IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY
PARTICLE ACCELERATOR SCIENCE AND TECHNOLOGY EXECUTIVE COMMITTEE ELECTION

Members-at-Large to the PAST ExCom
For the Four-Year Term 1 January 2027 – 31 December 2030
(VOTE FOR NO MORE THAN TWO)

KAZURO FURUKAWA (M'09-SM'19) is an Emeritus Professor at the High Energy Accelerator Research Organization (KEK) and the Graduate University for Advanced Studies (SOKENDAI), Japan. Since earning his Ph.D. in Nuclear Physics from Tohoku University in 1986, he has contributed extensively to accelerator science and technology, specializing in accelerator controls, timing systems, beam instrumentation, and accelerator operations. His work spans major international projects including KEKB, SuperKEKB, J-PARC, and the International Linear Collider (ILC). At KEK, he served in roles ranging from group member to division head and led the development of simultaneous top-up injection systems for four electron/positron storage rings. Prof. Furukawa has supervised doctoral students, contributed to international accelerator collaborations and conferences, and continues to support the global accelerator community through advisory and leadership roles, including within the Particle Accelerator Society of Japan and the JACoW collaboration.

Statement: I have contributed to the fields of accelerator science and engineering for more than 40 years. I participated in the design, construction, and operation of major accelerator projects such as TRISTAN, JLC, KEKB, J-PARC, ILC, and SuperKEKB. I have also served on committees for international conferences and accelerator projects. Through these experiences I have worked closely with many scientists and engineers and gained broad insight into the field.

Besides my main interest in accelerators, I have enjoyed contributing to community activities such as JACoW for international conferences and developments related to molten salt reactors combined with accelerators. I hope to give back some of my experience and knowledge to the community through service on the PAST committee.

Based on my long experience in the particle accelerator field, I believe I can contribute to PAST activities aimed at enhancing the exchange of innovative ideas in accelerator science and technology. IEEE already provides excellent platforms for knowledge exchange through conferences, publications, and web-based systems. Through my experience with JACoW and international conference committees, I hope to support these activities and strengthen collaboration between the IEEE community and the broader accelerator community. Although most of my work has been in fundamental science projects, I am also interested in broader applications of accelerator technology, including energy systems and medical accelerators. I hope that wider international exchange will further promote these developments.

ALESSANDRO (ALEX) RATTI (M'24) shortly after completing his degree in Electronics Engineering at University of Pavia (Italy), moved to the US joining first Brookhaven National lab in NY, then Berkeley Lab and ultimately SLAC in roles of increasing responsibility managing activities in both projects and programs and leading development of new technologies. Starting at BNL as an engineer in the RF group, he contributed to the design of the AGS booster low frequency cavities, led the design and construction of the accelerating system for RHIC, then joined LBL to lead the electronics systems in the front end of SNS. He then led the US contribution to the LHC commissioning for the US-LARP program as well as the demonstration and development of the crab cavity scheme that is now part of the LHC AUP construction project. With LBL colleagues he received an RD100 for the development of the Unexploded Ordnance Discriminator. As the Director of the EE Division in the Accelerator Directorate of SLAC was responsible for all electronics systems that operate SLAC's accelerators from the design to the maintenance and upgrades. EED personnel are also holding roles of significant importance in DOE construction projects such as LCLS-II and LCLS-II-HE. Now back at LBL as division deputy in Engineering Division, Alex is now System and L1 Manager in the ALS-U upgrade project and responsible for developing plans and infrastructure for particle accelerator technologies at the lab. He has been chairing the LLRF workshop Scientific Program Committee since 2015. Upon joining Berkeley, Alessandro completed his MBA at the Haas School of Business in Berkeley. This led to his contributions to three successful startups and his current role as Sr. Scientist in xLight.

Statement: If elected, I will bring my interests in three interconnected themes: Workforce development, open technology advancement, and strengthening our professional community through high-quality scientific exchange.

Attracting and retaining the next generations of accelerator professionals is becoming an increasingly urgent priority. This starts from strengthening ties with academic programs: By fostering stronger connections between academia and the broader accelerator community, we can build a pipeline of new talent equipped to face the scientific and engineering challenges ahead.

I also strongly advocate for the adoption of open-source licensing frameworks and community-driven technology development as strategic tools for accelerating progress in our field. Encouraging the accelerator community to openly share software, hardware designs, and methodologies can reduce duplication of effort, lower barriers to entry for smaller institutions, and facilitate the kind of collaborative culture that can greatly benefit the entire community. This is already underway at some of US laboratories, such as the Advanced Technology Group at LBNL, sharing some of its more recent designs through an IP approach modeled after CERN's Open Hardware License.

My commitment to the community is perhaps best demonstrated through my work with the LLRF workshop. Since taking on the role of chair of the Scientific Program Committee in 2015, I have worked closely with committee members and the broader community to drive several significant enhancements to the workshop. Under this leadership, we established the publication of proceedings, launched the IQ Award to recognize outstanding contributions to the field, and introduced a series of topical workshops. This last initiative serves a dual purpose: expanding our reach beyond the traditional LLRF workshop audience while sustaining community engagement during the years between regular workshop cycles. I am also a Board Member of the ISSNAF (Italian Scientists and Scholars in North America Foundation) a broad network of Italian researchers.

