ABOUT INDUSTRY DAY

Industry Day brings together graduate students, early career scientists, industry professionals, and academics who want to stay up-to-date on what's happening in industrial and applied physics.

This year's Industry Day theme, "New Ways of Seeing," will showcase the diverse activities of physicists who have chosen non-academic careers.

Enjoy discovering new methods for gathering information about the world, advances in how we organize and utilize data, frontiers in energy, and innovations that impact technologies from self-driving cars to aerospace.

JOIN FIAP

Stay up-to-date on news and trends in the field of industrial physics by becoming a member of the Forum on Industrial Physics (FIAP).

Learn more: aps.org/units/fiap

INDUSTRY MENTORING FOR PHYSICISTS

Get involved with industrial physics on a new level–sign up to become a mentor or mentee!

The APS Industry Mentoring for Physicists (IMPact) program connects graduate students, postdocs, and early career scientists with industrial physicists and entrepreneurs.

APS physics IMPACT

Learn more: impact.aps.org

INDUSTRY DAY

New Ways of Seeing

Presented by the APS Forum on Industrial and Applied Physics (FIAP)

WEDNESDAY, MARCH 4

8:00 A.M. - 5:30 P.M.

MONDAY, TUESDAY, AND THURSDAY, MARCH 2, 3, AND 5

SATELLITE SESSIONS

APS physics

American Physical Society
One Physics Ellipse, College Park MD 20740
aps.org

APS physics MARCH MEETING 2020
MARCH 2-6 DENVER, CO

Monday, March 2

12:00 noon - 2:15 p.m. | Centennial Hall D (Hyatt)

APS Careers, FIAP

C01. Meet Your Future: Careers in the Private Sector

Chair: Steven Lambert, American Physical Society

This special lunchtime session features representatives from industry who will discuss their career paths and answer questions about private sector physics careers. Topics will include research opportunities for industrial physicists, strategies for landing industrial jobs, and advice on how to thrive in this exciting and challenging work environment. Pizza included!

2:30 p.m. - 5:30 p.m. | Room 405-407

FIAP, GMED

D28. Metrology in Medical Imaging

Chair: Robert Jeraj, University of Wisconsin

- **Introduction to Quantitative Imaging** Timothy J. Hall, University of Wisconsin
- **Importance of Statistical Metrology Framework for Quantitative Imaging Applications**
  Nancy Obuchowski, Quantitative Health Sciences, Cleveland Clinic Foundation
- **Quantitative Imaging Applications for Radiography and Computed Tomography**
  Sam Armato, Department of Radiology, University of Chicago
- **PET/CT and PET/MR Quantitative Imaging Applications** Anne Smith, Siemens Healthineers
- **Better Medicine through Measurement: Developments and Applications of Quantitative Magnetic Resonance Imaging** Michael Boss, American College of Radiology

Tuesday, March 3

8:00 a.m. - 11:00 a.m. | Room 405-407

FECS, FIAP

F28. Seeing Your Career in a New Light

Chair: Benjamin Ueland, Ames Lab

- **Life as a PhD/MBA in the Optics and Photonics Industry**
  Yuri Sikorski, Excelitas Technologies Corp.
- **When Your Protagonist is a Hamiltonian: A Career in Physics Writing and Editing**
  Jessica Thomas, American Physical Society
- **From the Study of Physics to Entrepreneurship** Jeramy Hughes, FieldLine Inc.
- **Navigating a National Lab Career** John Sarrao, Los Alamos National Lab
- **Trailblazing an Industrial Physics Career: Three Case Studies on Getting Hired Outside Your Subfield** Matthew Thompson, BAE Systems

11:15 a.m. - 2:15 p.m. | Room 405-407

FIAP, GIMS

G28. Infrared Sensing and Imaging

Chair: Carola Emminger, New Mexico State University

- **Mid-IR GeSn Alloys with Narrow Band Gaps Beyond 8 μm**
  Jose Menendez, Arizona State University
- **Antimonides T2SLS Infrared Focal Plane Arrays for Space Remote Sensing Applications**
  Sarath Gunapala, NASA Jet Propulsion Laboratory
- **Low-cost Infrared Imaging Technology Development at the Air Force Research Laboratory**
  Arnold Kiefer, Sensors Directorate, Air Force Research Laboratory
- **Photonics for Mobile Handset Through Automotive 3D Sensing Consumer Applications**
  Brandon Collings, Lumentum
- **Mid-Wave Infrared Resonant Cavity Detectors** Gary Wicks, University of Rochester

12:30 p.m. - 2:00 p.m. | Lobby D

FIAP

H01. Student Lunch with the Experts

Undergraduate and graduate students are invited to lunch with the experts. Learn about careers in industry or a topical area that interests you. Sign up in advance near the registration desk.

Tuesday, March 3 (continued)

2:30 p.m. - 5:30 p.m. | Room 405-407

FIAP, GDS

J28. New Ways of Seeing with Data Science

Chair: Jie Ren, Merck & Co.

