since 2008

A major initiative of the 2008 strategic plan was to reimagine the University’s **general education program**—the common curriculum for all majors that provides the defining intellectual elements of a University of Maryland education. The new general education curriculum called for two categories unique to UMD: **i-Series** courses aimed at engaging students with big questions that matter to society and **Scholarship in Practice** courses that give students opportunities to engage in the work of a discipline through collaboration, innovation, risk-taking, communication and creation of original work. In addition, the **diversity requirement** was broadened to better prepare students to live and work in a multicultural society.

The new general education program is now fully implemented. Faculty-generated learning outcomes define each general education category, and nine active and engaged faculty boards have reviewed and approved nearly 1,300 courses. “Fearless Ideas” courses, led by the Academy for Innovation and Entrepreneurship, embed “design thinking” and “lean startup” methodologies into a wide array of courses. Through the academy, begun in 2012, enrollments have tripled in **innovation and entrepreneurship (I&E)** courses to 7,000; student engagement in I&E co-curricular activities has risen 40 percent to 8,000; and I&E courses have increased to 141 in 34 departments. Also, the Academy has launched a minor in I&E with initial enrollment of 110 students and has embedded I&E modules in the majority of living and learning programs.

The new **First Year Innovation and Research Experience (FIRE)** provides a multi-semester, inquiry-based research experience and mentorship to first-year students through faculty-led discovery and scholarship projects. In 2009, the **Honors College** was created, joining the interdisciplinary University Honors Program with Gemstone and Honors Humanities. New interdisciplinary living and learning programs followed: Design, Cultures, and Creativity; Entrepreneurship and Innovation; and Integrated Life Sciences. In 2013, the Advanced Cybersecurity Experience for Students (ACES) program was added with the help of a generous gift from Northrop Grumman. **College Park Scholars** has been revised and enhanced. Many of its 12 living and learning programs now include an international experience. The newest Scholars program, Justice and Legal Thought, is a successful collaboration with UMB’s Francis King Carey School of Law.

Updated 2020 Goals

An education at the University of Maryland engages students in social, ethical and cultural concerns; stimulates their intellectual curiosity; educates them for civic responsibility; and develops creative and critical reasoning skills to prepare them for a lifetime of inquiry, productivity and leadership. As a land-grant institution, UMD’s mission is also to put knowledge into action and prepare work force-ready graduates. UMD will

continue to transform its educational environment through new approaches to teaching, course design, learning environment, career preparation as well as new experiential opportunities.

A **Maryland “career-ready plan”** will be developed to prepare students for employment and/or post-baccalaureate study to help them succeed after graduation.

- New students will complete a **self-assessment** to explore their skills, interests, values, motivations, personality and goals and meet with professional development advisors who will help guide them earlier into majors that match their skills and aspirations, reducing time to graduation.
- The University will further expand programs that develop **innovation, inquiry and collaboration**, including *Academy for Innovation and Entrepreneurship initiatives*; the *First-Year Innovation and Research Experience*, which engages entering students in faculty scholarship and research; *Federal Semester*, which takes advantage of UMD’s location near Washington, D.C., and integrates academic learning with professional development; living and learning programs such as *the Honors College*, *College Park Scholars*, *CIVICUS*, *Global Communities*, *Beyond the Classroom* and *Carillon Communities*; and international programs such as *Global Semester*, *Global Classrooms*, *Global Entrepreneurship Semester*, *Maryland Social Entrepreneur Corps* and the *Global Certification Program*.
- **Peer mentors**—trained upper-level students—will be part of the delivery of these programs. Use of peer mentors improves student outcomes while providing valuable leadership and teambuilding skills and financial aid to the mentors themselves.
- Students will have expanded opportunities to engage in **paid internships** or projects with partner companies, organizations or agencies; community-based organizations; undergraduate research opportunities with faculty; or other training arrangements with alumni and other professionals.
- As students approach graduation, they will be offered workshops identifying employment opportunities, application and interviewing skills, business etiquette, financial planning and graduate and professional education options. UMD career advisors will identify job opportunities in careers that are under-represented in traditional, on-campus recruitment programs.
- Students will be encouraged to build a portfolio of learning artifacts that can be accumulated well beyond graduation, representing a commitment to lifelong learning.

Transforming Teaching to Enhance Learning: It is crucial that UMD goes beyond simple “content delivery” in courses and takes advantage of the best available pedagogies. Structuring classes to bring students more directly into the learning process during class time increases overall learning, and does so in a way that reduces the achievement gap (i.e., the greatest learning improvements are seen among under-represented minorities).¹ Project-based and “flipped” classrooms reduce in-class lecture time and enable collaborative learning and discovery. These techniques result in deeper long-term learning. The benefits of project-based learning also include:

- Leading students to seek the knowledge necessary to solve a problem, or advance from discovery to mastery of a topic, while building their self-confidence.
- Integrating learning across fields. Projects can be organized across several courses associated with a particular contemporary issue as well as used in individual courses.
- Developing analytical and creative skills.

