NEWS OF THE WEEK

OCTOBER 17, 2022

CBE IN THE NEWS

- Updates regarding the COVID-19 vaccine
- Congratulations to Rebecca Beswick for winning the competitive Ronald F. & Mildred Topp Othmer Scholarship from the national AIChE organization for 2021-2022

DEPARTMENT'S SEMINAR/EVENTS:

- **CBE Seminar Series**
  - **Dr. Victoria Muir, Princeton University**
    Friday, October 28, 2022
    10:00 AM in 102 CLB and via ZOOM: https://udel.zoom.us/j/91314568641
    Bioengineering with Granular Hydrogels

- **CCST Virtual Seminar**
  Dimitris Niakolas, Foundation for Research and Technology, Hellas, Institute of Chemical Engineering Sciences
  Tuesday, October 18, 2022
  9:00 AM via Zoom: https://udel.zoom.us/j/94251493353
  Physical Chemistry & Chemical Processes with Advanced Electro-catalysts for Energy/ Environment management with fuel cells/electrolysers under high temperature (SOFCs/SOECs) and high pressure (HP WE)

- **CBE BIO Seminar**
  Dr. Shishir Chundawat, Rutgers University
  Wednesday, November 2, 2022
  11:00 AM in 366 CLB and via Zoom: https://udel.zoom.us/j/96004735568
  Glyco-Engineering for a Cleaner, Healthier, & Sweeter Future

OTHER DEPARTMENT'S SEMINAR/EVENTS:

- **BISC Seminar**
  Monday, October 17, 2022
  1:30 PM in 140 AB AP Bio or via Zoom: https://udel.zoom.us/j/93155324516
  Cellular insights from the genetic lawbreaker Auanema rhodensis

- **Biomedical Engineering Seminar**
  Dr. Felicity Rose and Dr. Ricky Wildman, University of Nottingham
  Monday, October 17, 2022
  1:30 PM in 140 AB AP Bio Building or via Zoom: https://udel.zoom.us/j/97918813993
  Password: seminarBME
  Please see attached for more information

- **Materials Science & Engineering Seminar**
  Dr. Nitash P. Balsara, University of California, Berkeley
  Wednesday, October 19, 2022
  11:15 AM in 104 CLB or via Zoom: https://udel/zoom.us/j/98088380148
  Password: MSEGSEM
  Please see attached for more information

- **Plant and Soil Sciences**
  Dr. Aman Husbands, University of Pennsylvania
  Friday, October 21, 2022
  12:20 PM at 132 TNS
  Cellular insights from the genetic lawbreaker Auanema rhodensis
  Please see attached for more information

- **Physical Chemistry Seminar**
  Dr. Eric May, University of Connecticut
  Friday, October 21, 2022
  4:00 PM in 219 BRL and via Zoom: https://udel.zoom.us/j/98093174367
  Multiscale Modeling of Complex Membrane Systems: Towards Understanding Mitochondria Organization and Dysfunction

- **Biomedical Engineering Seminar**
  - **Raviraj (Ravi) Nataraj, Stevens Institute of Technology**
    Friday, October 28, 2022
    10:30 AM in 140AB BPI

  - **Warren Grayson, Johns Hopkins University**
    Friday, November 4, 2022
    10:30 AM in 140AB BPI
    Exploring Neurovascular Interactions in Musculoskeletal Tissue Regeneration

- **Computer & Information Sciences Seminar Series**
  Carla Brodley, Northeastern University
  Wednesday, November 9, 2022
  11:15 AM in Mitchell Hall
  Broadening Participation in Computing by Opening New Pathways to the BS, MS and PhD

DESCA EVENTS:

- **Ready to Lunch Seminar**
  Monday, October 17, 2022 @ 5:30 PM
  DESCA's "Ready to Launch" series features speakers from local industry giving talks about topics such as innovation & strategic focus, company culture & flexibility, DE&I, career development/pathways, spot hire vs talent hire, and career pathways for STEM students. Our first event will feature DuPont.
  Please see attached for more information.

JOBS/RECRUITING

- **Syracuse University**
  Position: tenure-track positions at the rank of Assistant Professor in the field of (i) Mechanobiology and (ii) Drug Delivery
  Brief Description: As an
  integral part of this investment, Syracuse University is actively recruiting multiple candidates for tenured/tenure-track faculty positions for a cohesive research cluster in the focus area of Mechanics of Development and Diseases. Faculty hired into these positions will build on existing strengths in the focus area and establish their research lab in the world-class facilities of the multidisciplinary BioInspired Institute for Material and Living Systems that spans multiple departments in the College of Engineering and Computer Science and the College of Arts and Sciences.
  Please see attached for more information.

- **New Jersey Institute of Technology**
  Position: faculty position at the rank of Assistant Professor
  Brief Description: The Otto H. York Department of Chemical and Materials Engineering at the New Jersey Institute of Technology invites applications for a faculty position at the rank of Assistant Professor with an expected start date of Fall 2023. We are seeking highly qualified candidates with a Ph.D. degree in Chemical Engineering, Materials Science and Engineering, or a closely related field. The successful candidate should have a proven track record of research accomplishments and a commitment to teaching excellence. Candidates with expertise and interest in membrane science and engineering are encouraged to apply. Candidates focusing on experimental as well as theoretical and computational research in membranes are welcome. Candidates from under-represented groups are especially encouraged to apply.
  Please see attached for more information.

- **Tufts University**
  Position: tenure-track position at the Assistant Professor level
  Brief Description: The Department of Chemical and Biological Engineering (ChBE) at Tufts University invites applications for a tenure-track position at the Assistant Professor level as part of a focused effort to further strengthen key research areas. Exceptional candidates will be considered at other ranks. The anticipated start date is September 2023. Major strengths of the department are in areas of advanced materials for energy and sustainability, and cellular and biomolecular engineering. Additional information about the department can be found at: http://engineering.tufts.edu/chbe/.

