



DREXEL UNIVERSITY

School of

Biomedical Engineering,
Science and Health Systems

2016

COMMENCEMENT AND
HONORS CEREMONY

COMMENCEMENT AND HONORS CEREMONY

Friday, June 10, 2016 – 9:00 AM

Main Building Auditorium

(Main Building Auditorium is located at the corner of 32nd and Chestnut Streets)

Program of Events

PROCESSIONAL

Order of Procession: Faculty, PhD, MS, and BS

WELCOMING REMARKS

Kenneth Barbee, PhD, Professor and Interim Director

ANNUAL AWARDS

The Elisabeth Papazoglou Inspired Leadership Award

In recognition of an individual who demonstrates exceptional abilities to lead, serve, collaborate, and inspire with broad impact and special distinction.

◇ Awardee: **Karen Moxon, PhD**

Distinguished Alumni Award

In recognition of an alumnus who has personified the traditions of excellence of the School of Biomedical Engineering, Science and Health Systems and the University through their personal accomplishment, professional achievement, and/or humanitarian service.

◇ Awardee: **Justin Lathia, PhD**

Distinguished Service Award

In recognition of outstanding service by a member of the University community in supporting our students and advancing the missions and ideals of the School of Biomedical Engineering, Science and Health Systems.

◇ Awardee: **Andres Kriete, PhD**

Lifetime Achievement Award

In recognition of a lifetime of significant and pioneering research in the area of rehabilitation engineering and assistive technology, outstanding service to the University community, dedicated teaching and inspiring mentorship to students at all levels of study.

◇ Awardee: **Rami Seliktar, PhD**

SENIOR DESIGN TEAM AWARDS

Recognizing the team finalists who presented their Senior Year final capstone projects at the Drexel University School of Biomedical Engineering, Science and Health Systems and College of Engineering Senior Design Competitions.

- ◆ First Place Team: “Tendon Reinforcement for Rotator Cuff Repair” – **Michael Chen, Desiree Martini, David Rodak, and Kenneth Rodriguez** / Advisor: **Kara Spiller**
- ◆ Runners Up (Biomed Competition)
 - ◇ “Monitoring Cuff Pressure of Endotracheal and Tracheostomy Tubes” – **Mirth Ampattu, Carl Eberle, John Hao, Daniel Martinez, and Mengdi Tao** / Advisors: **Joseph Sarver, Lin Han, Vinay Nadkarni, Oscar Mayer, and Natalie Napolitano.**
 - ◇ “Alignment Device for Cervical Spine Fusion” – **Samuel Hofbauer, Melissa Morgano, and Stephanie Tauscher** / Advisor: **Sriram Balasubramanian**

STUDENT ACCOMPLISHMENTS AND HIGHLIGHTS (please see program booklet)

FACULTY AND STAFF ACCOMPLISHMENTS AND HIGHLIGHTS (please see program booklet)

REMARKS BY GRADUATING STUDENTS

- ◆ Undergraduate Student Speakers – **Dimitrios Arhontoulis** and **Sam Hofbauer**
- ◆ Graduate Student Speaker – **Lauren Jablonowski**

RECOGNITION OF INDIVIDUAL STUDENTS

- ◆ Reader of Graduate Names – **Kara Spiller, PhD**
- ◆ Reader of Undergraduate Names – **Jaimie Dougherty, PhD**

CLOSING REMARKS by **Fred Allen, PhD**

GRADUATING CLASS OF 2016

Undergraduate Students BS in Biomedical Engineering

Iman Abdullah Abba	Ailyn Scarlet Gonzalez
Sena Agezo	John P. Grillo
Abdelrahman Z. Aleies	John C. Hao
Mirth Thomas Ampattu	Peter Martin Hayashi
Dimitrios C. Arhontoulis	Gabrielle Herrmann
Adam Anthony Asterito	Samuel Ian Hofbauer
Eric Mohan Balgobin	Kristina Catherine Ignasiak
Jayne Elizabeth Batchter	Kaleb Alexander Jacobson
Dipesh H. Bhakta	Derek Doromal Jacob
Jara Bhuiyan	Ian Andrew Kennedy
Justin Blake Bianchini	Aleah Thompson Kenner
Shravani N. Birewar	Minkee Kim
Manisha Bista	Joseph Christopher Knipp
Megan Nicole Brown	Ivy Lindsay Koberlein
Cody J. Bukowski	Hannah D. Kollar
Amanda Margaret Busch	Iden Kurtaliaj
Daniel J. Buss	Kathryn Mae Lank
Kimberly K. Chan	Kanghee Lee
Peter Y. Chang	Matthew Ryan Lieve
Michael Chen	Evan James Lynn
Matthew Chin	Dimitri C. Madonis
Christina B. Conrad	Alekhya Mangalampalli
Marisa DeCovny Cottrill	Rebecca Ann Marek
Donald B. Dalton II	Eric Jacob Marti
Richard Michael Dambra	Daniel Arturo Martinez
Chau Thi Thai Dang	Desiree Martini
Joseph Matthew Denshaw	Jingya Miao
Sachi M. Desai	Erica Jane Milan
Joshua Reuben Dienstman	Skye Rachel Miller
James Aaron Edwards	Rio Dindi Monte
Andrew Francis Ellinger	Jillian Austin Moraveck
Katie Rose Falcone	Krista Theresa Morgano
Nicole Marie Ferraro	Melissa Maria Morgano
Joyanna Rachel Friedman	Ryan Tyler Mulholland
Nathan Thomas Frueh	Jessica Danielle Nabitovsky
Farial Khaleda Fuad	Rima Naseer
Bhavika Gali	Julia Nezhinsky
Sachin A. Gandhi	Kevin Thomas Ng
Alison Generotti	Jarrold Scott Noland
Andrew George	Abigail Klohn Nolin
Rafael Girgis	Sarah Elizabeth O'Brien

GRADUATING CLASS OF 2016

Undergraduate Students BS in Biomedical Engineering

Isam Osman
Berk Ozoglu
Aman M. Patel
Anami S. Patel
Jasmin K. Patel
Krupali Rajeshkumar Patel
Meghna P. Patel
Purvina Patel
Sagar Patel
Alise Patricia Peckjian
Aravind Sandilya Ponukumati
Thomas Joseph Quinn II
David C. Rodak
Kenneth Giovanni Rodriguez
Gabriela De Jesus Rovi
Manit K. Sabharwal
Austin Michael Sacks
Sonia S. Selvan
Alexis Jaclyne Sermier
Rohil D. Shah
Rawan Fathi Shraim