Blended learning structures can provide accommodations not available in traditional classrooms, including

¹ <http://www.pnas.org/content/111/23/8410.full.pdf>.

adaptive content that identifies student weaknesses and provides personalized support. Also, online discussion of difficult topics can be more comfortable than in a face-to-face setting. MOOCs (massive open online courses) are a blended learning resource that can be adapted for use in campus classes. Within the blended/online environment, self-paced courses that require success at each module before moving forward (called “mastery-” or “competency-” based structures) have proven to be especially effective at improving learning outcomes.

These transformational approaches to teaching are supported in the pedagogical research literature. Still, implementation details can significantly affect outcomes, and learning and student success will be monitored to gauge the impact of these changes.

Learning spaces can facilitate or inhibit active learning. UMD will continue to invest in updated classrooms that are designed to accommodate a variety of teaching approaches, including project-based and blended learning systems.



GRADUATE EDUCATION

A defining aspect of the University as the state’s flagship is the strength and breadth of doctoral programs and the important role they play in the dual mission of education and scholarship.

Progress Since 2008

The “**Excellence in Doctoral Education**” initiative advanced several goals specified in the 2008 strategic plan. Each of the 83 doctoral programs was individually reviewed to determine appropriate program size based on 1) capacity for funding and mentoring students and 2) student success based on quantitative and qualitative measures. Providing a basis on which to match program size to capacity and success, this initiative was designed to increase full-time enrollment and full funding for students, and thus to increase graduation rates, decrease time-to-degree and improve placement upon graduation. This initiative achieved a 10 percent strategic reduction in the number of doctoral students, increased the 10-year completion rate (to 62.9 percent from 57 percent) and reduced the median time to degree to 5.3 years.

The 2008 strategic plan also called for an increase in **graduate student financial support**. In addition to increases in graduate assistantship stipends, the Graduate School replaced the Block Grant Fellowship program with University, Dean's and Merit Fellowships. These awards come in variable amounts with specified minimum values, carry incentives for combining with other resources, and enable tracking of student outcomes. New funds (\$2.5 million) were appropriated for additional fellowship programs targeted to recruiting, advancing and graduating exceptional students and students from underrepresented minorities.

Professional graduate degree and certificate programs have grown substantially in number and revenue generated. The Task Force on Professional/Executive Graduate Programs reviewed policies and practices to ensure that programs maintain the highest levels of academic standards, integrity and oversight, while remaining responsive, agile, flexible and competitive in the marketplace. A subsequent working group researched the advisability of creating professional doctoral programs and developed guidelines. It has drafted a Doctorate of Professional Studies proposal for consideration.

Updated 2020 Goals

A **comprehensive strategic plan** for graduate education will guide actions going forward. The plan envisions two parallel missions—*research* and *professional training*—that include graduate certificates, master's degrees and doctoral degrees. **Student Success Programs** in Graduate Student Writing, Graduate Teaching and Learning and Preparation of Doctoral Students for Multiple Career Paths will be advanced using "train-the-trainer" models aimed at both students and the faculty who mentor them. A comprehensive review of the allocation of graduate **fellowship funding** will be undertaken to ensure that resources are used to attract top students to our programs. Graduate education will continue to create opportunities for **international** research projects, bi- and multi-university graduate seminars and student exchanges.

II. RESEARCH AND SCHOLARSHIP

Research and scholarship are core University missions. Extending UMD's preeminence in these pursuits requires attracting and retaining the best, most productive faculty.

Accomplishments are measured by faculty recognition, research funding, collaborations and partnerships, and the impact of the work: how it pushes the boundaries of knowledge, experience and technology, and how it informs academic and public conversations on societal issues and cultural heritage. Evaluations are made with respect to peer institutions.

Progress Since 2008

Recognition of faculty excellence continues to rise. For example, eight faculty members have been elected to the National Academies and five to the American Academy of Arts and Sciences, while 10 have received Guggenheim Fellowships. Another fourteen faculty members have been supported by year-long grants from the National Endowment for the Humanities.

Despite a prolonged period of difficult budgets, **faculty research productivity** has continued to increase. Research awards in FY15 hit an all-time record of \$550 million—up 15 percent over \$479 million in FY14 and \$466 million in FY13. UMD is currently No. 1 among all U.S. universities in active Advanced Research Projects Agency-Energy (ARPA-E) awards, both as lead organization and for total active awards. The Na-

ture Index of Academic Productivity ranks UMD 15th among all universities, sixth among U.S. public universities, second in the Big Ten and fourth in research productivity among all universities without a medical school. UMD's federally funded research expenditures ranked fourth in 2013, up from sixth in 2006, among universities without a medical school.

While the total number of tenured and tenure-track faculty has essentially remained unchanged since 2008, the number of faculty with research titles has grown by 50 percent. Most of the increase in UMD's research portfolio is a direct result of a deliberate and targeted effort to develop a network of research partnerships with federal agencies, government labs and the private sector.

