

NEBEC 2018

44th Northeast Bioengineering Conference

March 28 – 30, 2018
Drexel University, Philadelphia, PA



DREXEL UNIVERSITY

School of

Biomedical Engineering,
Science and Health Systems



Drexel University is a private research university with its main campus located in the University City neighborhood of Philadelphia, Pennsylvania, United States. It was founded in 1891 by Anthony J. Drexel, a noted financier and philanthropist. Founded as Drexel Institute of Art, Science, and Industry, it was renamed Drexel Institute of Technology in 1936, before assuming the name Drexel University in 1970. More than 26,000 students are enrolled in over 70 undergraduate programs and minors, more than 100 master's and 40 graduate minors, doctoral, and professional programs at the university. Drexel's cooperative education program (co-op) offers students the opportunity to gain up to 18 months of paid, full-time work experience in a field relevant to their undergraduate major or graduate degree program prior to graduation.

To learn more about co-op, visit drexel.edu/co-op



44TH NORTHEAST BIOENGINEERING CONFERENCE

**Drexel University
Philadelphia, PA**

March 28-30, 2018

ORGANIZING COMMITTEE

CONFERENCE CHAIR

Ken Barbee

CONFERENCE CO-CHAIR

Andres Kriete

FINANCE

Clair King

PUBLIC RELATIONS & MEDIA

Steve Detofsky, David Myers

LOCAL ARRANGEMENTS

Danielle Crocker

DESIGN POSTER COMPETITION

Joseph Sarver (Coordinator)

Marek Swoboda

FACULTY SEMINARS

Sriram Balasubramanian

Lin Han

Katie von Reyn

Kara Spiller

ABSTRACT REVIEW

Ken Barbee

Emad Boctor

Daniel Cortes

Andres Kriete

Peter Lelkes

Katie von Reyn

Adrian Shieh

Anita Singh

Marek Swoboda

Yinghui Zhong

PROGRAM AT A GLANCE

WEDNESDAY, MARCH 28

- 11:00 **Registration Open**
- 12:00-2:00 **Neuroengineering Faculty Seminar**
Katie von Reyn, Moderator
- 2:00-3:15 **Undergraduate Design Poster Session I**
Organizers: Joseph Sarver, Marek Swoboda
Biomedical Imaging and Image Processing, Biomedical Sensors, Cancer Technologies, Cardiovascular and Respiratory Systems Engineering, Computational Bioengineering, Device Technologies and Biomedical Robotics, Devices: Micro- and Nano-Bioengineering, Diagnostic Systems, Drug Delivery, Education in Biomedical Engineering.
- 3:15 – 3:45 **Coffee Break**
- 3:45 – 5:00 **Undergraduate Design Poster Session II**
Organizers: Joseph Sarver, Marek Swoboda
Cellular and Molecular Bioengineering, Neural Engineering, Immuno-Engineering, Orthopedic Engineering, Pediatric Bioengineering, Rehabilitation Engineering, Biomechanics/Mechanobiology, Tissue Engineering/3D Printing, Biomaterials, Other.
- 5:00-6:30 **Welcoming Remarks**
Paul Brandt-Rauf and Ken Barbee
Keynote – Start-Up Campus:
How to Bring Your Scientific Discovery to a Successful Commercial Product.
Michele Marcolongo. Drexel University
Panel Discussion – Entrepreneurship in Academia, Industry and the Clinic
Panelists: Brian Garvey, Justine Han, Michele Marcolongo, Gulyeter Serbest
Moderators: Ken Barbee, Andres Kriete
Design Award Presentations
Jay Sarver and Paul Brandt-Rauf
- 6:30-8:00 **Networking Reception**

THURSDAY, MARCH 29

- 8:00 **Registration Open**
- 8:30-9:30 **1. Biomaterials/Biomimetic Materials** **2. Biomedical Imaging and Image Processing** **3. Immuno- and Neuroengineering**
Chair: Christopher Rock, Children's Hospital of Philadelphia (CHOP) Chair: Emad Boctor, Johns Hopkins University Chair: Katie von Reyn, Drexel University
- 9:30-10:30 **Research Poster Session I**
Biomaterials, Cardiovascular and Respiratory Systems Engineering, Cellular and Molecular Bioengineering, Computational Bioengineering, Neural Engineering, Immunoengineering, Orthopedic Engineering, Pediatric Bioengineering, Rehabilitation Engineering, Tissue Engineering/3D Printing.
- 10:30-11:15 **Keynote** – Lymphatic Vessels in Inflammation and Cancer:
New Roles in Immune Regulation and Implications for Immunotherapy.
Melody Swartz, University of Chicago

PROGRAM AT A GLANCE

- 11:15-1:15 **Immunoengineering Faculty Seminar**
Kara Spiller, Moderator
- 1:15-2:30 **Lunch**
- 2:30-3:30 **4. Tissue Engineering/
Functional Biomaterials**
Chair: Peter Lelkes,
Temple University
- 5. Computational
Bioengineering**
Chair: Andres Kriete,
Drexel University
- 6. Pediatric Bioengineering**
Chair: Anita Singh,
Widener University
- 3:30-4:30 **Research Poster Session II**
Biomechanics/Mechanobiology, Biomedical Imaging and Image Processing, Biomedical Sensors, Cancer Technologies, Device Technologies and Biomedical Robotics, Devices: Micro- and Nano-Bioengineering, Diagnostic Systems, Drug Delivery, Education in Biomedical Engineering, Other.
- 4:30-6:30 **Pediatric Bioengineering Symposium**
Sriram Balasubramanian, Moderator
Co-hosted with Children's Hospital of Philadelphia (CHOP)
Keynote – Flaura K. Winston, CHOP

FRIDAY, MARCH 30

- 8:00 **Registration Open**
- 8:30-9:30 **7. Biomechanics**
Chair: Daniel Cortes,
Penn State University
- 8. Biomedical Sensors**
Chair: Wan Shih,
Drexel University
- 9. Drug Delivery**
Chair: Margaret Wheatley,
Drexel University
- 9:30-9:45 **Coffee Break**
- 9:45-10:45 **10. Mechanobiology**
Chair: Adrian Shieh,
Drexel University
- 11. Biomedical Devices**
Chair: Marek Swoboda,
Drexel University
- 12. Orthopedic and Rehabilitation
Engineering**
Chair: Sarah Gullbrand,
University of Pennsylvania
- 10:45-11:00 **Coffee Break**
- 11:00-1:00 **Mechanobiology Faculty Seminar**
Lin Han, Moderator
- 1:00 -1:30 **Research Award Presentations, Conference Adjournment**

KEYNOTE SPEAKERS



MELODY SWARTZ, PHD

Melody A. Swartz is a Professor in the Institute of Molecular Engineering at the University of Chicago, where she holds the William B. Ogden Chair, as well as a joint appointment in the Ben May Department for Cancer Research. Her education was in Chemical Engineering, first with a BS from the Johns Hopkins University, and then a PhD from Massachusetts Institute of Technology. She undertook postdoctoral studies at Brigham & Women's Hospital in Boston before starting in 1999 as an Assistant Professor at Northwestern University, jointly in the Departments of Biomedical Engineering and Chemical Engineering. In 2003, she was recruited to the Ecole Polytechnique Fédérale de Lausanne (EPFL), where she was promoted to Full Professor in the Institute of Bioengineering and the Swiss Institute for Experimental

Cancer Research. Trained as a bioengineer, she uses quantitative approaches in immunobiology and physiology, including biotransport and biomechanics, to develop a deeper understanding of how the lymphatic system regulates immunity in homeostasis and disease, particularly in cancer and chronic inflammation. Her lab applies this knowledge to develop novel immunotherapeutic approaches in cancer, including lymph node-targeting vaccine approaches, as well as in vitro model systems that recapitulate relevant features of the 3D, perfused tumor microenvironment.



MICHELE MARCOLONGO, PHD, PE

Michele Marcolongo is Department Head and Professor of Materials Science and Engineering at Drexel University. There, she has served as Senior Associate Vice Provost for Translational Research at Drexel University, Associate Dean of Intellectual Property for the College of Engineering and Associate Vice Provost for Research. Marcolongo's field of research is biomaterials or materials that can be implanted into the body to replace diseased or damaged tissues. Specifically, she works on injectable biomaterials and macromolecules to replace and augment degenerated soft tissues. Marcolongo has co-founded three companies: the first, Gelifex, was sold to a major orthopaedics manufacturer and one company, Invisalert Solutions, is active presently. She is a fellow of the National Academy of Inventors, AIMBE and

Alpha Sigma Mu. Marcolongo has authored a book, *Academic Entrepreneurship: How to Bring Your Scientific Discovery to a Successful Commercial Product* (Wiley 2017), a "how-to" on translating research from discovery to commercialization for academics. Marcolongo received her doctorate from the University of Pennsylvania, Philadelphia and had worked for GE and DuPont before joining Drexel University in 1997.



FLAURA WINSTON, MD, PHD

Flaura Koplín Winston is the founder and Scientific Director of the Center for Injury Research and Prevention and Director of CChIPS at Children's Hospital of Philadelphia. She holds the Distinguished Chairs in the Department of Pediatrics. Flaura Koplín Winston is a board-certified pediatrician, a doctorally-trained engineer, and a public health researcher, who conducts research at the interface of child and adolescent health, injury, engineering and behavioral science. Winston's work is published in peer-reviewed journals and conference proceedings and focuses on the area of traffic injury. Her research to action to impact approach, pragmatic rigor, has led to patents and a focus on evidence-based mobile health (mHealth) for better health. She is a professor of pediatrics at the University of Pennsylvania in

Philadelphia and serves as the Scientific Director of the Center for Injury Research and Prevention at Children's Hospital of Philadelphia, Director of the National Science Foundation Industry/University Cooperative Research Center, the Center for Child Injury Prevention Studies (CChIPS), and Director of a National Science Foundation Research Experience for Undergraduates site.

