

ADVISORY BOARD MEETING

Next Generation of Biomedical Devices

The Fischell Department of Bioengineering

University of Maryland

May 13, 2019



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BIOE Department Chair, John Fisher: jpfisher@umd.edu

FACULTY LISTING



Aranda-Espinoza, Helim
Associate Professor
Associate Chair, Graduate Studies



Locascio, Laurie
Vice President for Research & Professor



Bentley, William E.
Distinguished University Professor
Director, Robert E. Fischell Institute for Biomedical Devices



Maisel, Katharina
Assistant Professor



Chen, Yu
Associate Professor



Matysiak, Silvana
Associate Professor



Duncan, Gregg
Assistant Professor



Montas, Hubert
Associate Professor



Eisenstein, Edward
Associate Professor



Morss Clyne, Alisa
Associate Professor



Fisher, John
Department Chair
Fischell Family Distinguished Professor



Scarcelli, Giuliano
Assistant Professor



He, Xiaoming (Shawn)
Professor



Shapiro, Ben
Professor



Herold, Keith
Associate Professor
Retiring May 2019



Stroka, Kimberly
Assistant Professor



Huang, Huang Chiao (Joe)
Assistant Professor



Tao, Yang
Professor



Jay, Steven
Assistant Professor



White, Ian
Associate Professor
Associate Chair, Undergraduate Studies



Jewell, Christopher
Associate Professor
Associate Chair, Research



Zhang, Li-Qun
Professor

ADVISORY BOARD MEMBERS

Borgoyn, Tom

After a career spanning over 40 years, Tom Borgoyn recently retired from Becton Dickinson. In that period of time, Tom has served in various roles in product development including designing electronics, developing software, leading product development core teams and managing an engineering department. Tom started his career working in the defense industry, designing and testing equipment for radar jamming pods, and he transitioned to working the majority of time in the medical diagnostics field. In his tenure in the medical field, he developed or led the development of instruments and systems for the detection of bacteria growth in normally sterile body fluids, rapid immunological tests for the flu, diagnostics tests to determine organism identification and antimicrobial susceptibility, and rapid molecular PCR tests for selective bacterial infections. Most recently, Tom led an effort in R&D in developing the process for coordinating multiple development projects to supply solutions for customers, in line with the recent focus on BD becoming more customer experience focused. Subsequent to retirement, Tom has engaged in part-time consulting with a new biotech company developing a rapid means of detecting infection in body fluids.



Brooke, M. Jason

M. Jason Brooke is a Director and Global Lead of the Life Sciences Regulatory, Quality, and Patient Safety practice at Navigant Consulting. He advises and assists medical device and connected health companies to overcome the challenges faced throughout the product lifecycle—from new product planning, research and development, and pre-market clearance/approval to post-market compliance. Mr. Brooke is also the co-founder and General Counsel for Vasoptic Medical Inc., an early stage medical device company developing a mobile health solution for early detection of diabetic retinopathy. Mr. Brooke has nearly 15 years of experience in design, development, and commercialization of medical device and mobile health technology. Prior to joining Vasoptic Medical, Mr. Brooke was an Associate at Epstein Becker & Green P.C., where he counseled medical device, mobile health technology, and clinical decision support software companies on pre- and post-market legal and regulatory issues, and a Sr. Research Scientist at Boston Scientific Corp., where he designed, developed, and tested novel algorithms for cardiac rhythm management and neurostimulation devices.



Dowling, Matthew

Dr. Matthew Dowling, Ph.D., is Founder and Chief Scientific Officer of gel-e. Matt completed his graduate work at the Fischell Department of Bioengineering at the University of Maryland in May 2010 and has since pursued gel-e on a full-time basis. In 2005, after graduating in chemical engineering from the University of Notre Dame, he was awarded the Fischell Fellowship in Biomedical Engineering for his innovative ideas in drug delivery systems. Matt then co-created the gel-e platform, raising several initial grants to develop the technology, which led to being named the Dean's Doctoral Research Award from the UMD Clark School of Engineering for his work on chitosan-based self-assembled soft materials for use in wound treatment. He has since successfully licensed gel-e from UMD and has raised another \$4.0M in non-dilutive funding which has been used to achieve three FDA clearances for gel-e, a large and growing patent estate and numerous peer-reviewed publications in high-impact journals.