- **University of California, Los Angeles**
  Position: multiple open rank tenure-track faculty positions
  Brief Description: Applicants for the positions must have a demonstrated record of excellence in, or show exceptional promise for, high-quality research, teaching, and professional development. In addition, applicants must have a demonstrated record of interest in, and commitment to, the mentorship of students from underrepresented and underserved populations.

- **University of Wisconsin-Madison**
  Position: tenure-track faculty position at the rank of Assistant Professor
  Brief Description: The department seeks applicants with a distinguished academic record and exceptional potential for creative research in the areas of robotics, automation, and advanced manufacturing, with a particular emphasis on advances in automation and control that have the potential to accelerate and streamline scientific discovery in core areas of chemical engineering and help redefine the future of the chemical process industry.

- **UC Santa Barbara**
  Position: external faculty searches
  Brief Description: The Chemical Engineering and Biological Engineering Departments in the College of Engineering at the University of California, Santa Barbara are seeking applications as part of three external faculty searches with a start date of July 1, 2023 or later. At a minimum, applicants must have completed all requirements for a PhD (or equivalent) except the dissertation (or equivalent) in Chemical Engineering or a closely related field.
  Please see attached for more information.

- **Columbia**
  Position: tenured or tenure-track faculty position
  Brief Description: Columbia Engineering invites applications for a tenured or tenure-track faculty position. Appointments at the assistant professor, associate professor, or full professor rank will be considered. Applications are specifically sought in any area encompassing material science and its intersections with sustainability. Research emphasizing the transformative manufacturing of soft materials, their use and recycling, engineering living materials, design and synthesis based on the principles of green chemistry, synthetic biology, biofabrication, and green manufacturing for a circular materials economy are encouraged.
  Please see attached for more information.

- **University of Miami**
  Position: several tenure-track/tenured faculty
  Brief Description: In line with these opportunities, the College of Engineering at the University of Miami will be recruiting for several tenure-track/tenured faculty at all ranks to lead research programs in Healthcare Engineering with an emphasis in Synthetic Biology & Biophysics, Cancer Engineering, Urologic Engineering, Neural Engineering, or Ophthalmic Engineering. Applications will be considered at the Assistant Professor, Associate Professor, and Professor ranks. Appointments are expected to be made in Department of Chemical, Environmental, and Materials Engineering and/or Department of Biomedical Engineering; but applications will be considered for all departments in the College of Engineering.
  Please see attached for more information.

- **ISMSM/NIST Research Fellow**
  Position: independent Research Fellow
  Brief Description: The Institute for Soft Matter Synthesis and Metrology at Georgetown University (GU), in collaboration with the National Institute of Standards and Technology (NIST), invite applications for an independent Research Fellow to work closely with scientists at Georgetown and NIST on soft matter, broadly defined.
  Please see attached for more information.

Available positions can be found on the Chemical & Biomolecular Engineering opportunity website, so be sure to check it regularly.

UNIVERSITY OF MIAMI

Cluster Hire in Health Engineering
College of Engineering
University of Miami
Fall 2022

The College of Engineering (CoE, https://www.coe.miami.edu/) at the University of Miami is proudly celebrating its 75th anniversary in 2022. In strategic partnership with several units at the University of Miami Miller School of Medicine, it is launching an ambitious growth area in Health Engineering. Multiple hires are expected to support several new initiatives:

In line with these opportunities, the College of Engineering at the University of Miami will be recruiting for several tenure-track/tenured faculty at all ranks to lead research programs in Healthcare Engineering with an emphasis in Synthetic Biology & Biophysics, Cancer Engineering, Urologic Engineering, Neural Engineering, or Ophthalmic Engineering. Applications will be considered at the Assistant Professor, Associate Professor, and Professor ranks. Appointments are expected to be made in Department of Chemical, Environmental, and Materials Engineering and/or Department of Biomedical Engineering; but applications will be considered for all departments in the College of Engineering. Joint appointments will also be considered, particularly with the Miller School of Medicine. Each appointment is expected to start on August 15, 2023.

Candidates must hold a PhD or MD/PhD in engineering or related disciplines. Applicants must be dedicated to establishing an inclusive environment for learning and research, have an outstanding record of research accomplishments, a strong interest in undergraduate and graduate education, and a commitment to professional service.

Applications can be submitted to CoE, and shall include: 1) Letter of interest that describes your anticipated contributions to scholarship, teaching, and service, 2) Current CV, 3) Research program vision statement (include hiring emphasis area, and synergy with existing UM investigators, centers, and institutes), 4) Teaching statement, 5) A statement that describes your vision for making contributions to diversity, equity, and inclusion, 6) Names and contact information of three or more references. Applications will be accepted till the positions are filled, however, preference will be given to applications received before December 1, 2022

The University of Miami is an Equal Opportunity Employer. Women, minorities, protected veterans, LGBTQIA+ people, and individuals with disabilities are encouraged to apply. Applicants and employees are protected from discrimination based on certain categories protected by Federal law. For additional questions, please contact **Ashu Agarwal (A.agarwal2@miami.edu)**.

COLUMBIA | ENGINEERING
The Fu Foundation School of Engineering and Applied Science

Open Rank Faculty Position in
Sustainable and Regenerative Materials for a Circular Materials Economy

Columbia Engineering invites applications for a tenured or tenure-track faculty position. Appointments at the assistant professor, associate professor, or full professor rank will be considered. Applications are specifically sought in any area encompassing material science and its intersections with sustainability. Research emphasizing the transformative manufacturing of soft materials, their use and recycling, engineering living materials, design and synthesis based on the principles of green chemistry, synthetic biology, biofabrication, and green manufacturing for a circular materials economy are encouraged. We wish to highlight that Columbia has a new Climate School. Intersections with this school, with the Data Science Institute, and with the Medical School are of particular interest.

