



FRONTIERS 2014

EXPLORE THE LATEST RESEARCH ADVANCES AT DUKE UNIVERSITY



JOHN ALBERTSON, PHD

John Albertson received his BS in civil engineering from SUNY Buffalo; an MBA in finance from the University of Hartford; a master's in hydrology from Yale University; and a PhD in hydrologic science from the University of California at Davis. He is now Professor and chair in the Department of Civil and Environmental Engineering. His current research is focused on water and energy issues affected by environmental dynamics in the lower atmosphere, such as fugitive methane emissions and wind power forecasting.



THEO BENSON, PHD

Theo Benson is an Assistant Professor in the Computer Science Department of Duke University. His research interests include solving practical networking and systems problems, with a focus on software defined networking, data centers, clouds and configuration management. In the past, he has conducted large-scale measurement studies of data centers and enterprise networks; and developed several networked and distributed systems—one of which was purchased in 2012. To date, his study on data center traffic characteristics has been used by over 15 groups to evaluate their designs and architectures.



ASHUTOSH CHILKOTI, PHD

Ashutosh Chilkoti is the Theo Pilkington Chair in Biomedical Engineering at Duke University. Professor Chilkoti was honored with the CAREER award by the National Science Foundation in 1998, the 3M non-tenured faculty award in 2002, and the Distinguished Research Award from the Pratt School of Engineering at Duke University in 2003 and in 2005. He was awarded a senior researcher award by the Alexander Von Humboldt Foundation in 2010, the Clemson Award for Contributions to the Literature by the Society for Biomaterials in 2011, and the 2013 Robert A. Pritzker Distinguished Lecture award by the Biomedical Engineering Society. He is currently the Director of the Center for Biologically Inspired Materials and Materials Systems at Duke University.

His areas of research include biomolecular engineering with a focus on stimulus responsive biopolymers for applications in protein purification and drug delivery, and biointerface science, with a focus on the development of clinical diagnostics and plasmonic biosensors. He has co-

authored over 250 publications, has been cited more than 14,500 times, has an H-index of 69, and has 18 patents awarded and 43 in process.

He is the founder of two start-up companies: PhaseBio Pharmaceuticals, which has raised \$65 million in venture capital funding and is taking drug delivery technology that he developed into clinical trials, and Sentilus, which is developing point-of-care clinical diagnostics based on a polymer brush technology developed in his laboratory. He serves on the editorial boards of five journals, and is a reviewer for over 20 other journals.



MATTHEW CLARK, PHD

Matthew Clark's day job is as a signal and image processing engineer at Northrop Grumman Information Systems in Raleigh, NC, where he fuses signal processing and digital design techniques to create small intelligent sensors. Dr. Clark is also the alumni recruiter (Georgia Tech) for Northrop Grumman's Future Technical Leaders Program. He has been recruiting at Georgia Tech for more than 15 years for both commercial and defense companies.

At various points in his career, Matthew's title has included the terms software, hardware, ASIC, signal processing, and program manager for TRW, GTRI, Hughes/Raytheon Missile Systems, Nortel Networks, Intel Americas, TASC and Northrop Grumman.

Matthew earned a bachelor's degree from St. Andrews Presbyterian College. He also holds a bachelor's degree in computer engineering, a master's in electrical engineering and a doctorate from Georgia Tech.



CHRIS DWYER, PHD

Chris Dwyer received his BS in computer engineering from the Pennsylvania State University in 1998, and his MS and PhD in computer science from the University of North Carolina at Chapel Hill in 2000 and 2003, respectively. He is currently an Associate Professor at Duke University in the Department of Electrical and Computer Engineering, and is a co-founder and VP of Research & Development at Parabon NanoLabs, Inc., an applied DNA nanotechnology company.

He was awarded the Young Investigator Award from the Army Research Office in 2008 for which he received the U.S. Presidential Early Career Award for Scientists and Engineers (PECASE). Dwyer is a Senior Member of the ACM and IEEE and was elected a Kavli Fellow by the National Academy of Sciences in 2011. His areas of research include DNA self-assembly and applications that expand the computational domain with a focus on device-to-systems design, evaluation and synthesis.