Morgan John Siegmann
Shivam Sitapara
Steven E. Snow
Sheharyar Sohail
Julie Elizabeth Speer
Julia Ann Stamatakis
Catherine Elisabeth Stauffer
Kartik Sudhakar
Mengdi Tao
Thomas Joseph Quinn II
Maxime Tremblay
Michael Alexander Vargas
Meera Varshneya
Oksana Vovchuk
Brigitte Marie Weesner
Rebecca Lynn Wright
Emily Cassandra Wyler
Sofia O. Zacharczuk
Shane Michael Zeshonski

GRADUATING CLASS OF 2016

Graduate Students MS in Biomedical Science

Kyrie Luck Cassin
Kaylynn Rita Curfman
Melisa Diaz
Reham Garash
Natalie Khutoryansky
Rubina Narang

Kathy Lan Vi Pham
Tri M. Phan
Ravi Kumar Shrivastav
Michael C. Yoder
Yuyuan Zhou

MS in Biomedical Engineering

Sena Agezo
Mirth Thomas Ampattu
Dimitrios C. Arhontoulis
Chetana Rajeshsingh Bayas
Shravani N. Birewar
Kimberly K. Chan
Mary Theresa Condosta
Amy Kathleen Dahl
Richard Michael Dambra
Chau Thi Thai Dang
Armin Darvish
David Michael deLeon
Devina Himanshu Desai
Richard Patrick Earley
Nadia Ibrahim Elkaddi
Mena Nader Farag
Nicole Marie Ferraro
Carson Solon Fox
Farial Khaleda Fuad
Bhavika Gali
Amelia Serlena George
Jason D. Gilliland
John P. Grillo
Gabriela Hernandez Meza
Gabrielle Herrmann
Grace Amarin Holliday
Nicholas William Houriet
Kristina Catherine Ignasiak
Kelsey Jacobson
Sai Mounica Jasthi
Aarti Shridhara Kamath
Ronak Rajendra Kapadia
Ian Andrew Kennedy
Pooja Konathalvalappil
Iden Kurtalijaj
Corey David Landis
Kathryn Mae Lank
Dennis G. LaVere
Kanghee Lee
Yien Liu
Dimitri C. Madonis
Rebecca Ann Mareck

Daniel Arturo Martinez
Desiree Martini
Kevin Michael McCarthy
Jingya Miao
Wisam Jamal Mohamed
Jillian Austin Moraveck
Rima Naseer
Kevin Thomas Ng
Xiaomin Niu
Sarah Elizabeth O'Brien
Averie Marie Palovcak
Anami S. Patel
Purvina Patel
Jasmin K. Patel
Meghna P. Patel
Jay P. Patel
Gargi Vijay Pednekar
Amanda Elizabeth Pentecost
Kartikeya Puranik
Ian L. Roberts
David C. Rodak
Kenneth Giovanni Rodriguez
Alexis Jaclyne Sermier
Maksim Shestov
Mengdi Tao
Maxime Tremblay
Tiffany Tse
Dharma Teja Varapula
Michael Alexander Vargas
Alexander Douglas Vogel
Jiajun Wang
Nicole M. Weikert
Kathryn Leigh Wofford
Rebecca Lynn Wright
Emily Cassandra Wyler
Sofia O. Zacharczuk
Argie Zoubroulis

GRADUATING CLASS OF 2016

Graduate Students
PhD in Biomedical Science

Gaurav Goyal

Jonathan Frischling Miller

PhD in Biomedical Engineering

Bartholomew J. Bacak
Christopher Richard Bawiec
Francis X. Bell
Armin Darvish
David Diaz
Xiajing Gong
Josa Ann Hanzlik
Lauren Jo Jablonowski
Yemin Lan
Ahmad Pourshoghi
Marissa Elaine Powers

Erin Renee Reichenberger
Christopher Allen Rock
Gregory Warren Schwartz
Ramalingam Venkat Kalyana Sundaram
Youhan Sunny
Nutte Tarn Teraphongphom
Sai Y. Veruva
Honghui Zhang
Zhiling Zhang
Chunyu Zhao

STUDENT ACCOMPLISHMENTS AND HIGHLIGHTS

Andy Abbate Receives a 2015 Drexel iCARE for HealthCare GAANN Fellowship

Andy Abbate, PhD candidate in BIOMED (Advisors: A. Throckmorton and E. Bass), received a 2015 Drexel iCARE for HealthCare Graduate Assistance in Areas of National Need (GAANN) fellowship.

- ◆ Received a Human Factors and Ergonomics Society Travel Award to present the paper titled, “Using Computational Tree Logic Methods to Analyze User Documentation Navigation: A Formal Reachability Approach” at the 59th Annual Meeting of the Human Factors and Ergonomics Society in Los Angeles, CA. Andy was also the runner-up for the Best Student Paper Competition from the Safety Technical Group.

Dimitri Arhontoulis, Kimberly Chan, Andrew Ellinger, Sachin Gandhi, Gabrielle Herrmann, and Iden Kurtalaj Win the Wound-Closure Category of the 2015 Coulter College Design Competition

Dimitri Arhontoulis, BS/MS student in BIOMED; Kimberly Chan, BS/MS student in BIOMED; Andrew Ellinger, BS student in BIOMED; Sachin Gandhi, BS/MD student in BIOMED and CoM; Gabrielle Herrmann, BS/MS student in BIOMED; and Iden Kurtalaj, BS/MS student in BIOMED (Team advisors: Wan Shih, PhD – BIOMED and Michael Weingarten, MD – CoM), won the Wound-Closure category of the 2015 Coulter College Design Competition in Coral Gables, FL.

BIOMED Freshmen Are Selected As 2015 STAR Scholars

The following 10 freshmen students in BIOMED were selected as participants in the 2015 STAR (Students Tackling Advanced Research) Scholars Program and were recognized, along with their mentors, at the 2015 STAR Scholars Summer Showcase in the Bossone Research Center:

