Monday, March 4
12:00 noon - 2:15 p.m. | Westin Hotel, Grand Ballroom B
BBB. 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 the exciting and challenging work environment. Pizza included!

Tuesday, March 5
8:00 a.m. - 11:00 a.m. | BCEC 205A
E34. Radiation Detection and Monitoring in Medical Imaging and Therapy
Chair: Wojtek Zihlarz, Johns Hopkins University
Modeling of Detector Performance
Jaffy H. Sweeney, Johns Hopkins University
New Scientific Tools for Medical Imaging
Yinak Nagy, Imaging Science PMS Inc.
Detector Technology for Photon Counting CT
Matt Danielson, KTH Royal Institute of Technology
Range Verification of Proton Therapy Beams
Joost Verbong, The Francis H. Burr Proton Therapy Center
Targeted Radiotherapy
Robert Jeraj, National Institutes of Health

11:15 a.m. - 2:15 p.m. | BCEC 205A
F34. Polymer Physics to Address the Dual Energy Challenge at Global Industrial Scale
Chair: Gaye Booze, ExxonMobil
A New Carbon Oxidation: Hydrocarbons as Boring Material Resource for Civilizational Scale Building
Mark Goettler, Musco Industries Institute of Technology
Tools for Polymer Design: Predicting Rheology from Molecular Weight Distribution and Branching Topology
Daniel Read, University of Leeds
Micromechanics of Oriented Semi-Crystalline Polymers from Structure to Properties
Niki Van Oostenriek, Embossed University of Technology
A Better Future for Food Hydrocarbons and Carbon Nanomaterials
Molten Pasqual, Rice University
Quantifying Tie Chain Fracture and its Impact on Charge Transport in Model Conjugated Polymers
Lyne Lab, Princeton University

12:30 p.m. - 2:00 p.m. | BCEC, Ballroom 3rd Floor
G71. Students 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.

2:30 p.m. - 5:30 p.m. | BCEC 205A
H34. Five Decades of Physics at ExxonMobil Corporate Strategic Research
Chair: Robert King, ExxonMobil
Physics at ExxonMobil Corporate Strategic Research: Today and Tomorrow
Amy Heinrich, ExxonMobil
How Scientific Research at ExxonMobil in the 1990s Showed the Way for Solar Electricity 35 Years Later
Tom Budge, University of Wisconsin
Rob and Shane: A Robust Mechanism for Efficient Self-organization of Granular Matter
Sakuraichy Kitahata, Asahi University
Optimal Sound Absorption Metastuctures: Practical Solutions from Fundamental Physics
Peng Sheng, Hong Kong University of Science & Technology
Pore scale study of multiphase flow in porous media
Dean Weitz, Harvard University

Wednesday, March 6
8:00 a.m. - 11:00 a.m. | BCEC 205A
K34. Future of Physics and Evolving Careers of Physicists: Chair: Maria Longobardi, Forum on Early Career Scientists
Emergence by Design in Artificial Spin Ice
Cornelie Nolting, Los Alamos National Laboratory
Imaging Quantum Materials
Maria Lavogna, Temple University
The Role of Communications in the Future of Physics
Jennifer Thomas, American Physical Society
The Career of a Nuclear Physicist at IBM
Michael Gordon, IBM Thomas J. Watson Research Center
Distinguished Lecture Award on the Applications of Physics Talk: Career Opportunities from Fundamental Physics to Patient Treatments
Cynthia Koppel, Jefferson Lab

11:15 a.m. - 2:15 p.m. | BCEC 205A
L34. The Future of Transportation
Chair: Michael Gordon, IBM Thomas J. Watson Research Center
Findings of the Governor’s Commission on the Future of Transportation in the Commonwealth of Massachusetts
Steven Rabin, Transportation Center, Harvard University
Crowdfunding Yields, Accessible Last Mile Transportation with Self-Driving AccesibleDOL
Joe Speed, 61 Solutions & Technology, ADINN Technology
The State of the Air for Drone Technology
Tim Maye, IBM
Self-Driving Cars and Lunar
Simon Vartanian, Waymo
Future of Flight
Brian Tinkham, Boeing