RICHARD FAIR, PHD

Richard Fair is a Fellow of the IEEE and a Fellow of the Electrochemical Society. He has served as Associate Editor of the IEEE Transactions on Electron Devices (1990-1993) and is past Editor-In-Chief of the Proceedings of the IEEE (1993-2000). He received the IEEE Third Millennium Medal in 2000, and the 2003 Solid State Science and Technology Award from the Electrochemical Society. He has published 150 papers in technical journals, contributed chapters to 10 books, edited eight more books and given over 115 invited talks.



LINDA FRANZONI, PHD

Linda Franzoni joined Duke in 1998 after spending five years as an assistant professor at North Carolina State University. She served as a research assistant professor at Duke's engineering school from 1991 to 1993, and is currently Associate Dean for Undergraduate Education.

She earned a bachelor of science degree from Yale University in 1980 and worked as an engineer for five years at NASA's Jet Propulsion Laboratory at Caltech before going to graduate school at Duke, where she earned a Master of Science degree in 1988 and her PhD in 1991.

Franzoni's research areas include acoustics, structural dynamics and vibration, and solid mechanics. Practical applications of this work include acoustics of enclosures (rooms or vehicle interiors) and underwater acoustics.



JEFF GLASS, PHD

Jeffrey T. Glass is a Professor in the Department of Electrical and Computer Engineering and is the Faculty Director of the Pratt School's Master of Engineering Management Program at Duke University. He also holds the Hogg Family endowed chair in Engineering Management and Entrepreneurship. Formerly, he was the Co-Director of The Institute for the Integration of Management and Engineering at Case Western Reserve University (CWRU) and held the Joseph F. Toot, Jr. endowed chair in the Case School of Engineering. Prior to his appointment at CWRU, he was the Vice President of R&D for Kobe Steel USA Inc. with a focus on electronic materials. He has consulted for various companies in materials-related areas and has served as an expert witness in patent litigation. He received the 2004 Industrial Research Institute's Maurice Holland Award for his paper entitled "Managing the Ties Between Central R&D and Business Units." His technical research focuses on the growth and characterization of thin films for energy and electronic applications, primarily carbon nanotubes, graphene and diamond. Jeff is an ISI Highly Cited Researcher and has published over 150 papers and book chapters, edited seven books and is a co-inventor on 14 patents. Jeff received his bachelor's and masters degree's from Johns Hopkins University, and a PhD in materials science and engineering from the University of Virginia. He also received an MBA from Duke University's Global Executive (GEMBA) program.



JOHN GLUSHIK

Intersouth Partners is one of the most active and experienced early-stage venture funds in the Southeast region with more than 110 investments in private companies over the last 28 years. Intersouth manages more than \$750 million in seven venture capital limited partnerships. John's work covers all aspects of venture investment and portfolio management. He has led multiple venture financings and he has managed a number of successful liquidity events. He is an active member of the entrepreneurial community, serving on the boards of the North Carolina Council for Entrepreneurial Development, the Southern Capital Forum, the Florida Venture Forum and the Atlanta Venture Forum where he is a past chairman. He also serves on the advisory boards of Southeast TechInventures and the Georgia Research Alliance. He is an active member of the judging committee for AngelPool. He teaches as an Adjunct Professor at the Kenan-Flagler Business School at the University of North Carolina. He speaks frequently at North Carolina State University and Duke University where he is an Entrepreneur Affiliate. He serves on the Board of Visitors for the Pratt School of Engineering at Duke.

Prior to Intersouth, John worked as an engineer and consultant in the information technology and aerospace industries. His previous experience includes software development, telecommunications engineering, data communications research and strategic market consulting. He holds a BS in mechanical engineering and materials science from Duke, an MS

in aeronautics and astronautics from the Massachusetts Institute of Technology and an MBA from the J.L. Kellogg Graduate School of Management at Northwestern University.



