IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY ELECTION

RADIATION INSTRUMENTATION STEERING COMMITTEE ELECTION
For a Three-Year Term 1 January 2027 – 31 December 2029
(VOTE FOR NO MORE THAN FIVE)

RAFFAELE GIORDANO (M'24) is an Associate Professor in the Department of Physics at the University of Naples Federico II, Italy. He received the M.Sc. and Ph.D. degrees in Physics from the same institution in 2007 and 2010, respectively. He contributes to international high-energy physics experiments at CERN and at the Japan High Energy Accelerator Research Organization, KEK.

Since 2016, he has been a faculty member at the University of Naples Federico II, where he leads publicly funded R&D projects on novel instrumentation for experimental physics, with a focus on data acquisition systems, digital reconfigurable electronics, radiation-hardening by design, and advanced technologies. He also teaches academic courses on instrumentation, contributing to the training of the next generation of experts. Since 2023, he has been serving as Coordinator of the Naples Section for the Technological Committee (CSN5) of the Italian National Institute for Nuclear Physics, INFN.

He is the author of more than 590 scientific publications, with an h-index of 100, and has delivered numerous presentations at international conferences, including invited lectures at IEEE conferences. He holds three international patents for digital oscillators, radiation-hardening techniques, and radiation sensing. He regularly serves the scientific community as a reviewer, editor, lecturer, and evaluator for journals, research programs, and academic selection committees. He is a member of IEEE and NPSS.

Statement: I am honored to be nominated for the IEEE RISC and would be pleased to contribute to its activities by bringing a perspective rooted in high-energy physics instrumentation, time-critical and radiation-tolerant electronics, with an eye toward emerging AI-oriented real-time computing paradigms.

If selected, I would aim to support the RISC mission by contributing to technical exchange and community initiatives on radiation detectors, readout electronics, data acquisition systems, radiation-hardening techniques, and novel AI-oriented hardware.

Drawing on my experience as principal investigator, coordinator of international research teams, reviewer and editor for international journals, and contributor to IEEE NSS short courses, I would be glad to help strengthen the RITC community, provide input for planning NSS/MIC conferences and promote high-quality contributions to IEEE Transactions on Nuclear Science, and support the recognition of researchers at different career stages.

STEFAN GUNDACKER (M'18) is working on developing detectors for positron emission tomography (PET) and high-energy physics (HEP) with a focus on scintillators, photodetectors, silicon detectors, and electronics. He completed his doctoral thesis at CERN (the European Organization for Nuclear Research) in Geneva and at the Vienna University of Technology (TU Wien). Following a postdoctoral fellowship at CERN, he moved to the University Hospital RWTH Aachen, where he led a research group working on time-of-flight PET and the transfer of ultra-precise timing detector concepts to PET systems. Currently he is based at the Marietta Blau Institute for Particle Physics (MBI) of the Austrian Academy of Sciences in Vienna, researching on silicon and silicon-carbide detectors, as well as SiPMs for their use in HEP and medical applications.

Statement: Within IEEE, the RITC plays a crucial role in advancing radiation detectors, instrumentation, and measurement techniques across multiple scientific domains. My work spans scintillator-based detectors with emphasis on time resolution, along with solid-state photodetectors and silicon/silicon-carbide sensors in medical and high-energy physics applications. To a certain extend it is inherent that the wide field of radiation detection very often shares common technological challenges, increasingly driven by advances in microelectronics, semiconductor manufacturing, and AI-enabled analysis, that more and more demand sustained collaboration and resource sharing.

IEEE with its conferences like the NSS/MIC/RTSD is essential to this mission, providing a platform for scientific exchange and fostering the collaborative ecosystem our community needs. During my term, I propose three focused initiatives. First, I will work on expanding dedicated workshops (such as the digital SiPM workshop already underway embedded in the IEEE NSS/MIC) and evaluate the use and development of (online) platforms where communities can share resources and best practices. Second, I will support and discuss new formats specifically designed to advance early-career researchers, whose development is vital to the field's future. Third, I will evaluate opportunities to strengthen integration between NSS, MIC, and RTSD - recognizing substantial topical overlap and potential for mutual learning. Furthermore, as topical convener for the NSS photdetectors session I am committed of getting more involved in organizational tasks of the conference and to actively shape its future.

