



Dr. Vanessa Z. Chan

Chief Commercialization Officer and Director of the Office of Technology Transitions for the U.S. Department of Energy

Dr. Vanessa Z. Chan is responsible for advocating and advancing pathways for the commercialization of innovative technologies developed at the U.S. Department of Energy's (DOE) national laboratories, sites, and facilities. Chan is an innovator who has worked across a wide range of ecosystems, from academia to Fortune 1000 companies to startups. She comes to DOE on a leave of absence from her position as undergraduate chair of the Materials Science & Engineering Department at the University of Pennsylvania's School of Engineering and Applied Sciences.



POORNI UPADHYA

Manager Technology Transfer & Commercialization, Office of Research Partnerships and Technology Transfer

Poorni Upadhyaya oversees Brookhaven National Laboratory's diverse portfolio of intellectual properties. These are available for licensing to the private sector—including start-up companies—to develop early-stage innovations into commercial products. Upadhyaya has received grants from the U.S. Department of Energy (DOE) to facilitate commercialization and entrepreneurship programs. She also served as a commercial reviewer for proposals to DOE Small Business Innovation Research (SBIR) Program.



GABRIELLA CARINI

Director, Instrumentation Division

Gabriella Carini leads Brookhaven National Laboratory's Instrumentation Division, which develops custom, advanced technology for science, national security, and more. She also chairs Brookhaven Lab's Quantum Information Science and Technology (QIST) working group, spearheaded efforts for a QIST laboratory with a focus on quantum network research, and oversees Brookhaven's quantum networking collaboration with Stony Brook University. Carini has authored 175+ publications and holds two patents. Her most recent, which she shares with two co-inventors, is for a charge cloud tracker—an improved x-ray detector with possible medical imaging applications. Carini earned her Ph.D. in electronic engineering from the University of Palermo in Italy.



GRZEGORZ DEPTUCH

Scientist, Group Leader for Application-Specific Integrated Circuits (ASICs), Instrumentation Division

Grzegorz Deptuch leads the Application-Specific Integrated Circuit (ASIC) Group in Brookhaven Lab's Instrumentation Division. His current research interests include the design of readout integrated circuits for radiation detectors and radiation detector instrumentation. Deptuch holds ten U.S. patents. He has authored or co-authored approximately 145 publications and one monograph. He received his PhD in physics-electronics jointly from the Université Louis Pasteur in Strasbourg, France, and AGH University of Science and Technology (AGH-UST) in Krakow, Poland.



JUSTINE HAUPT

Scientific Associate, Instrumentation Division

Justine Haupt is an instrument developer at Brookhaven Lab with experience in optical, mechanical, and electrical engineering. She is co-principal investigator for a Laboratory-Directed R&D program, titled "Free Space Optical Link for Entangled Photon Distribution Over Long Distances." She is also an ongoing contributor to a 4-dish 21-cm cosmology demonstrator radio telescope, called the Baryon Mapping Experiment, and a primary contributor to the sensor development effort for the Vera C. Rubin Observatory, currently under construction in Chile. Haupt sits on the board of directors of the Custer Observatory in Southold, New York, where she serves as the radio astronomy chair and is actively engaged in astronomy and STEM outreach. Haupt also owns Sky's Edge, an open-source technology company.



JULIAN MARTINEZ-RINCON

Staff Scientist, Quantum Information Science & Technology Laboratory, Instrumentation Division

Julián Martínez-Rincón is a scientist in the Quantum Information Science and Technology group in Brookhaven Lab's Instrumentation Division. He manages the Quantum Network Facility that launched recently at Brookhaven and also is part of the Long Island Quantum Information Distribution Network (LIQuIDNet) testbed, an effort by Stony Brook University and Brookhaven Lab to develop a memory-assisted, quantum-repeater-based quantum network that will connect Long Island to New York City. Martínez-Rincón earned a Ph.D. in physics from the University of Rochester. Before joining Brookhaven Lab, he was a postdoctoral researcher at Stanford University.



