

Fernando Sannibale

Curriculum Vitae (October 2023)

General Information

Work Address 1 Cyclotron Road, MS 80R0114, Berkeley CA 94720 Tel. +1 510 486 5924, Email: fsannibale@lbl.gov.

Present Position Senior Scientist at Lawrence Berkeley National Laboratory.
Advanced Light Source Division Deputy for Accelerator Operations.

ALS Accelerator Physics Program Head
Accelerator Technology and Applied Physics (ATAP) Division.

ALS Accelerator Physics Group Leader.
Advanced Light Source (ALS) Division

Research areas Particle accelerator physics. Focus in high-brightness electron sources; electron storage ring; free electron lasers; charged particle beam diagnostics; coherent synchrotron radiation in storage rings.

Languages Fluent in Italian, English and Portuguese.

Education

February 28, 1991 **'Laurea' in Physics** with top marks at the First University of Rome "La Sapienza". Thesis title: *Misuratore di emittanza, con il metodo "pepper-pot", per fasci di elettroni generati da cannoni ad alta perveanza* ("Emittance meter using the pepper-pot method for electron beams generated by high perveance guns), referees Prof. G.V. Pallottino and Dr. A. Vignati.

May & Oct. 2011 **UC Berkeley & Berkeley Lab 2011 Leadership Development Program**. Haas School of Business, Center for Executive Education, University of California Berkeley.

Career Progression

July 1, 2011-Today **Senior Scientist**, Accelerator Technology and Applied Physics Division (ATAP), former Accelerator and Fusion Research Division, at the Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA, USA.

Sept. 1, 2004-
June 30 2011 **Staff Scientist**, Accelerator and Fusion Research Division (AFRD) at the Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA, USA.

Aug. 1, 2003-
Aug. 31, 2004 **Electronic Engineer 4** (career), ALS Accelerator Physics Group at LBNL, Berkeley, CA, USA.

- May 1, 2001- July 31, 2003 **Electronic Engineer 4** (term), ALS Accelerator Physics Group at LBNL, Berkeley, CA, USA
- October 5, 1994- April 30, 2001 **Accelerator researcher** (tecnologo, permanent position) in the Accelerator Division of the INFN-LNF, Frascati, Italy.
- June 17, 1991- October 4, 1994 **Accelerator researcher** (tecnologo, term contracts) in the Accelerator Division of the INFN-LNF, Frascati, Italy.

Research & Management Responsibilities

- December 7, 2018- Today **Advanced Light Source (ALS) Division Deputy for Accelerator Operations.**
Responsible for the operation and development of the accelerators of the ALS complex. Responsibilities include accelerator physics activities and developments, operations, safety and coordination with Engineering division and other partners. Coordinating a team of about 100 people (approximately half of the ALS division) that includes scientists, engineers, and technicians.
- January 2, 2018- December 6, 2018 **Advanced Light Source (ALS) Interim Division Deputy for Accelerator Operations.**
Interim responsible for the operation and development of the accelerators of the ALS complex. Responsibilities include accelerator physics activities and developments, operations, safety and coordination with Engineering division and other partners. Directing a team of about 100 people (approximately half of the ALS division) that includes scientists, engineers, and technicians.
- November 1, 2016- Today **ALS Accelerator Physics Program Head.**
Accelerator Technology and Applied Physics (ATAP) Division.
Representing the ALS accelerator physics group in the ATAP division, the actual home division of the group in the LBNL matrixed system.
- November 1, 2016- Today **ALS Accelerator Operations & Developments Group Leader.**
Advanced Light Source (ALS) Division
Responsible for a group of 8-9 scientists and 9-10 operators dedicated to the development of projects for performance and reliability improvements of the accelerators of the ALS complex.
- October 2009- October 2017 **Principal Investigator** of the APEX (Advanced Photo-injector Experiment) Project for the construction at the Lawrence Berkeley National Laboratory of a novel high-brightness high-repetition rate electron photo-injector for FEL and ERL applications.
- October 2009- January 2010 **Principal Investigator** of the LDRD Project *Experimental accelerator R&D toward a future light source at LBNL* for the construction at the Berkeley Lab of a novel high-brightness high-repetition rate electron photo-injector for FEL and ERL applications.
- October 2008- September 2009 **Acting Principal Investigator** of the LDRD Project *Experimental accelerator R&D toward a future light source at LBNL* for the construction at the Berkeley Lab of a novel high-brightness high-repetition rate electron photo-injector for FEL and ERL applications.

