

WEDNESDAY

17 OCTOBER

3:00 p.m.

REGISTRATION

LOCATION: Alumni Hall Foyer, 1st Floor

4:00 p.m.

MICHAEL G. WELLS ENTREPRENEURIAL SCHOLARS LECTURE

LOCATION: Alumni Hall, Science Lecture Hall, 3rd Floor



Mir Imran

This year's Wells Lecture will be presented by Mir Imran, chair and CEO of Rani Therapeutics and chair of InCube Ventures. Imran is a prolific health care innovator and entrepreneur who has developed and commercialized numerous medical innovations and founded many diverse life sciences companies. His lecture will address the challenges faced by entrepreneurs while sharing strategies behind the pathway to success.

INTRODUCTION BY: [Evan Facher, PhD, MBA](#)

4:45 p.m.

MICHAEL G. WELLS STUDENT HEALTH CARE COMPETITION AND KUZNESKI INNOVATION CUP WINNER ANNOUNCEMENTS

LOCATION: Alumni Hall, Science Lecture Hall, 3rd Floor

PRESENTERS: [Michael G. Wells, MS, MBA](#); [Andrew and Laurie Kuzneski](#)

The Michael G. Wells Student Health Care Competition brings together University of Pittsburgh students who are developing health care innovations. The competition is sponsored by the Michael G. Wells Entrepreneurial Scholars Fund.

The Kuzneski Innovation Cup, sponsored by local entrepreneurs Andrew and Laurie Kuzneski, involves Pitt students who are developing innovations in fields outside of health care that can improve people's lives.

Early in the day, student finalists in each competition will pitch their innovations to judges from the local business community. The winners will be announced before the start of the Innovation Showcase, where all competition participants can share and discuss their innovations.

5:00 p.m.

OPENING RECEPTION AND INNOVATION SHOWCASE

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

Join the [University of Pittsburgh Innovation Institute](#) for a first look at the latest Pitt-generated innovations in health care, assistive technologies, Internet of things, information technology, human performance, and more. Many of these technologies are available for licensing, and others already form the basis of local, early-stage Pitt spinoff companies.

You will have the unique opportunity to network with these inventors and founders, as well as with local entrepreneurs, investors, and community leaders. Don't miss this opportunity to view novel Pitt discoveries that have already received development funding and mentorship from a host of sources on campus. All Science 2018 registrants are invited to this eagerly anticipated opening reception.

THURSDAY

18 OCTOBER

8:00 a.m.

REGISTRATION

LOCATION: Alumni Hall Foyer, 1st Floor

9:00 a.m.

SPOTLIGHT SESSION 1: Bacteria and Their Environment

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 3

MODERATOR: [Saleem Khan, PhD](#)

[Lee Harrison, MD](#) – Health Care-Associated Outbreaks of Bacterial Diseases: It's Time To Modernize

[Barbara Methé, PhD](#) – Host-Microbiome Interactions in the Lung

[Tagbo Niepa, PhD](#) – Nanocultures as Artificial Microniches for Studying Microbial Dynamics

[Matthew Culyba, MD, PhD](#) – Ordering Up Gene Expression by Slowing Down Transcription Factor Binding Kinetics

THURSDAY

18 OCTOBER

9:00 a.m. (continued)

SPOTLIGHT SESSION 2: Artificial Intelligence and Machine Learning

LOCATION: Wyndham Pittsburgh University Center, Carnegie Room

MODERATOR: [Harry Hochheiser, PhD](#)

Shandong Wu, PhD—Breast Cancer Imaging Meets Artificial Intelligence

Xinghua Lu, MD, PhD—From Big Data to Bedside: Toward AI-Based Clinical Decision Support for Precision Oncology

Brett Andrews, PhD—Hidden in Plain Sight: A Deep Learning Approach To Finding Supernovae in Galaxy Maps

Rebecca Hwa, PhD—Separating the Sheep from the Goats: On Recognizing the Literal and Figurative Usages of Idioms

SPOTLIGHT SESSION 3: Protein “Origami”

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 4

MODERATOR: [James Faeder, PhD](#)

W. Seth Horne, PhD—Coiled-Coil Peptides and Metals: A Powerful Pair in Supramolecular Materials Science

Carlos Camacho, PhD—The Origami that Wasn't: How and Why Eukaryotic Proteins Tolerate Disorder

Todd Lamitina, PhD—Our Inner Worm—New Models and Mechanisms of Neurodegenerative Disease in *C. elegans*

J. Timothy Greenamyre, MD, PhD—Misbehaving Proteins in Parkinson's Disease

10:30 a.m.