- **Data Science and Video Games** Spencer Stirling, Activision
- **Modeling Complex Physical Systems with Big Data and Machine Learning**
  Hendrik Hamann, IBM Thomas J. Watson Research Center
- **Machine Learning for Seeing and Hearing More** Patrick F. Riley, Google
- **Machine Learning in Scanning Probe Microscopy: Accelerating Imaging, Enhancing Resolution and Bayesian Methodologies for Theory-experiment Matching**
  Rama Vasudevan, Oak Ridge National Lab
- **Immunotherapy Modeling: Molecular Interaction and Recognition of MHC/Peptide/TCR Complexes** Ruhong Zhou, IBM Thomas J. Watson Research Center

Wednesday, March 4

8:00 a.m. - 11:00 a.m. | Room 405-407

FIAP, GERA

L28. Seeing the Energy Future

Chair: Carlos Gutierrez, Sandia National Laboratories

- **Mechanical Energy Harvesting for Commercial Applications** Robert Andosca, Advanced Energy
- **Autonomy and Subsea Oil and Gas Infrastructure** Andrew Speck, Schlumberger-Doll Research
- **Perspectives on the Future of Energy Production** Ross Koningstein, Google
- **Accelerating Commercialization of Energy Efficient SiC Power Electronics**
  Victor Veliadis, PowerAmerica, North Carolina State University
- **Visualizing the Future of Energy Storage** Imre Gyuk, Department of Energy

11:15 a.m. - 2:15 p.m. | Room 405-407

FIAP

M28. Imaging in Industry

Chair: Matthew Thompson, BAE Systems

- **Subterranean Visualization Through Multi-Sensor Fusion**
  Joe Morris, Lawrence Livermore National Lab
- **How Self-Driving Cars Find Their Way** Colin McCormick, Georgetown University
- **Augmented Reality in Aerospace** Shelly Peterson, Lockheed Martin
- **The Role of Physics in Overhead Imaging** Jonathan Edwards, BAE Systems
- **Weather Intelligence from a Private Microsatellite Fleet**
  Michael Hurowitz, Orbital Micro Systems Inc.

2:30 p.m. - 5:30 p.m. | Room 405-407

FIAP

P28. Fellows of FIAP

Chair: Michael Gordon, IBM Thomas J. Watson Research Center

- **Semiconductor and Nanostructured Materials and Devices** Nazir Kherani, University of Toronto
- **The Taming of the Superconducting Qubit: A Tale of Loss**
  Conal Murray, IBM Thomas J. Watson Research Center
- **Additive Manufacturing of Magnetic Materials for Clean Energy Applications**
  Mariappan Paranthaman, Oak Ridge National Lab
- **Startups: The Place to Be** Matt Kim, QuantTera
- **Application of Atomic Layer Deposited Films to Cultural Heritage Objects**
  Raymond Phaneuf, University of Maryland

5:30 p.m. - 6:30 p.m. | Room 405-407

FIAP

Q28. FIAP Business Meeting

Join FIAP in recognizing new APS Fellows and Prize winners.

Thursday, March 5

8:00 a.m. - 11:00 a.m. | Room 405-407

DPOLY, FIAP

R28. Physics of Foams: From Beer to Windmill Blades and Everything in Between

Chair: Valeriy Ginzburg, Dow Chemical Co.

- **Following a Theoretical Roadmap to Low Nucleation Barriers for CO2 Nucleation in Polyol**
  Julia A. Kornfield, Caltech
- **Polymer Foams for Building Insulation (Styrofoam and Beyond)**
  Stephane Costeux, DuPont
- **Polyurethane Application Innovation: Translating Chemistry to Materials to Solve Real-World Problems**
  William Koonce, Dow Chemical
- **Modeling Nucleation in Polymeric Foams Using Self-Consistent Field Theory**
  Russell B. Thompson, University of Waterloo
- **Fluid Dynamics of Bubbly Drinks** Roberto Zenit, Brown University

11:15 a.m. - 2:15 p.m. | Room 405-407

FIAP

S28. New Ways of Seeing with Electrons

Chair: Todd Brintlinger, United States Naval Research Laboratory

- **Defining Theoretical Limits of Aberration-corrected Electron Tomography: New Bounds for Resolution, Object Size, and Dose**
  Robert Hovden, University of Michigan
- **Vibrational Spectroscopy in the Electron Microscope**
  Ondrej Krivanek, R&D, Nion Co.
- **Visualizing Heterogeneous Nucleation with Liquid Cell Transmission Electron Microscopy**
  Taylor Woehl, University of Maryland
- **In Situ Transmission Electron Microscopy Imaging of Nanocrystal Transformations**
  Haimei Zheng, Lawrence Berkeley National Lab
- **The Intersection of Cryo, Laser Ablation, and Nanoscale Electron Imaging for Intact Battery Characterization**
  Katherine Jungjohann, Sandia National Laboratories

2:30 p.m. - 5:30 p.m | Room 405-407

FIAP, AIP

U28. Innovations from Industry

Co-Chairs: Steven Lambert, American Physical Society
Bo Hammer, American Institute of Physics

- **From Innovation to the Marketplace: The Role of a Physicist**
  Scott Davis, Vescent Photonics
- **Google Quantum Computing's Many Path**
  Eric Ostby, Google
- **Pake Prize: A Physics Career in Industry Research**
  Jim Bray, General Electric Research
- **Distinguished Lectureship Award on the Applications of Physics Talk: Academia to Entrepreneurship–Who is This for?**
  Thirumalai Venkatesan, National University of Singapore
- **Rocket Science for the Next Generation of Launch Vehicles**
  Janica Cheney, Lockheed Martin

5:30 p.m. - 7:30 p.m. | Stout Street Lobby (outside Room 407)

FIAP, AIP, FECS, GDS

Industry Day Closing Reception

Join us for social time with light refreshments to wrap up this year's Industry Day activities.