Neuroengineering Faculty Seminar

Lucas Parra, City College of New York

Brains on Video and Video Games.

Kathleen Cullen, Johns Hopkins University

Neural Representations of Natural Self Motion: Implications for Perception & Action.

Tzahi Cohen-Karni, Carnegie Mellon University

Multiscale Topological Design of Biological Interfaces to Novel Nanomaterials.

Douglas H. Smith, University of Pennsylvania

Tension Can be Good for Your Nerves.

Immunoengineering Faculty Seminar

Catherine A. Fromen, University of Delaware

Engineering Particle-Lung Interactions to Improve Pulmonary Therapeutics.

James L. Riley, University of Pennsylvania

Engineering T Cells to Facilitate an HIV Cure.

Ankur Singh, Cornell University

Engineering Ex Vivo Lymphoid Tissues to Model Immunity, Epigenetics, and Malignancies.

Kara Spiller, Drexel University

Harnessing the Inflammatory Response for Tissue Regeneration.

Pediatric Bioengineering Symposium

Flaura Winston, Children's Hospital of Philadelphia

Precision Child and Adolescent Injury Prevention for Road Safety

Alan Flake, Children's Hospital of Philadelphia

Development of the EXTEND System – an EXTra-uterine Environment for Neonatal Development.

Matt Maltese, Children's Hospital of Philadelphia (CHOP)

Recent Advances in Pediatric Medical Devices

Mechanobiology Faculty Seminar

Rob Mauck, University of Pennsylvania

Multi-Functional and Mechano-Active Materials to Direct Tissue Repair.

Ken Barbee, Drexel University

Transport-dependent Signaling Processes in Flow-induced Endothelial Nitric Oxide Production.

Rebecca Wells, University of Pennsylvania

Using Mechanics to Understand Fibrosis.

Liyun Wang, University of Delaware

Pericellular Perlecan and Load-Induced Bone Formation.

PARALLEL RESEARCH SESSIONS

THURSDAY, MARCH 29

8:30 – 9:30 AM

1. BIOMATERIALS/BIOMIMETICS

Chair: Christopher Rock, CHOP

- 27 **A Hydrogel Platform to Probe the Influence of Engineered Microenvironments on Stem Cell Fate.**
Sebastian Vega, Michelle Kwon, John Durel, Kwang Hoon Song, Chao Wang, Robert Mauck, Lin Han, Jason Burdick – University of Pennsylvania
- 86 **Osteogenic Potential of MC3T3 E1 Cells on Block Copolymer Nanofiber Shish Kebabs.**
Tony Yu, Diego Galindo, Michele Marcolongo, Christopher Li – Drexel University
- 42 **Tailoring Supramolecular Guest–host Hydrogel Properties with Covalent Double Networks.**
Claudia Loebel, Amal Ayoub, Jonathan H. Galarraga, Olga Kossover, Haneen Simaan–Yameen, Dror Seliktar, Jason A. Burdick – University of Pennsylvania
- 308 **Electrospun Nanofiber Scaffolds for Anterior Cruciate Ligament Reconstruction.**
David Brennan – Rowan University

2. BIOMEDICAL IMAGING AND IMAGE PROCESSING

Chair: Emad Boctor, Johns Hopkins University

- 50 **A Computational Framework to Optimize Fiducial Marker Layout for Tracking Tumor Deformation.**
Ye Han, Yoed Rabin, Levent Burak Kara – Carnegie Mellon University
- 164 **Fully Automated Method for the Enhancement of Ventricles from US Data.**
Ilker Hacihaliloglu, Mrudula Chakravarthy – Rutgers University
- 138 **Discrimination of Malignant and Normal Kidney Tissue with Short Wave Infrared Dispersive Raman Spectroscopy.**
Yu Sun, Miki Haifler, Alexander Kutikov, Robert Uzzo, Chetan Patil – Temple University
- 142 **Activatable Superparamagnetic Iron Oxide Agents Detect Reactive Oxygen Species In Vitro.**
Chukwuazam Nwasike, Eunsoo Yoo, Amber Doiron – Binghamton University

3. IMMUNO- AND NEUROENGINEERING

Chair: Katie von Reyn, Drexel University

- 120 **Nanodiamond–based Drug Delivery System for the Modulation of Macrophage Behavior.**
Amanda Pentecost, Minju Kim, Youngji Ko, Sangmin Jeon, Yury Gogotsi, Kwangmeyung Kim, Kara Spiller – Drexel University
- 246 **Neutrophil–endothelia Interactions in Mice Do Not Always Predict their Interactions in Humans.**
Fariborz Soroush, Yuan Tang, Shuang Sun, Qingliang Yang, Laurie Kilpatrick, Mohammad Kiani – Temple University
- 207 **Reprogramming Monocyte–Derived Macrophages to Promote and Maintain Anti–Inflammatory Behaviors as a Strategy to Treat Traumatic Brain Injury.**
Kathryn Wofford, Kara Spiller, Kacy Cullen – Drexel University
- 282 **Harnessing Neurovascular Interaction to Guide Axon Growth.**
Paul Partyka, Ying Jin, Itzhak Fischer, Peter Galie – Rowan University

2:30 – 3:30 PM

4. TISSUE ENGINEERING/FUNCTIONAL BIOMATERIALS

Chair: Peter Lelkes, Temple University

- 257 **Analysis of Thermomechanical Stress Developed During Polarized-light Scanning Cryomacroscopy Experiments, with Applications to Cryopreservation.**
Prem Solanki, Yoed Rabin – Carnegie Mellon University
- 57 **DREADDs as a Novel Tool for Controlling Calcium Activation in Chondrocytes.**
Ryan McDonough, Christopher Price – University of Delaware
- 79 **3D-Printing Heterogeneous Porous Patterns in Tissue Engineered Bone Scaffolds.**
Aine O’Sullivan, Ethan Nyberg, Warren Grayson – Johns Hopkins University
- 126 **Functional Integration of a Tissue Engineered Intervertebral Disc and Translation to a Large Animal Model.**
Sarah Gullbrand, Beth Ashinsky, Edward Bonnevie, Dong Hwa Kim, Lachlan Smith, Thomas Schaer, Dawn Elliott, Harvey Smith, Robert Mauck – University of Pennsylvania

5. COMPUTATIONAL BIOENGINEERING

Chair: Andres Kriete, Drexel University

- 58 **Automated Identification of the Seizure Onset Zone in Drug-Resistant Epilepsy Based on High Frequency iEEG Activity.**
Stefan Sumsy, Sabato Santaniello – University of Connecticut
- 263 **Heterogeneous Multiscale Framework for Cancer Systems Models and Clinical Applications.**
Alokendra Ghosh, Ravi Radhakrishnan – University of Pennsylvania
- 221 **An Auto-catalytic Cell Intercalation Mechanism to Understand Tissue Elongation During Morphogenesis.**
Samira Anbari, Javier Buceta – Lehigh University
- 31 **Analysis of Metabolites from Blood Samples of Pregnant Mothers and Probability of Autism Diagnosis of the Child.**
Kathryn Hollowood, Stephan Melnyk, Oleksandra Pavliv, Erica Sides, Uew Kruger, Jill S. James, Jürgen Hahn – Rensselaer Polytechnic Institute

6. PEDIATRIC BIOENGINEERING

Chair: Anita Singh, Widener University

- 214 **Dual-Headed Collapsible Blood Pumps for Dysfunctional Fontan Physiology.**
Steven Chopski, Marina Lillieholm, Krianthan Govender, Amy Throckmorton – Drexel University
- 203 **Effect of Bracing on Pediatric and Adult Kinematics During Low Acceleration Time Extended Pre-Crash Evasive Swerving.**
Christine Holt, Thomas Seacrist, Valentina Graci, Ethan Douglass, Sriram Balasubramanian, Kristy Arbogast – Drexel University
- 358 **Thoracic Vertebral Geometry Measurements of Experimental Progressive Scoliosis Induced in the Rabbit by Rib Unilateral Tethering.**
Ausilah Alfraihat, James Peters, John Casey Olson, Brian Snyder, Robert Campbell, Sriram Balasubramanian – Drexel University
- 184 **Drexel Dragon Heart for Children with Heart Failure.**
Carson Fox, Harut Sarkisyan, Randy Stevens, Francisco Arabia, Joseph Rossano, Amy Throckmorton – Drexel University

PARALLEL RESEARCH SESSIONS

FRIDAY, MARCH 30, 8:30 – 9:30 AM

7. BIOMECHANICS

Chair: Daniel Cortes, Penn State University

- 93 **Nanostructure and Biomechanics of Fibrocartilage Pericellular Matrix: Roles of Collagen V.**
Chao Wang, Qing Li, Su-Jin Heo, Sheila Adams, Mei Sun, Motomi Iwamoto, Robert Mauck, David Birk, Lin Han – Drexel University
- 133 **Broad Spectrum Analysis of Ultraviolet Lights' Effect on the Functional and Mechanical Properties of Human Stratum Corneum.**
Zachary Lipsky, Guy German – Binghamton University
- 162 **Mechanical Injury Alters Tribological Rehydration and Lubrication in Bovine Osteochondral Explants.**
Margot Farnham, Riley Larson, Christopher Price – University of Delaware
- 285 **Pericellular Matrix is Highly Sensitive to Cartilage Degeneration in Early Post-Traumatic Osteoarthritis.**
Daphney Chery, Qing Li, Biao Han, Ling Qin, X. Lucas Lu, Motomi Enomoto-Iwamoto, Lin Han – Drexel University