- September 2008-
May 2009 **Project Leader** of the proposed project *A Cost Effective High-brightness upgrade for the Advanced Light Source*, a multi-million-dollar upgrade proposal for the Advanced Light Source at the Lawrence Berkeley National Laboratory. Responsibility released after receiving funds for the APEX project to concentrate on the latter.
- November 2006 **Science Spokesperson** for the electron gun part of the APEX (Advanced Photo-injector Experiment) proposal for the construction of an R&D facility for future light sources at the Lawrence Berkeley National Laboratory.
- February 2005-
February 2009 **Responsible** for the beam diagnostics in the project for the *upgrade of the ALS to Top-off injection operation* at the Advanced Light Source at the Lawrence Berkeley National Laboratory.
- September 2004-
2008 **Project Manager** of the funded LDRD project *Development of a Low Energy Spread Electron Source* (a.k.a. DEGAS – DEGenerate Advanced Source) at the Accelerator and Fusion Research Division at the Lawrence Berkeley National Lab.
- October 2003-
September 2016 **Beamline Scientist** for BL 7.2, the second beamline dedicated to beam diagnostics at the Advanced Light Source at the Lawrence Berkeley National Laboratory.
- May 2002-
September 2003 **Project Leader** of the project *BL 7.2* for a x-ray beamline for beam diagnostics at the Advanced Light Source at the Lawrence Berkeley National Laboratory.
- January 2002-
September 2003 **Project Manager**-like role for the group proposing the construction of *CIRCE*, a storage ring optimized as a source of high power stable coherent synchrotron radiation at the Advanced Light Source at the Lawrence Berkeley National Laboratory.
- July 22, 1998 **DAΦNE Linac Accelerator Manager**, nominated by the INFN Board of Directors for the period September 1, 1998 – July 31, 2001. Responsible for the 800 MeV electron and positron linac.
- March 1, 1996 **DAΦNE Linac Accelerator Manager**, nominated by the head of the Accelerator Division of the Frascati National Laboratories of INFN. Responsible for the 800 MeV electron and positron linac.

Selected Research Achievements

- 1991-2001 *DAΦNE Linac*. Physicist responsible for the DAΦNE Linac (an 800 MeV electron/positron linear accelerator, core of the DAΦNE collider injector) Achieved at that time world record positron production energy normalized yield (100 mA of positrons over a 10 ns macro-bunch at 50 Hz repetition rate using a 250 MeV electron beam for the conversion). *DAΦNE linac operational performance*, in Proceedings of EPAC98, Sitges, Spain (1998), pg. 764-766.
- 1993-1997 *DAΦNE Beam Test Facility (BTF)*. Physicist responsible for the design and development of a unique beam test facility optimized for the generation of single electron/positron “bunches” for detector calibration purposes. The BTF was successfully commissioned and is now an operational, highly productive user facility. Nuclear Instr. & Methods in Physics Research A **515** (2003) 524-542.