HARTMUT HILLEMANNS (M'08-SM'10) is an experimental physicist in the EP Department at CERN and a member of the ALICE Collaboration. He obtained his PhD in Physics from RWTH Aachen University, Germany, in 1995, following research on the development and characterization of detector prototypes for the electromagnetic calorimeter of the CMS experiment.

After completing his doctoral studies, he continued his work on particle detector technologies through postdoctoral research positions at RWTH Aachen University and the Laboratoire de Physique Nucléaire et de Hautes Énergies (LPNHE) in Paris.

From 1999 to 2005, he held a series of management positions within Swiss information technology companies, gaining extensive experience in technology development and innovation management. In 2005, he joined CERN's Technology Transfer Group, where he was responsible for the evaluation and dissemination of radiation detection technologies and for promoting research and development projects aimed at transferring advanced detector technologies to applications beyond high-energy physics.

Since joining the ALICE experiment in 2012, Hartmut worked on the development and production of monolithic active pixel sensors for the upgrade of the ALICE Inner Tracking System (ITS). His current research focuses on the development of next-generation large-area, truly cylindrical stitched monolithic active pixel sensors for future upgrades of the ALICE ITS and for ALICE3, the proposed next-generation heavy-ion experiment at CERN. Hartmut served as an elected member of the RISC committee from 2018 to 2021.

Statement: Throughout my career in radiation detection instrumentation, I have developed expertise across a broad range of detector technologies through both industrial and research activities. This experience has given me a strong understanding of how to translate technological innovation into practical applications and impactful solutions. I have also remained actively engaged with the professional community through IEEE conferences, contributing technical presentations and supporting technology transfer initiatives that encourage collaboration and knowledge exchange.

If elected to RISC, I will leverage my technical and professional experience to support the continued growth and strategic development of the NSS/MIC/RTSD community. With several major projects shaping the future of our field, I am particularly committed to promoting radiation detection instrumentation as an attractive and rewarding career path for young scientists and engineers. Attracting and supporting new talent is essential to sustaining innovation and excellence.

I am also dedicated to expanding the visibility and impact of our technologies beyond the traditional boundaries of our field. By strengthening connections with industry, other scientific disciplines, and society, we can foster interdisciplinary collaboration, create new opportunities for technology transfer, and increase public awareness of the important role radiation detection plays in science, healthcare, industry, and security.

Through these efforts, I hope to contribute to the long-term vitality, relevance, and success of our community.

DONALD HORNBACK (M'23) is the Director of the National Security Program Office at Brookhaven National Laboratory. Donny joined BNL in November 2022 after serving as a program manager at the Intelligence Advanced Research Projects Activity (IARPA) within the Office of the Director of National Intelligence. While at IARPA he pursued and managed programs in nuclear detection and counter adversarial artificial intelligence. From 2016-2021, he was a senior program manager at DOE/NNSA's Office of Defense Nuclear Nonproliferation Research and Development (NA-22). At NA-22, he directed research portfolios focused on radiation detection, with particular emphasis on detection materials and instrumentation. Emphasis was placed on investments for fast-neutron detection, to include support for new neutron generators and detection technologies for associated particle imaging for NNSA applications. Prior to NA-22, he held a position as a staff physicist at ORNL from 2010-2016 working both in fundamental physics and national security with emphasis on nuclear detection instrumentation. He completed his PhD in experimental nuclear physics as a member of the PHENIX Collaboration at BNL in 2008.

Statement: I want to contribute to RISC to bring both my technical background and my unique understanding of US government approaches to R&D funding in relevant areas to assist in communicating prioritizations and impacts of continued investments.