The candidate will fit into one (or more) of the following relevant departments in the School of Engineering: Applied Physics and Applied Mathematics; Biomedical Engineering; Chemical Engineering; Civil Engineering and Engineering Mechanics; Earth and Environmental Engineering; and Mechanical Engineering. Candidates must have a Ph.D. or its professional equivalent by the starting date of the appointment in one of these (or related) fields. Applicants for this position at the Assistant Professor and Associate Professor without tenure levels must have the potential to do pioneering research and to teach effectively. Applicants for this position at the tenured level (Associate or Full Professor) must have a demonstrated record of outstanding research accomplishments, excellent teaching credentials and established leadership in the field.

The successful candidate is expected to contribute to the advancement of the school/department in these areas by developing an externally funded research program, contributing to the undergraduate and graduate educational mission of the department(s), and establishing multidisciplinary research and educational collaborations with academic departments and units across Columbia University. The school is especially interested in qualified candidates who can contribute, through their research, teaching and/or service, to the diversity and excellence of the academic community.

For additional information and to apply, please see: http://engineering.columbia.edu/faculty-job-opportunities. Applications should be submitted electronically at http://apply.interfolio.com/114736 and include the following: a curriculum vitae including a publication list, a research statement including a description of research accomplishments, a statement of teaching interests and plans, a diversity statement, contact information for three people who can provide letters of recommendation, and up to three pre/reprints of scholarly work. The positions will close no sooner than December 1, 2022, and will remain open until filled.

Applicants can consult https://www.engineering.columbia.edu/ for more information about the school.

Columbia is an affirmative action/equal opportunity employer with a strong commitment to the quality of faculty life.

Columbia University is an Equal Opportunity Employer/Disability/Veteran.

Department of Chemical
and Biological Engineering
UNIVERSITY OF WISCONSIN–MADISON

The DEPARTMENT OF CHEMICAL & BIOLOGICAL ENGINEERING at the UNIVERSITY OF WISCONSIN—MADISON invites applications for a tenure-track faculty position at the rank of Assistant Professor. Applicants are expected to have a Ph.D. in chemical engineering or a related discipline. The department seeks applicants with a distinguished academic record and exceptional potential for creative research in the areas of robotics, automation, and advanced manufacturing, with a particular emphasis on advances in automation and control that have the potential to accelerate and streamline scientific discovery in core areas of chemical engineering and help redefine the future of the chemical process industry.

For more information about this and other open positions, and to apply online, please visit:

https://jobs.hr.wisc.edu/en-us/job/515260/assistant-professor

Department of Chemical and Biological Engineering
Room 2018, Engineering Hall • 1415 Engineering Drive • Madison, Wisconsin 53706

UNIVERSITY OF DELAWARE
ENGINEERING
DEPARTMENT OF CHEMICAL & BIOMOLECULAR ENGINEERING

BIOLOGICAL SCIENCES SEMINAR

Nov. 2, 2022 | 11:00 AM | 366 CLB

SHISHIR CHUNDAWAT

Associate Professor
Rutgers University

Zoom: https://udel.zoom.us/j/96004735568

'GLYCO'-ENGINEERING FOR A CLEANER, HEALTHIER, & SWEETER FUTURE

Carbohydrates (or glycans) are the most abundant class of biomolecules on the planet that are known to play critical metabolic, structural, and functional roles in all biological systems. Given the dense coating of diverse glycan molecules on essentially all cell membrane (e.g., O-linked glycoconjugates displayed on the glycocalyx of mammalian cells or polysaccharides embedded within plant cell walls) and biomolecule surfaces (e.g., N-linked glycoproteins), it is not surprising that glycans play a critical role in cell biology such as mediating interfacial interactions of host cells with infectious or symbiotic agents (e.g., bacteria, viruses), drugs, antibodies, hormones, enzymes, and intercellular signaling receptors amongst numerous other functions. But we are still far from elucidating the role of glycans in the design, engineering, and regulation of biological systems spanning from the molecular to organismal level, unlike other fields of biotechnology like genomics and proteomics. The role of glycans in living systems can be better understood by creating robust biotechnology and analytical toolkits that can uncover the 'sweet' rules of life governing the biosynthesis, organization, and ultimately deconstruction of these complex biomolecules.

The Chundawat Research Group at Rutgers University is developing protein and glycan engineering (or broadly glyco-engineering) toolkits along with applying advanced bioprocessing and biophysical techniques to address fundamental scientific and engineering problems relevant to healthcare, bioenergy, and biomaterials research. Here, the speaker will highlight key advances being made in the broader areas of glyco-engineering and biomanufacturing using Carbohydrate-Active enZymes (CAZymes). He will specifically highlight some novel strategies being developed in his group to evolve CAZymes for chemoenzymatic synthesis of designer oligosaccharides as prebiotics/antibiotics, autonomous N-linked glycoproteins characterization for enabling continuous biological drugs manufacturing, single-molecule imaging & visualization of how CAZymes/cells assemble and deconstruct cell wall polysaccharides, and designing supercharged CAZymes for efficient bioconversion of waste cellulosic biomass to fermentable sugars for biofuels production.