In addition to its well-recognized scholarly impact, the University's world-class research and entrepreneurship has provided a major **economic benefit to the state**. According to the University System of Maryland's Committee on Economic Development and Tech Commercialization, UMD's economic impact on the state was valued at \$2.4 billion in 2007, increasing to \$3.1 billion in 2014. In recognition of the University's role as an economic engine, UMD was named to the 2015 class of Innovation & Economic Prosperity Universities by the Association of Public and Land-grant Universities (APLU), which honors 18 universities annually with that designation. UMD joins seven Big Ten institutions that are certified Innovation & Economic Prosperity Universities. Subsequently, UMD received top honors among the schools in this group, earning the 2015 Connections Award.

New buildings completed since 2008 that strengthen UMD's research infrastructure include phase I of the Physical Sciences Complex—unquestionably a superb new research facility—Knight Hall, and two new residence facilities, Oakland and Prince Frederick Halls.

Updated 2020 Goals

As one of the nation's front-rank research universities, UMD will attract and retain the best faculty—established leaders as well as rising stars—students, postdocs, research scientists and staff. This requires continued enhancement of the environment of achievement and success that supports faculty research and scholarship, as well as a vigorous pursuit of excellence in promotion, tenure and hiring.

UMD has strengthened the **promotion and tenure** process in a number of respects, improving recognition of entrepreneurial activity and teaching excellence, and striving to increase faculty diversity. The appointment and promotion process for teaching and research professionals has also been upgraded. But several years of budget constraints have resulted in serious issues **of salary compression** and a general need for cost-of-living and merit raises at all levels. Addressing these issues must be a major part of the updated 2020 goals, along with efforts to recruit, promote and retain the most outstanding faculty in the nation.

Top talent demands an **environment** that supports world-class research. This includes state-of-the-art research buildings and core facilities as well as opportunities for research funding, partnerships, new program development, technology transfer and collaboration with distant colleagues. It also requires resources to attract outstanding graduate students, including competitive fellowships and support for interdisciplinary programs. It is important, too, to have a local environment that provides safe, attractive, dynamic living conditions. Successfully achieving top-10 research status requires a multidimensional approach.

UMD will identify several key areas in which to **invest in funding and faculty** positions in the next five years. These areas of emphasis will be chosen with input from all the key stakeholders. Considerations for

deciding where to make future investments include:

- **Areas in which UMD is already preeminent.** UMD leads the nation in quantum computing, digital humanities, alternative energy sources, advanced geolocation, linguistics, climate change, and health disparities. The University needs to maintain and build on its strengths.
- **Areas of national or global need and emergent opportunities.** Fields such as cybersecurity, environmental security and policy, competencies in critical languages and cultures, and high-performance computing are areas of almost desperate national need. UMD, as the only Research I university inside the Washington, D.C. Beltway, can lead the nation in these areas. Recent investments and gifts have created new opportunities in virtual reality, robotics, biomedical devices and big data. These can leverage additional research strengths.
- **Areas where collaboration will enhance visibility and impact.** For example, breakthroughs in the quantitative life sciences will require the effective integration of knowledge and expertise drawn from multiple traditional disciplines. UMD has great strength in the life sciences across many schools and colleges, but poor national visibility or recognition because of the dispersed and separate organizational structure. The University will stimulate and support collaborations to address fundamental life science questions, using expertise from the biological, chemical, physical, computational and mathematical sciences. Such research can be translated into solutions using the applied expertise of engineering, agricultural science and public health, then implemented using the tools of policy, social science, business, humanities and the arts. Priorities include invigoration and increased visibility of interdisciplinary graduate research programs, as well as consolidation and coordination of core research facilities to maximize their potential. Similarly, existing strengths in neuroscience, environmental science and African-American history and culture will be leveraged to enhance their national and international prominence. The University will support convocations, awards and working groups that seek to explore new interdisciplinary collaborations or remove barriers that reinforce parochial paradigms.
- **Areas that benefit the state or leverage UMD's location.**
The State of Maryland is home to many potential partners and investors in a variety of fields, and UMD will make the most of its proximity to these opportunities. They include great strength in biotechnology and drug development, as well as opportunities to work with venture capitalists and defense contractors. The proximity of federal labs and agencies provides extraordinary potential for partnerships, including the departments of Homeland Security, Defense and Agriculture; Food and Drug Administration; NASA; National Institutes of Health; National Institute of Standards and Technology; National Oceanic and Atmospheric Administration; National Security Agency; and the Smithsonian Institution. Collaborations with partners like these help UMD build programmatic strength in biomedicine; climate change and weather; cybersecurity; food safety and food security; national security; quantum computing; remote sensing and space science. The state and federal governments have an abiding interest in the health of the Chesapeake Bay. The economic impact of the arts in the state is over \$1 billion, and UMD's exceptional facilities and programming in the performing and visual arts will be leveraged to enhance the state's creative economy.

To maximize the impact of investments, UMD will put in place a regular **review of investments** in research with the expectation that less productive ones will be reduced or eliminated as new opportunities and needs are identified.