My perspective on RISC is informed strongly through my career path in radiation detection that has taken me from basic research, to applied research, to federal program management, and back to management at a national laboratory. My graduate work as an experimentalist in DOE-SC Nuclear Physics was balanced between high-energy detector technology development and the need for high resolution Monte Carlo modeling to extract physis results. After my post-doc, I drifted into more applied research supported by national security sponsors involving involved electronics, materials, simulations, and algorithm development. By what was essentially a chance encounter, I moved from my staff physicist position at Oak Ridge National Laboratory to DOE-HQ as a program manager at DOE National Nuclear Security Administration's Office of Defense Nuclear Nonproliferation Research and Development (aka NA-22). I inherited the radiation detection portfolio as a federal program manager in a time of change within the US Sponsor community for this community and sponsored radiation instrumentation research for seven years. US funding in key radiation detection areas (especially from the national security side) has somewhat stagnated or decreased, and government policy leaders in the US have perceived limited progress in some application areas, or intrinsic limitations from investments in radiation instrumentation. After seven years of managing radiation detection programs in the US Government, I moved to BNL. I believe that I can assist RISC with an informed perspective on the strategic direction radiation detection in applied areas.

ZHEN-AN LIU (M'07-SM'12) is a physicist in the Experimental Physics Division (EPD) at the Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), and a Professor at University of Chinese Academy of Sciences (UCAS), Beijing China. He received a B.S. in Experimental Physics from University of Science and Technology of China (USTC) in 1983 and M.S. in High Energy Physics from Graduate School of Chinese Academy of Sciences (GUCAS which transformed to UCAS later) in 1988 and a Ph. D in Particle Physics from UCAS China in 1999. He visited GSI, Darmstadt Germany and CERN Geneva in 90's as a visiting scientist for years, and joined again IHEP Beijing leading a group to design and construct the trigger system for Beijing Spectrometer (BES III) in year 2001 with a completion in 2008. He has been leading a group, which has active research programs in instrumentation development for particle physics, plays a leading role in TDAQ development in PANDA experiment (since 2007 to present), the overall readout for Belle II experiment (Belle2link) from 2008 to 2018, the readout and data reduction system for Belle II/PXD detector(ONSEN) from 2010 to 2019, the Concentration, preprocessing and Fanout (CPPF) for CMS L1 trigger system Phase I upgrade from 2013 to 2017, and RPC Backend Electronics and trigger concentrator for CMS Phase II upgrade since 2018 and CEPC TDAQ R&D activities.

Statement: I have carried out research on radiation instrumentation for much of my career. If elected to RISC member at Large, I would work with RISC to enhance its core functions as member, helping to improve the communication between RISC and NPSS members, maximize benefit to attendees of NSS/MIC/RTSD meetings, and advocating initiatives of value to the radiation instrumentation community. I would help to foster an environment that will attract more young scientists into our field, with my experience in CANPS member, TNC member and elected RISC Member(previous). I have contributed presentations to IEEE/NPSS meetings over years, and participated in several NPSS meetings as an organizing committee member (Local Chair for Real Time Conference 2009 in China, Asia-Pacific Liaison Co-Chair NSS-MIC2013 in Korea, Scientific Committee Co-chair for RT2014 in Japan and RT2016 in Italy, NPSS Membership Booth running in SOFE2017 in Shanghai, and TIPP2017 as General Chair in Beijing), all of which have given me insight to be an effective member to RISC.

RALF HENDRIK MENK (M'26) received his Diploma in Physics and Ph.D. (Dr. rer. nat.) in Physics from the University of Siegen, Germany, in collaboration with HASYLAB at DESY. Following postdoctoral appointments at DESY and the National Synchrotron Light Source (NSLS) at Brookhaven National Laboratory, USA, he was awarded a European Marie Curie Fellowship, which brought him to Elettra Sincrotrone Trieste, Italy.

Since 2001, Dr. Menk has been a Senior Researcher at Elettra Sincrotrone Trieste, where he leads activities in detector and instrumentation development for synchrotron and free-electron laser applications. His research interests include radiation detectors, advanced X-ray imaging, photon-counting and hyperspectral detectors, readout electronics, and scientific instrumentation.