8. BIOMEDICAL SENSORS

Chair: Wan Shih, Drexel University

- 59 **An Automated, Triggerable, Continuous-flow, Micro-Electroporation Platform for Performing Single-Cell Level pDNA Transfection.**
Joseph Sherba, Hao Lin, Jerry Shan, David Shreiber, Jeffrey Zahn – Rutgers University
- 150 **Slowed Down Double-stranded DNA Transport Through Solid-State Nanopores by Using a LiCl Concentration Gradient.**
Julian Bello, Maksudul Mowla, Nicholas Troise, Jiwook Shim – Rowan University
- 222 **Detecting Cytosine Methylation with LiCl Salt Gradient using the Alpha-hemolysin Biological Nanopore.**
Trang Vu, Julia Borgesi, Joanna Soyering, Melissa D'Alia, Jiwook Shim – Rowan University
- 77 **Ultra-Sensitive (< 0.001 pg/mL), Multiplexed Detection of Cytokines using Digital Droplet ELISA with High Throughput, Portable Cell Phone Based Readout.**
Venkata Yelleswarapu, Jonathan Baron, Eshwar Inapuri, David Issadore – University of Pennsylvania

9. DRUG DELIVERY

Chair: Margaret Wheatley, Drexel University

- 175 **Lipid Nanoparticle-based mRNA Delivery to the Brain.**
Venkatesh Deshpande, Mariagemiliana Dessi, Jay Sy – Rutgers University
- 211 **Effectiveness of Targeted Delivery of IGF-1 and MSCs in the Treatment of MI to Determine Cell Survivability.**
Alexander Delis – Widener University
- 234 **Novel Therapeutic Hydrogel Contact Lenses For Glaucoma: Analysis of Polymeric Structural Kinetics.**
Amanda Burke, Nicholas Pisani, Liana Wuchte, Mark Byrne – Rowan University
- 323 **Using Multiscale Modeling to Study the Transport of Flexible Polymeric Nanoparticles in Blood Vasculature.**
Zahera Jabeen, David Eckmann, Portonovo Ayyaswamy, Ravi Radhakrishnan – University of Pennsylvania

9:45 – 10:45 AM

10. MECHANOBIOLOGY

Chair: Adrian Shieh, Drexel University

- 24 **Understanding the Three-dimensional Packing of Curved Epithelia.**
Luis M. Escudero, Javier Buceta – Lehigh University
- 141 **Indispensible Roles of Decorin in Cartilage ECM Assembly and Poroelastic Mechanical Properties.**
Biao Han, Qing Li, Mei Sun, Hadi Nia, Ramin Oftadeh, Ling Qin, Renato Iozzo, David Birk, Lin Han – Drexel University
- 254 **Prestrain Regulates Mechanosensation in Fibrous Microenvironments.**
Edward Bonnevie, Sarah Gullbrand, Tonia Tsinman, Dawn Elliott, Robert Mauck – University of Pennsylvania
- 121 **Absence of Decorin Exacerbates DMM-induced Post-traumatic Osteoarthritis in Mice.**
Qing Li, Chao Wang, Liu Ouyang, Wei Tong, Wei-Ju Tseng, X. Sherry Liu, Renato V. Iozzo, Ling Qin, David E. Birk, Lin Han – Drexel University

11. BIOMEDICAL DEVICES

Chair: Marek Swoboda, Drexel University

- 21 **Biodegradable Piezoelectric Force Sensor.**
Eli Curry, Thanh Nguyen – University of Connecticut
- 60 **New Nitinol Endovascular Devices.**
Youngjae Chun – University of Pittsburgh
- 100 **Alzheimer's Diagnosis for Mild Cognitive Impairment Individuals using Serial Reaction Time Trials.**
Rei Vardi, Reed Lorimer – Boston University
- 144 **Development of the 2nd Generation Mobile Phone Based Transcutaneous Bilirubinometer.**
Brandon Harrison, Alexander Dumont, David Gansen, Hendrik Weitkamp, Amy Nwaba, Zack McCormick, Chetan Patil – Temple University

12. ORTHOPEDIC AND REHABILITATION ENGINEERING

Chair: Sarah Gullbrand, University of Pennsylvania

- 85 **Multiscale Structure-Function Analysis of Intervertebral Disc Degeneration.**
Beth Ashinsky, Harvey Smith, Chao Wang, Robert Mauck, Lin Han, Sarah Gullbrand – Drexel University
- 302 **Fabrication of Antibacterial Tri-Magnesium Phosphate Hydrate Coatings on Polyetheretherketone (PEEK) Based Orthopedic Implants with Effective Treatment of Surgical Site Infections.**
Prabaha Sikder, Sarit Bhaduri – The University of Toledo
- 99 **Diffusion of Biomimetic Proteoglycans Results in Pericellular Augmentation in Articular Cartilage.**
Evan Phillips, Brett Haislup, Joseph Sincavage, Katsiaryna Prudnikova, Mary Mulcahey, Michele Marcolongo – Drexel University
- 305 **Compliant Assistive Soft Robotic Glove Powered by Super-Coiled Polymer Actuators.**
Robson Adem – Lafayette College

RESEARCH POSTER PRESENTATIONS

As of March 15th, 2018

BIOMATERIALS

309	The Control Release of Bioactive Proteins to PC12 Cells	Paul Gehret, Richard Hoff, Liam Kelly, Won Suh	Temple University
71	Thermal Conductivity of Cryoprotective Agents in the Presence and Absence of Nanoparticles	Lili E. Ehrlich, Zhe Gao, John C. Bischof, Yoed Rabin	Carnegie Mellon University
74	Sol-Gel Method For Coating An Alumina Substrate With a Crystalline Film of Yttria	Shyam Kalaria	Rutgers University
345	An Expanding, Enzyme Responsive Shape-Memory Polymer	Justine Paul, Shelby Buffington, Patrick Mather, James Henderson	Syracuse University
231	Vertical Nanowires Enhanced X-ray Radiation Damage of Cells	Qingxuan Li, Liyuan Zheng, Ming Su	Northeastern University
165	Evaluation of a Novel Injectable K-bioactive Glass Cement for Osteoporotic Hip Applications	Bushra Almishari, Kapil Raghuraman, Aisling Coughlan	University of Toledo
178	Enhanced Biological Cooling with Encapsulated Phase Change Nanoparticles	Weike Hu, Ming Su	Northeastern University
315	Improving the Macromolecular Alignment and Electrical Output of Electrospun PVDF-HFP Nanofibers through Post-Drawing	Adriano Conte, Damon Boorstein, Harrison Hones, Alexander Wildgoose, Shirvani Khosro, Raghid Najjar, Xiao Hu, Wei Xue, Vince Beachley	Rowan University
264	Post-Process Annealing of 3D-Printed Spinal Fusion Cages	James FitzPatrick, Richard Reynolds, Karen Wells, Cemile Basgül, Tony Yu, Michele Marcolongo	Drexel University
372	Dynamic Light Scattering of Bottlebrush Molecules	Alicia Kriete, Katsiaryna Prudnikova, Michele Marcolongo	Drexel University
289	Solving the Problem of Post-Operative Infection: a Novel Zn-bioactive Glass to Prevent 99.99% of Infections in Vitro	Kapil Raghuraman, Aisling Coughlan	University of Toledo
306	Differentiation of Human Neural Stem Cells Utilizing Peptide-Functionalized Retinoic Acid	Weili Ma, Neil Chada, Won Suh	Temple University
310	3D Printing of Biomimetic Scaffold for Annulus Fibrosus Regeneration	Thomas Christiani, Andrea Vernengo	Rowan University
335	Enzymatically Triggered Shape Memory Polymers	Shelby Buffington, Mark Macios, Chau Lee, Patrick Mather, James Henderson	Syracuse University
356	A Recombinant Vaccine System for Anthrax Protective Antigen	Cuiyan Lin, Weichiao Huang, Stephen Leppla, Jonathan Lovell	SUNY at Buffalo
360	A Potent OspA-based Vaccine Adjuvanted with a Functionalized Nanoliposome	Jasmin Fe Federizon, Wei-Chiao Huang, Jonathan F. Lovell	University at Buffalo
365	Synthesis and Surface Modification of Organometallic-Halide Perovskite Particles	Jing Chen	Drexel University
367	Biocompatibility and Live-Cell Imaging Study of Synthetic Polyethylene Glycol (PEG) Hydrogels	Lindsey Yam, Weili Ma, Won Suh	Temple University

RESEARCH POSTER PRESENTATIONS

BIOMECHANICS/MECHANOBIOLOGY

143	Prolonged Water Exposure Promotes Mechanical and Structural Degradation of Human Skin Tissue	Niranjana Dhandapani, Maria Skold, Guy German	Binghamton University
94	Roles of Collagen V in Structure and Mechanics of TMJ condyle cartilage	Prashant Chandrasekaran, Qing Li, Chao Wang, Mei Sun, Louis J. Soslowsky, David E. Birk, Lin Han	Drexel University
102	Induced Deletion of Biglycan in Mature Tendon Reveals a Surprising Role During Adulthood	Zakary Beach, Kelsey Robinson, Mihir Dekhne, Ashley Rodriguez, Snehal Shetye, Stephanie Weiss, Thomas Adams, Sheila Adams, Mei Sun, David Birk, Louis Soslowsky	University of Pennsylvania
104	Computational Model of Lower Extremity Bone Stresses	Brandon Jones, Noshir Langrana	Rutgers University
253	Pediatric ATDs in Simulated Frontal Crashes	Jalaj Maheshwari, Nhat Duong, Aditya Belwadi	University of Pennsylvania
255	Injury Implications in Children from Simulated Autonomous Aerial Vehicle Impacts	Shreyas Sarfare, Jalaj Maheshwari, Aditya Belwadi	The Children's Hospital of Philadelphia
296	Quantifying Solute Diffusivity in Human Osteoarthritic Cartilage via Correlation Spectroscopy	Alison Wright, Brian Graham, Christopher Price	University of Delaware
304	An Integral Model of Cell Membranes and Cytoskeleton Assembly	Sreeja Kutti Kandy	University of Pennsylvania
316	Vimentin Affects Force Transmission Mechanism in Fibroblasts	Minh-Tri Ho-Thanh	Worcester Polytechnic Institute
326	Application of Disturbed Fluid Flow in a Cerebral Bifurcation Model	Nesrine Bouhrira, Brandon DeOre, Peter Galie	Rowan University
361	Tumor Growth in Vessel-Like Mimics	Jonathan Kulwatno, Kristen Mills	Rensselaer Polytechnic Institute