- 1996-2000 *DAΦNE Luminosity Monitor*. Physicist responsible for the design and development of the luminosity monitor used by accelerator physicists for the collisions' optimization in DAΦNE. The system that was the main diagnostic during collision was based on the detection of single bremsstrahlung event at the interaction region and was capable of absolute luminosity measurement using gas bremsstrahlung spectra for calibration. Nuclear Instruments & Methods in Physics Research A **486** (2002) 568-589.
- 2000-2001 *CTF3 Delay Loop*. Designer of the linear lattice and layout of the Delay Loop "ring" for the CLIC Test Facility 3 (CTF3) at CERN in Geneva. The Delay Loop was subsequently built and successfully commissioned at CERN. CTF3 Note 2001-023, Geneva, Switzerland, June 18, 2001.
- 2001-2006 *Coherent Synchrotron Radiation (CSR)*. Leader or co-leader in a series of research activities at the Advanced Light Source studying and characterizing coherent synchrotron radiation in electron storage rings. In particular:
- One of the three scientists responsible for the first experimental demonstration of the coherent synchrotron radiation driven micro-bunching instability (MBI). Phys. Rev. Letters **89**, 224801 (2002).
 - Creator of a model describing and predicting stable CSR in storage rings. The model successfully explained the first observed results at the BESSY II ring in Berlin, Germany, and was subsequently used for designing new optimized CSR sources (CIRCE, IKNO) and for evaluating the potential CSR performance of existing rings (DAΦNE, Bates, SPEAR). Physical Review Letters, Volume **93**, 94801 (2004), Physical Review Letters **96**, 064801 (2006).
 - One of the three scientists responsible for the first experimental evidence of CSR induced by the "femtosing" technique. Physical Review Letters **96**, 164801 (2006).
 - One of the two scientists that developed a model explaining MBI laser seeding in storage rings. Phys. Rev. Letters **97**, 074802 (2006).
- 2007-2008 *Absolute bunch length measurements by fluctuational analysis of incoherent radiation*. One of the two physicists that developed and successfully tested a new scheme for measuring the length of extremely short bunches by fluctuational analysis of the incoherent radiation emitted by electron bunches circulating in linear and circular accelerators. Phys. Rev. Special Topics – Accelerators and Beams **12**, 032801 (2009).
- 2006-2016 *APEX and the VHF-Gun, a high-brightness continuous-wave normal-conducting VHF RF photo-injector*. One of the two scientists who conceived a novel scheme for a high brightness MHz-class repetition rate photo-injector for free-electron laser and ultra-fast electron diffraction/microscopy applications. The VHF-Gun was designed, fabricated, and generated photo-emitted beams successfully demonstrating all nominal parameters of operation. A close version of the VHF-Gun was selected as the gun for the injector of the LCLS-II project, the high repetition rate X-ray FEL at SLAC. This second gun was fabricated at LBNL, delivered to SLAC, and successfully commissioned there in September 2019. Since then, SHINE, the high repetition rate X-FEL in construction in Shanghai, China has adopted and is constructing a VHF gun for their injector. Other operating or proposed facilities (European X-FEL, IRIDE) are considering VHF for their injectors as the primary or secondary choice. This activity generated 13 journal publications, 43 conference publications, 1 PhD thesis, 1 Master thesis, 25 talks including invited, seminars and contributed presentations to conferences.

2016-2017 *APEX-2*. Conceived a new scheme for upgrading the VHF-Gun technology towards higher fields at the cathode and higher energies. A successful development of the gun would allow for a dramatic extension of high repetition rate x-ray FELs towards higher photon energies. A proposal to the funding agency for the design of the gun was submitted and successfully funded in FY18, FY19, and FY20 (I did not lead this effort). *Physical Review Accelerators and Beams* **20**, 113402 (2017).

Awards and Official Acknowledgements

- March 15, 2022 **Recognition of Excellence Award** from the Lawrence Berkeley National Laboratory for the accomplishment: *Developed the lab wide Engineering Classification and guidelines for the Engineer career path, promotion and hire process.*
- November 22, 2013 **Fellow of the American Physical Society**. Division of Physics of Beams: *For contributions to the understanding of coherent synchrotron radiation in storage rings and the development of high brightness electron beam sources.*
- October 16, 2009 **Klaus Halbach Award** of the Advanced Light Source for the contribution to the Top-off Project.
- May 13, 2009 **Outstanding Performance Award** of the Lawrence Berkeley National Laboratory for the contribution to the Top-off Project at the Advanced Light Source.
- April 1, 2003 **Outstanding Performance Award** of the Lawrence Berkeley National Laboratory for the contribution to the understanding and characterization of coherent synchrotron radiation in storage rings.
- April 8, 1998 **Official letter of congratulations and appreciation** from the INFN President Luciano Maiani for the contribution to the DAΦNE project.

Teaching Activity

- 2006 - 2023 **Instructor/lecturer** in **eight sessions** of the US Particle Accelerator School teaching graduate and undergraduate courses.
1. Jan. 23 - Feb. 3, 2023. **Instructor** at the Northern Illinois University, held in: Houston, Texas teaching the undergraduate course of the US Particle Accelerator School with title: *Fundamental Accelerator Theory, Simulations and Measurement Laboratory.*
 2. January 25-29, 2016. **Lead Instructor** at University of Texas at Austin teaching the graduate course of the US Particle Accelerator School with title: *Electron Injectors for 4th Generation Light Sources.*
 3. June 16-27, 2014. **Instructor** at the University of Albuquerque, New Mexico teaching the undergraduate course of the US Particle Accelerator School with title: *Fundamental Accelerator Theory, Simulations and Measurement Laboratory.*
 4. January 23-27, 2012. **Lead Instructor** at University of Texas at Austin teaching the graduate course of the US Particle Accelerator School with title: *Electron Injectors for 4th Generation Light Sources.*