JAY S. GOLDEN, PHD

Jay Golden is Associate Vice Provost for Research where he focuses on research development, corporate relations, institutional partnerships with peer universities and national labs, and sustainability initiatives.

Golden is an Associate Professor of the Practice for Sustainable Systems Analysis in the Division of Earth and Ocean Sciences in the Nicholas School of the Environment and holds a secondary appointment in the Civil & Environmental Engineering at the Pratt School of Engineering.

He received his PhD in engineering from the University of Cambridge, and his master's degree in environmental engineering and sustainable development from a joint program of the Massachusetts Institute of Technology and the University of Cambridge. He also holds a Professional Mastery of Project Management Certificate from Stanford University and has a bachelor's degree in management where he attended the University of Phoenix and Arizona State University. Prior to arriving at Duke, Golden was an assistant professor and honors faculty member at Arizona State University.



ROB HALLFORD

Rob Hallford joined Duke's Office of Licensing & Ventures in 2010, bringing more than 15 years of experience in the pharmaceutical and life science venture capital industries. Most recently, Rob served as Vice President of Business Development for Nanosyn, where he led sales efforts for their contract biology services. Prior to Nanosyn, as a Senior Associate at Pappas Ventures, he sourced, evaluated and managed venture capital investments, working closely with several portfolio companies, including a role as Director of Business Development for CoLucid Pharmaceuticals. Rob also worked for eight years with Eli Lilly and Company, where he held positions in Lilly Ventures, corporate strategy and business development, research portfolio management, and biopharmaceutical development. During his tenure at Lilly, Rob operated on a number of business development deal teams and co-developed the global product development strategy for Lilly's \$2 billion diabetes business. Hallford received his BS and MS in chemistry from Furman University and his MBA from Duke University's Fuqua School of Business.



JOHN HARDIN, PHD

John Hardin is the Executive Director for the North Carolina Board of Science & Technology, which is staffed by Office of Science & Technology in the North Carolina Department of Commerce. The Board advises and makes recommendations to the North Carolina Governor, General Assembly, Secretary of Commerce, and Economic Development Board on the role of science and technology in the economic growth and development of the state. Created in 1963 (the first such organization in the U.S.), the board has been responsible for the creation of a number of internationally recognized initiatives to catalyze the transformation of the North Carolina economy by leveraging research and development, science, innovation, entrepreneurship and technology-based economic development.

Hardin's duties include developing and justifying legislation related to defining statewide research capacity and structure; implementing science and technology-related economic development policy and resource allocations; research, analysis, and review of substantive policy issues and proposals; preparing public policy and budget analyses; preparing and presenting high-level state policy briefings, assessments, and reports to policy makers and

external constituencies; conducting strategic planning and making recommendations for technology-based economic development; directing and overseeing strategic initiatives with impact at the state level; and overseeing the administration of grant programs to support technology commercialization by North Carolina small businesses.

A native of Tulsa, Oklahoma, Hardin holds the MA and PhD degrees in political science from the University of North Carolina at Chapel Hill, a BA in economics from Baylor University, and a certificate of completion for the Leadership Decision Making program, Harvard University, John F. Kennedy School of Government.



ALEX HARTEMINK, PHD

Alex Hartemink is the Alexander F. Hehmeyer Professor of Computer Science, Statistical Science and Biology. He directs Duke's PhD Program in Computational Biology and Bioinformatics, and is a founding member of the Center for Systems Biology and the Center for Genomic and Computational Biology. He chaired the Provost's Academic Programs Committee this year, and has served on the Board of Directors of the Duke Alumni Association for the last four years.

His research interests are at the intersection of machine learning (especially Bayesian methods) and cellular and molecular systems biology (especially the interplay between genomics, transcriptional regulation, and cell cycle control). He received an NSF CAREER Award in 2004, an Alfred P. Sloan Research Fellowship in 2005, the David and Janet Vaughn Brooks Distinguished Teaching Award in 2007, was named to the DARPA Computer Science Study Group in 2008, and was inducted into Duke's Bass Society for excellence in teaching and research in 2009.