RESEARCH POSTER PRESENTATIONS

BIOMEDICAL IMAGING AND BIOMEDICAL SENSORS

52	Parietal-thalamic Dysconnectivity During Sustained Attention Processing in Young Adults with Traumatic Brain Injury	Ziyan Wu, Xiaobo Li	New Jersey Institute of Technology
53	Structural Brain Abnormalities in Young Adults Remitted and Persistent with Childhood-onset Attention-Deficit/Hyperactivity Disorder	Yuyang Luo, Xiaobo Li	New Jersey Institute of Technology
159	Surface Charge Controlled Nucleoli Selective Staining with Nanoscale Carbon Dots	Qingxuan Li, Ming Su	Northeastern University
364	Alignment and Calibration of a Two-Photon System with SHG Capabilities	Mitchell Harling, William Breeding, Karissa Tilbury	University of Maine
145	Fracture Guidance in Homogeneous and Compliant Membranes through Topographical Embedding	Christopher Maiorana, Mitchell Erbe, Travis Blank, Guy German	Binghamton University SUNY
170	Wearable Ultrasound Patch for Wearable Ultrasound Patch for Therapeutic Applications	Vivinya Gunasekaran, Olivia Ngo, Evan Niemann, Prabagar Sankar, Miriam Putterman, Alec Lafontant, Rose Ann DiMaria Ghalili, Michael Neidraeur, David Margolis, Leonid Zubkov, Michael Weingarten, Peter Lewin	Drexel University
328	Utilizing Secured Online Database to Connect Physicians and Patients with Real-Time Fitness Tracker Linked Phone-App for Customized Obesity Treatment (Even Outside of Clinics)	Joochan Kim, Ian Peitzsch, Sakib Hoque, Chanpreet Singh, Liyun Li, Steven Crimarco, M. Ete Chan	Stony Brook University
324	Cardiopulmonary Monitoring of Firefighters via Real-Time OLED Mounted Display and Android Application	Seth Gergel, Seth Gergel, Ryan Dolan	University of Rhode Island
377	Rapid, In Situ, Label-Free Genetic Detection of Enteropathogens in Stool without Genetic Isolation or Amplification	Song Han, Mehmet C. Soylu, Ceyhun Kirimili, Wei Wu, Bhaswati Sen, Suresh Joshi, Chris Emery, Giang Au, Xiaomin Niu, Richard Hamilton, Wei-Heng Shih, Wan Shih	Drexel University
339	Detection of Shunt Malfunction	Dante Navarro	Johns Hopkins University

CANCER TECHNOLOGIES

75	Characterization of the Primary Binding Interactions in CAR-T Therapy Using Atomic Force Microscopy	Liam Dow, Matthew Dragovich, Wenpeng Cao, Meaghan Gavey, Myrna Yehia, Xiaohui Zhang	Lehigh University
248	Intra-Operative Breast Cancer Tumor Imaging System using NIR-Emitting Quantum Dots	Alexandra Jednorski, Wan Shih	Drexel University

RESEARCH POSTER PRESENTATIONS

CARDIOVASCULAR, CELLULAR AND MOLECULAR BIOENGINEERING

128	A Model System for Advanced Glycation End Product-Related Structural Degeneration of Bioprosthetic Valves	Christopher Rock, Antonio Frasca, Samuel Keeney, Giovanni Ferrari, Robert Levy	The Children's Hospital of Philadelphia
278	Canine Tracheal Stent Design	Harry Chartoff, Anna Kjølgaard, Tyler Marshall, Joseph Switzer	Worcester Polytechnic Institute
92	Promoting Myogenic Potential of Human Endothelial Progenitor Cells by Transactivation of Endogenous MYOD1 In Vivo	Ji Sun Park, Jong-Wan Kim, Syandan Chakraborty, Hong Sun Ahn, Nicholas Hornstein, Peter Sims, Hae-Won Kim, Jung Keun Hyun, Kam Leong	Columbia University
103	Design and Optimization of a Cholesterol-Binding Peptide Based on the Cholesterol Recognition Aminoacid Consensus Motif	Anxhela Sinani, Evan Koufos, Angela Brown	Lehigh University
106	Encapsulation of Mesenchymal Stromal Cells in Alginate for the Treatment of Osteoarthritis	Sarah Salter, Ileana Marrero-Berrios, Rene Schloss, Martin Yarmush	Rutgers University
113	Donor Dependent Effects on the Survival and Extracellular Matrix Producing Capacity of Mesenchymal Stem Cells following Hypoxia and TGF-beta Conditioning	Justin Bendigo, Sun Peck, George Dodge, Robert Mauck, Neil Malhotra, Lachlan Smith	University of Pennsylvania
158	Endogenous Neural Stem Cell Activation After Traumatic Brain Injury	Jeremy Anderson, Misaal Patel, Li Cai	Rutgers University
163	The Tumor Suppressor Protein RASSF1A modulates transcriptional activation of NF-AT	Sarah Deng, Kerry McConaughay, Phuwadet Pasarj, Shairaz Baksh, Joanne Pratt	Olin College of Engineering
187	Protein Kinase C-DELTA Tyrosine Phosphorylation is a Critical Regulator of Neutrophil-Endothelial Cell Interactions in Inflammation	Fariborz Soroush, Yuan Tang, Shuang Sun, Jordan Langston, Laurie Kilpatrick, Mohammad Kiani	Temple University
279	Caveolin1 Regulates ATP-Stimulated Nitric Oxide Production In Endothelial Cells	Tenderano Muzorewa, Donald Buerk, Dov Jaron, Kenneth Barbee	Drexel University
286	Investigating the Relationship Between Vascular Endothelial Cell Morphology and Function Through the Use of Patterned Substrates	Aparna Bhattacharyya, Kenneth Barbee	Drexel University
287	Human Schwann Cell Response to Tonic Electrical Stimulation	Alagu Chidambaram, Deanna Bouton-Thompson, Sally Temple	Rensselaer Polytechnic Institute
293	Plasma Membrane Fluidity Measurements of Bovine Aortic Endothelial Cells using Fluorescence Anisotropy of Trimethylammonium- Diphenyl-Hexatriene	Kelly Zaccheo, Kenneth Barbee, Dov Jaron, Donald Buerk	Drexel University
354	Effects of Ras/MAPK and PI3K Pathway on Cell Mechanics	Will Linthicum, Minh-Tri Ho Thanh, Michele Vitolo, Qi Wen	Worcester Polytechnic Institute

RESEARCH POSTER PRESENTATIONS

COMPUTATIONAL AND SYSTEMS BIOENGINEERING

124	Bio-Electro Stimulation Therapy for the Treatment of Motor and Non-Motor Symptoms in Parkinson's Disease - A Pilot Study	Christina Fontana, Tommi Tsao, Ayan Waite	Boston University
140	Development of Accelerated Raman Scattering and Fluorescent Monte Carlo Model	Alexander Dumont, Chetan Patil	Temple University
155	A Markovian Approach Towards Bacterial Size Control and Homeostasis	Yanyan Chen, Javier Buceta	Lehigh University

DEVICES AND DIAGNOSTIC SYSTEMS

108	Simulation of Tissue Insertion Force of Surgical Needles using Neural Network Model	Sai Teja Reddy Gidde, Tololupe Verissimo, Nuo Chen, Byoung-Gook Loh, Parsaoran Hutapea	Temple University
240	A Non-invasive BCI Controlled Wheelchair	Hongbo Du, Brandon Smith, Yih-Choung Yu, Lisa Gabel	Lafayette College
48	Dual Function SWIR Emitting Precision-targeted Drug Loaded Nanoprobes for Breast Cancer	Sandra Pelka, Michael Donzanti, Harini Kantamneni, Shravani Barkund, Rahul Pemmaraju, Swetha Sathi, Zhenghuan Zhao, Mei Chee Tan, Mark Pierce, Prabhas Moghe, Vidya Ganapathy	Rutgers, The State University of New Jersey
72	Development of a Microfluidic Model of the Glomerulus and Proximal Tubule	Michael Raver, Gretchen Mahler, Brian Philip, Courtney Sakolish	SUNY Binghamton
177	A Microfluidic Tissue Chip for Modeling Spatial Heterogeneity in Human Organ Fibrosis	Matthew Osborn, Yoon-Suk Yi, Mark Mondrinos, Dongeun Huh	University of Pennsylvania
181	Development of a High-throughput Neural Circuit Screening Platform using Human Induced Neurons	Joseph Fantuzzo, Vincent Mirabella, Ronald Hart, Zhiping Pang, Jeffrey Zahn	Rutgers
196	High Throughput Toxicity Assay on Coordinately Ordered Single Cells with Individual Identity	Qingxuan Li, Angela Su, Junfei Xia, Ming Su	Northeastern University
332	Capturing Single Stranded DNA Compaction with Biological Nanopore	Trang Vu, Julia Borgesi, Jiwook Shim	Rowan University
243	Inhibition of Protein Kinase C-delta Mitigates Sepsis-Induced Vascular Damage in Brain	Yuan Tang, Fariborz Soroush, Elisabetta Liverani, Shuang Sun, Jordan Langston, Qingliang Yang, Laurie Kilpatrick, Mohammad Kiani	Temple University
337	Machine Learning-based Microchip Platform for the Diagnosis of Disease	Jin A Ko, Matthew Hemphill, David Meaney, David Issadore	University of Pennsylvania
61	Sample Preparation for the Capture and Detection of Trichomonas Vaginalis	Laura Torres, Rebecca Sze-Tu, Zachary Say, Justin Rosenbohm, Mario Cabodi	Boston University
191	Fabrication of Solid-State Nanopore in LiCl using Controlled Dielectric Breakdown	Julian Bello, Jiwook Shim	Rowan University