Fischell, Tim

Dr. Fischell is Professor of Medicine at Michigan State University, Clinical Professor of Medicine at Western Michigan University, Medical Director of the Department of Cardiovascular Research and Director of the Interventional Cardiology Fellowship Program at the Borgess Heart Institute in Kalamazoo. He has an active practice as an interventional cardiologist at the Heart Center For Excellence in Kalamazoo. After receiving his medical degree from Cornell University Medical Center in New York City, Dr. Fischell completed an internship and residency in internal medicine at Massachusetts General Hospital/Harvard University in Boston, and then completed his interventional cardiology fellowship at Stanford University Medical Center in Palo Alto. He was on the faculty at Stanford for five years, and then served as director of the cardiac cath labs and interventional cardiology at Vanderbilt University from 1992-1996. Dr. Fischell is board certified in internal medicine, cardiovascular medicine and interventional cardiology. He is an active inventor and serial entrepreneur, with more than 100 medical device patents, founder or co-founder of 7 medical device companies, and recently was elected (2017) as a Fellow in the National Academy of Inventors.



ADVISORY BOARD MEMBERS

Kessel, Samuel (Woodie)

Dr. Woodie Kessel, B.S.E.E., M.D., M.P.H., is a pediatrician and child advocate with experience as an educator, investigator, and practitioner in medicine, public health, bioengineering, community-based programming, and public policy. Dr. Kessel is currently the CEK Senior Child Health Scholar in Residence at the C E Koop Institute, Dartmouth College and Medical School; Professor of Pediatrics, Geisel School of Medicine, Dartmouth College; and Professor of the Practice at the University of Maryland's School of Public Health. Previously, Dr. Kessel served in the U.S. Public Health Service as an Assistant Surgeon General and senior advisor on child and family health matters to the White House, Cabinet Secretaries, Surgeons General, and Health and Human Services officials spanning eight administrations.



Knight, Ivor

Dr. Ivor Knight recently joined Penn State to lead research and graduate programs at the Behrend College in Erie, Pennsylvania. Prior to this academic appointment he was senior VP and CTO at Canon U.S. Life Sciences and Canon BioMedical, Inc., where he oversaw the R&D functions of both companies. During his career at Canon he established Canon's biomedical research and development organization and facility in Rockville, Maryland, and led the development of the first products brought to market. Prior to joining Canon, Dr. Knight was a professor at James Madison University, where he taught and conducted research in molecular genetics and microbiology. He has published widely in his field and is an inventor on numerous patents in the area of diagnostic instrumentation and chemistry. He holds a Ph.D. from the University of Maryland and is a Fellow of the American Association for the Advancement of Science.



Knizek, Claudio

Claudio Knizek joined The Boston Consulting Group in January 2006 and is a Partner and Managing Director in BCG's Washington D.C. office. Throughout his tenure at BCG, he has focused on a variety of operational and strategic issues affecting the Industrial and Consumer Goods sectors. The majority of Claudio's work at BCG has been focused on operational topics, particularly manufacturing and supply chain. Claudio currently co-leads BCG's Manufacturing Topic globally. Prior to joining BCG, Claudio worked at A. T. Kearney for five years. Claudio has a B.S. and M.S. from Stanford University and an M.B.A. from Harvard Business School.



Lehrer, Steven

Steven Lehrer brings over 30 years of experience starting, growing and running life science-based businesses focused on commercializing new technology and expanding businesses globally. SBLehrer LLC works with life science companies to develop and introduce drugs worldwide. Steve has extensive experience in pharmaceutical, biopharmaceutical and biosimilar R&D, regulatory, operations and commercialization. In addition, his companies and businesses have developed and commercialized new drug delivery approaches for pharmaceuticals, multiple molecular genetic diagnostic tests and developed outcomes databases for bioinformatics and healthcare econometric modeling. Steve has built and run businesses in the US, EU, Brazil, China, India, Japan and SEA. Steve previously served as Head of Biologicals at Cipla Ltd., CEO at Cipla BioTec, President at Glycominds, EVP at Adamas Pharma, CEO at GeneOs Ltd, CEO at DNA Sciences and division President at Monsanto. Prior to Monsanto, Steve worked for McKinsey & Co. and P&G. Steve has a Master's Degree from The Graduate School of Business at Harvard University and a B.S.E. in Chemical Engineering as well as a B.A. in Economics from the University of Maryland.