Hartemink is a 1994 Duke alumnus, majoring in mathematics, physics and economics. He spent two years at Oxford, earning an MPhil in economics in 1996. He went on to earn his PhD in electrical engineering and computer science from MIT in 2001, and joined the faculty at Duke that fall.



TOM HEALY

Tom Healy is Director, Corporate Relations, in the Office of the Vice Provost for Research, Duke University. Duke collaborates with industry to promote innovation, insight, and solutions to global challenges. Through partnerships with Duke University, corporations have access to an unparalleled pipeline of talent and the distinctive resources of a top 10 research university. Prior to his position at Duke, Tom was Director, External Research Strategy, at Microsoft Research. He established and supported leading-edge academic research projects at worldwide universities; which included managing programs, events, and communications. He is originally from the Boston, Massachusetts, area and holds a BA in education from the University of Massachusetts and an MS in organizational development from Lesley University.



KEITH HURKA-OWEN

Keith began his administrative career at Duke University as the Program Coordinator for the Center for International Business, Education and Research, a center funded through the U.S. Department of Education in 1995. Since then, he has accepted positions of increasing responsibility until becoming the Director of the Office of Research Support. From the year 2001 forward, his primary focus has been on research administration where he has participated in developing training workshops, systems and procedures for managing proposal submissions, award acceptance and reporting with a goal of improving and supporting the research enterprise of the University.



ED HUTCHINSON

Ed manages the private investments (venture capital, private equity, real estate, natural resources) for DUMAC (Duke University's endowment). He also helps oversee its private co-investment program. Prior to joining DUMAC in early 2008, he was a principal in the corporate development group at Cytoc Corporation, which he helped sell for more than \$6 billion. Ed holds a BA in economics from the University of Virginia and an MBA from Stanford University.



THOMAS KATSOULEAS, PHD

Thomas C. Katsouleas became dean of Duke University's Pratt School of Engineering, in July 2008. He also serves as Professor of Electrical and Computing Engineering. He earned a PhD in physics and BS in physics, both from UCLA in 1979 and 1984, respectively. He continued at UCLA where he served for seven years on the faculty. Katsouleas' primary research interest is in the use of plasmas as novel particle accelerators and light sources. He joined the University of Southern California faculty as an associate professor of electrical engineering in 1991, becoming full professor in 1997. There he also served as an Associate Dean of Engineering and Vice Provost of Information Technology Services. He serves as associate editor of the IEEE Transactions on Plasma Science and is the Chair of the National Academy of Engineering's Advisory Committee on Engineering Grand Challenges for the 21st Century.



ANDREW KINTZ

Andrew Kintz (Andy) is a Senior Staff Scientist at LORD Corporation. In this role he supports global marketing and business development to better understand technology trends and their impact on LORD. He has been a successful entrepreneur, turning ideas into profitable finished products through assertive risk-taking and innovation.

Andy has over 25 years of broad based industrial experience in job functions ranging from research and development to operations management. He worked globally on LORD Corporation's adhesive business for rubber-to-metal adhesives and structural adhesive. He spent several years as the Americas Market Manager for LORD's automotive aftermarket products. Andy's work on Magnetic Rheological (MR) fluids led to the use of MR devices in production vehicles in the automotive industry. As LORD's Automotive Commercial Business Manager, he gained experience pricing for direct sales and distribution based businesses.

Prior to LORD Corporation, Andy worked for Reichhold Chemicals and Mead Imaging. Andy holds numerous international and United States patents. He has 13 patents for his work relating to Polymer Chemistry and Magnetic Rheological Fluids. His alma mater is Bowling Green State University, where he earned a bachelor's of science in chemistry.