5. January 18-29, 2010. **Lead Instructor** at University of California Santa Cruz, held in San Francisco teaching the undergraduate course of the US Particle Accelerator School with title: *Fundamental Accelerator Theory, Simulations and Measurement Laboratory*.
 6. January 21-25, 2008. **Instructor** at University of California Santa Cruz, held in Santa Rosa teaching the graduate course of the US Particle Accelerator School with title: *Accelerator-Based Sources of Coherent Terahertz Radiation*.
 7. June 4-15, 2007. **Lead Instructor** at Michigan State University, Lansing teaching the undergraduate course of the US Particle Accelerator School with title: *Fundamental Accelerator Theory, Simulations and Measurement Laboratory*.
 8. January 16-27, 2006. **Visiting Professor** at the Arizona State University in Phoenix AZ teaching the undergraduate course of the US Particle Accelerator School with title: *Fundamental Accelerator Theory, Simulations and Measurement Laboratory*.
- October 9, 2016 **Lecturer** at IEEE Short Courses at the 2016 National Particle Accelerator Conference - Chicago, IL, with title: *High brightness electron injectors for 4th generation light sources*.
- July 16 -18, 2013 **Lecturer** at University of Campinas (UNICAMP), Brazil, teaching the course of the UNICAMP IFGW Winter School with title: *Synchrotron Light and its Applications in Materials Science*.
- April 14, 2011 **Instructor** at the US-CERN-Japan-Russia International Accelerator in Erice, Italy. Title of the lectures: *Electron Sources and Injectors*.
- July 3-8, 2006 **Lecturer** at the 2006 Nathiagali Summer College, Nathiagali Pakistan, on *Electron storage ring as synchrotron radiation source*. Taught remotely by phone.
- 2004 - 2011 **Guest Lecturer** at the University of California of Berkeley at the graduate course on Charged Particle Sources and Beam Technology (NE C282) of the Department of Nuclear Engineering. Title of the lecture *Electron sources: an Introduction*.

Miscellaneous Services

- Peer Rev. Journals Since October 2014 **Editor** of the Journal of Instrumentation (JINST), an IOP (UK) and SISSA (Trieste, Italy) Journal.
- Referee Activity **Reviewer** for the following journals: *Nature Physics, Nature Photonics, Physical Review Letters, Physical Review Accelerators and Beams* (and former *Physical Review Special Topics: Accelerators and Beams*), *Physical Review A, Phys. Review Applied, Optics Letter, Applied Physics Letters, Review of Scientific Instruments, Journal of Selected Topics in Quantum Electronics, Nuclear Instrum. & Methods in Physics Research A, Il Nuovo Cimento B, MethodsX, Nuclear Science and Techniques*. Also, reviewer for the Small Business Innovation Research (SBIR/STTR), **Early career awards**, for the **Accelerator Stewardship** programs of the US Department of Energy (DOE), and for **Research Grants and Scholarships** for the Natural Sciences and Engineering Research Council (NSERC) of Canada.
- Professional Associations Since February 2004 member of the American Physical Society
Since June 2011 member of the European Physical Society