BIO: Dr. Chundawat is a tenured associate professor at the Department of Chemical and Biochemical Engineering at Rutgers University – New Brunswick (New Jersey, USA). He has 18 years of multidisciplinary expertise working with carbohydrate-active enzymes (CAZymes); protein modeling and engineering; carbohydrate chemistry; biomanufacturing; and developing novel analytical techniques for characterization of glycans and protein/CAZymes-glycan interactions. He received his B.Tech. in Chemical Technology from the Institute of Chemical Technology (Mumbai, India) in 2004 and his Ph.D. in Chemical Engineering from Michigan State University (East Lansing, Michigan, USA) in 2009. He held a postdoctoral staff scientist position at the Great Lakes Bioenergy Research Center from 2009-2011 and at the University of Wisconsin-Madison (Department of Biochemistry, Wisconsin, USA) from 2012-2014. He also held a joint adjunct/research assistant professor position at the Department of Chemical Engineering & Materials Science at Michigan State University before joining Rutgers University in January 2015.

University of Nottingham
UK | CHINA | MALAYSIA

Biomedical Engineering Seminar
Monday, October 17th, 1:30 PM to 2:30 PM

Ammon Pinizzotto Biopharmaceutical Innovation Center, 140 AB

OR

https://udel.zoom.us/j/97918813993

Password: seminarBME

Additive BioFabrication – High precision fabrication for regenerative medicine

At Nottingham, we focus on the use of synthetic, biodegradable polymers for the control of scaffold architectures and to support 3D tissue growth. Working closely with clinicians to enhance the applicability of these materials, we now seek to exploit advances in additive manufacturing to advance regenerative medicine. We exploit the geometrical freedom offered by additive manufacturing to understand the role of geometry on cell behaviour; using engineered topographies and 3D architectures at scales 100 nm – 100 um we can manufacture at dimensions relevant to cell behaviour. Work in this area is beginning to reveal the complex interactions that operate between geometry, material and biology.

Our seminar will discuss the technical advances in understanding that have been developed for 3D printing at cell relevant scales, and how they have been exploited to allow us to direct human cell behaviour towards desired function and phenotype.

Felicity Rose and Ricky Wildman (biographies overleaf)

University of Nottingham, UK

University of Nottingham
UK | CHINA | MALAYSIA

Felicity Rose is Professor of Biomaterials and Tissue Engineering and Director for Research and Knowledge Exchange, School of Pharmacy (Faculty of Science) at Nottingham. With an established reputation in the UK and internationally as one of the research leaders in regenerative medicine, she is co-lead of the largest network of research funding in biomaterials development within the UK. This includes two Engineering and Physical Sciences Research Council (EPSRC) programme grants and more recently, an EPSRC Programme Grant 'Dialling up Performance for On Demand Manufacturing', led by Prof Ricky Wildman. She is deputy director of the UK Regenerative Medicine Platform (UKRMP2) smart materials hub led by Prof Molly Stevens at Imperial College London. She has an established track record through publication in high impact journals including PNAS, Advanced Materials and Biomaterials. Felicity is a leader in the tissue engineering community through the Tissue and Cell Engineering Society (TCES – elected committee member), the Scientific Advisory Committee for the TERMis World Congress 2021, and she chairs the EPSRC Centre for Doctoral Training Strategic Advisory Board in Advanced Biomedical Materials led by the University of Manchester.

Research Summary: Felicity's research focusses on the ability to control stem and differentiated mammalian cell behaviour during tissue regeneration. Felicity has expertise in materials science, controlled release of biological factors to stimulate repair processes, and in cell-material interactions specifically for bone tissue regeneration. In addition, she has over 10 years' experience of electrospinning polymeric materials as scaffolds to support cell and tissue growth of mucosal tissues for regenerative applications and for use as *in vitro* models. She is now developing interests in the application of additive manufacturing (3D printing) to regenerative medicine.

www.nottingham.ac.uk/pharmacy/people/felicity.rose

Ricky Wildman is a Professor in the Faculty of Engineering, University of Nottingham. His interests lie in developing wider application and understanding of additive manufacturing / 3D printing, particularly within the healthcare industry. A recent focus has been on the development of methods that allow rapid identification of useful 3D printing materials, using both experimental and computational approaches to screen candidate inks and resins. To achieve this, he has built an interdisciplinary team of engineers, chemists, and experts in drug delivery and regenerative medicine funded by key UK funders, EPSRC, MRC and BBSRC as well as industry collaborators including GSK, Astra Zeneca, Pfizer, Johnson Matthey and Syngenta. In 2014, Ricky co-founded a spin out company, Added Scientific Ltd which provides technical services for companies wishing to understand how to implement additive manufacturing solutions.

Research Summary: Ricky's current research is focused on the use and development of 3D printing as a way of inducing precise behaviour. This ranges from screening of materials, to the coprinting of multiple materials, to the use of generative design methods to achieve desired function. He manufactures across the length scales, using multimaterial ink jet printing to design and manufacture polydrug tablets and implants, using projection micro stereolithography to create complex reactors, and multiphoton methods to manufacture at scales less than 100 nm, all of which enables the exploration of the intersection of manufacture, geometry and biology on function.

www.nottingham.ac.uk/engineering/departments/chemenv/people/ricky.wildman

DEPARTMENT OF BIOLOGICAL SCIENCES

Fall SEMINAR SERIES

"Cellular insights from the genetic lawbreaker *Auanema rhodensis*"

October 17, 2022 | 1:30 PM – 2:30 PM | 318 Wolf

Zoom Link: https://udel.zoom.us/j/93155324516?pwd=S2NoenBoWksxR0tUVDA2TGFRT3RXQT09

BIO: As an undergraduate at Pomona College, Diane begun her scientific career at NASA-Ames studying the role of osteocalcin in bone metabolism. As a graduate student at Johns Hopkins, she developed her lifelong interest in the cell and developmental biology of gametogenesis as she worked with her graduate advisor Sam Ward and then postdoc Steve L'Hernault on the genetic analysis of *C. elegans* spermatogenesis. She then joined Ken Kemphues at Cornell University as a postdoc where she studied the role of *par*-5 (14-3-3) in establishing polarity in early *C. elegans* embryos.
Diane established her own lab, first at the University of Houston and then at William & Mary. Her ongoing research interests include 1) the development of nematode gametes (particularly sperm), 2) cell polarity, and 3) the interplay between development and the cell cycle. Her studies of *C. elegans* spermatogenesis have ranged from the analysis of transcription factors that implement the developmental program to the identification of spermatogenesis-specific features of the meiotic cell cycle and analysis of proteins essential for late sperm functions from cell motility to fertilization and egg activation.