Several **new facilities** are underway or in design that will help address research infrastructure needs and provide opportunities for program growth in important areas. The A. James Clark Hall and the Brendan Iribe Center for Computer Science and Innovation are wonderful, transformative examples of buildings that will

enable the world’s most advanced research and recruitment of the world’s best faculty and students in these fields.

Now under construction, Clark Hall will meet the need for new bioengineering and bioscience facilities, including labs and animals used by vertebrate researchers, as well as imaging and behavioral analysis facilities essential for work in neuroscience and the study of brain function. The geographical sciences need on-campus space. The College of Information Studies, schools of Public Policy and Public Health and the Robert H. Smith School of Business all need more space. Language researchers need improved facilities.

Similar **infrastructure needs** exist in many other areas of the University, and will require aggressive capital improvement investments. For example, there is a very great need for a physical sciences/chemistry complex with state-of-the-art space for synthetic organic chemistry, materials science and condensed matter physics. This would replace wings 1 and 2 of the old Chemistry Building and the remaining physics space in the John S. Toll Physics Building. In addition, UMD must begin to retire its huge maintenance backlog, which totals over \$900 million. The average age among the 253 campus buildings is 43 years. A continued and sustained effort will be required to improve the campus infrastructure sufficiently to compete at the highest levels. All these basic infrastructure needs must be a high priority.



*The **Brendan Iribe Center for Computer Science and Innovation** will provide world-class space for the highly ranked Department of Computer Science and the University of Maryland Institute for Advanced Computer Studies (UMIACS) that will keep Maryland at the forefront of technology and innovation in this critically important field. It will be a great advantage in recruiting top faculty and students. It will feature state-of-the-art virtual reality and robotics labs, hacker- and makerspaces, classrooms and informal learning areas and faculty offices and labs. It will serve thousands of students each week and will be a community resource for technology leaders in the region and across the nation.*





A. James Clark Hall will provide state of the art space for teaching and research in bioengineering as well as a sorely needed vivarium for the care and treatment of experimental animals. Located next to the Jeong H. Kim Engineering Building, its 184,000 ft² will house research labs, core facilities, classrooms, meeting and maker spaces that will bring together students, faculty, medical practitioners, entrepreneurs and regulators to design and build the next generation of health-care technologies.

III. STRATEGIC PARTNERSHIP WITH UMB (MPOWER)

Unlike most of the goals and initiatives described in this update, MPower, the strategic partnership of UMD with the University of Maryland, Baltimore (UMB), was not envisioned in 2008. It represents one of the most transformational changes in recent years. It has expanded UMD's horizons and opportunities. The collaborative possibilities span the breadth of programs on both campuses.

Progress

Since its inauguration in FY 2012, this collaboration has connected some of the best research with the most innovative educational programs. The partnership encompasses fields as diverse as bioscience, engineering, social science, computer and mathematical science, law, public health and agriculture. There are now some 70 joint faculty appointments, compared to only a handful a few years ago. As a result, joint research has increased, producing more than 220 proposals to federal agencies and nearly 60 awards with anticipated funding of \$79 million. In addition, more than \$180 million in proposed funding is now in the federal review pipeline in fields ranging from child development to robotics to nanomedicine.

The partnership has launched two major cross-university research initiatives. **The Center for Health-Related Informatics and Bioimaging** combines advanced computer expertise and resources at College Park with clinical data and biomedical expertise in Baltimore. New leadership and resources have energized the **Institute for Bioscience and Biotechnology Research**. It combines expertise in engineering, medicine, quantitative sciences, bioscience and technology in pursuit of advanced research and commercial-governmental partnerships.

UM Ventures, MPower's joint technology commercialization effort, is accelerating the speed that inventions move to market, from labs into the lives of people who need them. Invention disclosures, license agreements and startup companies using the universities' intellectual property have all increased. The Collaboration is directly responsible for partnerships with companies such as MedImmune and Keygene.

Also, MPower has launched new educational programs, including the undergraduate **MLaw Program** with Baltimore's Francis King Carey School of Law and UMD's College of Behavioral and Social Sciences and

College of Arts and Humanities. Summer research opportunities for talented undergraduates; a chance to work side by side in the lab with UMB scientists; and a new 2 + 2 program in nursing and a 3 + 3 program in law will help students complete their undergraduate and graduate training more quickly and more economically. **The Agriculture Law Education Initiative**, through the University of Maryland Extension, combines the expertise of the School of Law and UMD's College of Agriculture and Natural Resources to serve Maryland's rural communities with myriad publications and training programs.

2020 Goals

This successful strategic partnership will deepen and broaden as it matures, expanding the opportunities and impact on both campuses. UMD is on the verge of fully realizing the potential of the **Institute for Bioscience and Biotechnology Research (IBBR)** at Shady Grove. After an initial startup phase that brought stability and established the basic research infrastructure, an IBBR director was appointed in FY14 following a national search. Charged with leveraging the research assets of UMD, UMB and the National Institute of Standards and Technology, the new director is focusing primarily on biotechnology relevant to companies in the I-270 corridor and across the state. He will recruit outstanding bioscience and biotechnology researchers to conduct translational research that quickly turns groundbreaking science into business ventures. IBBR will focus on measurement sciences, biomolecular engineering, disease models and biomolecular pathways. Its research will also strengthen the Maryland economy and create jobs.