RESEARCH POSTER PRESENTATIONS

DRUG DELIVERY

44	Development of Tissue Mimic Models to Study Free Radical-Initiated Polymer Immobilization	Keana R. Mirmajlesi, Christopher J. Lowe, David I. Shreiber	Rutgers, The State University of New Jersey
73	3D Modeling and Simulation of Airflow and Aerosol Deposition of Idealized Human Oral Airways	Abdurrahman Addokhi, Abdullah Albedah, Omar Altwijri	Boston University
112	A Biomimetic Microfluidic Platform for Anti-tumor Drug Evaluation	Lara Reid, Wentao Shi, Yaling Liu	Lehigh University
212	Pore Formation and pH Dependent Behavior of Lipid Bilayer Coatings	Sarah Deng, Darryl Sasaki	Olin College of Engineering
269	The Uptake Study of a Novel Cell Penetrating Peptide on Multiple Mammalian Cell Types	Neil Chada, Weili Ma, Won Suh	Temple University
311	Synthesis of Chitosan/poly Glutamic Acid Nanoparticles with Various Characteristics	Chendong Han, Amber Doiron, Komal Abhang	SUNY Binghamton
313	Acetazolamide as Candidate Drug for Reducing Drug Clearance from the Brain via Cerebrospinal Fluid Pathways	Mariagemiliana Dessi, Sonia Yevick, Swetha Kodamasimham, Caroline Wood, Jay Sy	Rutgers University
341	Targeted Drug Delivery of Gemcitabine Loaded Polymer Microbubbles for the Treatment of Pancreatic Cancer	David Brown, John Eisenbrey, Lauren Jablonowski, Flemming Forsberg, Margaret Wheatley	Drexel University
350	Development of an Ultrasound-Sensitive Platform for Co-Delivery of Oxygen and Lonidamine to Hypoxic Tumor Sites	Nicholas Daroshefski	Drexel University
351	Wavelength-selective Cargo Release from Porphyrin- and Purpurin-phospholipid Liposome Mixture	Upendra Chitgupi, Shuai Shao, Kevin Carter, Wei-Chiao Huang, Jonathan Lovell	SUNY Buffalo
352	Local Delivery of Minocycline and BDNF using Hydrogels Loaded with Self-assembled Complexes Protects and Enhances Diaphragmatic Respiratory Function after Spinal Cord Injury	Zhicheng Wang, Biswarup Ghosh, Jia Nong, Mark Urban, Victoria Trovillion, Megan Wright, Angelo Lepore, Yinghui Zhong	Drexel University
318	In-Situ Forming PLGA-PEG-PLGA Hydrogel for the Delivery of Nucleic Acid Conjugates Nanospheres for Secondary Cataract Treatment	Laura Osorno, Robert Getts, Mindy George-Weinstein, Mark Byrne	Rowan University

EDUCATION IN BIOMEDICAL ENGINEERING

233	Enhancing Biomedical Engineering Education Through Continued Adaptive and Experiential Learning Environment	Anita Singh, Dawn Ferry, Susan Mills	Widener University
329	The Impact In Teaching/Learning With 3D Modeled Laboratory Tools And Video Game Component	Abdullah Mohamed Rizvi, Ryan Tam, Amna Haider, Bruce Coluccio, Timucin Altan, Chanpreet Singh, M. Ete Chan	Stony Brook University

RESEARCH POSTER PRESENTATIONS

IMMUNO- AND NEUROENGINEERING

209	Discovery of Small-molecule Inhibitors of PD-1/PD-L1 Interaction for Cancer Immunotherapy	Michelle DiFrancesco, Stephen Finocchiaro, Michael Visconti, Jabari Mani, Sachin Patil, Sean Tevis, Griffin Walawender, Abhay Aradhya, Jeremy Hofer, Suk-Chung Yoon	Widener University
359	Effects of Macrophage Phenotype on Biomaterial Vascularization	Pamela Graney, Shahar Ben-Shaul, Shulamit Levenberg, Kara Spiller	Drexel University
78	A Novel Multilayer Intracortical Microelectrode Probe for High Density and Chronic Recording	Xin Liu, Sunshine Littlecreek, Hilton M. Kaplan, Joachim Kohn, David I. Shreiber, Jeffrey D. Zahn	Rutgers University
105	Forced Expression of Nkx6.1 Induces Neurogenesis after Spinal Cord Injury	Misaal Patel, Jeremy Anderson, Shunyao Lei, Rebecca Risman, Li Cai	Rutgers University
153	A Novel Approach to Assessing Neurodevelopmental Toxicity	Johnathan Morris, Conor Kelly, Elizabeth Bealer, Morgan Dean, Mary Staehle	Rowan University
200	SVM Based EEG Detection of True/False Assertion	Hongbo Du, Shuyu Jia, Ismail Jouny	Lafayette College
237	Biomechanical Threshold of Neonatal Brachial Plexus after Stretch Injury	Anita Singh, Shadi Malaeb, Rachel Magee	Widener University
268	Conditioned Gaze Modulation by Deep Brain Stimulation of the Subthalamic Nucleus	Maximilian Lowndes, Eunjeong Lee, Kelsea Parker, Wael Asaad	Brown University

OTHER

217	Optical Phantoms for Mobile Diagnosis	Jerry So, Shreyas Chandragiri, Brandon Harrison, Alexander Dumont, Chetan Patil	Temple University
241	Thermal Analysis of Marginal Thermal Conditions Associated with Cryopreservation by Vitrification	Purva Joshi, Yoed Rabin	Carnegie Mellon University

RESEARCH POSTER PRESENTATIONS

PEDIATRIC AND REHABILITATION ENGINEERING

172	Computational Modeling of a Modified Blalock-Taussig Shunt under Varying Geometric and Physiological Conditions	Ellen Garven, Steven Chopski, Randy Stevens, Amy Throckmorton	Drexel University
213	Unique Integrated Switchable Ventricular Assist Device for Children and Young Adults	Harut Sarkisyan, Randy Stevens, Amy Throckmorton	Drexel University
223	Fluid-Structure Interactions Dominate in a Pitch-adjusting Collapsible Pediatric Blood Pump	Matthew Hirschhorn, Randy Stevens, Amy Throckmorton	Drexel University
205	Modeling Region-Specific Growth of the Pediatric Lumbar Spine through Finite Element Methods	Param Shah, James Peters, Sriram Balasubramanian	Drexel University
262	Multivariate Thoracic Deformity Model for Predicting Pulmonary Function in Early Onset Scoliosis	Jennifer Sanville, Oscar H. Mayer, Robert M. Campbell, Jr., Shiker Nair, Shuait Nair, Ananya Ganesh, Sriram Balasubramanian	Drexel University
259	Age- and Sex- Related Changes in Trunk Range of Motion in Pediatric Subjects	Jeffrey Hoffman, Ross Chafetz, Sriram Balasubramanian	Drexel University
347	Cognitive Agency During Visually-altered Operation of a Virtual Hand Prosthesis	Raviraj Nataraj, Sean Sanford, Aniket Shah	Stevens Institute of Technology

TISSUE ENGINEERING/3D PRINTING

49	Response of Engineered Fat to Perfusion with Lipoactive Hormones	Xuanyue Li, Calin T. Nicolescu, Miles W. Massidda, Jingyi Xia, Tyler J. Ryan, Joe Tien	Boston University
81	Solvent-cast 3D Printing Biodegradable Polymer-based Scaffolds for Tissue Engineering	Nicole Malofsky, Hafiz Busari, Peter Schwarzenberg, Paula Camacho, Hannah Dailey, Lesley Chow	Lehigh University
176	A Novel Cell Culture Device to Study the Cross-Talk between Cells in an Osteoarthritis Model	Charles Rabolli, Ileana Marrero-Berrios, Anil Shrirao, Rene Schloss, Martin Yarmush	Rutgers University
294	The Porcine Accessory Carpal as a Model for Biologic Joint Replacement for Trapeziometacarpal Osteoarthritis	Brendan Stoeckl, Hannah Zlotnick, Mike Hast, Mac Sennett, Minwook Kim, Mike Eby, Tom Schaer, Robert Mauck, David Steinberg	University of Pennsylvania
343	In Vitro 3D Cancer Modelling in an Adjustable Nanofiber-Hydrogel Hybrid Synthetic Scaffold for Tracking of Glioblastoma Growth and Invasion	Nikita Grigoryev, Matija Snuderl, Kalle Levon	NYU Tandon School of Engineering

