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NEWS AND VIEWS

News: Recognitions, Societies, and Academia

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Awards and Recognitions

Professor Chad A. Mirkin, Ph.D. (Northwestern University), received the prestigious 2016 Dan David Prize in the Future Time Dimension for his breakthroughs in nanotechnology. The International Dan David Prize annually awards three $1 million prizes for outstanding achievements in the three time dimensions – past, present, and future. This year, the future time dimension prize recognizes innovative research in nanoscience and technology. Professor Mirkin was recognized for his seminal work that has led to the creation of spherical nucleic acids (SNAs) that are being utilized for novel diagnostic and treatment solutions for diseases such as cancer and neurodegenerative disorders.

Professor Antonios Mikos, Ph.D. (Rice University), earned the 2015 Tissue Engineering and Regenerative Medicine International Society (TERMIS) Lifetime Achievement Award for his contributions in the field of tissue engineering. Professor Mikos' work has focused on utilizing translational principles to fabricate organs that can be transplanted in patients.

Professor Robert Langer, Sc.D. (Massachusetts Institute of Technology), was awarded the 2015 Queen Elizabeth Prize for Engineering for his revolutionary advances and leadership in engineering through his development of drug-release systems, tissue building and microchip implants. The £1million engineering prize rewards engineers responsible for a groundbreaking engineering innovation that has globally benefited society.

Professor Cato Laurencin, M.D., Ph.D. (University of Connecticut), will receive the National Medal of Technology & Innovation from President Obama in 2016 for his advancements in the field of regenerative engineering. The award recognizes America's leading innovators who have made lasting contributions to America's competitiveness and quality of life and is the nation's highest honor for technological achievement. Professor Laurencin's lasting contributions include breakthrough research in musculoskeletal tissue growth and regeneration, as well as contributions in polymeric materials science and nanotechnology. Professor Joseph Desimone, Ph.D. (University of North Carolina at Chapel Hill) and Professor Rakesh Jain, Ph.D (Harvard Medical School), will also receive the National Medal of Technology & Innovation award from President Obama in 2016 for their contributions in material science to create advances in medicine.

Professor Jordan Green, Ph.D. (Johns Hopkins University), will be a recipient of the Presidential Early Career Award, bestowed by President Obama. This award is the highest recognition for science and engineering professionals that is bestowed by the U.S. government. Professor Green's research focuses on developing biomaterials and nanobiotechnology for tissue engineering and regenerative medicine purposes.

Academy and Society Inductions

The National Academy of Engineering recently inducted 80 new members and 22 new foreign members. Dr. Jennifer West, Professor of Biomedical Engineering at Duke University and Dr. Molly Shoichet, a Professor of Chemical Engineering at the University of Toronto were among the recent inductees. They were inducted for their respective contributions in the field of tissue engineering and drug delivery. In addition, Prof. Rui Reis, Professor at University of Minho was also inducted for his pioneering contributions to biomaterials and tissue engineering.

Professor Kristi Anseth, Ph.D. (University of Colorado Boulder), was elected as the 2016 president of the Material Research Society and will lead its board of directors. MRS is an international organization of about 16,000 material researchers and a recognized leader in promoting to the advancement of interdisciplinary material research to improve the quality of life. Professor Anseth's laboratory is currently

working on engineering materials for cartilage and heart valve replacements.

Professor Adnrew Zydney (Pennsylvania State University), Professor Jackie Ying (Institute of Bioengineering and Nanotechnology, Singapore), Professor Babatunde Ogunnaike (University of Delaware), Professor Dennis Discher (University of Pennsylvania), Professor Shu Schien (University of California San Diego) and Professor Shelly Sakiyama-Elibert (Washington University in St. Louis) were all recently inducted as Fellows into the American Association for the Advancement of Science for their respective contributions to the field of biomedical engineering.

University Positions

Professor Ravi Bellamkonda, Ph.D. (Georgia Tech University and Emory College of Medicine), has recently been named the dean of the Pratt School of Engineering at Duke University. Professor Bellamkonda, a renowned biomedical engineer, has conducted extensive research on the application of biomaterials to the nervous system for cancer and nerve repair therapies.

Views: Recent Advances in the Field

Advancements in Industry

L'Oreal, a nationally renowned cosmetic company, has recently partnered with Organovo; the beauty company will utilize the biotechnology firm's 3D printing capabilities to print skin for cosmetic testing. This partnership will allow the company to produce more accurate testing results across a wide array of skin phenotypes.

Advancements in Academia

Scientists at Wake Forest University have recently printed functional cartilage, soft muscle and bones that have been successfully implanted into animals. This breakthrough technology, as reported in *Nature Biotechnology,* will potentially be used for clinical applications once the safety and efficacy has been established in animal models.

Scientists at the University of Toronto have demonstrated that engineered hydrogels can accelerate healing in cases of nerve damage in the eyes and brain. The scientists have conducted two preliminary lab trials, which demonstrated that the hydrogels had the capacity to facilitate the healing of the brain after a stroke and also had the ability to partially reverse blindness. These findings were reported in *Stem Cell Reports.*

Scientists at Vanderbilt University have recently discovered an unexpected way construct fiber networks that can be used as templates to build artificial organs: cotton candy machines. This finding, published in *Advanced Heatlhcare Materials,* utilizes the cotton candy machines to create microfluidic networks that mimic the human three-dimensional capillary system. By utilizing a top-down approach with the cotton candy machine spinning method, the scientists were able to produce channels that ranged from three to five microns, with an average diameter of thirty-five microns, which are similar in size to human capillaries. The researchers are now fine-tuning their method to apply to other types of vascular networks.

Views: Government and Public Policy

A bill entitled the "*Advancing Standards in Regenerative Medicine Act*" has recently been introduced in the United States Senate to promote regulatory and scientific standards for the fields of regenerative and advanced medicine. This bill aims to refine the regulatory process and reduce the financial and time requirements that are necessary for the development and approval of new regenerative therapies.

Congress and President Obama have recently passed and signed into law a federal spending bill that will give the National Institutes of Health (NIH) a $2 billion funding increase. This is the largest proposed increase in more than 12 years and the funding will be distributed across several different fields of research, including precision medicine, Alzheimer's, and antibiotic research.