- May 2021 - Today **Member** of the European X-FEL Machine Advisory Committee at DESY, Hamburg, Germany. First session held in November 2021.
- Dec. 2020 - Today **Member** of the PETRA IV Technical Advisory Committee at DESY, Hamburg, Germany. First session held in March 2021.
- Nov. 2020 – Today **Member** of the Machine Advisory Committee for the DESY laboratory in Hamburg, Germany.
- Oct. 2020 – Today **Member** of the Division Staff and Award Committee of the Accelerator Technology and Applied Physics (ATAP) Division.
- Aug. 2020 - Today **Member** of the Division Staff Committee of the Advanced Light Source Upgrade (ALS-U) Division.
- July 11, 2018 - Today **Member** of the Radiation Safety Committee Lawrence Berkeley National Laboratory.
- October 19-20, 2023 **Member** of the 2023 Basic Research Needs (BRN) DOE-BES Accelerator Based Instrumentation Workshop, remotely held.
- October 3-4, 2022 **Committee member** of the LCLS-II Accelerator Readiness Director’s Review – Phase-3, SLAC Accelerator Center, Stanford, CA USA.
- October 2022 **Member** of the Organizing Committee (OC) for the 2024 International Particle Accelerator Conference (IPAC’24), to be held in Nashville, TN USA, May 2024.
- July 5-7, 2022 **Committee member** of the LCLS-II Accelerator Readiness Director’s Review – Phase-2, SLAC Accelerator Center, Stanford, CA USA.
- January 2022 **Member** of the Scientific Advisory Board (SAB) for the 2023 International Particle Accelerator Conference (IPAC’23), to be held in Mestre-Venezia, Italy, May 2023.
- Aug. 2020 – Sept.2022 **Member** of the Scientific Program Committee for the 2021 (canceled due to COVID pandemic) and 2022 FEL Conference (Trieste, Italy). Chair of the electron Source session of the committee.
- June 2021 – Dec. 2021 **Member** of the LBNL Engineering Classification Committee for redefining the career track for critical engineering professional figures.
- Jan. 2020 – Dec. 2021 **Member** of the Fellowship Committee of the Division of Physics of Beams (DPB) of the American Physical Society (APS).
- Sept. 2019 –May 2021 **Member** of the International Organizing Committee (OC) and of the scientific Program Committee (SPC) for the International Particle Accelerator Conference IPAC’20 (postponed) and IPAC’21, to be held in Foz De Iguacu, Brazil, May 2021.
- Dec. 14-16, 2021 **Committee member** of the LCLS-II Accelerator Readiness Director’s Review – Phase-1, SLAC Accelerator Center, Stanford, CA USA.
- June 10, 2021 **Committee member** of the APS-U 38-AM Diagnostics Beamline Final Design Review, Argonne National Laboratory, Argonne, IL, USA.

- May 11, 2021 **Committee member** of the LCLS-II spare gun Preliminary Design Review, SLAC Accelerator Center, Stanford, CA USA.
- December 2020 **Member** of the international Organizing Committee for the 2022 International Particle Accelerator Conference (IPAC22), to be held in Bangkok, Thailand, May 2022.
- September 2020 **Committee member** of the ALS-U Final Design Review for the Accumulator Ring Beam Diagnostics System at Lawrence Berkeley National Laboratory, Berkeley, CA USA.
- October 16, 2020 **Committee member** of the LCLS-II spare gun Conceptual Design Review, SLAC Accelerator Center, Stanford, CA USA.
- Sept.2017 – Sept.2020 **Chair** of the Division Staff and Award Committee of the Accelerator Technology and Applied Physics (ATAP) Division.
- September 2020 **Committee member** (chair of the Accelerator Systems sub-committee) of the DOE Status Review of the APS-U project at Argonne National Laboratory, Argonne, IL USA.
- Dec. 10-11, 2019 **Committee member** of the Phase 2 Director's Accelerator Readiness Review for the SLAC warm linac restart. SLAC Accelerator Center, Stanford, CA USA.
- October 7-9, 2019 **Committee member** of the Phase 1 Director's Accelerator Readiness Review for the SLAC warm linac restart. SLAC Accelerator Center, Stanford, CA USA.
- September 2019 **Member** of the Scientific Advisory Board (SAB) of the international workshop on Spectro-Temporal control of Radiation In accelerator-based Photon Emission (STRIPLE), to be held in Arcidosso, Italy in May 2020.
- September 6, 2019 **Member** of ALS-U Preliminary Design Review (PRD) committee for the Accumulator Ring RF Cavity at LBNL.
- September 3, 2019 **Chair** of the triennial LBNL Accelerator Radiation Safety Committee for the 88-Inch Facility at LBNL.
- July 2019 **Committee member** for Accelerator Vulnerability Mitigation and Mature Performance Review at Brookhaven National Laboratory, Brookhaven, NY USA.
- June 2019 **Committee member** (chair of the Accelerator Systems sub-committee) for the CD-3 DOE Review of the APS-U project at Argonne National Laboratory, Argonne, IL USA.
- January 2019 **Organizing Committee member** of the 2019 North American Particle Accelerator Conference in Lansing, Michigan, USA.
- November 2018 **Local Committee member** of the 40th International Conference on Vacuum Ultraviolet and X-ray Physics (VUVX19), San Francisco, CA USA.
- October 2018 **Scientific Program Committee member** of the 2019 Free Electron Laser Conference, Hamburg, Germany.