ADVISORY BOARD MEMBERS

Lindsay, David

Dr. David A. Lindsay is the Directorate Head of the Vaccine Clinical Materials Program (VCMP), within the Clinical Research Directorate at the Frederick National Lab (FNL) in Maryland. He is responsible for the scientific, technical and administrative oversight and operation of a good manufacturing practices (GMP) vaccine pilot plant. The mission of the VCMP at FNL is to advance the development, manufacture, analytical testing, release and regulatory support of biologically-derived clinical materials, discovered/developed by the Vaccine Research Center (VRC) at NIH's National Institute of Allergy and Infectious Diseases (NIAID), for subsequent evaluation in Phase I/II clinical trials in humans. While the focus to date has been on broadly neutralizing monoclonal antibodies (mAbs) for passive treatment of HIV-AIDS, there is a renewed emphasis on universal flu/influenza, and emerging/reemerging infectious diseases of global significance including Chikungunya, Ebola, Malaria, RSV, Tuberculosis and ZIKA. David holds a B.S. degree in chemical engineering from Lafayette College and a Ph.D. from Johns Hopkins University. He has over 24 years of industry experience, from cell culture process development to tech transfer to clinical and commercial manufacture of biologics/recombinant vaccines.



Menon, Naresh

As the founder of ChromoLogic, Dr. Menon is passionate about developing novel biomedical solutions that result in new biological insights and lead to superior patient outcomes while being cost-effective and affordable. Dr. Menon received his Ph.D. in physics from Purdue University, with an emphasis in sensor fabrication, instrumentation, and novel data analytic methods that were applied at multiple national and international laboratories towards fundamental physics discoveries. His early career was spent at Corning Incorporated and Northrop Grumman Mission Systems, where he was groomed for leadership positions in multiple businesses. Founded in 2007, ChromoLogic is a boutique product development organization developing innovative solutions that save lives and make the world secure. Products range from bioinspired solutions for establishing traceability of items, such as medical implantables, to at-home HIV viral load analysis kits, an ophthalmic system to assess physiological stress, and a unique digital telehealth platform.



Mikos, Antonios

Dr. Antonios G. Mikos is the Louis Calder Professor of Bioengineering and Chemical and Biomolecular Engineering at Rice University. His research focuses on the synthesis, processing, and evaluation of new biomaterials for use as scaffolds for tissue engineering, as carriers for controlled drug delivery, and as non-viral vectors for gene therapy. He is the author of over 600 publications and 29 patents. He is a Member of the National Academy of Engineering, a Member of the National Academy of Medicine, and a Member of the Academy of Athens. He is a Founding Fellow of the Tissue Engineering and Regenerative Medicine International Society, and a Fellow of numerous societies and organizations including the American Association for the Advancement of Science, the American Institute of Chemical Engineers, the American Institute for Medical and Biological Engineering, the Biomedical Engineering Society, and the National Academy of Inventors.



Naggie, Susanna

Dr. Susanna Naggie completed her undergraduate degrees in chemical engineering and biochemistry at the University of Maryland, College Park, and her medical education at Johns Hopkins School of Medicine. She conducted her internal medicine and infectious diseases fellowship training at Duke University Medical Center. She joined the faculty in the Duke School of Medicine in 2009. She is an Associate Professor of Medicine with Tenure and currently holds appointments at the Duke University School of Medicine, at the Duke Clinical Research Institute (Director of ID Research), and at the Durham Veterans Affairs Medical Center. Dr. Naggie is a clinical investigator with a focus in clinical trials and translational science in HIV and HCV. Dr. Naggie is a current member of the DHHS Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents Living with HIV and was a prior co-Chair of the AASLD/IDSA HCV Guidance Committee. She services the Duke SOM as the Associate Dean of Clinical Research and Regulatory Affairs.