EXHIBIT BREAK

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

11:00 a.m.

PLENARY SESSION 1: Dickson Prize in Medicine Lecture

LOCATION: Alumni Hall, Auditorium, 7th Floor

WELCOME: [Patrick D. Gallagher, PhD](#)

INTRODUCTION OF SPEAKER: [Arthur S. Levine, MD](#)

KEYNOTE SPEAKER: [Bonnie Bassler, PhD](#)

Tiny Conspiracies: Cell-to-Cell Communication in Bacteria



Bonnie Bassler, PhD

THURSDAY

18 OCTOBER

12:30 p.m.

EXHIBITS & LUNCH

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

1:00 p.m.

POSTER SESSION 1

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

- Basic Life Science—From Molecule to Mouse
- Translational Life Science—From Animal to Human to Community
- Physical Science and Engineering
- New Research Tools and Techniques

2:00 p.m.

SPOTLIGHT SESSION 4: Don't Confuse Me with the Facts

LOCATION: Wyndham Pittsburgh University Center, Carnegie Room

MODERATOR: [Margaret C. McDonald, PhD, MFA](#)

Sandra Mitchell, PhD—Appropriating the Language of “Fact” while Distorting Its Logic

Russell Golman, PhD—Information Avoidance: How People Select Their Own Reality

Deepika Mohan, MD, MPH—How Do Doctors Think? Understanding the Role of Intuition in Physician Decision-Making

Yu-Ru Lin, PhD—The Different Real Worlds: Probing the Group Biases in Big Data

SPOTLIGHT SESSION 5: Microbiomes and Microenvironments

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 3

MODERATOR: [Alison Morris, MD, MS](#)

Lan Coffman, MD, PhD—The Ovarian Cancer Stromal Microenvironment: Targeting the Soil To Destroy the Seed

Tia-Lynn Ashman, PhD—Gazing into the Anthosphere: Studies of the Microbial Communities of Flowers

Anthony St. Leger, PhD—Manipulating Ocular Mucosal Immunity with Prob-eye-otics

Georgios Kitsios, MD, PhD—The Respiratory Microbiome when the Human Host Is on Life Support

THURSDAY

18 OCTOBER

2:00 p.m. (continued)

SPOTLIGHT SESSION 6: Precision Translational Pharmacology and Therapeutics

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 4

MODERATOR: [Steffi Oesterreich, PhD](#)

Thomas Smithgall, PhD—Figuring Out FGR: A Src-Family Tyrosine Kinase with Unusual Regulation and a Promising Drug Target in AML

Carola Neumann, MD—Genomic Instability: Friend and Foe in Triple Negative Breast Cancer

Stephen Chan, MD, PhD—Computational Repurposing of Chemotherapeutic Drugs in Pulmonary Hypertension and Heart Failure

Lina Ghaloul Gonzalez, MD—Next Gen Sequencing and Its Clinical Utility and Predicted Outcomes in Our Daily Practice

3:30 p.m.

EXHIBIT BREAK

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

4:00 p.m.

PLENARY SESSION 2: Provost Lecture

LOCATION: Alumni Hall, Auditorium, 7th Floor

WELCOME AND INTRODUCTION OF SPEAKER: [Ann E. Cudd, PhD](#)

KEYNOTE SPEAKER: [Arthur Lupia, PhD](#)

Communicating Science in Challenging Environments



Arthur Lupia, PhD

5:15 p.m.

UNDERGRADUATE RESEARCH POSTER RECEPTION

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

At a special reception open to all Science 2018 registrants, undergraduates from across the University will exhibit faculty-mentored posters in basic science, medicine, and engineering.

FRIDAY

19 OCTOBER

8:00 a.m.

REGISTRATION

LOCATION: Alumni Hall Foyer, 1st Floor

9:00 a.m.

SPOTLIGHT SESSION 7: Applications of Novel Molecular Tools

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 3

MODERATOR: [Alexander Sorkin, PhD](#)

Christopher Donnelly, PhD—Optogenetic Modulation of Neurodegenerative Disease Proteinopathies

Kara Bernstein, PhD—Rules Were Made To Be Broken: Novel Approaches To Studying DNA Double-Strand Break Repair and Cancer

Kyle Orwig, PhD—Gene Therapies for Infertility

Patricia Opresko, PhD—Telomeres in the Spotlight: Illuminating how Stressed-Out Telomeres Contribute to Disease

SPOTLIGHT SESSION 8: Modeling—From Particles to People

LOCATION: Wyndham Pittsburgh University Center, Carnegie Room

MODERATOR: [Timothy Lezon, PhD](#)