More recently she has used her knowledge of *C. elegans* gametogenesis to study the unusual patterns of meiosis in *Auanema rhodensis*, a nematode whose gametes have evolved the ability to segregate their X chromosome in sex and gamete specific ways. At a faculty member at William & Mary, Diane carries out her studies alongside her undergraduate and masters level research students while also engaging in fruitful collaborations with researchers in both the US and around the world.

Diane Shakes, Ph.D.
Professor, Department of Biology
College of William & Mary
dcshak@wm.edu

Host: Amber Krauchunas, Assistant Professor, Department of Biological Sciences (arkrauch@udel.edu)

NJIT New Jersey Institute of Technology

Tenure-Track Faculty Position

Assistant Professor in Membrane Science and Engineering

The Otto H. York Department of Chemical and Materials Engineering at the New Jersey Institute of Technology invites applications for a faculty position at the rank of Assistant Professor with an expected start date of Fall 2023. We are seeking highly qualified candidates with a Ph.D. degree in Chemical Engineering, Materials Science and Engineering, or a closely related field. The successful candidate should have a proven track record of research accomplishments and a commitment to teaching excellence. Candidates with expertise and interest in membrane science and engineering are encouraged to apply. Candidates focusing on experimental as well as theoretical and computational research in membranes are welcome. Candidates from under-represented groups are especially encouraged to apply.

NJIT offers competitive startup packages, exciting opportunities for research collaboration, and a supportive environment for new faculty. Furthermore, numerous interdisciplinary centers and institutes across the campus (http://centers.njit.edu/) provide access to comprehensive, state-of-the-art core facilities and facilitate collaborative research activities. The Department is home to one of four University sites of the National Science Foundation Industry/University Cooperative Research Center, Membrane Science, Engineering and Technology Center (MAST Center).

NJIT is among the top 100 "Best Graduate Engineering Schools" (per U.S. News & World Report). It offers a vibrant engineering community environment and exciting opportunities for research and education. Universities, research institutes and industrial facilities in the vicinity of NJIT further increase collaboration opportunities and access to experimental equipment.

Applications should be submitted online:
https://njit.csod.com/ux/ats/careersite/1/home/requisition/4533?c=njit

Rank and salary will be commensurate with qualifications and experience. Applicants must include a curriculum vitae, teaching and research statements, cover letter and list of (3) professional references. Questions may be directed to the department chairperson, Dr. Lisa Axe at axe@njit.edu.

Diversity is a core value of NJIT and we are committed to make diversity, equity and inclusion, part of everything we do. We celebrate the diversity of our university community and recognize the cultural and personal differences. We strive to cultivate an inclusive campus culture that promotes excellence among our faculty, staff and students. Building a robust and diverse community is critical to NJIT's continuing status as a premier institution of higher education and a leading polytechnic university.

ISMSM/NIST Research Fellow

The *Institute for Soft Matter Synthesis and Metrology* at Georgetown University (GU), in collaboration with the National Institute of Standards and Technology (NIST), invite applications for an independent **Research Fellow** to work closely with scientists at Georgetown and NIST on soft matter, broadly defined.

1. Fellowship Details

- This position is suitable for excellent scientists with a PhD in physics, chemistry, materials science, chemical engineering, mechanical engineering, biophysics, applied mathematics, or related disciplines, and a strong record of accomplishments in experiment, synthesis, metrology, theory, or simulation.

- In our soft matter community, scientific excellence goes together with the quality of the human experience. We seek a diverse pool of applicants sharing our excitement of scientific discoveries, enthusiasm to learn from each other and desire to grow by exchanging perspectives.

- The Fellowship is for two years, with an option for a third year depending on mutual interest. Each Fellow will have competitive salary and access to $5,000/year travel expenses, and up to $10,000/year research expenses; as well as access to a wide range of synthesis and characterization equipment at Georgetown and NIST.

- Fellows are expected to work in areas that overlap strongly with 2 or more groups at Georgetown, as well as with NIST scientists.

- Current research areas (experiment, theory, synthesis, metrology, simulations) include (but are not limited to):

Theory of polymer glasses	Gels and networks	Rheology and structure of spherical and rodlike suspensions	Additive manufacturing and 3D printing of soft matter	Phase separation in biology
Active matter	Rheology and structure of cement	Amorphous solids	Biopolymer networks	Self-assembly at interfaces
Lipid bilayer membrane theory and simulation	Motion of giardia and microorganisms	Shear banding in fluids and amorphous solids	Design of polymer nanoparticles	Polymer-based fibrils for medical applications
Self-assembly mediated by intrinsically-disordered proteins	Dynamics of entangled polymers	Synthesis of multifunctional polymer networks	Simulation of complex aromatic molecular assemblies	Novel metrologies for imaging and mechanics of soft matter.

- The ISMSM has extensive laboratory facilities, and access to cloud computing networks. NIST can be easily reached by public transport or driving from GU.

- See http://softmatter.georgetown.edu for information about the ISMSM. Information about soft matter scientists at NIST can be found at https://www.nist.gov. Much of our interaction is with the Materials Measurement Laboratory https://www.nist.gov/mml or the NIST Center for Neutron Research https://www.nist.gov/ncnr.