EVGENYA I. SIMAKOV (M'18-SM'18) is a Group Leader for Accelerators and Electrodynamics Group at the Accelerators Operations and Technology division in Los Alamos National Laboratory. Dr. Simakov received her Ph.D. degree in Physics from Massachusetts Institute of Technology, Cambridge, MA, USA in 2005. She came to Los Alamos as a visiting student in 2003 to work on the design and cold testing of a Photonic band gap accelerator as a part of her Ph.D. work. In 2005 she joined LANL as a Director's Postdoctoral Fellow and became a staff member in 2007. Her current research interests include advanced electromagnetic structures for accelerators, high gradient acceleration, novel cathodes, and advanced electromagnetic structures from low GHz frequencies to infrared. She served and serves as a principle investigator on multiple advanced accelerator projects funded by LANL, DOE HEP, and DOD. Dr. Simakov is a Fellow of the American Physical Society, a Senior Member of IEEE, and a recipient of several awards including the 2010th DOE Recovery Act Early Career Research Grant, the 2011 Presidential Early Career Award for Scientists and Engineers.

Statement: I am honored to get an opportunity to run for a Member-at-Large position within for PAST Executive committee of NPSS. I have previously had the privilege of serving in various roles within the IEEE NPSS organization which always presented me with important professional development and networking opportunities and the allowed me to contribute to my professional community.

One of my key focus areas will be to develop an improved framework to support member recognition, advancement, and representation with increased engagement of the members with different backgrounds. I aim to encourage industry engagement, which was always integral to the success of particle accelerator research. I will support educational initiatives that promote the field of particle accelerators to the public and especially to young people who potentially represent the future workforce. I will also focus on strengthening the PAST technical committee and its collaboration and alignment with other relevant IEEE units.

YOUNG PROFESSIONAL Member-at-Large to the PAST ExCom
For a Two-Year Term 1 January 2027 – 31 December 2028
(VOTE FOR ONE)

DANIEL BAFIA (M'25) is an Associate Scientist at Fermi National Accelerator Laboratory, where he advances research on superconducting radiofrequency (SRF) technology by connecting materials science with RF performance across accelerator and quantum systems. He received his PhD from the Illinois Institute of Technology in 2020. His work focuses on understanding and mitigating fundamental loss mechanisms that limit performance, with applications spanning high-efficiency accelerators and quantum information platforms. Bafia contributes to shaping future directions in the field through involvement in strategic efforts such as the GARD RF roadmap and through active participation in major conferences, including the North American Particle Accelerator Conference (NAPAC), where he highlights emerging intersections between accelerator science and quantum technologies. He is also active in outreach, having delivered public talks and seminars on accelerator and quantum information science to student audiences, including programs such as "Saturday Morning Quantum."

Statement: As a Young Professional member, I would focus on strengthening connections between accelerator science, quantum information systems, and emerging physics applications. My work sits at this interface, and I see strong opportunities to expand the impact of superconducting radiofrequency technologies beyond traditional accelerator use. In particular, I aim to highlight shared challenges and opportunities in materials science and low-level RF control, as well as the growing role of SRF cavities in fundamental physics applications such as axion and dark matter searches, where ultra-low loss and high coherence are critical. I would also support programming that brings these communities together and increases the visibility and engagement of early-career researchers working at these intersections.

THOMAS G. LUCAS (AM'25-M'26) is an RF accelerator physicist specializing in high-gradient and high-brightness accelerator technologies, with particular expertise in electron injectors and advanced RF systems. He is currently a Tenure-Track Research Scientist at the Paul Scherrer Institute (PSI), where he leads research into next-generation accelerator concepts and beam source technologies. His work focuses on the design and testing of a C-band travelling-wave RF photogun for future free-electron laser (FEL) light sources, leadership of the FCCee electron source development program, modelling of high-brightness beams and brightness-limiting effects in XFEL photoinjectors, development of high-gradient accelerating structures across the S-, C-, and X-band regimes, and multiphysics modelling of RF phenomena. Prior to his current role, he held research positions at PSI and Eindhoven University of Technology and completed his PhD at the University of Melbourne in collaboration with CERN. His research has produced influential contributions in accelerator science, including advances in RF photoguns, beam dynamics, and high-gradient accelerator systems. He also contributes to teaching and peer reviews.

Statement: I am excited to put myself forward as a candidate for the PAST ExCom Young Professionals position. IEEE and NPSS PAST have played an important role in the dissemination of knowledge and collaboration within our technical community, and I would welcome the opportunity to contribute more actively to its development.

Over the past decade, I have been involved in the high-brightness electron source and accelerator physics community, and I see strong opportunities to further expand IEEE engagement within this field. I have served as a reviewer for IEEE publications, and I have also contributed to the broader scientific community through the organization of scientific events, including chairing the LEDS workshop in 2024.

If elected, I would work to strengthen connections between PAST Technical Committee (TC) and the accelerator community while encouraging greater participation from young researchers. Addressing the growing generational gap in accelerator physics is particularly important, and I would like to help attract and support early-career scientists entering the field. I would also aim to increase the impact and visibility of PAST TC by promoting focused, high-impact workshops.

I am fully willing and able to serve if elected and would be committed to contributing my time, experience, and energy to supporting PAST TC members.