- ◆ **Hary Bach** (Faculty Mentor: Adrian Shieh / Graduate Student Mentor: Arpit Shah)
Project: “Hepatocellular Carcinoma Cell Invasion Depends on Interstitial Flow Velocity”
- ◆ **Hazara Begum** (Faculty Mentor: Wan Shih / Graduate Student Mentor: Xin Xu)
Project: “Finite Element Analysis of the Resonance Behavior of Piezoelectric Plate Sensor”
- ◆ **Gregory Burns** (Faculty Mentor: Hasan Ayaz)
Project: “Using MazeSuite to Edit Virtual Environments”
- ◆ **Nohra Murad** (Faculty Mentor: Amy Throckmorton / Graduate Student Mentor: Carson Fox)
Project: “New Right Ventricular Assist Device with Magnetic Suspension for Pediatric Patients”
- ◆ **Rochitha Nathan** (Faculty Mentor: Kurtulus Izzetoglu / Graduate Student Mentor: Gabriela Hernandez)
Project: “Using fNIR to Measure Brain Hemodynamics and Other Physiological Signals in Healthy Volunteers”
- ◆ **Michael Rego** (Faculty Mentor: Lin Han / Graduate Student Mentor: Biao Han)
Project: “Nanomechanics of Weakly Linked Polymeric Hydrogels”
- ◆ **Jennifer Sanville** (Faculty Mentor: Sriram Balasubramanian)
Project: “Thoracic Deformity in Early Onset Scoliosis, and Pelvis Morphology in Normative and Adolescent Idiopathic Morphology”
- ◆ **Emma Stenger** (Faculty Mentor: Amy Throckmorton)
Project: “Testing and Analysis of Cage-impeller Designs for Blood Pump Device in Single Ventricle Physiology”
- ◆ **William Washington** (Faculty Mentor: Margaret Wheatley / Undergraduate Student Mentor: Rawan Shraim)
Project: “Optimizing a Platform to Deliver Oxygen to Hypoxic Regions in Tumors”
- ◆ **Isabel Wingert** (Faculty Mentor: Karen Moxon / Graduate Student Mentor: Gary Blumenthal)
Project: “Quantifying Lesion Size in Spinal Cord Injury”

Student Accomplishments and Highlights

Michael Chen, Desiree Martini, David Rodak, and Kenneth Rodriguez Win 1st Place in the 2016 BIOMED Senior Design Competition

Michael Chen, BS student in BIOMED, and Desiree Martini, David Rodak, and Kenneth Rodriguez, all BS/MS students in BIOMED (Advisor: Kara Spiller), won 1st Place in the 2016 School of Biomedical Engineering, Science, and Health Systems ('BIOMED') Senior Design Competition for their project titled, "Tendon Reinforcement for Rotator Cuff Repair." The team went on to represent the School in the College of Engineering Senior Design Competition. The two runners-up teams are listed below:

- ◆ "Monitoring Cuff Pressure of Endotracheal & Tracheostomy Tubes"
Team members: Mirth Ampattu, Carl Eberle, John Hao, Daniel Martinez, and Mengdi Tao.
Advisors: Joseph Sarver, Lin Han, Vinay Nadkarni, Oscar Mayer, and Natalie Napolitano.
- ◆ "Alignment Device for Cervical Spine Fusion"
Team members: Samuel Hofbauer, Melissa Morgano, and Stephanie Tauscher.
Advisor: Sriram Balasubramanian

Adam Craig Receives a David L. Boren Fellowship for Overseas Study at Hebrew University of Jerusalem

Adam Craig, PhD student in BIOMED (Advisor: U. Hershberg), received a \$24K 1-year David L. Boren Fellowship for overseas study at Hebrew University of Jerusalem. Boren Fellows represent a vital pool of highly motivated individuals who wish to work in the federal national security arena. In exchange for funding, Boren Fellows commit to working in the federal government for at least one year after graduation.

Chau Dang Receives a 2016 Drexel University Cooperative Education Award for Her Work on the Stability of a Lipid Molecule Important in the Study of Gaucher's Disease

Chau Dang, undergraduate student in BIOMED, with a concentration in biomaterials and tissue engineering, received a 2016 Drexel University Cooperative Education Award for her co-op with biotechnology company Amicus Therapeutics, where she examined the stability of a lipid molecule important in the study of Gaucher's disease.

Sachin Gandhi Is Selected as a 2015 Dornsife Global Development Scholar for His Social Entrepreneurship and Field Work in India

Sachin Gandhi, BS/MD student in BIOMED and CoM, was selected as a 2015 Dornsife Global Development Scholar, for his field experience in India where he learned about the importance of proper WASH ("Water, Sanitation, and Hygiene") infrastructure. As a social entrepreneur, Sachin won a technology competition based on a solar-powered phone charging system he developed using items that can be found in the local community, such as empty soda cans.

Reham Garash, Brandon Marcinkiewicz, and Anamika Bajpai Publish an Article on Drug Delivery Strategies to Control Macrophages in the Journal Experimental Biology and Medicine

Reham Garash, MS student in BIOMED, Brandon Marcinkiewicz, PhD student in BIOMED, and Anamika Bajpai, Postdoctoral fellow in BIOMED (Advisor: K. Spiller), published an article titled, "Drug Delivery Strategies To Control Macrophage Behavior for Tissue Regeneration" in the journal Experimental Biology and Medicine.

Pamela Graney Receives a 2015-2016 Louis and Bessie Stein Family Fellowship for Exchanges with Israeli Universities

Pamela Graney, PhD student in BIOMED (Advisor: K. Spiller), received a \$20K 2015-2016 Louis and Bessie Stein Family Fellowship for Exchanges with Israeli Universities for her project titled, "Modulating Macrophage Behavior in Blood Vessel Development and Maintenance." She will work in the lab of Dr. Shulamit Levenberg at the Technion Israel Institute of Technology in Haifa, Israel.

- ◆ Received a trainee award to present her work titled, “Biomaterial-mediated Modulation of Macrophage Behavior To Promote Bone Regeneration” at the 10th Annual World Biomaterials Congress in Montreal, CA.

Lauren Jablonowski Wins the Drexel Graduate College 2016 Outstanding Doctoral Dissertation Award in the Physical and Life Sciences

Lauren Jablonowski, PhD candidate in BIOMED (Advisor: M. Wheatley), received the Drexel Graduate College 2016 Graduate Student Excellence Award for “Outstanding Doctoral Dissertation in the Physical and Life Sciences.” This award is presented to doctoral students in recognition of excellence in dissertation research and to encourage the highest levels of scholarship, research and writing.

- ◆ Selected to give an oral presentation under the Drug Delivery track at the 2015 Biomedical Engineering Society (BMES) Annual Meeting in Tampa, FL.

Kritika Katiyar Receives a National Institute of Neurological Disorders and Stroke Research Fellowship

Kritika Katiyar, PhD candidate in BIOMED (Advisor: Y. Zhong), received a 3-year \$90K NIH National Institute of Neurological Disorders and Stroke research fellowship for the project titled, “Mechanisms for Axonal Guidance Using Living Tissue Engineered Scaffolds.”

Manyah Kohli, Gabriela Hernandez-Meza, and Daryl Omire-Mayor Each Receive an NSF Fellowship to Attend the 15th International Summer School on Biocomplexity, Bidesign and Bioinnovation

Manyah Kohli, BS student in BIOMED, Gabriela Hernandez-Meza, PhD student in BIOMED (Advisor: K. Izzetoglu), and Daryl Omire-Mayor, PhD student in BIOMED (Advisor: K. Pourrezaei), each received an NSF Fellowship to attend the 15th International Summer School on Biocomplexity, Bidesign and Bioinnovation: From Gene to System, in Izmir, Turkey.