DESIGN POSTER PRESENTATIONS

As of March 15th, 2018

BIOMATERIALS

18	Engineered Semi-Synthetic Hybrid Skin Models for Skin-care and Pharmaceutical Product Evaluation	Naseem Sardashti, Sana Suhail, Ryan Cordier, Skylar Buswell, Sangamesh Kumbar	University of Connecticut
239	Effects of Increased Silver Concentration on the Solubility of PAA/PVP Based Bioactive Glass Cement	Shailaa Kummar, Lawrence Sanders, Aisling Coughlan	University of Toledo
272	Design of a Bone Morphogenetic Protein (BMP)-based Device for Repair of Turtle Carapace	Alan Jankowski, Aislinn Keane, Theresa Kosmides, Kevin Lam, Maia Patrie, Milton Cornwall-Brady, Jaclyn Grode, Cheryl Lee, Charles Innis, Howard Seeherman, Christopher Wilson	Boston University
151	Polyelectrolyte Complex (PEC) Attachment Testing for the Prevention of Abdominal Adhesions	Avi Desai, Peidong He, Hima Tallam, Rene Schloss, Noshir Langrana	Rutgers University
229	Dynamic Supramolecular Hydrogels Based on Glycosaminoglycan-Peptide Hybrid Molecules for Tissue Regeneration	Reilly Callahan	Lehigh University
260	New Portable Solution Pulling-drawing Device for Aligned Fiber Placement	Dave Jao, Vincent Beachley	Rowan University

BIOMECHANICS AND MECHANOBIOLOGY

28	Non-invasive In Vivo Quantification of Human Skin Tension Lines	Kerianne Coulon, Danielle Laiacona, Joshua Cohen, Guy German	Binghamton University
63	Fracture Healing Analysis: Creating a Micro-displacement in Distal Radii to Diagnose Healing Defects	Daniel Amirault, Maddison Caron, Julie McLarnon, Alex Witkin	Worcester Polytechnic Institute
96	Tee It UP: A Smart Golf Mat with Integrated Infrared Technology for the Visually Impaired	Jeremy Doody, Scott Barlow, Mel Sweeney	University of Rhode Island
116	Wrist Loading Frame to Test Surgical Procedures	Leah Singer, Esther Park, Colleen Cassidy	Syracuse
132	Nanoscale Mechano-mediated Drug Resistance in Cancer	Kristen Bougher, Rachel Howley, Samantha Marfoglio, Emily Margolis	Boston University
374	Drop Foot Assistive Device for Flat Foot Squat in Low Income Countries	Andrew Wilson, Mary Hayles, Claudia Duguay, Komal Mehta	Drexel University

DESIGN POSTER PRESENTATIONS

BIOMEDICAL IMAGING AND IMAGE PROCESSING

29	Monitoring Pain in Individuals Who are Nonverbal using a Video-based Algorithm and Android Application	Rachel Bellisle, Jessika Decker, John McLinden, Eugene Chabot, Ying Sun	University of Rhode Island
34	Video-Based Eye Blink Detection	Jason Mercier, Rachael Amore, Sawyer Nichols, Jiang Wu, Ying Sun	University of Rhode Island
114	A Graphical User Interface for Enhancement and Localization of Spine Bone Surfaces	Nilay Vora, Amrut Sarangi, Ilker Hacihaliloglu	Rutgers University
139	DermaSpot: Mobile App for Skin Cancer Detection	Muyang Xu, Haris Qureshi, Christopher Le	UCONN
149	An Economical & Ergonomic Hydrocephalus Software System	Garrett Soler, Kazunori Hoshino	University of Connecticut
251	Hyperspectral Fluorescence Imaging	Yenyu Chen, Xiang Pan, Thomas Blais	Worcester Polytechn. Inst.

BIOMEDICAL SENSORS AND WEARABLE SYSTEMS

37	Intelligent Pressure Sensing Rock Climbing Shoe for Contact Detection of Lower Limb Prosthetics	Jillian Holden, Emma Orton, Riley Temple, Jordan Anderson, Ying Sun	University of Rhode Island
43	Alleviate Menstrual Pain (AMP) Device	Megan Moss, Bella Nicholson, Matthew Paulo, Sam Zanetti	The College of New Jersey
90	EOG and EMG Environmental Control for Patients with Mobility and Communicative Disabilities	Greggory D'Ambrosca, Ryan Ivone, Peter Cerce, Eugene Chabot	University of Rhode Island
91	Reflectance vs. Transmittance Photoplethysmograms on Various Locations for Heart Rate Monitoring	Emily Ensom, Sydney Beck, Aaron Gilmore, Tanya Wang, Eugene Chabot	URI
130	S.W.E.E.T. Dreams Baby Monitoring System	Korina Stelzenmueller, Autumn Holzinger, Nicole Schott	TCNJ
174	Human Factors Engineering and Design Implications for a Bionic Pancreas	Zachary Morgan, Jade Chen, Allison Stern, Jamil Hakim	Boston University
179	Wearable, Remote Patient Monitor for the General Ward	Caitlin Kwan, Eric Li, Wiktoria Bis, Sydney Beckers	Boston University
189	Designing a Digital Goniometer and Dynamometer Glove: "The Helping Hand"	Gerard Calderone, Maria Lopez Cavestany, Alioune Diane, Jay Patel, John Capo, Becky Tucci, Vikki Hazelwood	Stevens Institute of Technology
193	Salivary Lactate Sensor for Detection of Colic in Horses	Alexander Bossart, Christopher Cline, Danielle Di Domenico, Alexandra Paciulli, Marissa Gray	Stevens Institute of Technology
227	Thermal Management System for Transfemoral Prosthesis	Anastasia Georges, James Hartman, Danielle Humbert, Jailene Miranda	Temple University
242	Implementing Force Sensing Technology in Non-Inhibiting Insoles Paired with Electromyography Sensors to Study Human Gait	Timothy O'Connor, Colby Thomas, Jiang Wu	University of Rhode Island
245	Augmentative and Alternative Communication (AAC) Solution Utilizing Electromyographic Sensor and Android Accessibility Software	Joshua Harper, Zachary DiMartino, Ying Sun	University of Rhode Island

DESIGN POSTER PRESENTATIONS

BIOMEDICAL SENSORS AND WEARABLE SYSTEMS

247	Balance Board with Intelligent Feedback for Ankle Rehabilitation	Daniel Salazar Herrera, Matthew Brass, ThankGod Ugochukwu, Craig Simpson, Eugene Chabot	University of Rhode Island
250	Stabilizing Breathing Patterns in Preterm Infants Using Mechanical Vibrations	Noam Grunfeld, Dean Zeldich, Yu Zhang, Samer Bou Jawde, Bela Suki	Boston University
261	PAM Support	BriAnna Puma, Paige Stroh, Philip Binaco, Vinit Parekh	The College of New Jersey
274	Doppler Ultrasound for Frequent Carotid Artery Stenosis Monitoring	Matthew Coates, Mark Welsh, Cyrus Ahmadi	Drexel University
291	Utilizing Secured Online Database to Connect Physicians and Patients with Real-Time Fitness Tracker Linked Phone-App for Customized Obesity Treatment Even Outside of Clinics	Joochan Kim, Ian Peitzsch, Sakib Hoque, Chanpreet Singh, Liyun Li, Steven Crimarco, M. Ete Chan	Stony Brook University
312	EDS aZZZist: An Innovative Eye-Tracking Assistive Device for Excessive Daytime Sleepiness	Kathleen Wan, Thamara Thayalan, Marisa Palmeri, Yamini Sasidhar, Xuefeng Wei	The College of New Jersey
314	Obstructive Apnea Monitor for the Neonatal Intensive Care Unit	Alena Davis, Nicole Fosko, Zachary George, Ruth-Ann Gonzales, Marwa Khalil	Stevens Institute of Technology
336	Wearable Technology to Non-Invasively Detect Biosignals related to Fatigue in Construction Workers	Shasha Graves, Charmi Patel, Alyssa Tacchi	University of Connecticut
340	UpFeet™ Project Abstract	Eva Alvarez, Megan Burns, Brian Van Oostendorp, Quinn DiPasquale	Stevens Institute of Technology
157	Forefoot versus Rearfoot Loading Validation Using the Smartboot 2.0	Sheridan Parker, Katie Solon, Stephen Faulkenberry, Ian Goldie, Sagar Doshi, Erik Thostenson, Karin Gravere Silbernagel, Jill Higginson	University of Delaware

CANCER TECHNOLOGIES

30	Effects of Dye- Linked Zinc Oxide Nanoparticles on Living Cells	Jaspreet Singh Nagi, Kenneth Skorenko, William Bernier, Wayne Jones, Amber Doiron	Binghamton University
168	A Multiplexed Biosensor for Cancer Therapy	Adrian Barber, Jacob Willemain, Anthony English	Western New England University
171	Precision-targeted SWIR Nanoprobes: A Calibration Tool for Tumor Heterogeneity	Michael Donzanti, Harini Kantamneni, Sandra Pelka, Rahul Pemmaraju, Dan Martin, Carolina Bobadilla, MC Tan, Mark Pierce, Prabhas Moghe, Vidya Ganapathy	Rutgers University

DESIGN POSTER PRESENTATIONS

CARDIOVASCULAR, CELLULAR AND MOLECULAR BIOENGINEERING

46	A Dynamic Computational Network Model for the Role of Nitric Oxide and the Myogenic Response in Microvascular Flow Regulation	Yien Liu, Donald Buerk, Kenneth Barbee, Dov Jaron	Drexel University
152	Boug-illuminator: Lighted Bougie for Emergency Intubations	Cari Schoffelman, Zach Wilhelm, Bailey Bancroft, Jessica Martin	Stevens Institute of Technology
325	Cardiopulmonary Monitoring of Firefighters via Real-Time OLED Mounted Display and Android Application.	Ryan Dolan, Seth Gergel	University of Rhode Island
84	Electrical Bioreactor Design for Undergraduate Student Application	Emily Kimber, Shena Marshall, Dillon Flood, Jonathan Girard, Lucas Belikis	Rochester Institute of Technology
88	Characterization of the Binding Affinity Between the Lynx Protein and the Neuronal Nicotinic Acetylcholine Receptors	Wenpeng Cao, Xiaohui Zhang	Lehigh University
355	High-throughput Single-molecule Telomere Characterization using CRISPR/Cas9	Jennifer McCaffrey	Drexel University