UM Ventures, the merged technology transfer efforts of UMB and UMD, commercializes discoveries and creates economic impact by engaging partners in industry and social ventures. By encouraging students and faculty and by providing expert advice and business services, more discoveries will reach the market. Engaging directly with external partners will attract new investments and create more startup ventures.

The **Center for Sports Medicine, Health and Human Performance**, the newest initiative of the collaborative, will be housed in a new addition to the remodeled Cole Field House. It will support a vigorous research program in areas such as traumatic brain injuries, physical training, preventive and rehabilitative sports medicine, obesity and nutrition. Collaborative relationships among the universities' departments of Orthopedics, Kinesiology, Bioengineering, Aerospace and Mechanical Engineering and Electrical and Computer Engineering will advance understanding of the benefits and consequences of mechanical loading of bones, joints and muscles in healthy and diseased populations. It will help develop better surgical and nonsurgical therapies for sports injuries. The Center will also advance innovation by harnessing emergent technologies designed to optimize health and human performance, including assistive "smart" technologies such as exoskeleton and robotics. These new approaches hold promise for helping amputees to relearn to walk, prevention and rehabilitation of injury, surgical and non-surgical therapies for sports injuries, and improved human performance in challenging environments.

Several other new collaborations between the two campuses have been suggested, including a brain and behavior initiative, development and testing of new biomedical devices, the use of augmented reality visualization tools in clinical situations, and collaborations to deliver social services and education to low-income families in Baltimore.

IV. ARTS AND HUMANITIES

The arts and humanities are core components of a quality education and building blocks of global exchange. They provide a gateway to cultural understanding and conflict resolution and are often at the forefront of community transformation and enhanced “town and gown” relationships. Artistic knowledge can enhance and refine the entrepreneurial abilities and creative talents that today’s students bring to college through their experience in a 24-hour global multimedia environment.

Strategic investment in the arts and humanities will enhance the national profile of UMD and attract donors concerned about creativity, contemporary value creation and culture.² The quality, creativity and innovation of a society’s fine arts are among the primary standards by which that society is judged. The nation’s greatest universities are strong in a broad array of fields—the humanities; arts, design and culture; social science; science and, engineering. The best universities find ways to nurture and sustain connections among and across these different fields. It is at these intersections that paradigms are changed, new knowledge is created and new opportunities realized.

Progress since 2008

The Arts and Humanities Center for Synergy was established in response to the goal identified in the 2008 plan to establish a world-class humanities center. It provides programs and support for cross-discipline research and projects involving the arts, humanities and various STEM fields.

UMD was recently recognized by the American Academy of Arts & Sciences as one of three national leaders advancing the conversation about the importance of the arts and humanities to the future of the nation. The University is also a founding member of the Alliance for the Arts in Research Universities. This partnership of 31 institutions is committed to ensuring institutional support for interdisciplinary research, curricula, and programs that connect the arts, sciences and other disciplines.

Updated 2020 Goals

Through four major projects, UMD will elevate its programs in the arts and humanities and expand UMD’s traditional STEM focus:

- **The Initiative for Art and Design** will foster project- and research-based practice to integrate the arts and humanities with the sciences, critical and contextual studies with studio practice and community engagement. It will bring together faculty and students from the School of Architecture, Planning and Preservation; A. James Clark School of Engineering; College of Computer, Mathematical, and Natural Sciences; Robert H. Smith School of Business; and the College of Arts and Humanities. The initiative will include a **Digital Media Studies program** focused on the critical study and creation of new media in a variety of formats, including virtual and augmented reality. It will bring together students and faculty in film studies, journalism and photojournalism, computer sciences, design, theatre, visual arts, creative writing and American studies for teaching and research. The program will apply project-based instruction and design thinking at all levels. Faculty and students will work in collaborative spaces, developing

² In this document, “the Arts,” refers to an understanding, interpretation and representation of all aspects of the human condition. Therefore, the term includes both creative and imaginative production along with activities that focus on critical and interpretive analysis as well as stewardship of both visual and material culture. The Arts is by necessity a broad category.

a problem exploration approach.