JACK FRIED

Electrical Engineer, Data Acquisition (DAQ) Group Leader, Instrumentation Division

Jack Fried's innovative approach to designing electronic systems to collect and analyze data—as well as his leadership skills—have made him an indispensable member of Brookhaven Lab's Instrumentation Division. Overseeing the Data Acquisition (DAQ) Group, Fried is positioning Brookhaven as a lead institute for experiments in the High Energy Physics program for the U.S. Department of Energy's Office of Science. Key projects include Deep Underground Neutrino Experiment (DUNE), Proto-DUNE, Short-Baseline Near Detector (SBND), PHENIX and sPHENIX, as well as projects supported by Laboratory Directed Research & Development, Small Business Innovation Research (SBIR), and Strategic Partnership Projects programs.



SOUMYAJIT MANDAL

Scientist, Application-Specific Integrated Circuit (ASIC) Group, Instrumentation Division

Soumyajit Mandal's experiences span the areas of biomedical electronics, bioinstrumentation, and sensor physics. He developed a wireless, battery-free, wearable tag for pervasive monitoring of multiple biomedical signals. Mandal also developed a low-power, broadband, bidirectional transcutaneous wireless data link. His research interests include low-power analog and RF circuits, energy-efficient computing, and precision instrumentation. Mandal has over 175 publications in journals and conferences. He has received 26 patents and a number of awards. He earned his Ph.D. in electrical engineering from MIT and previously worked at Schlumberger-Doll Research Center, Case Western Reserve University, and the University of Florida. He is a senior member of the IEEE.



GABRIELE GIACOMINI

Scientist and Group Leader for Silicon Sensors, Instrumentation Division

Gabriele Giacomini is internationally recognized as an expert in the highly specialized field of silicon sensors. As principal investigator for the Silicon Sensor Group in Brookhaven Lab's Instrumentation Division, Giacomini's is focused on cutting-edge, low gain avalanche detectors (LGADs). This work has been critical for improving the speed and accuracy with which particles are detected and tracked. Giacomini's thorough approach to device development—which involves simulation, design, fabrication, and testing—has led to LGADs with a few tens of picosecond timing. By advancing this technology, Giacomini has successfully developed and tested a new capacitively coupled LGAD (AC-LGAD), a first in the United States.



DON PINELLI

Senior Technical Supervisor and Group Leader for High Density Interconnects (HDI), Instrumentation Division

Don Pinelli specializes in assembly techniques and process design integration for high-performance detectors and integrated circuits (ASICs) at the die/wafer level. He has 35 years' experience in the field of electronics and currently leads the high-density interconnect and electronics assembly lab in Brookhaven Lab's instrumentation Division. Some of his key accomplishments include work on projects such as CERES NA45 and WA98, STAR SVT and IST, ATLAS and MAIA and multiple smaller R&D projects.



LUCA CULTRERA

Scientist, Group Leader Photocathodes & Lasers, Instrumentation Division

Luca Cultrera is an expert in the areas of accelerator physics, thin film deposition, photocathode materials, and vacuum and surface science. Previously an academic researcher at Cornell University, he joined Brookhaven Lab's Instrumentation Division in 2021. Today he leads the division's Photocathode & Lasers Group. Cultrera has an h-index of 24. He co-authored 71 publications which, in total, have been cited more than 1,500 times. Cultrera also worked at the Istituto Nazionale di Fisica Nucleare research agency in Italy.

NATHANIEL SPEECE-MOYER

Group Leader for Mechanical Engineering and Fabrication, Instrumentation Division

Nathaniel Speece-Moyer is a mechanical engineer with over 10 years' experience in R&D, product development, and design. He oversees the Mechanical Engineering and Fabrication group within the Instrumentation Division at Brookhaven Lab and provides engineering support to research projects. He has bachelor's and master's degrees in mechanical engineering from Ohio State University. He worked in private industry on industrial and consumer products before joining Brookhaven Lab.