COMPUTATIONAL AND SYSTEMS BIOENGINEERING

47	Software Tool for Predicting Presence of Non-Alcoholic Fatty Liver Disease	Rita Chen, Maximilian Christ, Jillian Yong, Theresa Tuthill	Boston University
169	Improved Sampling with Distance-dependent Scoring Functions for Protein Docking	Abigail Sasdelli, Andrew Mahler, Sandor Vajda, Dmitri Beglov	Boston University

DEVICES, MICRO- AND NANO-BIOENGINEERING, DIAGNOSTIC SYSTEMS

80	Development of a Bioreactor and Hydrogel Coating to Study and Improve Implant Biocompatibility In-Vitro	Rashmi Vasthare	Rutgers University
95	Assisted Self Treatment for Dysregulation of Emotions Based on Biofeedback	Zachary Silveira, Samantha Provencher, Elaine Joyce	University of Rhode Island
123	Daily-Wear Nasal Breathing Aid (Undergraduate Design Competition)	Clayton Andrews, Melissa Austin, Talia Kirschbaum, Pooja Nair, Eric Cao, Theodore Lee	Johns Hopkins
161	A Pressure Ulcer Prevention Pad for Wheelchair Use	Nathaniel Fisher, Bar Stern, Dominick Pirozzi, YouJoong Park, Guy German	Binghamton University
194	IlluminatORTM Automated Surgical Lighting to Improve Operating Conditions and Efficiency	Stephanie Sayegh, Sydney Slavik, Thomas Plunkett, Evan Van Tine, Ilya Shnaydman, Becky Tucci, Vikki Hazelwood	Stevens Institute of Technology
204	Use of the BactiBeam Device to Propagate UVC Light in an Endotracheal Tube to Eliminate Ventilator-Associated Pneumonia-Causing Bacteria	Nicole Gambardella, Kassandra Marrero, Thomas Fenton, Lilly Razzaghi, Sally Shady, Glen Atlas	Stevens Institute of Technology
208	An Accessible Model House for Demonstrating an Independent Living Environment	Alexis Welch, Ahmaad Randall, Amy Harmon, Ying Sun	University of Rhode Island

DESIGN POSTER PRESENTATIONS

DEVICES, MICRO- AND NANO-BIOENGINEERING, DIAGNOSTIC SYSTEMS			
218	Feasibility Assessment of Miniaturizing a Bioartificial Liver System by Simulation of Ammonia Clearance Efficiency	Amanda Burke, Kelsey Defrates, Thomas Madan, Theodore Markiewicz	Rowan University
276	Electrocautery Device for Major Surgeries Without Electromagnetic Interference	Colin Aitken, Salvatore Finocchiaro, Terence McEllen, Jhustin Scarlett, Christopher Sinatra, Glen Atlas	Stevens Institute of Technology
292	Design of a Novel Injection Surgical Instrument to Safely Deliver a Biomaterial to Spinal Discs for Minimally Invasive Surgery	Kiet Anh Tran, Anthony Lowman, Erik Brewer	Rowan University
298	Ultra-Violet Germicidal Irradiation for the Prevention of Hospital Acquired Infections	Kyle Riley, Daniel Medeiros, William Kiernan, Jordan Anderson, Ying Sun	University of Rhode Island
363	Repurposing a 3D Printer for Automated Force-Adaptive Spectral Acquisition	David Gansen, Obiora Ufondu, Monica Parameswaran, Jerry So, Nancy Pleshko, Mugdha Padalkar	Temple University
375	Assistive Communication Technology for Amyotrophic Lateral Sclerosis	Jane Roberts, Jacob Fischer, Kelly McGuigan, Avi Bash	Drexel University
41	Fabrication of a Novel Multichambered Lung-on-a-Chip Microfluidic Device	Jieen Bae, Gretchen Mahler, Peter Huang	SUNY Binghamton University
154	Developing Nanoladder Scaffold for Neuronal Outgrowth and Regeneration	Connor Yong, Aaron Sorrin, Natalie Dong	Boston University
180	A Spectroscopically Assessable Microfluidic-like-Device with Variable Flow for the Testing of Chondrocyte Extracellular Matrix Deposition	Winston Colburn, Kenneth Hy, James Karchner, Daniel Reiners, Nancy Pleshko	Temple University
362	Portable Electroblowing Device for Generation of Protein-based Wound Dressings	Jonathan Gerstenhaber, Sogol Baharlou, Baran Arig, Madison Baltazar, Yah-el Har-el, Peter Lelkes	Temple University
271	Microfluidic Tissue Chips for Modeling Spatial Heterogeneity in Human Organ Fibrosis	Matthew Osborn, Yoon-Suk Yi, Mark Mondrinos, Dongeun Huh	University of Pennsylvania
290	Integrated Pulse Oximeter for Portable Vital Assessment	Rory Caldas, Derek Santos, Jiang Wu, Ying Sun	University of Rhode Island
115	Portable Serum Osmolality Monitoring System for Hemodialysis Patients	Tracy Levi, John Martinez, Jacob Coumans, Victoria Maglaras, David Guirguis	Stevens Institute of Technology
135	A Quantitative Platform for the Clinical Assessment of Biomarker Concentration	Matthew Buonanno, Nile Delso, Austin Hoffman, Kieran O'Donnell, Kara Spiller	Drexel University
206	SoundMedicine: A Portable Smartphone Based Pneumonia Diagnostic Device	Ross Agen, Nick Thomas, Andrue Caruso, Andrew Stoycos	Boston University
280	Malaria detection by Force Analysis through Exploitation of Erythrocyte Deformability.	Zahra Ahmed, Lilibeth Martinez, Joshua Daniel, Lucy Yip, Amber Buhagiar, Ian Michelow	Brown University
283	Lab on a Chip for Diagnosis of Chagas Disease	Kathryn Jordan, Gage Riccio, Collette Connor, Michael Rust	Western New England University

DESIGN POSTER PRESENTATIONS

DRUG DELIVERY

249	Gold Nanoparticle-Based Targeted Drug Delivery System for Glioblastoma Multiforme Cell Treatment	Maria Lopez Cavestany, Beilu Zhang, Yuhao Wang, Hongjun Wang	Stevens Institute of Technology
258	Multi-modality Cancer Treatment with Multi-functional Nanoparticles	Ming Su, Yacong Wu	Northeastern University
353	Multifunctional Liposomes for Image-Guided Intratumoral Chemo-Phototherapy	Dyego Miranda, Kevin Carter, Dandan Luo, Shuai Shao, Jumin Geng, Changnin Li, Upendra Chitgupi, Steven Turowski, Nasi Li, G. Ekin Atilla-Gokcumen, Joseph Sperryak, Jonathan Lovell	State University of New York at Buffalo

EDUCATION IN BIOENGINEERING

320	Video Games With 3D Printed Laboratory Tools And Their Impact In Teaching/Learning	Abdullah Mohamed Rizvi, Ryan Tam, Amna Haider, Bruce Coluccio, Timucin Altan, Chanpreet Singh, M. Ete Chan	Stony Brook University
-----	--	--	------------------------

NEURAL ENGINEERING

38	Portable Electromyography Spectrogram for Neuromuscular Research	Melissa Santi, James Baez, Jiang Wu, Ying Sun	University of Rhode Island
40	Wearable Rotating Permanent Magnets Driven by Brushless Motor for Rehabilitating Stroke Patients	Austin Ramos, Juan Malvar, Zachary Brown, Tanya Wang, Ying Sun, Brian Silver	University of Rhode Island
182	Nanofibrous Nerve Conduit Designed to Enhancing Cavernous Nerve Regeneration In Vivo	Gan Zhou, Antoine Carlisle, Harry Koo, Xiaojun Yu	Stevens Institute of Technology
256	Peel Away Electrode Placement Catheter for Deep Brain Stimulation (DBS)	Owen Leary, Noah Trac, Zakir Tahiry, Rohan Rastogi, Shane Lee, Wael Asaad	Brown University
109	Think-Blast: A Prosocial Brain-Computer Interface Platform for Locked-In Syndrome Patients	Dylan Davis, Gabe Cas, Haneul Kim, Ian Bilofsky, Jaimie Dougherty	Drexel University

ORTHOPEDIC ENGINEERING

56	Low-Cost Prosthetic Knee for Amputees in Developing Countries	Alexander Lo, Matthew Lo, Luke Morales, Claire Sise, Matthew Borges, Franklin Tarke, Justin Lee	Brown University
107	Gait Simulation for an External Fixation Device	Peter Chien, Zack Hogan, Kevin Mejia, Sruthi Suresh, Noshir A. Langrana	Rutgers University
186	Functionalized Nanofibrous Scaffolds for Bone Tissue Engineering	Gan Zhou, Xiaojun Yu	Stevens Institute of Technology
225	Modelling Mechanical & Biological Properties of Tendon Tear Progression In-Vivo	Vithika Nag, James Cho	Boston University
281	Complementary Device for Surgeon Feedback During Percutaneous Stabilization of Bone Marrow Lesions	Sean McMillan, Erik Brewer, Mary Staehle, Matthew Fiori, Sara Dailey, Joe DiStefano	Rowan University
297	Early Detection of Implant Loosening to Prevent Total Implant Failure	Hanna Dietrich, Joseph DiFranceisco, Miguel Isaga, Luke Austin, Erik Brewer	Rowan University