Dr. Menk has coordinated several European research projects and has contributed to the IEEE Nuclear Science Symposium and Medical Imaging Conference community, serving as committee member, program chair, instructor, and organizer for the 2004 IEEE NSS/MIC in Rome.

He is an Associated Researcher of INFN and currently serves as Vice Chair of the LEAPS Detector Working Group. He also holds leadership responsibilities within the LEAPS-TECH project on next-generation detector technologies and acts as spokesperson of the joint Elettra Sincrotrone Trieste and CNR-IOM team within CERN's DRD5 collaboration on Quantum and Emerging Detector Technologies.

Dr. Menk has authored more than 220 scientific publications and has contributed to scientific books, including authoring two book chapters in the field of advanced X-ray imaging and detector technologies. His work has accumulated more than 5,000 citations (h-index 30), and he holds several international patents in detector and imaging technologies. He has served on scientific review and beamtime allocation panels for major international facilities, including NSLS, ESRF, SPring-8, and the Canadian Light Source, and has acted as an evaluator for European Commission research programs.

In 2013, he obtained the Italian National Scientific Habilitation for Full Professor in Physics. From 2016 to 2022, he served as Adjunct Professor at the College of Medicine, University of Saskatchewan, Canada. He currently holds an Adjunct Professorship at the Department of Computer and Electrical Engineering of Mid Sweden University.

Statement: Throughout my career, I have worked at the intersection of detector development, advanced imaging, synchrotron science, and large-scale research infrastructures. This experience has allowed me to collaborate with researchers from diverse scientific communities, including nuclear and particle physics, medical imaging, photon science, and instrumentation engineering. I have consistently found that many of the most significant advances in detector technology emerge when ideas, methods, and expertise are exchanged across disciplinary boundaries.

I believe the Radiation Instrumentation Steering Committee plays a crucial role in fostering these interactions and in ensuring that the Radiation Instrumentation Conference remains a premier international forum for innovation in detectors and instrumentation. Having benefited from this community throughout my career, I would welcome the opportunity to contribute to its continued growth and success.

As a Member-at-Large, I would bring the perspective of the synchrotron and free-electron laser communities, where detector requirements continue to evolve rapidly and where close collaboration with the broader radiation instrumentation community is increasingly important. Through my involvement in LEAPS, LEAPS-TECH, CERN DRD5, INFN, and various international collaborations, I have worked to build connections between detector developers, facility scientists, and end users across different research domains.

If elected, I would actively support initiatives that strengthen interdisciplinary collaboration, encourage participation of early-career researchers, promote emerging detector technologies, and enhance the exchange of knowledge between the radiation instrumentation community and major international research infrastructures.

I would be honored to contribute my experience and enthusiasm to help advance the mission of RISC and support the continued success of the Radiation Instrumentation Conference.

ARIANNA MOROZZI (GSM'15-M'17) received her M.Sc. (2012) in Electronic and Telecommunications Engineering and her Ph.D. (2017) in Industrial and Information Engineering from the University of Perugia, Italy. She is currently a Staff Technological Researcher at INFN (Perugia Section), where she plays an active role in national and international research initiatives and coordination activities. Her research focuses on radiation-hard semiconductor detectors for high-energy physics, addressing the challenges of the High-Luminosity LHC and future accelerator experiments. Her work combines semiconductor physics and advanced numerical methods, with a specialization in predictive TCAD simulations for modeling radiation damage in silicon and alternative materials such as CVD diamond, amorphous silicon, and ferroelectric devices. In recent years, her activity has concentrated on the development of next-generation sensors for 4D tracking, including LGAD-based technologies, bridging microscopic defect physics with device design for operation in extreme radiation environments. She is the recipient of the IEEE NPSS Gatti and Manfredi Best Ph.D. Thesis Award (2017) and the IEEE Radiation Instrumentation Early Career Award (2020).