ADVISORY BOARD MEMBERS

O'Connor, Michael

Dr. Michael O'Connor is the Director, Strategy and Project Management with Medtronic, Plc. Medtronic is a global healthcare solutions company committed to improving the lives of people through their medical technologies, services, and solutions. O'Connor has over 28 years of professional experience in the Medical Device Industry developing products from idea to commercialization. He holds patents in the areas of medical catheters and stents, and has graduate degrees in project management, technology management and business administration. O'Connor earned his Ph.D. in civil engineering, majoring in project management, from the University of Maryland's A. James Clark School of Engineering. He was selected as an American Society for Quality (ASQ) Fellow, Fellow of the American Academy of Project Management (FAAPM), and Medtronic Technical Fellow. He is currently a Minnesota PMI Board Member and Director at Large. He is on the Biomedical Engineering Society (BMES) Educational Committee and is also a member of the BMES Wallace H. Coulter Healthcare Innovation Award Subcommittee. O'Connor is also an Adjunct and Community Faculty Member teaching graduate-level Project Management, Project Capstone, Project Procurement, and Culture/Organizational course(s).



Pantezzi, Todd

Todd Pantezzi is a Senior Vice President with ICF, representing the firm's public health, biomedical research, health informatics, information technology, management consulting, health communications, cyber security, survey research, and digital media consulting practices. He has been a growth executive and consultant in the federal health industry since 1992, primarily focusing on civilian health agencies (NIH, CDC, FDA, and EPA) representing corporations including CSRA, General Dynamics, United-Health Group, and Northrop Grumman, as well as small and mid-size firms. Mr. Pantezzi holds industry leadership positions including Trustee with The Children's Inn at NIH, and chair of the Professional Services Council's annual survey of the U.S. Department of Health & Human Services. He was named to the FedHealthIT100 in 2017.



Pham, Minh-Quan

Dr. Minh-Quan K. Pham is a patent attorney with over ten years of experience in protecting innovations and providing creative legal solutions through a unique combination of perspectives, including as an inventor, a scientist/engineer, an entrepreneur, an examiner, and an attorney. Dr. Pham is experienced in all aspects of intellectual property protection, including counseling, prosecution, litigation, licensing, and portfolio management. He has represented authors, artists, educators, engineers, physicians, scientists, as well as universities, small companies, and international corporations. Prior to his legal practice, Dr. Pham was a patent examiner in group 1600, examining biotechnology patent applications. He was also a founder of Chesapeake PERL, a recombinant protein production company. Dr. Pham received his B.S. and Ph.D. in Chemical Engineering from the University of Maryland, and his J.D. from the Georgetown University Law Center.



Pinchuk, Leonard

Dr. Leonard Pinchuk has 129 U.S. patents, 90 publications and founded 10 companies. His major accomplishments include the invention of the Nylon 12 angioplasty balloon, the helical wire stent, the modular stent-graft, a drug-eluting stent (TAXUS®), several biomaterials (Bionate® and SIBS), a novel glaucoma tube (the InnFocus MicroShunt®) and the next generation intraocular lens. His inventions are used in hundreds of millions of patients with a financial impact well over \$100 billion. Dr. Pinchuk was inducted into the National Academy of Engineering in 2012, was awarded the 2017 Society for Biomaterials Innovation and Technology Award, San Antonio's BIOMED SA Award (2017) and the National Academy of Engineering 2019 Fritz J. and Dolores H. Russ Prize. He received a B.Sc. in chemistry from McGill University (1976) and a Ph.D. interdisciplinary in engineering and chemistry from the University of Miami (1984). Dr. Pinchuk co-founded Corvita Corporation (1987) which went public in 1994, was acquired by Pfizer, Inc. (1996) and then sold to Boston Scientific (1998). He then founded Innovia LLC (2002), which spun-out InnFocus, Inc. (2004) which was acquired by Santen Pharmaceuticals in 2016. Dr. Pinchuk also enjoys an appointment as Distinguished Research Professor of Biomedical Engineering at the University of Miami.