- The new partnership with the **Phillips Collection** will greatly augment UMD's profile in the arts and humanities. The Phillips—America's first museum of modern art and home to one of the most distinguished collections of impressionist, modern and contemporary art in the world—maintains a rich schedule of special exhibitions, traveling exhibitions, contemporary art commissions, public programs and new acquisitions. Its mission of "an intimate museum combined with an experiment station" will provide new opportunities to link art and design to STEM disciplines. The partnership will involve collaboration with existing galleries on campus and will include a University of Maryland Center for Art and Knowledge that will be physically located in College Park and at the Phillips Collection Annex. It will offer jointly developed and jointly taught college courses, both in person and online (MOOCs), that focus on art, art history, arts management, museum studies and interdisciplinary studies. It will offer graduate and postdoctoral fellowships; host an International Forum Weekend (200 scholars, collectors and donors); and oversee both the UMD-Phillips Collection Book Prize and the Creative Voices DC program (lectures, films, etc.). The Phillips partnership will also make UMD a permanent presenter of Intersections (contemporary art exhibitions) and a co-presenter of special traveling exhibitions. Other benefits of the partnership will include opportunities to entertain at the museum, display parts of the Phillips Collection at UMD and host lectures and symposia at UMD by Phillips' visiting scholars and artists. UMD students will have opportunities for internships and will be featured in a music series.
- **Building a vibrant arts and culture environment in College Park** will make major contributions to the revitalization of the City and enrichment of Prince George's County. By fostering a dynamic, innovative arts and culture community that showcases the next generation of humanists, artists and creative innovators, this initiative will engage cultural scholars and visual and performing artists across campus. As a large percentage of the Phillips Collection remains in storage, UMD is exploring the development of a new facility in College Park to display and store Phillips and UMD works.
- **Leverage the DeVos Institute to offer a master's degree in arts management.** In fall 2014, Michael Kaiser, who served as president of the Kennedy Center for 14 years, joined UMD as a professor of the practice and relocated the esteemed DeVos Institute for Arts Management to the University. The Institute's training and advisory program is extraordinarily successful. Its strategic, analytical and hands-on approach has helped arts organizations around the world face existential challenges. Drawing on Kaiser's expertise and success, college leaders are currently discussing development of an interdisciplinary master's degree in arts management. This will position UMD as a national leader in education and best practice in arts management.

Additionally, one of the areas for investment in new faculty (discussed above) now under active consideration is the history and culture that has shaped the African-American Experience. This would be an interdisciplinary initiative engaging current and new faculty in multiple academic units.

V. GREATER COLLEGE PARK

A core mission of Maryland's flagship institution is to support economic development in the state. UMD's research and innovation plays a major role in fulfilling this mission, made possible by faculty excellence and a uniquely supportive location.

The state of Maryland is home to the Food and Drug Administration, National Institutes of Health, National Institute of Standards and Technology, U.S. Army Research Laboratory, Center for Medicare and Medicaid Services, NASA, and many other health- and medical science-related institutions and agencies. Together,

they form a unique hub of health-related activity—one of the largest and most vibrant in the world. The state is also home to one of the nation's leading industry clusters in biotechnology and a vast industry focused on system integration, defense and information technology.

Hence, the 2008 strategic plan sought to develop the campus as a major hub for innovation and creativity. At the same time, the plan called for a revitalization of the City of College Park to help attract the best students, faculty and staff, and businesses to partner with UMD.

Progress since 2008

UMD has made substantial progress toward these goals through a shift in strategy that helped attract private investment, aided by state incentives and a vibrant partnership with local authorities. The shift involved an effort to encourage development throughout downtown College Park, rather than at a single campus site. The advent of the collaboration between UMD and UMB has also furthered these goals.

In 2012, a "University District 2020 Vision" was created, through the College Park City-University Partnership (CPCUP), to establish a shared set of ideas and values for the campus and local residents. The goal was to improve the quality of life for all who live and work in the community by transforming College Park into a vibrant, walkable, mixed-use hub of activity with new retail, office and housing options. Development projects already under way include:

- **New education options**—In 2013, CPCUP launched the College Park Academy, a public charter school serving grades 6-12 in an innovative and rigorous blended-learning environment.
- **Improved public safety**—The jurisdiction of UMD's police force has expanded to cover a number of city neighborhoods, and the University hired additional officers. The campus expanded its code of conduct to apply throughout College Park, promoting family-friendly behavior in neighborhoods.
- **A four-star hotel** on the east side of Baltimore Avenue across from the main entrance to campus, to be completed in December 2016. This hotel will include four restaurants, convention space and 10,000 square feet for innovation incubators to serve UMD startup companies.
- **The light rail Purple Line** will traverse the campus and connect UMD with the Washington, D.C. metropolitan area and will also catalyze transit-oriented economic development. It is expected to be operational by 2021.

Simultaneously, an **Innovation District** is developing east of Baltimore Avenue. It will support startups and mature businesses that want to partner with University researchers and students. From these initiatives, a coordinated vision of "**Greater College Park**" is emerging—one that links the campus, downtown, UMD's research park and the Innovation District into a mutually supportive, integrated **innovation ecosystem**.

Updated 2020 plan

Anchored by the new hotel, the **Innovation District** will include 2.7 million gross square feet of new or renovated facilities for research and startup companies; housing and hospitality space; public space; a food hall offering a variety of cuisines, sustainably grown food and culinary incubators; and ample parking.