STEPHANE LAROUCHE, PHD

Stephane Larouche is currently a post-doctoral fellow in Metagroup, studying various aspects of linear and nonlinear metamaterials and plasmons. He received his PhD in engineering physics from the Ecole Polytechnique de Montreal, under the supervision of Ludvik Martinu. Dr. Larouche has developed advanced methods for the design of optical filters with arbitrary refractive indices. He has developed a retrieval method for the characterization of nonlinear metamaterials, and currently leads several projects in the lab including infrared metamaterials.



ALVIN LEBECK, PHD

Alvin R. Lebeck is a Professor of Computer Science and of Electrical and Computer Engineering at Duke University. Lebeck's research interests include architectures for emerging nanotechnologies, high performance microarchitectures, hardware and software techniques for improved memory hierarchy performance, multiprocessor systems, and energy efficient computing. Professor Lebeck received a BS in electrical and computer engineering (1989), an MS (1991) and a PhD (1995) in computer science at the University of Wisconsin-Madison. Lebeck is co-author on over 75 refereed publications, received the best paper award at the 31st IEEE/ACM International Symposium on Microarchitecture, and has papers selected as IEEE MICRO Top Picks in Computer Architecture in 2009 and 2010. He is the recipient of a 1997 NSF CAREER Award and is a member of ACM and senior member of IEEE.



VRAD LEVERING

Vrad is a PhD student who joined the Lopez Lab in 2012. His research interests include biofilms, catheters, glucose sensors, cell therapies and translational medical device development. Vrad received his Honors Chemical Engineering BS from the University of Texas at Austin, where he also performed research in Dr. C. Grant Willson's lab (recipient of the National Medal of Technology and Innovation). After UT he worked for nine years as a medical device engineer at W.L. Gore and Associates, Inc. During his tenure at Gore, he worked on products including vascular grafts, pacing leads, aortic stents, delivery catheters, balloon catheters, carotid stents, and shunts. Vrad entered the PhD program at Duke in 2009 and received a MS while researching cardiovascular cell therapies. He joined the Lopez Lab after becoming excited about its broad research and translational opportunities. His current research utilizes novel techniques for the controlled detachment of the bacterial exopolysaccharide matrix (biofilm) using active soft materials. Vrad led the development of the anti-biofilm catheter and has been instrumental in the patenting, publicizing, and pursuit of commercial funding for anti-biofilm medical technologies. Vrad was recently selected by the Duke Graduate School to represent entrepreneur-students for its website video for recruiting future students. Vrad has received or won Research Triangle MRSEC, Duke CBTE, and Morton H. Freedman Fellowships, and is a member of the PhD Plus Certificate program. Vrad has traveled to more than 25 countries and enjoys backpacking, out-reach, kickboxing and salsa dancing.



KAREN LEVERT

Karen LeVert is CEO and co-founder of Southeast TechInventures, Inc. (STI). STI is a technology accelerator focused on migrating promising technologies from university research labs to the commercial marketplace.

Ms. LeVert's business experience encompasses both corporate and entrepreneurial worlds with over 25 years of successful leadership experience in start-ups, technology commercialization and executive management. She spent the early years of her career with a Fortune-500 company in positions ranging from computer programmer, to controller, to general manager of a 500-person operation. Her first entrepreneurial venture was the launching of a franchise bioremediation company in 1998 that she later sold in 2001. Before co-founding STI, Karen co-launched a Silicon Valley venture-funded software company where she served as Executive Vice-President of Business Development.

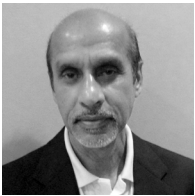
Karen holds an MBA from the University of Dayton and an information technology undergraduate degree from Eastern Michigan University. Along with her professional duties she serves as a Board member for Southeast TechInventures, Council for Entrepreneurial Development (CED), and the North Carolina School of Science and Math. Karen is a former recipient of CED's North Carolina's Entrepreneur of the Year.