DESIGN POSTER PRESENTATIONS

OTHER

36	Wrist Pulse Simulation Technology Capable of Representing 28 Pulse Patterns of Traditional Chinese Medicine	Mackenzie Mitchell, Jake Morris, Ian Kanterman, Ying Sun	University of Rhode Island
67	The Hybrid II Pessary and Applicator	Michelle Schumacher, Caroline Culp, Mark Youssef, Emilee Erickson	Stevens Institute of Technology
76	Eliminating Microbes on Everyday Surfaces (EMOES)	Justine Paul, Jahnessa Payne, Emily Pujadas, Pun To Yung	Syracuse University
89	Coupling System for Safe Storage and Transportation of IV Poles	Daniel Haberek, Margaret Franklin, Daniel O'Brien, Jordan Anderson, Ying Sun	University of Rhode Island
188	A Model for Predicting the Light Intensity of a Bioluminescent Capsule Light Source: A Visualization Source for Endoscopic Procedures	Edward Curtin, Meredith Foor, Lucas Heldman, John Van Oostendorp	Stevens Institute of Technology
232	Development and Clinical Testing of an Application for the Improvement of Severe Sepsis Treatment and SEP-1 Compliance	Ashley Plunkett, Robert DePersia, Miguel Isaga, Erik Brewer, Mary Staehle	Rowan University
265	Stimuli Delivery System for Awake Animal Model MR Imaging Regimes	Jonathan Perry, Josephine Leingang, Joseph Miceli, Shivam Mehta	Worcester Polytechnic Institute
273	Uterine Simulator Model for Training in Manual Vacuum Aspiration	Melissa Cirillo, Zoe Greenhall, Feyone La, Jacqueline Park, Michele Marcolongo	Drexel University
299	Radio Frequency Identification for Tracking in Hospital Personnel	Delaney Santos, Tyler Gagan, Lauren Porto	University of Rhode Island

PEDIATRIC AND REHABILITATION BIOENGINEERING

226	Novel Geometrically Tunable Blood Shunt for Infants with Severe Congenital Heart Disease	Krianthan Govender, Jacqueline Muscella, Kaitlyn John, Nathaniel Neavling, Randy Stevens, Kara Spiller, Amy Throckmorton,	Drexel University
192	Design of the DynaSoar Kinesthetic Stander™ to Improve the Health of Children with Cerebral Palsy	James Raleigh, Lily Bruenjes, Philip Chapel, Hannah Timm, Megan Manning, Becky Tucci, Vikki Hazelwood	Stevens Institute of Technology
195	Modular Prosthetic Foot for Child Amputees	Aditya Bhalla, Darby Destefano, Guido Porcelli, Mike Salas	Stevens Institute of Technology
199	Northeast Bioengineering Conference - Infant Sleep Position Monitor	Alyssa Anderson, Tierney Clark, Ao Li, Sarah Venn, Sherri McMullen, Karen Klingman	Syracuse University
201	Otto-mobile: A Pediatric Transitional Wheelchair	Pruthvi Kilaru, Elizabeth Snyder, Kiana Lally, Madison Leiman, Jessica Manna, Eben Philbin, Madeline Brooks, Maria Catalane	Syracuse University
215	Neonatal Nasal Cannula Fixation Device	Parth Patel, Harsh Patel, Sonali Dadoo, Melissa Mathew	Drexel University
322	Novel Harness for Comfortable Treatment of Pediatric Hip Dysplasia	Rebecca Dixon, Sydney Downing, Sarah Ferrell, Elizabeth Gonzales, Julianne Sitler, Sally Shady	Stevens Institute of Technology
331	Mixed Methods Research – A Qualitative Solution to a Quantitative Problem	Pooja Anantha, Aditya Belwadi	Children's Hospital of Philadelphia

DESIGN POSTER PRESENTATIONS

PEDIATRIC AND REHABILITATION BIOENGINEERING

349	Smart Toys that Assess Grasp Strength in Infants to Aid in the Diagnosis of Fine Motor Delays	Kaitlin Olsen, Noor Aamer, Martha Rivas, Rachael Stone, Shams Alhakeem, Sahana Kukke	The Catholic University of America
70	Prism Lens Inserts for Double Vision Correction in Snowboarding Goggles	Fariha Choudhury, Matthew Kandl, Parth Patel, Courtney Mould	Stevens Institute of Technology
131	CAF Prosthesis Device	Madison Levine, William Kates, Dale Johnson, Rose LoPiano	The College of New Jersey
137	Treadmill Body Weight Support System	Jillian Harris, Tyler Thurmond, Jordan Zawodniak, Alex Truong	The College of New Jersey
238	Thermotherapy Exerciser	Amulya Veldanda, Saveetha Raghupathi, Aakhila Rameeza, Nic Russo, Connie Hall	The College of New Jersey
252	Design of Metacarpophalangeal Thumb Splint for Collegiate Baseball Catchers	Grace Ruiz Cooper, Alex Metz, Zakary Chiaradia, Seth Martinez, Sarah Rooney	University of Delaware
266	Dynamic Correction of Postural Kyphosis	Connor Mastropoll, Spenser Martin, Maria Perez Luna, Kirsten Herchenroder, Silvio Torres Betancur	Worcester Polytechnic Institute
284	Design of an Adaptive Golf Club for a Stroke Patient	Katie Wood, Lucia Cavacini, Samantha Ostrowsky, Elizabeth Moulton, Tracie Klekotka, Andrea Kwaczala	Western New England University
288	Metered Liquid Dispenser for Children at Risk for Aspiratio	Courtney Tani, Khaled Alotaibi, John Leslie, Judy Cezeaux, Patricia Meyers	Western New England University

TISSUE ENGINEERING/3D PRINTING

301	Engineering a "Fat-on-a-Chip" Device for Assessing Lipolytic Activity	Miles Massidda, Calin Nicolescu, Ryan Jamieson	Boston University
166	The Effect of Vascularization on Adipose Tissue Glucose Metabolism	Jennifer Hammel, Golnaz Anvari, Evangelia Bellas	Temple University
173	Creating a 3D In Vitro Model for Breast-Cancer-to-Bone Metastasis	Michael Masino, Michael Pellegrini, Joseph Freeman	Rutgers University
183	The Effect of Stiffness Modulation of 3D Collagen Matrices on Adipocyte Metabolic Regulation	Nikolas Di Caprio, Evangelia Bellas, Golnaz Anvari	Temple University
202	Polycaprolactone Nanofibers Coated in Crosslinked Gelatin Hydrogel Film	Isabelle Moderski, Nicolas Mann, Samantha Glanville	Rowan University
319	Repairing the Intervertebral Disc: An Ex Vivo Bovine Organ Culture Model Using an Injectable Composite Seeded with Stem Cell	Thomas Christiani, Andrea Vernengo	Rowan University

ABSTRACTS ARE AVAILABLE ONLINE AT

http://indexsmart.miramsmart.com/NEBEC_2018/

SPONSORS AND EXHIBITORS



BINGHAMTON
UNIVERSITY
STATE UNIVERSITY OF NEW YORK



BROWN

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

UNIVERSITY OF
DELAWARE.

 **Drexel**
UNIVERSITY

 **LEHIGH**
UNIVERSITY

PENNSTATE.


 **Rowan University**
HENRY M. ROWAN
COLLEGE OF ENGINEERING

 **STEVENS**
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY™

**Mc
Graw
Hill
Education**

Notes



DREXEL UNIVERSITY

School of

Biomedical Engineering, Science and Health Systems



The global community of biomedical innovators is broad and extremely diverse, yet all of these innovators share a core characteristic: They do not see problems, but instead solutions and opportunities to translate amazing science into lives saved and health improved. To realize these lifesaving solutions, these innovators believe that collaboration leads to progress for everyone. At Drexel's School of Biomedical Engineering, Science and Health Systems, we feel fortunate to be part of that unique community. We are also proud to have been instrumental in its development. Founded in 1961 as the United States' first Biomedical Engineering and Science Institute, we have pushed the boundaries of science and technology for half a century. Along the way, we have forged relationships with a network of partners bridging academia, industry and government to harness our combined potential regionally, nationally and internationally and to fulfill our social contract.



Founded on the excellent basic research taking place at Drexel, our teaching, translational research and service activities are focused on achieving clinical and industrial relevance, thus creating the educational experiences that prepare our students for emerging biomedical challenges. We have been recognized as a model of interdisciplinary collaboration within Drexel University, where breaking down the barriers between fields is a strategic priority. Likewise, our primary translational research partner, the Wallace H. Coulter Foundation, has identified our School as a global best practice in moving discoveries from the laboratory to patients.



As its name suggests, the School places particular emphasis on collaboration among scientific disciplines and our students benefit from our alliances with major research centers, hospitals and biotech companies in the Philadelphia region. The School educates undergraduates in an innovative, accredited curriculum and offers MS, PhD and certificate programs in Biomedical Engineering (BME), Biomedical Science (BMS), and Integrated Biomedical Engineering and Business (IBEB). Concentrations are available in Biomaterials and Tissue Engineering, Imaging and Devices, Neuroengineering, Biomechanics and Bioinformatics.

To learn more please visit:
drexel.edu/biomed



FUTURE CONFERENCES

2019

RUTGERS UNIVERSITY

Chair: Joseph Freeman

2020

PENN STATE UNIVERSITY

Chair: Keefe Manning

PLAN TO ATTEND!



DREXEL UNIVERSITY
School of

**Biomedical Engineering,
Science and Health Systems**

3141 Chestnut Street,
Philadelphia, PA 19104
drexel.edu/biomed