It will include 100,000 square feet of adaptable space for startups and research partners. Thus, the Innovation District will provide a physical and functional connection between campus academic buildings and the **UMD Research Park**. Also, UMD will work with developers to create additional incubator and collaborative

space for businesses and federal agencies in and around College Park to make this area a hub of economic development and creativity, as well as a highly attractive place to live and work.

UMD will develop a joint proposal for an **Arts and Entertainment District** designation by the State. The plan is expected to generate new jobs and facilitate support for nonprofit arts organizations in this area. The District will include improved arts venues. This includes an “art house” in renovated space on Baltimore Avenue near campus, a collaboration with the Clarice Smith Performing Arts Center, and a possible storage facility-modern art museum in partnership with the Phillips Collection. The Arts and Humanities Center for Synergy has made engaged scholarship a key area of focus. Through programs such as the Foxworth Creative Enterprise Initiative and its Social Innovation Scholars program, it will have a growing impact on College Park and other Maryland communities.

UMD will take maximum advantage of **state matching funds** for endowed chairs in STEM fields and work with industry, government and academic partners to attract and retain businesses and major programs in this area.

UMD will serve as a catalyst for investment by private developers and to **attract retail stores and amenities** to the College Park area, such as a bridge that will connect the UMD Research Park with a new Whole Foods Market and plaza in Riverdale. Similarly, it will work to attract market-rate housing developments that will attract millennials and others who want to live and work in a vibrant, attractive community.

By 2020, College Park will be on its way to becoming a top college town. Baltimore Avenue will be transformed into a vibrant, walkable thoroughfare with a mixture of excellent food, art, entertainment and retail venues. The city will be an asset in our efforts to attract and retain the best faculty and students.

VI. EQUITY, DIVERSITY AND INCLUSION

The University fully embraces the vision that excellence requires diversity at all levels. It is committed to the highest standards of equity, diversity and inclusion in higher education. *Insight into Diversity* recognized UMD with its 2015 Higher Education Excellence in Diversity Award. This is reflected in the rising success and diversity of the undergraduate and graduate student bodies; the faculty and staff; the focus and impact of educational initiatives, research, scholarship, creative activities, community engagement and service; an inclusive campus climate; and an engaged student body, faculty and staff.

A separate 2010 diversity plan—*Transforming Maryland: Expectations for Excellence in Diversity and Inclusion*—has reached its midpoint and is now under review by a task force to assess progress to date and future challenges. The goals of equity, diversity and inclusion remain a North Star for this institution and a key to its success.

Updated 2020 plans

The University will vigorously recruit, enroll, retain and graduate low-income and underrepresented ethnic minority students (African-American/black, Latino/a, Native American), both undergraduate and graduate, in all disciplines, as well as women students in STEM disciplines where they are underrepresented.

By 2020, there will be a net increase in the University's need-based **financial aid** resources to support the matriculation and retention of a greater number of low-income students from urban, rural, and suburban communities. The retention and graduation rates of low-income, African-American/black, Latino/a undergraduate students will continue to increase, and the achievement gaps for these groups will continue to decrease.

The University will vigorously recruit, hire, tenure and promote **underrepresented minority faculty** in all disciplines as well as women faculty in disciplines where they are underrepresented. The University will increase the number of **Cultural Competence courses** in the general education curriculum, so that all undergraduate students have the opportunity to develop skills in interacting and communicating effectively with people from diverse cultural and social backgrounds. The University will continue to foster the transformation of all courses to include material that reflects diverse cultural and social perspectives and to engage the preferred learning styles of diverse learners.

The University will foster an **inclusive climate**, where there is a strong sense of community and where students, staff and faculty from all cultural and socioeconomic identities feel welcomed, valued and actively engaged. In all University programs, initiatives and decision-making, the value and impact on equity, diversity and inclusion will be actively and routinely considered, so as to fully embed these principles throughout all aspects of the University.

VII. MODERNIZING ADMINISTRATIVE PROCEDURES

The University is a large and complex organization, with a wide range of administrative and information management processes to support its missions. These include recruiting, admitting, matriculating, housing and advising students; recruiting and supporting faculty and staff; supporting the research infrastructure; parking; procurement; catering; construction; vehicles; marketing; and safety and security. Keeping all these services aligned and integrated as efficiently and effectively as possible is a challenge in a stable environment, let alone during a time of the significant transformation now facing higher education.

When these services are efficient and effective, the core work of learning, discovery, scholarship and creative arts receive the necessary support. When they are not, the whole University suffers.

Progress Since 2008

While significant progress has been made on many of the goals of the 2008 plan, UMD continues to struggle with outdated processes, systems and software that challenge its ability to minimize overhead, optimize performance and direct resources toward primary missions.

Just as there is a large amount of deferred maintenance with the physical campus, there is also a significant backlog in the administrative, business and academic processes that comprise the virtual campus. Continuing state budget shortfalls have heightened awareness of the need for a better budget model, increased efficiency and improved business practices. These will allow the campus to make better long-term budget planning, strategic investments and strategic prioritization.