ADVISORY BOARD MEMBERS

Rowley, Jon

Dr. Jon A. Rowley is the Founder & Chief Product Officer of RoosterBio Inc. Jon started RoosterBio in 2013 as part of his personal quest to have the biggest impact possible on the commercial translation of technologies that incorporate living cells, including cellular therapies, engineered tissues, and tomorrow's medical devices. Jon holds a Ph.D. from the University of Michigan in Biomedical Engineering and has authored over 35 peer-reviewed manuscripts and 20 issued or pending patents related to biomaterials development, tissue engineering, and cellular therapy. Jon started his industry career at BD as a scientist and R&D manager in a Cell & Tissue Technologies group focused on applying high throughput screening technologies to cell therapy media development and tissue engineering. Jon then contributed to the clinical development of Aastrom Biosciences' Tissue Repair Cell product, where he was Sr. Manager of Process Development responsible for manufacturing process improvements and cell delivery to the patient. Jon most recently spent five years as Director of Innovation and Process Development in Lonza's Cell Therapy CMO business, and currently resides in Walkersville, MD, with his wonderful wife and their three young children.



Seeto, Reginald

Dr. Seeto has over 20+ years of experience in the healthcare and life sciences field. He is the President and CBO of CareDx, a public biotech that is a leader in transplant diagnostics, where his responsibility includes the business development, commercial units, manufacturing and operations, R&D and international operations. Prior to this, he was the Chief Operating Officer of Ardelyx, a public biotech where he oversaw business development, commercial operations, corporate strategy and medical affairs. His experience also included being a member of executive leadership team at MedImmune, the Biologics unit for AstraZeneca in his roles as Head of Partnering & Strategy, and as Executive Vice President of Corporate Development and Strategy. He first joined MedImmune as Head of Global Strategic Marketing and Portfolio Management and later worked as a country General Manager for AstraZeneca in Asia. Earlier in his career, Dr. Seeto led the Fertility and Emerging Biotech Franchises (oncology, immunology, vaccines) for Organon Biosciences as the Vice President of Global Marketing and Flomax for Boehringer Ingelheim, which he grew to be a blockbuster and company's largest-selling U.S. product at that time.



Shuler, Michael

Dr. Michael L. Shuler is the Eckert Professor of Engineering, Emeritus, in the Meing Department of Biomedical Engineering and in the Robert Frederick Smith School of Chemical and Biomolecular Engineering at Cornell University. Shuler has degrees in chemical engineering (B.S., Notre Dame, 1969, and Ph.D., Minnesota, 1973) and has been a faculty member at Cornell University since 1974. Shuler's research includes development of "Body-on-a-Chip" for testing pharmaceuticals for toxicity and efficacy, creation of production systems for useful compounds, such as paclitaxel from plant cell cultures, and construction of whole cell models relating genome to physiology. Shuler is CEO and President of Hesperos, a company founded to implement the "Body-on-a-Chip" system. Shuler has been elected to the National Academy of Engineering and the American Academy of Arts and Science.



Soltani, Peter

Dr. Soltani is a native of greater Washington, D.C. and has been involved in the medical device and diagnostics space for nearly 20 years. Peter's early career involved technology innovation involving semiconductor and optical materials for energy conversion and imaging. He joined Hologic, Inc., a women's health focused medical device company, in 2000, where he led the company's Women's Health business segment. Notable accomplishments include helping develop Hologic's digital mammography platform, and the development and commercialization of the first 3D digital mammography system for early cancer detection. Peter joined Siemens Medical Solutions between 2014-2016 to lead its North American Healthcare Services business, helping develop solutions to meet the changing and complex needs of the healthcare delivery market. Peter has been with Beckman Coulter Diagnostics, Inc. (a Danaher company) since early 2016, leading its Hematology, and Urine Analysis & Workflow, and IT businesses.