2. Application Process:

- The first stage of the application consists of the following:

    1. CV
    2. Full publication list.
    3. One page summary of the candidate's research achievements.
    4. One page letter of intent outlining the research ideas that the candidate would like to pursue, and explaining how they would integrate with the research at ISMSM.
    5. 3 reference letters

    All documents should be sent as PDF files

- The second stage of the application is by invitation and requires:
    1. A research proposal, including research plan, anticipated budget, and clear statement of potential collaboration(s) with GU and NIST scientists. No longer than 5 pages (not including references), typeset at 11 point with 1 inch margins.
    2. One letter of support from GU scientist(s) with whom the candidate plans to collaborate.

For further questions and information please contact any ISM member or

Professor Emanuela Del Gado, Director, ISMSM
emanuela.del.gado@georgetown.edu, +1-202-687-1489
Mrs. Amy Gould (Administrator)
amy.gould@georgetown.edu, +1 202-687-5592

Applications can be submitted through *Academic Jobs Online*:
https://academicjobsonline.org/ajo/jobs/22818

3. Deadline and dates:

- Deadline for the letter of intent: 20th October 2022
- Invitation to submit the research proposal: 20st November 2022
- Research proposal deadline: 6th January 2023
- Earliest starting date: 1st March 2023

Georgetown University is an Equal Opportunity/Affirmative Action Employer fully dedicated to achieving a diverse team of employees. All qualified applicants are encouraged to apply and will receive consideration for employment without regard to race, color, religion, national origin, age, sex (including pregnancy, gender identity and expression, and sexual orientation), disability status, protected veteran status, or any other characteristic protected by law.

UNIVERSITY OF DELAWARE

MATERIALS SCIENCE and ENGINEERING SEMINAR

Dr. Nitash P. Balsara

Chemical & Biomolecular Engineering Department

and

Materials Sciences Division, Lawrence Berkeley National Laboratory

University of California, Berkeley

Barriers to Current Flow in Nanostructured Polymer Electrolytes and the Pesko Condition

The need for creating safe electrolytes for lithium batteries is significant given the continued safety problems associated with current lithium-ion batteries. Nonflammable polymer electrolytes offer a possible solution but the rate of lithium ion transport is too low for practical applications. In this talk, I will discuss some of the fundamental factors that limit ion transport in polymers. In all electrolytes, the current generated at steady state is governed by the applied potential. This relationship, which one might call a modified Ohm's Law, depends on Stefan-Maxwell diffusion coefficients. In the first part of my talk, we show experimental results indicating that these diffusion coefficients are negative over a substantial salt concentration range in polymer electrolytes. We use these diffusion coefficients to analyze and predict battery performance. A crucial ingredient in the analysis is a "condition" that my Ph.D. student Danielle Pesko arrived at; I call this the Pesko condition. In the second part of my talk, I examine the passage of current through a nanostructured block copolymer. Salt concentration gradients caused by the passage of current cause order-order and order-disorder phase transitions that are taken as indicators of the local salt concentration in the cell. It enables the detection of salt concentration hot spots, regions where the local salt concentration is much higher than that in the surrounding regions. We discuss the implications of this phenomenon in the context of transport limitations that may arise generally when current flows through heterogeneous media.

BIOGRAPHY

Nitash P. Balsara is a chemical engineer with a bachelor's degree from the Indian Institute of Technology in Kanpur, India in 1982. His graduate education began with a master's degree from Clarkson University. This was followed by Ph.D. from RPI. After 2 post-docs at the University of Minnesota and Exxon, he joined the faculty of the Department of Chemical Engineering at Polytechnic University in Brooklyn. In 2000 he accepted the job that he currently holds: a joint appointment as professor of Chemical Engineering at the University of California, Berkeley, where is currently the Charles W. Tobias Professor of Electrochemistry, and faculty scientist at Lawrence Berkeley National Laboratory. He has managed to hang on to both jobs. Along with his students and collaborators, he cofounded two battery start-ups, Seeo, Inc., and Blue Current.

MSEG SEMINAR
10/19/2022

11:15 AM
Colburn Lab 104

Zoom Option:

https://udel.zoom.us/j/98088380148

Password: MSEGSEM

mseg.udel.edu

College of Engineering
DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

UC SANTA BARBARA
Biological Engineering

Chemical Engineering & Biological Engineering
Faculty Searches
2022-23

The Chemical Engineering and Biological Engineering Departments in the College of Engineering at the University of California, Santa Barbara are seeking applications as part of three external faculty searches with a start date of July 1, 2023 or later. At a minimum, applicants must have completed all requirements for a PhD (or equivalent) except the dissertation (or equivalent) in Chemical Engineering or a closely related field. Please see links below for application package and submission details.

One tenure-track Assistant Professor in Chemical Engineering, submit application material via UC Recruit at:

https://recruit.ap.ucsb.edu/JPF02224

One tenure-track Assistant Professor in Biological Engineering, submit application material via UC Recruit at:

https://recruit.ap.ucsb.edu/JPF02302

One Professor position in the departments of Chemical Engineering and Biological Engineering, open to all levels (Assistant, Associate, or Full Professor), with research in the area of biomolecular engineering or related fields, submit application materials via UC Recruit at:

https://recruit.ap.ucsb.edu/JPF02289

The University is especially interested in candidates who can contribute to the diversity and excellence of the academic community through research, teaching and service as appropriate to the position.

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law.