Chen Liu Presents Her Work on the Functional Role of Neuron Adaptation in Encoding Context Information at the 2015 BMES Annual Meeting

Chen Liu, PhD candidate in BIOMED (Advisors: K. Moxon), presented her work titled, “Functional Role of Neuron Adaptation in Encoding Context Information” at the 2015 Biomedical Engineering Society (BMES) Annual Meeting in Tampa, FL.

Daryl Omire-Mayor Receives a Drexel Graduate College 2016 Teaching Assistant Excellence Award for Highly Commended Teaching

Daryl Omire-Mayor, PhD student in BIOMED (Advisor: K. Pourrezaei), received a Drexel Graduate College 2016 Teaching Assistant Excellence Award for “Highly Commended Teaching.” Daryl was the teaching assistant for Dr. Uri Hershberg’s graduate course on biomedical statistics.

Carli Moorehead Receives a Goldwater Scholarship for Her Research on Biomimetic Tissue Regeneration and Repair Scaffolds

Carli Moorehead, BS/MS student in BIOMED and MSE (Advisor: M. Marcolongo), received a 2-year \$7.5K Goldwater Scholarship for her work on biomimetic tissue regeneration and repair scaffolds. Carli began her research path as a STAR (Students Tackling Advanced Research) Scholar in the BIOMED Cellular Biomechanics Lab, and extended her STAR work to achieve SuperNova Undergraduate Research Fellow status.

Nohra Murad Presents Her New Right Ventricular Assist Device Research and Poster at the National Collegiate Research Conference (NCRC) at Harvard University

Nohra Murad, BS/MS student in BIOMED (Advisor: A. Throckmorton), a former STAR (Students Tackling Advanced Research) student, presented her research and poster titled, “New Right Ventricular Assist Device with Magnetic Suspension for Pediatric Patients” at the National Collegiate Research Conference (NCRC), hosted by the Harvard College Undergraduate Research Association (HCURA).

Student Accomplishments and Highlights

- ◆ Received the Steinbright Research Co-op Award for Fall/Winter Term 2015 in recognition of her exceptional effort in fulfilling the goals and ideals of cooperative education.

Amanda Pentecost Receives a 2016 Whitaker International Fellowship To Conduct Research in Korea

Amanda Pentecost, dual PhD candidate in MSE and MS in BIOMED (Advisors: Y. Gogotsi and K. Spiller), received a 2016 Whitaker International Fellowship to conduct research with Dr. Kwangmeyung Kim at the Center for Theragnosis, housed in the Biomedical Research Institute at the Korea Institute of Science and Technology (KIST) in Seoul, Korea. Amanda's research focuses on using theranostic nanoparticles to increase the effectiveness of a common anti-inflammatory drug, dexamethasone, in preventing fibrous capsule formation and isolation of an implanted biomaterial.

Shubra Rastogi Receives the 2016 Ian L. Alexander Outstanding Commuter Student Life Award

Shubra Rastogi, undergraduate student in BIOMED, received the Ian L. Alexander Outstanding Commuter Student Life Award from the Drexel University Student Affairs Association and the Undergraduate Student Government Association, for having made a significant contribution to student life at the University and in the surrounding community.

Gregory Schwartz and Bochao Zhang Present Their Posters at the 2016 Keystone Symposia Systems Immunology Meeting

Gregory Schwartz and Bochao Zhang, both PhD students in BIOMED (Advisor: U. Hershberg), presented their posters titled, "Estimating B Cell Clonal Richness and Required Sampling in Different Anatomic Compartments" and "Discrimination of Germline V Genes at Different Sequencing Lengths and Mutational Burdens: A New Tool for Identifying and Evaluating the Reliability of V Gene Assignment," respectively, at the 2016 Keystone Symposia Systems Immunology Meeting in Big Sky, MT.

Alex Sevit and Julie Speer Receive an Honorable Mention from the NSF Graduate Research Fellowship Program

Alex Sevit, BS/MS student in BIOMED, and Julie Speer, BS student in BIOMED, received an Honorable Mention from the prestigious National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP).

Hassaan Pasha Sheikh and Nohra Murad Are Named to the Provost's Inaugural Dragon'24 Student Advisory Group

Hassaan Pasha Sheikh, BS student in BIOMED, and Nohra Murad, BS/MS student in BIOMED (Advisor: A. Throckmorton), were named to the Provost's inaugural Dragon'24 Student Advisory Group. The group consists of 24 student leaders representing the best and brightest from the diversity of programs, backgrounds, and cultures present at Drexel, with the goal of developing an initial charter and devising a specific set of activities for the first two years of the group's work.

Nutte Tarn Teraphongphom, Lauren Jablonowski, and Colleagues Publish an Article on Nanoparticle Loaded Polymeric Microbubbles in the Journal Langmuir

Nutte Tarn Teraphongphom and Lauren Jablonowski, both PhD candidates in BIOMED (Advisor: M. Wheatley), published the article titled, "Nanoparticle Loaded Polymeric Microbubbles as Contrast Agents for Multimodal Imaging" (Co-authors: P. Chhour, J. Eisenbrey, P. Nah, W. Witschey, B. Opasanont, D. Cormode, and M. Wheatley) in the American Chemical Society's journal Langmuir.

Valerie Tutwiler Receives a 2016 American Heart Association Predoctoral Fellowship

Valerie Tutwiler, PhD candidate in BIOMED (Advisors: K. Spiller and J. Weisel, UPenn), received a prestigious American Heart Association (AHA) 2-year \$52K Predoctoral Fellowship for her research titled, “Blood Clot Contraction: Relation to Cell Stiffness and Fibrinolysis.”

- ◆ Published an article titled, “Kinetics and Mechanics of Clot Contraction Are Governed by Molecular and Cellular Blood Composition” (Co-authors: R. Litvinov, A. Lozhkin, A. Peshkova, T. Lebedeva, F. Ataulakhanov, D. Cines, K. Spiller, and J. Weisel), and an article titled, “Platelet Transactivation by Monocytes Promotes Thrombosis in Heparin-induced Thrombocytopenia” (Co-authors: D. Madeeva, H. Ann, I. Andrianova, V. Hayes, X. Zheng, D. Cines, S. McKenzie, M. Poncz, and L. Rauova), both in the journal *Blood*. The latter article was chosen for the journal’s January 2016 cover.