ADVISORY BOARD MEMBERS

Steel, Adam

Dr. Adam Steel is the R&D Engineering Leader for Molecular and Microbiology platforms for Becton Dickinson's Diagnostic Systems business unit. He leads a team of over 100 engineers across the disciplines of Mechanical, Electrical, Software, Systems, and Test Engineering. Adam is a member of the Molecular Leadership Team and works closely with business leaders in that capacity to drive new growth opportunities via technology and product development. He has been Vice President of R&D Product Development and GPDS since 2016. Adam received a B.S. in Chemistry and Mathematics from Gettysburg College and a Ph.D. in Analytical Chemistry from the University of Maryland, College Park. He has several U.S. and worldwide patents and has published over 20 papers.



Yoon, Diana

Dr. Diana Yoon has been working as a regulatory scientist in the U.S. Food and Drug Administration (FDA) since 2011. She started as a Commissioner's Fellow working on a project evaluating standards for premarket review of bone regenerative medicine products. During her tenure at the FDA, she has conducted premarket regulatory review in the Center for Biologics Evaluation and Research and the Center for Devices and Radiological Health. She is currently a Senior Scientific Reviewer for product classification and jurisdiction in the Office of Combination Products. In 2003, she received a B.S. in Chemical Engineering, Biomedical Engineering (double major) from Carnegie Mellon University. She attended the University of Maryland, College Park (UMD) for her Ph.D. in Chemical and Biomolecular Engineering and graduated in 2008. During her time at UMD, she was awarded the Fischell Fellowship in 2006 for translational research in cartilage tissue engineering. She attended Rice University as a postdoctoral fellow to conduct bone tissue engineering research and was awarded the Gulf Coast Consortia Nanobiology Fellowship.



DEPARTMENT CHAIR

Fisher, John

Dr. John P. Fisher is the Fischell Family Distinguished Professor and Department Chair in the Fischell Department of Bioengineering at the University of Maryland. Dr. Fisher is also the Director of the newly established NIBIB/NIH Center for Engineering Complex Tissue (CECT) that aims to create a broad community focusing on 3D printing and bioprinting for regenerative medicine applications. Dr. Fisher completed a B.S. in biomedical and chemical engineering at The Johns Hopkins University (1995), an M.S. in chemical engineering at the University of Cincinnati (1998), a Ph.D. in bioengineering at Rice University (2003), and a postdoctoral fellowship in cartilage biology and engineering at the University of California Davis (2003).



As the Director of the Tissue Engineering and Biomaterials Laboratory, Dr. Fisher's group investigates biomaterials, stem cells, bioprinting, and bioreactors for the regeneration of lost tissues, particularly bone, cartilage, and cardiovascular tissues. Overall, the laboratory has published over 170 articles, book chapters, and proceedings (6900+ citations/46 h-index), as well as delivered over 340 invited and contributed presentations, while utilizing over \$15M in financial support from NIH, NSF, FDA, NIST, DoD, and other institutions. Dr. Fisher has been elected Fellow of both the American Institute for Medical and Biological Engineering (2012) and the Biomedical Engineering Society (2016). He is currently the Co-Editor-in-Chief of the journal *Tissue Engineering*, as well as the Chair (2018 - 2020) of the Americas Chapter of the Tissue Engineering and Regenerative Medicine International Society (TERMIS-AM). In 2018, Dr. Fisher chaired the Biomedical Engineering Society (BMES) Annual Meeting, celebrating the 50th Anniversary of the Society.

ADVISORY BOARD SUBCOMMITTEES

Advisory Board Chair

Claudio Knizek

Development Opportunities

Ivor Knight*

Tim Fischell

Steven Lehrer

Michael O'Connor

Todd Pantezzi

Adam Steel

Diana Yoon

Strategic Planning

Jon Rowley*

Matthew Dowling

David Lindsay

Antonios Mikos

Leonard Pinchuk

Reginald Seeto

Peter Soltani

Student Engagement

Samuel (Woodie) Kessel*

Tom Borgoyne

Jason Brooke

Naresh Menon

Susanna Naggie

Min-Quan Pham

Michael Shuler

** notes subcommittee chair*

RECENT DEPARTMENT HIGHLIGHTS

■ Four BIOE Students Named NSF Graduate Research Fellows

Three Fischell Department of Bioengineering graduate students and one BIOE undergraduate student were named recipients of the prestigious National Science Foundation (NSF) Graduate Research Fellowship Program award. Ph.D. students Micaela Everitt, Eugene Froimchuk, and Samm Stewart, and undergraduate senior Eric Wang will receive three years of support – including a stipend and additional funding towards a graduate degree – over a five-year fellowship period. In addition to the four award recipients, BIOE undergraduate senior Thea Ornstein was recognized with an honorable mention.