Physical Chemistry Seminar

219 Brown Laboratory/ Zoom
Zoom Link https://udel.zoom.us/j/98093174367
Friday, October 21, 2022, 4pm

Multiscale Modeling of Complex Membrane Systems: Towards Understanding Mitochondria Organization and Dysfunction

Eric May PhD
University of Connecticut

Membranes are ubiquitous in biology, from providing an outer membrane to enclose the cell to internal membranes sub-dividing cells into different organelles. Cellular membranes are complex entities containing a variety of lipid species and can containing numerous peripherally and integrally associated proteins and protein complexes. These membranes are dynamic entities as well, as spatial segregation of both protein and lipid components as well as shape remodeling are critical for numerous biological processes. In addition, membranes provide a protective barrier against invading species such as viruses, bacteria or antimicrobial peptides in the case of bacterial cells. Furthermore, increasing examples of lipid specificity towards the functional state of different protein enzymes and signaling complexes has been revealed in recent years. In this presentation I will discuss our work on multicomponent bilayers, where we have been investigating the interplay between lipid composition, bilayer mechanical properties and curvature. A main motivation in these studies is understanding the role of the mitochondrial lipid cardiolipin and how that unique lipid may impart unique properties on the highly curved mitochondrial inner membrane. I will also discuss our recent work using MD simulations to uncover the mechanism of action of a class of peptide based therapeutics that have shown significant promise in treating numerous mitochondria-based diseases.

UNIVERSITY OF DELAWARE
ARTS & SCIENCES

Department of Chemistry & Biochemistry

Tufts UNIVERSITY | School of Engineering

Department of Chemical and Biological Engineering
Tenure Track Assistant Professor

The **Department of Chemical and Biological Engineering (ChBE) at Tufts University** invites applications for a tenure-track position at the Assistant Professor level as part of a focused effort to further strengthen key research areas. Exceptional candidates will be considered at other ranks. The anticipated start date is September 2023. Major strengths of the department are in areas of advanced materials for energy and sustainability, and cellular and biomolecular engineering. Additional information about the department can be found at: http://engineering.tufts.edu/chbe/.

The successful candidate is expected to develop and maintain an active, highly visible research program and to demonstrate excellence in teaching, including core chemical engineering subjects, and in mentoring both undergraduate and graduate students.

We invite applicants whose research complements our current strengths in advanced materials for energy and sustainability, catalysis, and molecular engineering. Applicants whose expertise is on technologies for renewable energy and sustainability, including renewable energy conversion and storage, the design of electrochemical (e.g., fuel cells, batteries, etc.) and photochemical systems, surface and molecular engineering for energy and environmental applications, and related experimental and/or computational approaches are especially encouraged to apply. We seek individuals who embrace opportunities to work collaboratively within the department as well as across the School of Engineering (SOE) and the University. This search is part of a broader hiring campaign by the SOE to grow its research and educational capabilities in engineering for sustainability. The School of Engineering is deeply committed to developing pragmatic, innovative solutions for environmentally and socially responsible use of energy and materials applying methods that minimize damage to the natural environment. Currently, tenure-stream faculty searches are ongoing in four of the six academic departments centered on the common themes of climate change and sustainable materials.

Tufts' SOE distinguishes itself by the interdisciplinary focus and integrative nature of its engineering education and research programs, within the environment of both a "Research I" university and a top-ranked undergraduate institution. We offer the best of a liberal arts college atmosphere, coupled with the resources of a major research university. Home to nine graduate and professional schools across four campuses, Tufts University prides itself on its culture of cross-school partnerships. Tufts' Medford/Somerville campus is located only six miles from historic downtown Boston, facilitating extensive opportunities for academic and industrial collaborations, as well as participation in the rich intellectual life of the region.

Candidates should possess an earned doctorate in **chemical engineering or a closely related discipline**. Candidates should submit their application, including a cover letter, curriculum vitae, statement of research and teaching interests and objectives, and contact information for three references online through Interfolio at https://apply.interfolio.com/114724. Cover letter should be addressed to: Professor Ayse Asatekin, Search Committee Chair, Department of Chemical and Biological Engineering, Tufts University, 4 Colby Street, Medford, MA 02155. Candidates are encouraged to demonstrate attention to diversity and inclusion as it relates to teaching, research, and scholarship throughout their application. For full consideration, applications should be received by **December 10, 2022**. Application review will proceed on a rolling basis and continue until the position is filled.

Tufts University, founded in 1852, prioritizes quality teaching, highly competitive basic and applied research, and a commitment to active citizenship locally, regionally, and globally. Tufts University has also committed to becoming an anti-racist institution through the continuous improvement of diversity, equity and inclusion work. Current and prospective employees of the university are expected to have and continuously develop skill in, and disposition for, positively engaging with a diverse population of faculty,

staff, and students. Tufts University is an Equal Opportunity/Affirmative Action Employer. We are committed to increasing the diversity of our faculty and staff and fostering their success when hired. Members of underrepresented groups are welcome and strongly encouraged to apply. See the University's Non-Discrimination statement and policy here: https://oeo.tufts.edu/policies-procedures/non-discrimination/. If you are an applicant with a disability who is unable to use our online tools to search and apply for jobs, please contact us by calling the Office of Equal Opportunity (OEO) at 617-627-3298 or at oeo@tufts.edu. Applicants can learn more about requesting reasonable accommodations at https://oeo.tufts.edu

UNIVERSITY OF DELAWARE

THE DEPARTMENT OF PLANT AND SOIL SCIENCES CORDIALLY INVITES YOU TO A SEMINAR ON

"STUDYING THE COMPLEX AND REPRODUCIBLE NATURE OF PLANT DEVELOPMENT"

Dr. Aman Husbands

University of Pennsylvania

FRIDAY, OCTOBER 21, 2022. AT 12:20PM-1:15PM
132 TOWNSEND HALL

HOST: DR. ERIN SPARKS
https://udel.zoom.us/j/99846709725

If you would like to meet with Dr. Aman Husbands individually, please email Erin Sparks (esparks@udel.edu) with your available time slots.