Statement: With over a decade of experience in radiation instrumentation, my work has focused on advancing the understanding of radiation damage effects in solid-state detectors for future high-energy physics experiments.

I aim to bring this experience to the RISC committee, contributing to initiatives that strengthen collaboration, expand the global impact of the radiation instrumentation community, and support its scientific and technological development.

Particular attention will be devoted to fostering an open and dynamic environment that values new ideas and encourages the involvement of early-career researchers.

I look forward to contributing to the committee's activities in support of the broader IEEE community.

MATTEO PORRO (M'13) received the Laurea degree in Electronics Engineering from Politecnico di Milano in 2001 and the Ph.D. cum laude in Radiation Science and Technology from the same institution in 2005. From 2005 to 2015 he worked at the Max Planck Institute for Extraterrestrial Physics (MPE) and the associated Semiconductor Laboratory (HLL), where he coordinated ASIC development activities for advanced silicon radiation detectors and contributed to projects in X-ray astronomy, photon science, and space instrumentation.

Since 2015 he has been with the European XFEL GmbH, where he currently serves as Detector Development Operations Leader. Since 2022 he has also been Associate Professor of Electronics at Ca' Foscari University of Venice and holds the Italian National Scientific Qualification as Full Professor in Electronics.

Since 2008 he has served as Principal Investigator and Project Leader of the DSSC detector for the European XFEL, leading an international collaboration of approximately 40 scientists and engineers. He currently serves as Principal Investigator of XSTREAM, a recently launched exploratory R&D program aimed at defining future detector technologies for a potential European XFEL upgrade.

He was responsible for the development and coordination of the ASTEROID ASIC for the ESA/JAXA BepiColombo mission to Mercury. He currently serves as Chair of the LCLS Detector Advisory Committee at SLAC National Accelerator Laboratory and has been actively involved in the IEEE Nuclear Science Symposium community as Topic Convener, reviewer, session chair, and member of international advisory committees, including the International Advisory Board of the Front-End Electronics (FEE) conference series.

He received the IEEE Radiation Instrumentation Early Career Award in 2010 and the IEEE Emilio Gatti Radiation Instrumentation Technical Achievement Award in 2021.

Statement: Radiation instrumentation is a uniquely interdisciplinary field that brings together detector physics, semiconductor technologies, integrated electronics, data acquisition systems, and a broad range of scientific applications. Continued progress depends on maintaining strong interactions between these communities and on facilitating the transfer of ideas and technologies across different application domains.

Throughout his career, Matteo Porro has worked at the interface between detector development, ASIC design, large scientific facilities, and international collaborations. His activities span photon science, space instrumentation, semiconductor detectors, and mixed-signal electronics, providing experience across several areas represented within the NPSS Radiation Instrumentation community.

Photon science and X-ray Free Electron Lasers have become important drivers of detector innovation, introducing challenges in ultrafast imaging, high dynamic range, and extreme data rates that require new approaches to sensors, electronics, and system architectures. These developments have benefited from technologies originating in many different areas of radiation instrumentation and, in turn, have contributed new concepts and requirements to the broader community.

As a RISC Member-at-Large, Matteo Porro would contribute the perspective of the photon science and FEL detector community while supporting the broader mission of RISC and NPSS. He would work to strengthen the connections between detector developers, electronics designers, scientific facilities, end users, and educational institutions, helping to promote technical excellence, interdisciplinary collaboration, and the transmission of radiation-instrumentation expertise to the next generation.

ANDRÉ SOPCZAK (M'07-SM'11) IEEE member since 2006, senior member since 2011, RISC member 2016-2018. Since 2017 president of the Nuclear & Plasma Sciences Chapter of the IEEE Czechoslovakia Section Since 2019 member of the Transnational Committee, TNC 2021 founder and first chair of the Life Member Affinity Group, LMAG for Region 8 Czechoslovakia.

Undergraduate studies in mathematics and physics at Munich University, 1992 PhD University of California, San Diego, Isidor I. Rabi Diploma for Best Students at Erice School. CERN and DESY Fellowships, teaching and research assistant at Karlsruhe University. 2001 faculty member at Lancaster University, tenured 2004. Since 2012 Czech Technical University in Prague, ATLAS group leader.