GABRIEL P. LÓPEZ, PHD

Gabriel López is founding Director of the NSF's Research Triangle Materials Research Science and Engineering Center (MRSEC) and a Professor of Biomedical Engineering and Mechanical Engineering & Materials Science at Duke University. He is also Research Professor of Chemical Engineering and a member of the Center for Biomedical Engineering at the University of New Mexico. He was the founding Director of the UNM Center for Biomedical Engineering (2005). His research has been supported by several sources including the NSF, NIH, DOE, NASA, DOD, industry and nonprofit foundations. He has authored more than 200 research publications and is inventor on 29 issued patents and many pending patent applications, many of which have been licensed by industry and formed the basis for start-up companies. He has been granted several awards and honors for his research, including the Outstanding University Inventor Award from the Semiconductor Research Corporation and the NSF Faculty Early Career Development Award. He was named one of the 100 most important Hispanics in technology and business for 2006 by the editors of *Hispanic Engineer* and *Information Technology*.

Professor Lopez's professional activities include outreach to groups under-represented in science and engineering, participation in several scientific societies, consultation on research directions for NIH, NSF and DTRA programs, serving on the NIH College of CSR Reviewers and serving on the Editorial Advisory Boards of *Langmuir* and *Biointerphases*. He also served for five years on the Board of Directors of STC.UNM, the non-profit corporation that nurtures innovation and economic development for the UNM community. His current research interests include biointerfacial phenomena, bioinspired and biomimetic materials and bioanalytical microsystems to address problems in medicine, biotechnology and environmental quality.



ASHOK K. MENDIRATTA, PHD

Ashok Mendiratta is the Chief Commercialization Officer at Southeast TechInventures Inc (STI), a technology accelerator focused on transitioning the most promising technologies from university research labs to the commercial marketplace.

Ashok's expertise stems from extensive technology and business leadership experience in both corporate America (GE and Honeywell) and in startup operations. He started his career with GE's Corporate Research & Development Center as a scientist. Ashok was with GE for 17 years—holding technology and business leadership positions of increasing responsibilities in various GE businesses. In 2004 he co-founded Liquidia Technologies, a startup company with an innovative micro- and nano-technology platform. He joined STI in 2007. Ashok earned his BS, MS and PhD degrees in Chemical Engineering. He has been issued 21 patents.



MILES PALMER, PHD

As an innovator, engineer and scientist, Miles Palmer has expertise in a broad range of fields, including biomedicine, aerospace, optics, communications, transportation, automotive technology, robotics, energy, fuels and environmental chemistry. Since earning both an electrical engineering and chemistry degree at MIT and a PhD at the University of California, San Diego, he has been leading forefront technology and business development, with over 50 patents/publications, seven companies, and \$1B in value. A few years ago, he cofounded 8 Rivers Capital, LLC with a former MIT roommate, Bill Brown, and moved to the Triangle area.

8 Rivers Capital was formed to develop and deploy companies that offer cheaper and better solutions to significant world problems, helping spawn a new industrial revolution. 8 Rivers has developed a new and unique technical and business process to achieve this end for capital intensive solutions.

The first proof of this new model lies in the ongoing success of NET Power. NET Power,

according to both industry and government officials in the U.S. and around the world, is developing the most important new electric power plant technology of the past 75 years. It enables zero carbon emissions from fossil fuel power plants coupled with higher profitability. It is this higher profitability that is driving, and will drive, NET Power to global adoption. It has all started here in the Triangle.

8 Rivers is working on several “next big things.” This includes a company that might reduce global wireless communications costs over tenfold and another that might reduce space launch costs by even more.



AKSHAY RAUT

Akshay Raut obtained his bachelor’s degree in electronics and telecommunications engineering in June 2005 from University of Pune, India. He worked as an embedded software engineer in Aftex Ltd., Pune from July 2005 to November 2007. He came to the United States in December 2007 for his master’s in engineering management from Duke University. He transferred to the doctoral program in Electrical and Computer Engineering at Duke University in August 2008. Concurrently he also gained his Master of Engineering degree from Duke University. During his doctoral program, he worked as a research Scientist intern at RTI International in Durham, North Carolina, in 2013. His research interests include electrochemistry, carbon nanomaterials, energy storage technology, and disinfection and water quality.