- August 2018 **Committee member** for the pre CD-2 Director's Review of the APS-U project at Argonne National Laboratory, Argonne, IL USA.
- August 2018 **Program Committee member** of the BES Light Sources Beam Stability Workshop at the Lawrence Berkeley National Laboratory, Berkeley, CA USA.
- April 2018 **International Organizing Committee (PAC-OC) member** of the 2020 International Particle Accelerator Conference in Caen, Normandy, France.
- March 2018 **Committee member** for the LCLS-II Early Injector Commissioning (EIC) review at SLAC, Stanford, CA USA.
- December 2017 **Committee member** for the DOE/SC OPA review of the APS-U project at Argonne National Laboratory, Argonne, IL USA.
- December 2017-
March 2018 **Hiring Committee member** for the selection of the Advanced Light Source Division Director of the Lawrence Berkeley National Laboratory.
- Oct. 2017 **Scientific Program Committee member** for the 2018 Workshop on High Brightness Synchrotron Light Sources at Argonne, IL, USA.
- July 10-11, 2017 **Chair** of the Pacific Northwest National Laboratory (PNNL) Dynamic Transmission Electron Microscope (DTEM) Review Committee.
- May 2017 **Committee member** for the DOE Triennial review of the SSRL facility at SLAC, Stanford, CA USA.
- January 2017 **Review Committee member** of the eRHIC Electron Source review, Brookhaven National Laboratory, NY, USA.
- November 2016 **Scientific Program Committee member** of 2017 Free Electron Laser Conference, Santa Fe, NM, USA.
- Sept. 8-9, 2016 **Member** of the invited team of experts for the *DOE Basic Energy Sciences 2016 Workshop on the Future of Electron Sources* at SLAC National Accel. Lab., CA.
- March 2016 **Member** of the sub-committee of the Advisory Council of the US Particle
January 2018 Accelerator School (USPAS).
- June 23 2016 **Chair** of the Arizona State University Photoinjector Design Review Committee.
- Nov. 2007-
Feb. 2016 **Committee Member** of the US Particle Accelerator School Curriculum Committee.
- February 2016 **Member** of the SRRL (SPEAR 3, SLAC) Machine Advisory Committee.
- August 2015 **Program Committee member** of 2016 P3 Workshop on Cathodes, JLab, Newport News, VA USA.
- November 2014 **Scientific Program Committee member** of 2015 Free Electron Laser Conference, Daejeon, Korea.
- July 2014 **Program Committee member** of 2014 P3 Workshop on Cathodes, LBNL, Berkeley, CA USA.

- May 2014 **Reviewer** of 2014 LDRD proposal for a non-classified project at Los Alamos National Laboratory.
- May 2014 **Member** of 2014 SLAC LDRD (Lab Directed R&D proposal) Review Team.
- 2014 **Committee member** of the Department of Beam Physics (DPB) Education and Outreach Committee of the American Physical Society.
- October 2013 **Committee member** of the Accelerator Mission Readiness Program Committee for the Accelerator Directorate of the SLAC National Accelerator Laboratory.
- May 2013 **Member** of 2013 SLAC LDRD (Lab Directed R&D proposal) Review Team.
- 2013 **Program Committee member** of 2013 North America Particle Accelerator Conference.
- May 2012 **Member** of 2012 SLAC LDRD (Lab Directed R&D proposal) Review Team.
- January 2012 **Member** of the SRRL (SPEAR 3, SLAC) Machine Advisory Committee.
- January 2012 **Committee member** of 2012 LDRD Appraisal Committee for a non-classified project at Los Alamos National Laboratory.
- May 14, 2003-
March 2011 **Program Committee Member** for the Beam Instrumentation Workshop (BIW)
- January 2011 **Member** of the SRRL (SPEAR 3, SLAC) Machine Advisory Committee.
- May 2010 **Committee member** of 2010 SLAC LDRD (Lab Directed R&D proposal) Review Committee.
- 2011 **Program Committee Member** for the 2011 Particle Accelerator Conference
- March 2010 **Convener** of the *High Brightness Electron Guns* Working Group at the 48th ICFA Advanced Beam Dynamics Workshop on Future Light Sources (FLS2010)
- 2008-2009 **Program Committee Member** for the 2009 Particle Accelerator Conference
- June 2008 **Committee Member** of the West Coast Light Source Committee. (Joint LBNL-SLAC committee for coordinating the west coast DOE laboratories activity for the next generation light source field).
- June 2007-
May 2008 **Conference & Program Committee Chair** for the conference BIW08 (2008 Beam Instrumentation Workshop). Also Local Org. Committee Chair for the conference.
- March 2008 **Committee Member** of the AFRD Division of LBNL Publication Process Committee.
- October 2007 **Co-organizer** of the ALS 2007 User Meeting Workshops "Beyond Top-Off: Opportunities for Improved ALS Performance" and "New Infrared Science Opportunities at the ALS".
- February 23, 2006 **Committee Member** of the Stanford Linear Accelerator Center (SLAC) review committee for the design of a bunch length monitor for the LCLS Project.