Synopsis: Development generates complex morphologies in a remarkably reproducible manner, and is characterized by tightly controlled gene expression driven by the activity of transcription factors (TFs). TF activity is highly regulated, integrating inputs across multiple regulatory levels to impact developmental outcomes. In plants, this is exemplified by CLASS III HOMEODOMAIN-LEUCINE ZIPPER (HD-ZIPIII) proteins, a >700 million-year-old family that arose before the common ancestor of Chlorokybus algae and land plants. HD-ZIPIII TFs were then repeatedly coopted to regulate pivotal developmental innovations including stem cell niches, lateral organs, and vasculature. HD-ZIPIII activity is regulated by multiple mechanisms, including the miRNA mir166 and the LITTLE ZIPPER (ZPR) family of microProteins. HD-ZIPIII proteins also contain a START domain. Initially identified in animals, START domains adopt an α/β helix-grip fold, creating a hydrophobic pocket which accommodates lipophilic ligands ranging from long-chain fatty acids to sterols to isoprenoids. Remarkably, the impact of the HD-ZIPIII START domain remains unknown, despite their essential roles in development and molecular identification over twenty years ago. Using PHABULOSA (PHB) as a representative HD-ZIPIII protein, we demonstrate that the START domain renders HD-ZIPIII dimers competent to bind DNA, while increasing both their frequency and transcriptional potency. The developmental and evolutionary implications of these findings will be discussed. I will also briefly discuss our efforts to use flat leaf production as a model to identify determinants and relationships that lend robustness to the complex process of development.

Bio: Aman got his Bachelor of Science from the University of Toronto where he learned to love plant biology from Nancy Dengler. He then pursued a PhD in Patricia Springer's lab at the University of California – Riverside where he showed the LOB DOMAIN (LBD) genes constitute a new class of plant-specific transcription factors which regulate numerous developmental processes including brassinosteroid signaling, adaxial-abaxial polarity, and lateral root production. After receiving his PhD, Aman joined Marja Timmermans lab at Cold Spring Harbor Laboratory in NY, who has since moved to the University of Tuebingen in Germany. There he studied the molecular mechanisms that polarize the adaxial-abaxial (or dorsoventral) axis, which drives the production of flat leaf architecture. In January of 2018, Aman started his own lab at Ohio State in the Molecular Genetics department. His lab recently moved to the University of Pennsylvania, joining the Dept of Biology in Jan of 2022. His lab is interested in the mechanisms that govern complexity and reproducibility, two outcomes which seem in tension yet are both defining features of development.

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Time: 5:30—7:30 pm
Place: UD Career Center, Workshop Room

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WANDA WATSON
MT Talent & Strategy leader
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REBEKAH LAZAR
Comms/Public Affairs Manager
Electronics & Industrials

HAOYU ZHANG
Technical Manager
Science & Innovation

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Syracuse University
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Assistant Professor Positions in Biomedical & Chemical Engineering at Syracuse University

The Department of Biomedical and Chemical Engineering (BMCE) in the College of Engineering and Computer Science at Syracuse University (bmce.syr.edu) is seeking applicants for **two tenure-track positions** at the rank of **Assistant Professor** in the field of **(i) Mechanobiology and (ii) Drug Delivery**. These positions are part of an ambitious Invest Syracuse Cluster Hire Initiative in the broad area of bioinspired science and technology. As an integral part of this investment, Syracuse University is actively recruiting multiple candidates for tenured/tenure-track faculty positions for a cohesive research cluster in the focus area of Mechanics of Development and Diseases. Faculty hired into these positions will build on existing strengths in the focus area and establish their research lab in the world-class facilities of the multidisciplinary BioInspired Institute for Material and Living Systems that spans multiple departments in the College of Engineering and Computer Science and the College of Arts and Sciences. Further information about the BioInspired Institute and cluster hire initiative can be found at BioInspired.syr.edu. More information on the facilities can be found at tinyurl.com/BioInspiredFacilities.

Applicants should have a Ph.D. in biomedical engineering, biophysics, mechanical engineering, chemical engineering, materials science, or a closely related discipline. For the **mechanobiology** position, we are particularly interested in candidates who focus on cell-matrix interactions and mechanotransduction, tissue biomechanics and pattern formation, molecular force sensor design, and cell biophysics integrated with both computational and experimental approaches. For the **drug delivery** position, we are particularly interested in candidates who focus on micro/nano-particles, nanomaterials, biomaterial synthesis and engineering for drug delivery, targeted delivery of therapeutic agents, and new technologies for antimicrobial control. Candidates from related research areas are also encouraged to apply.

A strong commitment to collaborative, cross-disciplinary research is especially desirable. Demonstration of past accomplishments toward fostering diversity and building an inclusive climate in research and teaching is of great importance. The BMCE Department offers B.S. (ABET-accredited), M.S., and Ph.D. degrees in both bioengineering and chemical engineering. There are currently 21 full-time faculty, including 6 new hires since 2018, and approximately 220 undergraduate and 110 graduate students, 55 of whom are doctoral students.

For full consideration, candidates must complete an online application and electronically attach a cover letter indicating whether the application is for **Mechanobiology** or **Drug Delivery** position. Other required documents include curriculum vitae, concise statements of research plans and teaching interests, a diversity statement describing interest or efforts in furthering diversity and inclusion (e.g., through mentoring, pedagogy, or faculty recruitment/retention), and contact information of three professional references through www.sujobopps.com (**job# 076635**, direct link via https://www.sujobopps.com/postings/95261). Review of applications will start on **November 23th, 2022** and continue until the positions are filled. For additional information, please contact the chair of the search committee, Zhen Ma, at zma112@syr.edu.

Syracuse University is an equal opportunity/affirmative action employer with a strong commitment to equality of opportunity and a diverse work force. Members of groups traditionally underrepresented in higher education broadly, and in engineering, specifically, are strongly encouraged to apply.

Department of Biomedical and Chemical Engineering
329C Link Hall, Syracuse, NY 13244 **T** 315.443.1931 ecs.syr.edu