Claire Witherel, Pamela Graney, and Colleagues Publish an Article on the Behavior of Macrophages in Response to Biomaterials in the Journal *Wound Repair and Regeneration*

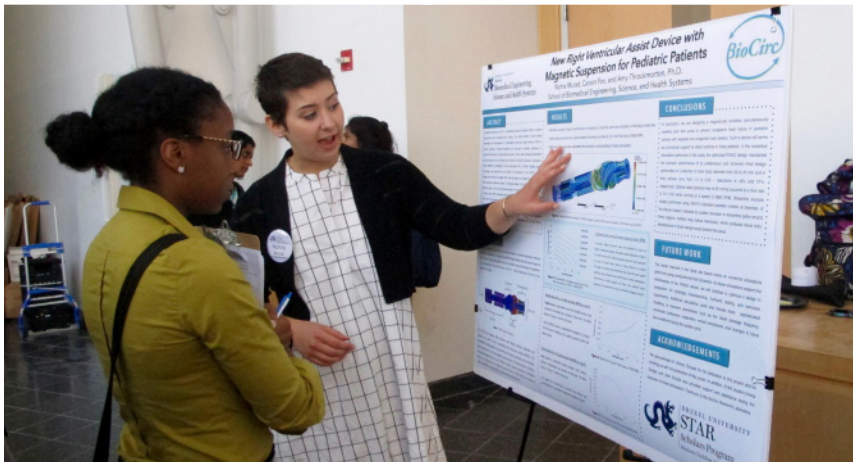
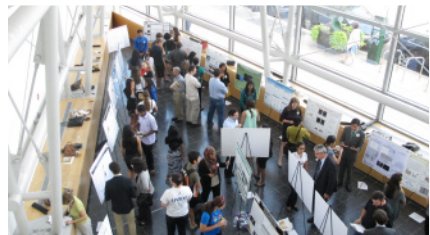
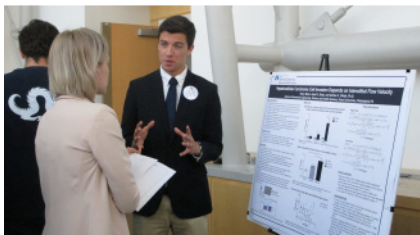
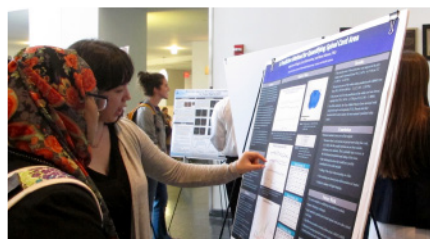
Claire Witherel and Pamela Graney, PhD candidates in BIOMED (Advisor: K. Spiller), published the article titled, “Response of Human Macrophages to Wound Matrices In Vitro” in the journal *Wound Repair and Regeneration*, in collaboration with Drs. Michael S. Weingarten (CoM) and Donald O. Freytes (NC State-UNC).

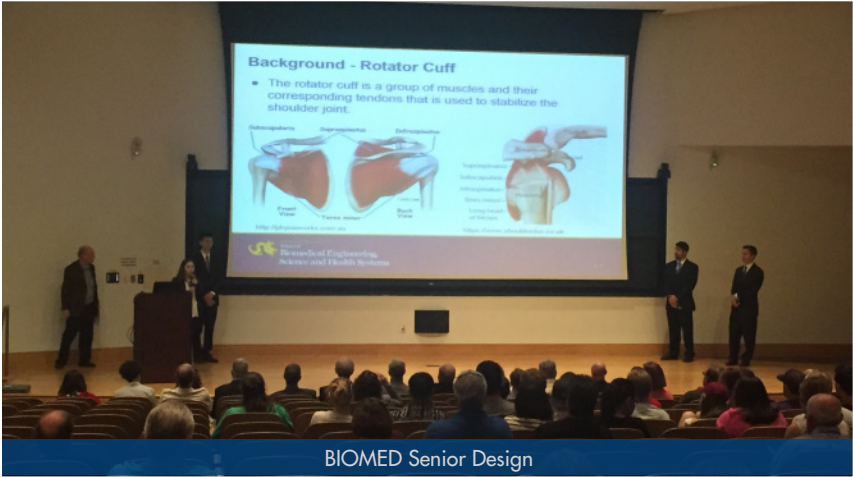
Tony Yu, Sina Nassiri, Chau Dang, and Colleagues Publish an Article on the Foreign Body Response to Hydrogels in the Journal of Biomaterials Science, Polymer Edition

Tony Yu and Sina Nassiri, PhD candidates in BIOMED, and Chau Dang, undergraduate student in BIOMED (Advisor: K. Spiller), published the article titled, “Temporal and Spatial Distribution of Macrophage Phenotype Markers in the Foreign Body Response to Glutaraldehyde-crosslinked Gelatin Hydrogels” in the *Journal of Biomaterials Science, Polymer Edition*. The work was done in collaboration with Dr. Wei Liu and colleagues at the Shanghai Key Tissue Engineering Laboratory of Shanghai Jiao Tong University (SJTU).

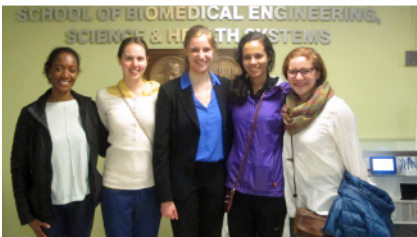
INTERNATIONAL RESEARCH SHOWCASE

Faculty Flash Presentations & Graduate Student Poster Fair



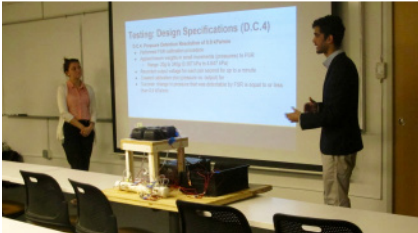
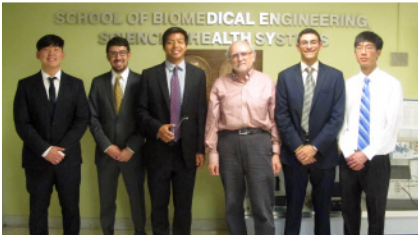


BIOMED Senior Design



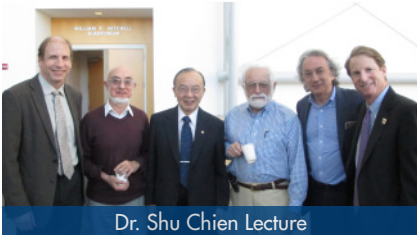


BIOMED Senior Design

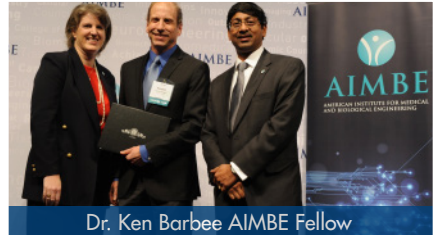




Dr. Hun H. Sun Memorial



Dr. Shu Chien Lecture



Dr. Ken Barbee AIMBE Fellow



Dr. Lisa Xu BIOMED Distinguished Seminar



FACULTY AND STAFF ACCOMPLISHMENTS AND HIGHLIGHTS

Dr. Hasan Ayaz Will Co-chair the 1st International Conference of Neuroergonomics

Dr. Hasan Ayaz, associate research professor in BIOMED, will co-chair the 1st International Conference of Neuroergonomics, to be held October 6–7, 2016, in Paris, France.