Research on radiation hardness of CCD detectors, application of Medipix, Timepix and Timepix3 detectors, accelerator R&D (collimators), searches for new particles and Higgs boson physics. Forward Detector applications at LHC. Major collaborations L3, DELPHI, LCFI, D-zero and ATLAS. Several TNS publications as leading author, >120 individual publications http://cern.ch/sopczak/Welcome.html, h-index>100.

Statement: With the privilege and opportunity to bring my professionalism and dedication to foster the important goals of the IEEE, I would be delighted to expand my IEEE engagement and serve as a member of the Radiation Instrumentation Steering Committee (RISC). Having strong specific qualifications, experience, abilities and motivation for the Radiation Instrumentation Technical Committee (RITC), as a member of the RISC I can contribute to several areas:

- contribute to advancements of theory and applications of Ionising Radiation Instrumentation
- give a positive image of the detectors based on successful applications
- through initiating and chairing an LMAG, adding experience with the IEEE admin procedures
- promote the detector technology advancements for further applications
- serve as ambassador between the large Collaborations and RISC
- find efficient ways to explain detector advancements understandably
- based on several grants for outreach, promote public understanding
- electronic learning and an e-learning project in an international consortium
- successful with fund raising for School organizations
- with participation in most IEEE NSS/MIC conferences since 2005, supporting the JOS, researching future NSS/MIC conference locations and assisting the selection of the respective General Chairs
- supporting the Awards committee with experience of student selection and successfully supporting and initiating RISC Glenn Knoll awards

JOANNA SZORNEL (GSM'19-M'24) is a Career Research Scientist in the Nuclear Science Division at Lawrence Berkeley National Laboratory (LBNL), where she leads research within the Applied Nuclear Physics group. She received her BA in Physics from the University of California, Berkeley in 2015, and continued at UC Berkeley for her PhD under the supervision of Professor Kai Vetter in Nuclear Engineering, completing her doctorate in 2021. She has held postdoctoral and subsequent career appointments at LBNL ever since, building an independent research program focused on advanced semiconductor detector development for nuclear and space science applications.

Dr. Szornel is one of a small number of researchers worldwide with end-to-end capability in high-purity germanium (HPGe) double-sided strip detector (DSSD) fabrication, a distinction built through years of hands-on development at LBNL's detector laboratory. Her most prominent contribution to date is the fabrication of more than twenty HPGe detectors for the Compton Spectrometer and Imager (COSI) mission, a NASA Small Explorer satellite selected for launch. This achievement represents a milestone in domestic HPGe detector manufacturing and positions LBNL as a key supplier of flight-grade detector technology. Beyond COSI, her research spans work with CZT and silicon sensors for environmental monitoring and nonproliferation applications, alongside related modeling and signal processing efforts.

In addition to her technical research, Dr. Szornel is committed to mentorship and community building. She serves as early-career chair for LBNL's Nuclear Science Division and has served as an organizer for community outreach programs and an undergraduate traineeship program. These roles reflect a sustained interest in supporting the next generation of detector developers and in strengthening the connections that hold a specialized field together.

Dr. Szornel is an IEEE member and active contributor to the Nuclear and Plasma Sciences Society. She has presented her research at major conferences in nuclear instrumentation and applied nuclear physics, and has served as a collaborator or PI on proposals spanning DOE, NASA, and NNSA-funded programs.

Statement: I am a Career Research Scientist at Lawrence Berkeley National Laboratory, where I lead high-purity germanium detector development. I also serve as early-career chair for LBNL's Nuclear Science Division, as both a mentor and mentee in the Physical Sciences Area mentoring program, and on the division's outreach committee. These roles have shaped how I think about what I would want to bring to RISC.