- March 25-26, 2003 **Review Committee Member** for the LBNL “Ultrafast x-ray science research project”. LBNL publication: LBID-2465.
- October 28-29, 2002 **Co-organizer** of the workshop on “Coherent Synchrotron Radiation in Storage Rings” Napa, USA.
- March 25, 1999 **Committee Member** of the Radiation Safety Committee of the LNF for the period March 25, 1999 – March 25, 2001.
- January 14, 1998 **External consultant** in the selection process for the linac for the *Swiss Light Source* at the Paul Scherrer Institute (PSI), Villigen, Switzerland.

Selected Publications (for a complete list refer to [FS_PB_Oct2023.pdf](#))

F. Sannibale, Section 7.1.1.5 of the 3rd edition of the Handbook of Accelerator Physics and Engineering. Publisher: World Scientific Publishing Company, Section title: *Normal Conducting Photo rf Guns*. Published on: February 2nd, 2023 ISBN: 9789811270154, ISBN-10: 9811270155.

F. Sannibale, D. Filippetto, H. Qian, C. Mitchell, F. Zhou, T. Vecchione, R. K. Li, S. Gierman, J. Schmerge.

High-brightness beam tests of the Very-High-Frequency Gun at the Advanced Photo-injector Experiment test facility at the Lawrence Berkeley National Laboratory.

Review of Scientific Instruments **90**, 033304 (2019).

F. Sannibale, D. Filippetto, C. Papadopoulos, J. Staples, R. Wells, B. Bailey, K. Baptiste, J. Corlett, C. Cork, S. De Santis, S. Dimaggio, L. Doolittle, J. Doyle, J. Feng, D. Garcia Quintas, G. Huang, H. Huang, T. Kramasz, S. Kwiatkowski, R. Lellinger, V. Moroz, W. Norum, H. Padmore, C. Pappas, G. Portmann, T. Vecchione, M. Vinco, M. Zolotarev, F. Zucca.

Advanced photoinjector experiment photogun commissioning results.

Physical Review Special Topics – Accelerators and Beams **15**, 103501 (2012).

F. Sannibale, M. Abo-Bakr, J. M. Byrd, J. Feikes, K. Holldack, H.-W. Hubers, P. Kuske, A. Loftsdottir, M. Venturini, R. Warnock, G. Wustefeld.

A Model Describing Stable Coherent Synchrotron Radiation in Storage Rings.

Physical Review Letters, Volume **93**, Issue 9, 94801, 27 August 2004.

F. Sannibale,

High-Brightness Electron Injectors for High-Duty Cycle X-Ray Free Electron Lasers.

Front. Phys. **11**, 1187346 (2023). DOI: 10.3389/fphy.2023.1187346).

F. Sannibale, D. Filippetto, M. Johnson, D. Li, T. Luo, C. Mitchell, J. Staples, S. Virostek, R. Wells, and J. M. Byrd.

Upgrade possibilities for continuous wave RF electron guns based on room-temperature VHF technology.