- ◆ Co-authored an original research article titled, “Into The Wild: Neuroergonomic Differentiation of Hand-Held and Augmented Reality Wearable Displays During Outdoor Navigation with Functional Near Infrared Spectroscopy” that was accepted for publication in the journal *Frontiers in Human Neuroscience* (Co-authors: R. Mckendrick, R. Parasuraman, R. Murtza, A. Formwalt, W. Baccus, and M. Paczynski).
- ◆ Gave an invited lecture titled, “Expanding Vistas for fNIRS: Applications to Aerospace, Medicine, and Clinical Solutions” at the Max Planck Institute for Biological Cybernetics in Tübingen, Germany.
- ◆ Gave an invited lecture titled, “Expanding Vistas in Brain Computer Interfacing: Continuous Monitoring of Brain Dynamics with fNIRS” at the Brain Robot Interactions for Healthcare Workshop at the Hamlyn Symposium on Medical Robotics in London, UK.

Dr. Sriram Balasubramanian and Colleagues Receive \$5K in ExCITE Seed Funding for Their Portable Adaptable Strength Testing Device

Drs. Sriram Balasubramanian, assistant professor in BIOMED, Arun Ramakrishnan (CoNHP), Sheri Silfies (DPT&RS), and Noel Goodstadt (DPT&RS) received a 2015 \$5K ExCITE Seed Fund grant for the project titled, “Portable Adaptable Strength Testing (PAST) Device.” The goal is to develop a novel, portable and adaptable system that changes any weight-stack machine in a gym into a strength-testing device.

BIOMED Faculty Members Receive 2015 Wallace H. Coulter Translational Research Grants

The following BIOMED faculty members received a 2015 Wallace H. Coulter Translational Research Grant:

- ◆ Drs. Hasan Ayaz, associate research professor in BIOMED, Patricia Shewokis, professor in CoNHP with a joint appointment in BIOMED, Paul Diefenbach (CoMAD), and Margaret E. O’Neil (CoNHP) received a 1-year \$130K Coulter grant for the project titled, “KOLLECT Virtual Reality Rehabilitation: Expanding Game Development To Promote Function in Individuals with Disabilities.”
- ◆ Drs. Kara Spiller, assistant professor in BIOMED, and Michael S. Weingarten (CoM) received a 1-year \$135.6K Coulter grant for the project titled, “A Novel Molecular Assay To Predict Likelihood of Healing of Diabetic Ulcers.”

Drs. Lin Han, Uri Hershberg, Hualou Liang, Adrian Shieh, Wan Shih, Yinghui Zhong, and Colleagues Are 2016 CURE Program Grant Awardees

The following faculty in BIOMED are 2016 Commonwealth Universal Research Enhancement (CURE) Program grant awardees:

- ◆ Dr. Lin Han, assistant professor in BIOMED, received \$75K for the project titled, “Molecular Engineering of Cartilage with Biomimetic Proteoglycans: Mechanisms of Diffusion and Extra-Cellular Matrix Interactions” (Co-investigators: M. Marcolongo – MSE, K. Prudnikova – MSE, and M. Mulcahey – CoM).
- ◆ Dr. Uri Hershberg, assistant professor in BIOMED, received \$75K for the project titled, “Development of an In Vitro Assay to Measure Vaccine Effectiveness” (Co-investigator: E. Haddad – CoM).
- ◆ Dr. Hualou Liang, professor in BIOMED, received \$75K for the project titled, “Novel Signal Processing for Combinatoric Neural Electrodes To Increase Yield by Orders of Magnitude” (Co-investigator: S. Giszter – CoM).

- ◆ Dr. Adrian Shieh, assistant professor in BIOMED, received \$43K for the project titled, “The Role of Fucosyltransferase 8 in Altering Hepatocyte Physiology” (Co-investigators: A. Mehta – CoM, M. Bouchard – CoM, and L. Steel – CoM).
- ◆ Dr. Wan Shih, associate professor in BIOMED, received \$75K for the project titled, “Rapid Antimicrobial Susceptibility Test” (Co-investigators: W.H. Shih – MSE, C. Emery – CoM, and S. Joshi – CoM).
- ◆ Dr. Yinghui Zhong, assistant professor in BIOMED, received \$43K for the project titled, “Control of Catheter-associated Urinary Tract Infection and Biofilm: A Novel Antimicrobial and Anti-adhesive Catheter Coating” (Co-investigators: S. Joshi – CoM and R. Huneke – CoM).

Dr. Lin Han Is a Keynote Speaker at the Australian and New Zealand Orthopaedic Research Society (ANZORS) 21st Annual Scientific Meeting

Dr. Lin Han, assistant professor in BIOMED, gave an invited keynote talk titled, “Uncovering Murine Knee Joint Function and Pathogenesis via Nanomechanics” at the Australian and New Zealand Orthopaedic Research Society (ANZORS) 21st Annual Scientific Meeting at the University of Auckland, NZ.

Dr. Uri Hershberg Gives an Invited Talk on Identifying the Different Scales of Selection That Influence Immunity at Bar Ilan University and the University of Maryland Cancer Research Institute

Dr. Uri Hershberg, assistant professor in BIOMED, presented an invited talk titled, “Identifying the Different Scales of Selection That Influence Immunity, From the Competition of Cells to the Evolution of the Immune System” for the monthly biology seminar at the Tzfat Medical School of Bar Ilan University in Israel and also for an immunology seminar at the University of Maryland Cancer Research Institute.

- ◆ Gave an invited talk titled, “Fit for What? The Early Bird Gets the Worm...But What Does the Early Worm Get?” at the 2016 Philadelphia Science Festival’s Gross Anatomy: The Human Microbiome session.
- ◆ Published several papers with his students in peer reviewed publications this past academic year, including:
 - ◇ Gregory C. Antell, W. Dampier, B. Aiamkitsumrit, M. Nonnemacher, J. Jacobson, V. Pirrone, W. Zhong, K. Kercher, S. Passic, J. Williams, Gregory Schwartz, Uri Hershberg, F. Krebs, and B. Wigdahl, “Utilization of HIV-1 Envelope V3 To Identify X4- and R5-Specific TAT and LTR Sequence Signatures,” *Retrovirology* (2016).
 - ◇ Mesut Yucel, L. Muchnik, and Uri Hershberg, “Detection of Network Communities with Memory-biased Random Walk Algorithms,” *Journal of Complex Networks* (2016).
 - ◇ Gregory W. Schwartz, A. Shokoufandeh, S. Ontanon, and Uri Hershberg, “Using a Novel Clumpiness Measure To Unite Data with Metadata: Finding Common Sequence Patterns in Immune Receptor Germline V Genes,” *Pattern Recognition Letters* (2016).
 - ◇ X. Liu, Corbett T. Berry, G. Ruthel, J. Madara, K. MacGillivray, C. Gray, L. Madge, K. McCorkell, D. Beiting, Uri Hershberg, M. May, and B. Freedman, “T Cell Receptor-induced NF-κB Signaling and Transcriptional Activation Are Regulated by STIM1- and Orai1-Mediated Calcium Entry,” *Journal of Biological Chemistry* (2016).