Robin Lee, PhD—Taking Advantage of Cell-to-Cell Variability To Learn How Cells Process Information

Anne Robertson, PhD—New Developments in Data-Driven Modeling of Vascular Disease

Rob Coalson, PhD—Statistical Mechanical Model of Transport Receptor Binding in the Nuclear Pore Complex

Christian Schunn, PhD—Learning Activation as a Model of Long-Term Feedback Loops in Science Pathways

SPOTLIGHT SESSION 9: Drug and Vaccine Targets

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 4

MODERATOR: [Seema Lakdawala, PhD](#)

Paul Duprex, PhD—Illuminating Viruses and Vaccines

Valerian Kagan, PhD, DSc—Redox Lipidomics Deciphers Signals and Mechanisms of Programmed Cell Death—New Therapeutic Targets?

Ning Feng, MD, PhD—HDAC Inhibitor Holds CaMKII Hyperactivity-Driven Heart Failure Progression

Jacob Durrant, PhD, MS—Target Identification, Computer-Aided Drug Discovery, and Advanced Molecular Visualization

FRIDAY

19 OCTOBER

10:30 a.m.

EXHIBIT BREAK

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

11:00 a.m.

PLENARY SESSION 3: Mellon Lecture

LOCATION: Alumni Hall, Auditorium, 7th Floor

WELCOME AND INTRODUCTION OF SPEAKER: [Arthur S. Levine, MD](#)

KEYNOTE SPEAKER: [Feng Zhang, PhD](#)

Development of CRISPR-Cas Systems for Genome Editing



Feng Zhang, PhD

12:30 p.m.

LUNCH AND LAST CALL FOR EXHIBITS

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

1:00 p.m.

POSTER SESSION 2

LOCATION: Alumni Hall, J.W. Connolly Ballroom, 1st Floor

- Basic Life Science—From Molecule to Mouse
- Translational Life Science—From Animal to Human to Community
- Physical Science and Engineering
- New Research Tools and Techniques

2:00 p.m.

SPOTLIGHT SESSION 10: Evolutionary Biology Meets Medicine

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 3

MODERATOR: [Vaughn Cooper, PhD](#)

Nathan Clark, PhD—History Repeats Itself: From Genes to Phenotypes Using Convergent Evolution

Matthew Nicotra, PhD—You Don't Need a Backbone To Be Useful: The Unexplored Potential of Invertebrate Model Organisms

Dennis Kostka, PhD—Developmental Loci Harbor Clusters of Accelerated Regions that Evolved Independently in Ape Lineages

Erik Wright, PhD, MS—First-Step Mutations Reveal a Multitude of Evolutionary Pathways to Antibiotic Resistance

FRIDAY

19 OCTOBER

2:00 p.m. (continued)

SPOTLIGHT SESSION 11: New Ways of "Seeing"—Visually, Statistically, and Otherwise

LOCATION: Wyndham Pittsburgh University Center, Schenley Ballroom 4

MODERATOR: [Simon Watkins, PhD](#)

Ethan Rossi, PhD—Seeing Single Cells in the Living Human Eye

Gerald Hammond, PhD—Imaging Membrane Molecule Dynamics in Living Cells

Michael Tsang, PhD—Visualizing the Cellular Events that Determine Left-Right Patterning of the Embryo

Roderick O'Sullivan, PhD—Snapshots of Telomere Dynamics in Cancer Cells

SPOTLIGHT SESSION 12: Cellular Organization, Behavior, and Communication

LOCATION: Wyndham Pittsburgh University Center, Carnegie Room

MODERATOR: [Jeffrey Hildebrand, PhD](#)

Zachary Freyberg, MD, PhD—Opening a New Window into the Cell: New Uses of *In Situ* Super-Resolution Imaging

Yi Shi, PhD—Integrative Proteomics: From Fundamental Biology to Drug Discovery

Yoel Sadovsky, MD—Exosome-Based Cellular Communication: The Known Unknowns

Lance Davidson, PhD—Cryptic Mechanical Cues Guide Cell Behaviors and Cell Fate Choices

3:30 p.m.

BREAK

LOCATION: Alumni Hall Foyer, 1st Floor

4:00 p.m.

PLENARY SESSION 4: HOFMANN LECTURE

LOCATION: Alumni Hall, Auditorium, 7th Floor

WELCOME AND INTRODUCTION OF SPEAKER: [Arthur S. Levine, MD](#)

KEYNOTE SPEAKER: [Paul E. Turner, PhD](#)

Using Viruses To Select for Reduced Virulence of Bacterial Pathogens in Human Patients



Paul E. Turner, PhD