■ Clyne, Jewell Inducted into AIMBE College of Fellows

Associate professors Alisa Morss Clyne and Christopher Jewell were inducted into the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows on March 25th. Election to the AIMBE College of Fellows is among the highest professional distinctions accorded to a medical and biological engineer. College membership honors those who have made outstanding contributions to engineering and medicine research, practice, or education.

■ 3D-printed Tissues May Keep Athletes in Action

Bioscientists are moving closer to 3D-printed artificial tissues to help heal bone and cartilage typically damaged in sports-related injuries to knees, ankles and elbows. At the Center for Engineering Complex Tissues (CECT), a National Institutes of Health center at the University of Maryland (UMD), Rice University, and the Wake Forest School of Medicine, scientists reported their first success at engineering scaffolds that replicate the physical characteristics of osteochondral tissue – basically, hard bone beneath a compressible layer of cartilage that appears as the smooth surface on the ends of long bones. UMD Fischell Department of Bioengineering Fischell Family Distinguished Professor and chair John Fisher directs CECT.

■ New Microscopy Technique Could Change LASIK

BIOE researchers have developed a microscopy technique that could one day be used to improve LASIK and eliminate the “surgery” aspect of the procedure. Their findings were published in March in *Physical Review Letters*.

ADVISORY BOARD PURPOSE & RESPONSIBILITIES

The Fischell Department of Bioengineering Advisory Board at the A. James Clark School of Engineering is composed of leaders from industry, government, and academia committed to the advancement of the Fischell Department of Bioengineering at the University of Maryland, College Park (UMD). Members of the Advisory Board are the Department's strongest advocates and champions.

The purpose of the Fischell Department of Bioengineering Advisory Board is to:

1. Foster excellence in the department;
2. Provide guidance to the department regarding mission, goals and strategic planning;
3. Promote the interests of the department locally, nationally and internationally;
4. Advise on curriculum and research, student recruitment, student career placement and industry trends;
5. Strengthen and enhance the financial resources of the department; and
6. Act as a liaison between the department and industry, government and other academic institutions.

The Advisory Board will be composed of approximately 20 members who represent a diversity of experiences and perspectives. The Chair of the Fischell Department of Bioengineering will be the primary facilitator, with assistance from the Clark School of Engineering's Office of External Relations.

Membership responsibilities include:

1. Service on the Advisory Board for one three- (3) year term, with the option to renew for one additional three- (3) year term (*at the request of the Department Chair, exemplary service may result in an invitation to become an emeritus member of Advisory Board*);
2. Participation in strategic planning for the Department by advising the chair on matters pertaining to curriculum, research, program initiatives and external relations;
3. Ambassadorship to external constituencies and UMD leadership;
4. Fostering connections and identifying resources to support departmental initiatives;
5. Attendance at two bi-annual meetings, typically held in October and April (*absence from three consecutive meetings may result in a request to step down from service*);
6. Giving and/or encouraging philanthropic support for the department annually, at a level that is personally meaningful: members are asked to consider the department as one of their top three philanthropic priorities; and
7. Volunteering annually to assist with a student, faculty, or alumni initiative.

The Fischell Department of Bioengineering is committed to the following:

1. Soliciting feedback and recommendations from committee members on enhancing academic, research and external relations programs;
2. Inviting members to marquee events such as the Fischell Festival and the Senior Capstone Design Competition;
3. Providing access to Clark School Dean and UMD leadership; and
4. Providing updates on the State of the Department, including finances, undergraduate program, graduate program, and research initiatives.



FISCHELL DEPARTMENT OF
BIOENGINEERING