Dr. Kurtulus Izzetoglu Is Cited in Unmanned Aircraft Systems (UAS) Magazine for His Research in Exploring Human Factors That May Impact the Safe Operation of UAS

Dr. Kurtulus Izzetoglu, associate research professor in BIOMED, was mentioned in Unmanned Aircraft Systems (UAS) magazine for his research in exploring human factors that may impact the safe operation of unmanned aircraft systems in the national airspace. Part of his team’s research involves analyzing UAV control station design standards.

Dr. Meltem Izzetoglu and Colleagues Receive Two NIH Grants for the Investigation of Neural and Biological Mechanisms of Fall in Older Adults and Cognitive Remediation in Walking Performance in Aging

Drs. Meltem Izzetoglu, associate research professor in BIOMED (Co-PI of pass-through funding), Roee Holtzer (Co-PI), and Joe Verghese (PI), both from Albert Einstein College of Medicine, Yeshiva University, received a 5-year \$4M National Institute on Aging grant for the project titled, “Biological and Neural Mechanisms of Fall,” and a 5-year \$2.5M National Institute on Aging grant for the project titled, “Cognitive Intervention To Improve Simple and Complex Walking.”

- ◆ Received with Drs. Lori Severino (PI) and Mary Jean Tecce DeCarlo (both in the School of Education) a 1-year \$75K Drexel Ventures Innovation Fund grant for the project titled, “ACE: Adolescent Comprehension Evaluation.”
- ◆ Quoted in a PsychCentral.com story about Parkinsonian patients and measuring their brain activity in real-time, in a realistic setting. Her research and a new device developed in BIOMED to treat Parkinsonian syndromes were featured in a Philly Voice story.
- ◆ Principal investigator (PI) on a near infrared spectroscopy-based mobile edema monitoring device project featured in a KYW news radio story and interview with her clinical project partner, Drs. Shadi Malaeb and Jane McGowan, both professors of pediatrics in CoM.

Dr. Dov Jaron Receives a Medal of Honor from the Polish Academy of Sciences Maciej Nalecz Institute of Biocybernetics and Biomedical Engineering

Dr. Dov Jaron, Calhoun Distinguished Professor of Engineering in Medicine in BIOMED, received a medal of honor from the Polish Academy of Sciences Maciej Nalecz Institute of Biocybernetics and Biomedical Engineering in recognition of his contributions to the field of biomedical engineering and the development of the Institute.

Dr. Andres Kriete Chairs the Joint 2015 BIOMED–College of Medicine ‘Success in Academia’ Professional Development Conference

Dr. Andres Kriete, associate professor in BIOMED, chaired the joint 2015 BIOMED–College of Medicine ‘Success in Academia’ professional development conference at Drexel University. The conference featured nine highly accomplished speakers and panelists discussing academic career options and providing advice for graduate students, postdocs, and biomedical engineers and scientists.

Laurie Lenz Is Co-Chair of the 45th Annual Middle Atlantic Career Counseling Association (MACCA) Conference

Laurie Lenz, Academic Advisor in BIOMED, was co-chair of the 45th Annual Middle Atlantic Career Counseling Association Annual (MACCA) Conference on “Making Change Happen” in Lancaster, PA.

Dr. Peter Lewin Is the Luminary Speaker and Moderator for the Therapeutic Ultrasound Scientific Session at the 2016 American Institute of Ultrasound in Medicine Convention

Dr. Peter A. Lewin, Richard B. Beard Distinguished University Professor and Director, Biomedical Ultrasound Research and Education Center, was the invited Luminary Speaker and Moderator for the Therapeutic Ultrasound Scientific Session at the 2016 American Institute of Ultrasound in Medicine (AIUM) Convention in New York. The Luminary Lecture presentation is considered to be a substantial professional acknowledgement and recognizes Dr. Lewin’s contributions to the field of biomedical ultrasound.

- ◆ Co-authored a paper titled, “Experimental Observation of Acoustic Emissions Generated by a Pulsed Proton Beam from a Hospital-based Clinical Cyclotron” that appeared in the journal Medical Physics (Co-authors: K. Jones, F. Stappen, C. Bawiec, G. Janssens, D. Prieels, T. Solberg, C. Sehgal, and S. Avery).
- ◆ Recognized as an IEEE Life Member for his achievements in technology and the significant impact he had on the growth and development of IEEE.
- ◆ Presented an invited paper titled, “Wearable Ultrasound Applicators for Wound Healing and Noninvasive Drug Delivery” at the IEEE International Symposium on Ultrasound.

Dr. Donald McEachron Gives an Invited Talk on Neural Rhythms and Brain Activity

Dr. Donald McEachron, teaching professor and coordinator for academic assessment and quality improvement in BIOMED, gave an invited talk titled, “We All Got Rhythms but Can We All Stay in Synch?” at the IEEE Philadelphia Section Night Meeting in Philadelphia, PA.

- ◆ Co-authored with Dr. Eugenia Ellis (COMAD) an article on growing older with the rhythms of life for the online magazine Disruptive Women in Health Care.

Drs. Karen Moxon and John Bethea Receive a \$3M NIH Grant for Their Enhancing Supraspinal Plasticity To Improve Functional Recovery After Spinal Cord Injury Project

Drs. Karen Moxon, professor and associate director for research in BIOMED (PI), and John Bethea (CoAS – Co-PI), received a 5-year multi-PI \$3M NIH grant for the project titled, “Enhancing Supraspinal Plasticity To Improve Functional Recovery After SCI.” The goal of the project is to study the impact of a range of novel therapeutic interventions on neuronal and glial plasticity in the central nervous system to understand how to improve behavioral outcomes after severe, mid-thoracic spinal cord injury.

- ◆ Dr. Moxon gave a plenary address titled, “Role of Supraspinal Reorganization in Recovery of Function after SCI” at the 1st Annual Shriners–Temple Symposium on Neural Repair in Philadelphia, PA.
- ◆ Gave an invited talk titled, “Brain-Machine Interfaces Beyond Neuroprosthetics: Controlling Neural Circuits, Restoring Function and Changing the Way We Think” at the Minnesota Neuromodulation Symposium in Minneapolis, MN.