Updated 2020 Goals

In FY 2015, President Loh convened a suite of work groups—one to create this update to the University's strategic plan, a second to recommend a new budget model and three others to recommend efficiencies and improvements in virtually every aspect of University operations—and a group of the most distinguished faculty, the 2020 Commission, to vet the work groups' recommendations.

By the end of the Fall 2015 semester, the budget work group will provide recommendations for strategic changes in budgeting and finance that reflect best practices at peer schools. The recommendations from the 2020 work groups will aim to resolve structural issues with the campus budget and to implement broad-based efficiencies and enhancements that will generate savings and revenues. This will provide resources to support the strategic goals in the core missions of teaching, research and innovation. A series of recommendations, with projected implementation plans and timelines, will be developed to guide progress in coming years.

New strategies to increase revenue will be developed, such as differential pricing for specific high-demand, high-cost programs; targeted fees for new initiatives in select programs; gradual movement toward a peer-median pricing and/or peer-median financial aid model; gradual increase in the out-of-state/international student population within prescribed legislative limits; and increased opportunities for non-degree tuition sources (e.g., development of new MOOC specializations and other online course revenue; new 2+2-style programs for international students). Additionally, UMD will investigate specific strategic sourcing options for non-mission-critical services, increased research-related revenue through new corporate and government research partnerships (co-locating corporate and new government entities on or near campus; starting a research foundation for nontraditional research grants) and increased investment in the development enterprise to significantly increase private fundraising during a new capital campaign.

Building on the insights gained from the 2020 groups, UMD will work with the University System of Maryland to identify strategic investments of fund balance dollars that will enhance efficiency, build additional revenue and support strategic planning and strategic budgeting priorities. Efforts will be directed toward key investments to support presidential priorities such as enhancing the number of STEM graduates, improving graduation rates, decreasing the achievement gap, enhancing partnerships to build economic growth in Maryland, increasing the research achievements of faculty and students, and reducing the deferred maintenance of the physical plant.

VIII. ATHLETICS

Athletics no longer sits on the periphery of American life as a mere diversion, but reflects and shapes culture. The pursuit of excellence is a core value at UMD, and athletics embodies this. At Maryland, it also serves as a collaborative platform to transform lives and advance the academic mission.

Another major change not envisioned in 2008 that has greatly expanded UMD's influence and opportunity is its entrance into the Big Ten Conference and the parallel academic organization, the Committee on Institutional Cooperation (CIC).

The Big Ten leads all other athletic conferences in the number of alumni (5.7 million) and students (nearly 580,000). The Big Ten Network (BTN) reaches more than 60 million homes across the United States and

Canada. In addition to athletic events, the network airs segments about its members' students, faculty, staff and alumni who are making an impact with their research, education and community service. This highlights UMD as a world-class academic institution.

2020 Goals

Maryland's membership in the CIC provides a wide array of opportunities for students, faculty, staff and the institution as a whole. The CIC provides collaboration among its member institutions and forms the strongest multi-university academic consortium in the world.

Going forward to 2020, UMD will take the greatest advantage possible of this extraordinary partnership. Already numerous activities are underway, including joint theater productions, a symposium on disaster resilience, and joint research on concussions and health disparities. UMD faculty, staff and administrators have participated extensively in CIC-sponsored programs on professional and leadership development. UMD student government leaders meet regularly with their CIC counterparts. A CIC large-scale purchase program provides significant discounts on some items (e.g., library materials). The coordination of admissions recruitment and federal lobbying efforts can be powerful. UMD students are participating in CIC study abroad, summer research and language programs with member schools, and about 1,150 students from other CIC institutions applied for summer study/research in 2015 at UMD.

The connection between academics and athletics is also reflected in the renovation of Cole Field House—a project that combines new athletics facilities with MPower research and education on human health and sports medicine. This **Center for Sports Medicine and Human Performance** will 1) promote the development of new educational offerings in the field of sports medicine; 2) provide experiential learning opportunities for current UMD students in a variety of disciplines, including public health science, engineering, nutrition, psychology and dance; and 3) expand residencies, fellowships and assistantships for students in medical and graduate education programs within the Schools of Medicine in Baltimore and College Park's School of Public Health and A. James Clark School of Engineering. Further, there are plans to develop a new major in **sports management** to prepare students to serve in management positions in all segments of the sport industry, currently estimated to involve \$400 billion annually in economic activity across all sectors (youth sports, intercollegiate, professional and recreational pursuits).

For UMD athletes, the Center will provide medical and scientific support, helping them perform at the highest levels of sport and recover from injuries.

The **Big Ten Network** (BTN) has invested in student production crews at each of the Big Ten journalism schools. "Student U" crews produce their own sports broadcasts that stream live on the BTN digital extension, which reaches over 90 million homes. Brand U is an innovative education program for the 21st century student-athlete. This industry-leading program assists student athletes with sound personal and leadership skills to provide a foundation for confidence through transition and persistence in everyday challenges and preparation for successful lives after graduation.

These programs are examples of new research and educational opportunities made possible through strategic partnerships. UMD will pursue additional synergistic opportunities as they develop.