2:30 p.m. - 5:30 p.m. | BCEC 205A
P34. Recent Advances on Spintronics-based Computing: from Deterministic to Probabilistic
Chair: Ernesto Marinari, Purdue University
Recent Progress in Reducing the Current and Time for Magnetization Switching in Magnetic Tunnel Devices for Memory Applications
Jonathan Sun, IBM Thomas J. Watson Research Center
Spintronic Devices for Neural Networks
Shunsuke Fukami, Tohoku University
Supervised Learning of an Artificial Opto-Magnetic Neural Network with Picoscale Laser Pulses
Teo Vasing, Rutherford University
Puls for Probabilistic Spin Logic
Supriyo Datta, Purdue University
Biologically Computing Leveraging the Physics of Magnetic Nano-Oscillators
Amarante Mageswaran, University of Paris Sud

3:30 p.m. - 6:30 p.m. | BCEC 205A
G33. FIAP Business Meeting
Set up sessions on FIAP activities and take part in recognizing new APS fellows and Prize winners.
• Distinguished Leadership on Applications of Physics: Cynthia Koppel, Jefferson Lab
• Ken Hess Outstanding Student Paper Award

Thursday, March 7
8:00 a.m. - 11:00 a.m. | BCEC 205A
R34. Live Long and Prosper as Physicist, Innovator, and Entrepreneur
Chair: Charles Kuo, California State University, Long Beach
Physicists as Master Innovators. Why Innovation and Entrepreneurship Should be Highlighted in Physics Education
Douglas Aronin, Carthage College
Live Long and Prosper as a Physicist, Innovator, and Entrepreneur
Crystal Bailey, American Physical Society
Understanding the Value of Intellectual Property in Entrepreneurship:
Finding Your Path Down the Yellow Brick Road
Cynthia Pillote, Snell & Wilmer
Making the Shift from Research to Revenue: Skills that Physicists Need to be Successful in Business
Sara Mrazel
Academia to Entrepreneurship - A Multi-pronged Journey
Thirumalai Venkatesan, National University of Singapore

11:15 a.m. - 2:15 p.m. | BCEC 205A
S34. Adventures of Entrepreneurial Physicists or Where you Should Find Your Next Job
Chair: Matt Kim, Quantum
Harnessing the Nanoscale Physics of Living Systems to Transform the Delivery of Healthcare
Ara Gafas, Nansensays
Physicists who Lead: You Don’t Need Your Own Invention To Found a Deep Tech Startup
Omar Zahr, Zerdo LLC
Physics and Entrepreneurship - Changing the World with your Brain
John Van Vlinder, Deltacorp
Rules for Successful Startups
John Fan, Kepiel Corp.
Panel Discussion with Speakers on their Wisdom and Future Jobs at Startups

2:30 p.m. - 5:30 p.m. | BCEC 205A
V34. Innovations from Industry
Chair: Steven Lombard, American Physical Society, and Brad Conrad, American Institute of Physics
Innovations from Texas Instruments: MEMS Mirrors Moving in Many Modes for a Multitude of Markets
Rick Oden, Texas Instruments
Next Generation Technology from Google’s Quantum at AT&T
Alan Ho, Google
The Economic Impact of Industrial Physics on the U.S. Economy: What Value do Physicists Bring to Economic Activity
John Rumble, R&R Data Services
Future Computing for AI
Mike Reid, IBM Thomas J. Watson Research Center
Physics for Tomorrow: Optical Imaging and Sensing Systems
Alicear lvandez, United Technologies, Collins Aerospace

5:30 p.m. - 7:30 p.m. | BCEC Northwest Lobby, Meeting Level 2
Industry Day Closing Reception
Join your colleagues, in the lobby near rooms 207-208, for a social time with light refreshments including beer and wine to wrap up this year’s Industry Day activities. There will be brief remarks by some of the organizers and sponsors. Hope to see you there!
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 is "Physics for Tomorrow," which highlights the many ways that technology developed by physicists helps shape our daily lives. Industrial physicists in many different sectors of the economy advance technology through modeling and designing experiments, developing new materials and instruments, and improving and maintaining processes that ensure product quality.

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

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.

Learn more: impact.aps.org

INDUSTRY DAY

Physics for Tomorrow

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

WEDNESDAY, MARCH 6
8:00 A.M. - 5:30 P.M.

TUESDAY AND THURSDAY,
MARCH 5 AND 7
SATELLITE SESSIONS

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