Dr. Banu Onaral Is Featured as One of Turk of America Magazine’s ‘30 Most Influential Turkish-American Women’

Dr. Banu Onaral, H. H. Sun Professor in BIOMED and Senior Advisor to the President for Global Innovation Partnerships, was featured as one of Turk of America magazine’s ‘30 Most Influential Turkish-American Women’ in its summer edition.

Drs. Wan Shih and Wei-Heng Shih and Their Intelligent Breast Cancer Detector Research Are Cited in a Philadelphia Inquirer Story on Drexel’s \$10M Fund for University Startups

Drs. Wan Shih, associate professor in BIOMED, and Wei-Heng Shih (MSE), and their intelligent breast cancer detector research, were cited in a Philadelphia Inquirer story on Drexel’s partnering with investors to launch a \$10M fund to create firms from university projects.

- ◆ Drs. Wan Shih and Wei-Heng Shih (MSE), and their research on non-invasive ways to find and evaluate tumors, were featured in a Drexel News Blog post titled, “Hi-Res Cancer Surgery: Materials That Make TV Pictures Pop Also Guide Tumor Removal.”

Dr. Kara Spiller Receives a \$2M NIH Grant for Her Understanding and Controlling Macrophage Behavior in Angiogenesis Project

Dr. Kara Spiller, assistant professor in BIOMED, received a 5-year \$2M NIH grant for the project titled, “Understanding and Controlling Macrophage Behavior in Angiogenesis.” The project’s goal is to better understand the relationship between the body’s natural healing process and tissue regeneration and to develop a drug delivery strategy to grow blood vessels using immune system cells called macrophages. Dr. Spiller and her project were featured in a DrexelNOW story titled, “Harnessing the Body’s Immune System to Heal Wounds Naturally.”

- ◆ Received the Faculty Mentor Award in 2015 for mentorship of Drexel students in fellowship applications.
- ◆ Gave an invited talk titled, “Harnessing the Inflammatory Response for Tissue Regeneration” at the Imperial College of London’s Department of Bioengineering.
- ◆ Gave an invited plenary talk on her work on the role of macrophages in wound healing at the Annual Meeting of the Wound Healing Society in Atlanta, GA.
- ◆ Featured in a BillyPenn.com post as one of the most dynamic young STEM leaders in Philadelphia.
- ◆ Featured in a Philadelphia City Paper column on her regenerative medicine lab.

Drs. Amy Throckmorton and Ellen Bass Receive a 2015-2018 Drexel BIOMED

Interdisciplinary Collaboration and Research Enterprise (iCARE) for Healthcare GAANN Grant

Drs. Amy Throckmorton, associate professor in BIOMED (PI), and Ellen Bass (CCI – Co-PI), received a Department of Education Graduate Assistance in Areas of National Need (GAANN) grant for six doctoral students for 2015-2018: Drexel BIOMED Interdisciplinary Collaboration and Research Enterprise (iCARE) for Healthcare. Each fellowship recipient will receive a \$34K stipend per academic year, in addition to \$15.2K dedicated to tuition.

- ◆ Dr. Throckmorton published several papers with her students in peer reviewed publications this past academic year, including:
 - ◇ A.L. Throckmorton, S.G. Chopski, S. Birewar, T. Joa, R. Stevens, and J.Y. Kresh. “Vortical Flow Characteristics of Mechanical Capovulmonary Assistance: Pre- and Post-Swirl Dynamics,” *Technology and Healthcare*, 2015.
 - ◇ S.G. Chopski, W.B. Moskowitz, R.M. Stevens, and A.L. Throckmorton. “Mechanical Circulatory Support for Patients with Congenital Heart Disease: Current Status and Future Developments,” *Artificial Organs*, 2015.
 - ◇ A. Abbate, A.L. Throckmorton, and E.J. Bass. “A Formal Task Analytic Approach to Medical Device Alarm Troubleshooting Instructions,” *IEEE Transactions on Human-Machine Systems*, 2015.
 - ◇ C.S. Fox, K.L. McKenna, P.E. Allaire, R.M. Mentzer, Jr., and A.L. Throckmorton. “The Total Artificial Heart - Past, Current, and Future,” *Journal of Cardiac Surgery*, 2015.

Drs. Margaret Wheatley and John Eisenbrey Receive a National Cancer Institute Grant for Their Oxygen Microbubbles Project

Drs. Margaret Wheatley, John M. Reid Professor in BIOMED, and John Eisenbrey, alumnus in BIOMED (MS '09) and research assistant professor at Thomas Jefferson University, received a 2-year \$218K NIH National Cancer Institute grant for the project titled, “Oxygen Microbubbles for Overcoming Hypoxic Tumor Resistance to Radiotherapy.”

- ◆ Dr. Wheatley received a 1-year \$100K W.W. Smith Charitable Trust Award for the project titled, “Creating a New Paradigm for Pancreatic Cancer Treatment.”
- ◆ Quoted in a Philadelphia Inquirer story on her experience as a former postdoctoral fellow in the lab of Dr. Robert S. Langer, a drug delivery pioneer and recipient of the 2016 Franklin Medal in the Life Sciences who gave a special lecture at Drexel University.

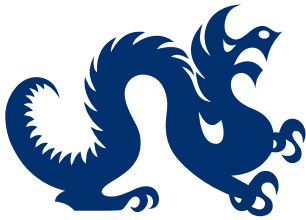
BIOMED Hosts Drexel University's 3rd Annual Biomedical Engineering Week

The School of Biomedical Engineering, Science and Health Systems hosted Drexel University's 3rd Annual Biomedical Engineering (BME) Week, held throughout the University's main campus. The week featured several events, including a resume review workshop; an interview workshop; guest speakers from industry and academia; an alumni connection happy hour; a BIOMED faculty, staff, and student picnic and lunch; and finally, a BIOMED faculty and student version of the popular TV game show ‘Who Wants To Be A Millionaire?’

The School of Biomedical Engineering, Science and Health Systems would like to thank the following students for their valuable contributions in participating as peer mentors and outreach volunteers:

Undergraduate Peer Mentors and Outreach Volunteers

Adam Asterito
Dipesh Bhakta
Stephen Brown
Samantha Cassel
Karema Dixon
Margaret Dudreer
Farial Fuad
Shelby Keating
Ivy Koberlein
Nidhi Kumar
John Lim
Richard Lu
Evan Lynn
Ashley Malone
Desiree Martini
Carli Moorehead
Nora Murad
Austin Sacks
Arpit Shah
Julie Speer
Virginia Tanner
Mengdi Tao
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