ANDY RINDOS, PHD

Andy Rindos is the head of the Research Triangle Park (RTP) Center for Advanced Studies (CAS), which coordinates university relations for the IBM community in North Carolina. He is also the co-leader of the IBM Cloud Academy, and is working very closely with universities all across the world interested in deploying cloud computing. Most recently, Andy was the World Wide CAS Leader, coordinating the activities of 29 centers across the globe. Previously, Andy has headed Tivoli performance, as well as the Web Sphere Technology Institute. Andy is an IBM Senior Technical Staff Member (STSM), an executive technical resource, as well as an adjunct professor at NC State. He joined IBM in 1988, after receiving his PhD in Electrical Engineering (Control Theory) from the University of Maryland (College Park). Prior to IBM, he was a neurophysiologist at the National Institutes of Health (NIH) in Bethesda, MD.



WYATT SHIELDS

Wyatt Shields is a third-year PhD student in the research group of Dr. Gabriel P. López. His interests include new methods of cell sorting in acoustic microfluidic devices. In particular, Wyatt is investigating the synthesis of elastomeric particles from silicone gels with programmable acoustic properties and narrow size distributions for the recognition and isolation of rare cells. He is also interested in the fabrication and assembly of patchy, anisotropic microparticles into reconfigurable materials that controllably actuate on-command. Wyatt is an NSF Graduate Research Fellow and the recipient of the 2013 Exceptional Student Award from the International Society for the Advancement of Cytometry.



ERIC TOONE, PHD

Eric Toone began his independent career at Duke in 1990, and is currently Professor of Chemistry and Professor of Biochemistry. He has authored over 220 original papers, reviews, book chapters and abstracts in physical organic and biophysical chemistry, including applied and mechanistic enzymology, ligand binding in aqueous solution, and the chemistry and biology of nitric oxide. He is also listed as an inventor on more than 20 patents in a range of biomedical

fields. He is a scientific founder of two research-based pharmaceutical companies, Aerie Pharmaceuticals and Vindica Pharmaceuticals, focused on ophthalmology and therapeutic administration of nitric oxide, respectively. From 2009 to 2012 Professor Toone was detailed to the U.S. Department of Energy where he was a founding member of the Advanced Research Projects Agency – Energy (ARPA-E). During that time, he served both as Program Director and Deputy Director for Technology before leading the Agency in 2012. Professor Toone is currently Director of Duke University Innovation and Entrepreneurship Initiative, an initiative designed to foster entrepreneurship across the entire university community



GEORGE TRUSKEY, PHD

George Truskey is the R. Eugene and Susie E. Goodson Professor and Senior Associate Dean for Research in the Pratt School of Engineering. Dr. Truskey's research interests include cardiovascular tissue engineering and the mechanisms of atherogenesis, a disease of large and medium-size arteries involving the localized accumulation of cholesterol and other lipids. He also studies cell adhesion and cell biomechanics, for which he focuses upon the effect of flow on endothelial cell adhesion to synthetic surfaces and monocyte adhesion to endothelium. He received a BSE in bioengineering in 1979 from the University of Pennsylvania and a PhD degree in 1985 in chemical engineering from MIT. He was an Assistant Professor of Chemical Engineering at Tufts University from 1985 to 1987 and has been a faculty member in the Department of Biomedical Engineering at Duke since 1987. From 2003-2011, he was Chair of the Department of Biomedical Engineering at Duke University. He oversaw the growth of the department to one of the largest at Duke with 28 tenure track faculty and 170 PhD students and new masters programs. During that time, he directed Duke's Translational Research Partnership with the Coulter Foundation and the successful transition to an endowed program. He is the author of over 100 peer-reviewed research publications, a biomedical engineering textbook entitled *Transport Phenomena in Biological Systems*, six book chapters, over 180 research abstracts and presentations, one patent and two patent applications. He is a Fellow of the Biomedical Engineering Society (BMES), the American Institute of Medical and Biological Engineering, and the American Heart Association. He has served as reviewer for a number of U.S. and international government agencies and is currently a member of the Steering Committee of the Whitaker International Fellowship Program at the Institute for International Education. He was president of BMES from 2008 to 2010. He received the Capers and Marion McDonald Award for Excellence in Mentoring and Advising from the Pratt School of Engineering at Duke (2007) and the BMES Distinguished Service Award (2012).