The priority I would commit to is supporting early-career researchers in the IEEE nuclear instrumentation community, with particular attention to those whose work centers on detector development itself. Training in this field happens in labs and programs that RISC does not run, but what RISC can do is ensure that when early-career people emerge from that training, the broader community recognizes their contributions, makes their work visible, and connects them to mentors and peers beyond their immediate group. Mentorship that crosses institutional and subfield boundaries is, in my experience, one of the most valuable things a professional society can offer, and one of the hardest things for a junior researcher to find on their own.

This matters more now than it used to. AI and ML work in nuclear instrumentation is attracting considerable attention and funding, and offers visible, well-defined career paths that draw talented people in. That is a good thing in many respects. But the experimental, materials-rooted side of our work remains essential to detector development, and it depends on people choosing to spend their careers on it. Recognition and community shape those choices. Early-career researchers who feel seen by their professional society are more likely to stay in the parts of the field where their skills were built.

Concretely, I would push within RISC for stronger early-career presence in NSS-MIC programming, for recognition structures that value hands-on detector contributions alongside electronics and analysis, and for mentorship pathways that deliberately connect junior researchers with practitioners outside their immediate group. I would also want to bring early-career voices into the committee's own work, not only as recipients of programming but as participants in shaping it.

I would be honored to take this on.

JINHONG WANG (M'23) was born in Anhui, China, in 1985. He received the B.S. degree in Applied Physics and the Ph.D. degree in Nuclear Science and Technology from the University of Science and Technology of China (USTC) in 2007 and 2012, respectively. From 2013 to 2022, he was with the Department of Physics at the University of Michigan, Ann Arbor, first as a research fellow and later as a senior electronics engineer. In 2022, he joined USTC as a Professor of Physics.

Dr. Wang has worked in fast electronics for particle-physics experiments for more than 15 years. His research spans system-level front-end electronics and data-acquisition (DAQ) systems as well as transistor-level, radiation-tolerant application-specific integrated circuit (ASIC) design. Since 2013, he has been deeply involved in the ATLAS upgrade, contributing to electronics for the New Small Wheel (NSW) and the Monitored Drift Tube (MDT) systems. He led a University of Michigan engineering team (2013–2018) that developed high-speed data processing and transmission for the NSW trigger chain, delivering and installing more than 5,000 custom Trigger-Data Serializer (TDS) ASICs. From 2018 to 2022, he led the design of a high-precision time-to-digital converter (TDC) ASIC for the MDT upgrade, with over 20,000 ASICs delivered. His current work also includes custom electronics for extreme environments, notably high-radiation and cryogenic conditions. Dr. Wang received the University of Michigan LSA "Rising Star" award in 2018 and has served as an Associate Editor of the IEEE Transactions on Nuclear Science since 2022.

Statement: My research in fast electronics and radiation instrumentation spans more than 15 years, bridging transistor-level cryogenic and radiation-tolerant ASIC design with large-scale front-end electronics and DAQ systems. My experience ranges from system development for the ATLAS NSW trigger chain to leading the design of a high-precision TDC ASIC for the MDT upgrade, with more than 25,000 custom chips delivered to CERN. These experiences have given me a broad understanding of the full lifecycle of radiation instrumentation, from detector requirements and circuit design to system integration, qualification, production, and long-term operation. I have also actively served the community as an IEEE NSS reviewer since 2017, a reviewer for IEEE Transactions on Nuclear Science since 2015, and currently as an Associate Editor of the journal.

Having worked extensively within both U.S. and Asian research institutions, I would bring a cross-regional perspective to RISC and help strengthen global engagement within the radiation instrumentation community. If elected, I would focus on three priorities: broadening the technical scope of NSS/MIC/RTSD to better reflect emerging areas such as cryogenic microelectronics, quantum-related instrumentation, radiation-tolerant ASICs, and extreme-environment electronics; supporting early-career scientists and engineers through more structured mentorship, reviewer guidance, and technical feedback opportunities; and encouraging broader participation from international laboratories and young engineers. I would be honored to serve RISC and to help sustain the technical excellence, mentorship culture, and long-term vitality of the Radiation Instrumentation Technical Committee.