TONY VOIERS

Tony is founder and CEO of Novocor Medical Systems. In his role as CEO, Tony has raised over \$1.5M in financing and oversees all aspects of their therapeutic hypothermia business. He has over 20 years experience in the medical device industry with most of his career spent in operations, new product development and general management. After graduating from North Carolina State University in chemical engineering and spending a short stint in industrial chemical production, Tony joined Abbott Laboratories in north Chicago, IL, where he held multiple positions in product development and manufacturing. Tony then joined Closure Medical, a medical device startup company based in Raleigh, NC. He served in several roles during his tenure at Closure Medical, including Director of Operations, Director of Product Development, Director of R&D and Managing Director for the Raleigh facility. Closure Medical is best known for developing the wound closure technology, known as Dermabond®. In 2005, Ethicon bought Closure Medical for \$420M.



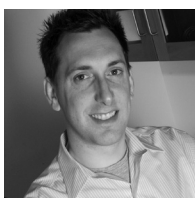
RICHARD M. WEST

Rich West is currently co-founder and CEO of his fourth life sciences startup, which is focused on newborn screening (www.baebies.com). In 2013 Rich and his team sold Advanced Liquid Logic to Illumina for \$96M; the company was a Duke spinout that developed lab-on-a-chip technology and products for the research tools and diagnostic markets. Prior to Advanced Liquid Logic, Rich was founder and CEO of TriVirix, a venture-funded medical equipment contract manufacturer that he and his team grew to over 500 employees, and founder and CEO of Adigy, a medical wireless company. Rich has an engineering degree from Duke, an MBA, and 17 years as a health-tech CEO. Rich serves on the Board for the Council for Entrepreneurial Development; is past Board Chairman for TROSA, a non-profit that serves recovering substance abusers; teaches entrepreneurship at Duke University; and is an advisor to a number of healthcare companies in the Triangle.



BENJAMIN WILEY, PHD

Ben started at the University of Minnesota as a major in Chinese, but quickly switched to chemical engineering and received his BS in 2003. Ben received his PhD in chemical engineering in 2007 after studying the synthesis and properties of silver nanostructures with Younan Xia in the Department of Chemistry at the University of Washington in Seattle. His work on silver nanowires was licensed to Cambrios, which is currently marketing silver nanowire based touch-screens. Ben subsequently worked as a postdoctoral fellow in the lab of George Whitesides in the department of chemistry at Harvard University, primarily focusing on paper diagnostics, plasmonics and nanoskiving. Ben started as an Assistant Professor in the Department of Chemistry at Duke University in 2009. His work focuses on the production, properties, and applications of metal nanostructures. To date he has published 66 papers with over 7,700 citations, has five patent applications and received an NSF CAREER award. He co-founded NanoForge Corp. in 2010 to commercialize his work with copper-based nanowires.



BENJAMIN YELLEN, PHD

Benjamin Yellen is an Associate Professor in the Mechanical Engineering and Materials Science Department at Duke University. His work on magnetic field directed assembly of colloidal objects has been supported by several research grants from the National Science Foundation, DARPA and NIH. He has co-authored over 50 publications, which have been cited ~1200 times with an H-index of 18. Yellen is the co-director of IRG1 of the Triangle MRSEC, where he works with theorists to understand magnetostriction and martensitic phase transitions in colloidal crystalline alloys.