Physical Review Accelerators and Beams **20**, 113402 (2017)

- D. Filippetto, H. Qian, **F. Sannibale**.
Cesium Telluride Cathodes for the next generation of high-average current high-brightness photoinjectors
Applied Physics Letters **107**, 042104 (2015).
- J. Byrd, Z. Hao, M. Martin, D. Robin, **F. Sannibale**, R. Schoenlein, A. Zholents, M. Zolotarev.
Laser Seeding of the Storage-Ring Microbunching Instability for High-Power Coherent Terahertz Radiation
Physical Review Letters **97**, 074802 (2006).
- F. Zhou, C. Adolphsen, A. Benwell, G. Brown, D. Dowell, M. Dunning, S. Gilevich, K. Grouev, G. Huang, B. Jacobson, X. H. Liu, A. Miahnahri, **F. Sannibale**, J. Schmerge, and T. Vecchione,
Commissioning of the SLAC Linac Coherent Light Source II electron source, Phys. Rev. Accelerators and Beams **24**, 073401 (2021)
- F. Sannibale**, G. Stupakov, M. Zolotarev, D. Filippetto, L. Jagerhofer.
Absolute bunch length measurements by incoherent radiation fluctuation analysis.
Physical Review Special Topics – Accelerators and Beams **12**, 032801 (2009).
- K. Baptiste, J. Corlett, S. Kwiatkowski, S. Lidia, J. Qiang, **F. Sannibale**, K. Sonnad, J. Staples, S. Virostek, R. Wells.
A CW normal-conductive RF gun for free electron laser and energy recovery linac applications.
Nuclear Instruments & Methods in Physics Research A **599**, 9 (2009).
- R. Huang, D. Filippetto, C. F. Papadopoulos, H. Qian, **F. Sannibale**, M. Zolotarev.
Dark current studies on a normal-conducting high-brightness VHF electron gun operating in continuous wave mode.
Physical Review Special Topics – Accelerators and Beams **18**, 013401 (2015).
- F. Sannibale**.
High-brightness high-duty cycle electron injectors.
Nuclear Instruments & Methods in Physics Research A, **740**, 10, 2014.
- F. Sannibale**, D. Filippetto, C. F. Papadopoulos.
Schemes & challenges for electron injectors operating in high repetition X-ray FELs.
Journal of Modern Optics **58**, 1419 (2011).
- J. M. Byrd, W.P. Leemans, A. Loftsdottir, B. Marcellis, M. C. Martin, W. R. McKinney, **F. Sannibale**, T. Scarvie, C. Steier.
Observation of Broadband Self-Amplified Spontaneous Coherent Terahertz Synchrotron Radiation in a Storage Ring.
Physical Review Letters, Volume **89**, Issue 22, 224801, 25 November 2002.
And Virtual Journal of Ultrafast Science, Volume 1, Issue 6, November 2002.

M.S. Zolotarev, E. D. Commins, **F. Sannibale**.
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Selected Presentations (for a complete list refer to [FS_PB_Oct2023.pdf](#))

April 7 and 24, 2023 **Seminar** with title *High-Brightness Electron Injectors for High-Duty-Cycle X-Ray Free Electron Lasers (Part 1 and Part 2)*, at FRIB APES Seminar, Michigan State University.

October 3, 2019 **Tutorial talk** with title *The Machine*, at 2019 ALS Users' Meeting, at the Lawrence Berkeley National Laboratory.

December 3, 2018 **Seminar** with title *The VHF-Gun Electron, an electron source optimized for high-brightness, high-duty-cycle applications*, at INFN-LNF, Frascati, Italy.

November 1, 2018 **Invited talk** with title *Compensation of emittance and beam size variations induced by insertion devices*, at the 2018 BES Light Sources Beam Stability Workshop at the Lawrence Berkeley National Laboratory, November 1, 2018.

November 8, 2017 **Seminar** with title *The VHF-Gun Electron Source Scheme: a Recipe for a High-Brightness, High-Repetition Rate Performance*, APS ASD Seminar, Argonne National Laboratory, Argonne, IL USA.

August 10, 2017 **Invited talk** with title *Electron Gun Options for High Repetition Rate XFELs*, High Repetition-Rate XFEL Physics and Technology Workshop, Shanghai, China.

- November 2, 2016 **Seminar** with title *The Pursuit of Brightness*, ALS/CXRO Seminar, Lawrence Berkeley National Laboratory, Berkeley, CA USA.
- October 11, 2016 **Invited talk** with title *Overview of Electron Source Development for High Repetition Rate FEL Facilities*, 2016 North America Particle Accelerator Conference, Chicago IL, USA.
- September 13, 2016 **Seminar** with title *APEX, the Advanced Photo-injector EXperiment at the Lawrence Berkeley National Laboratory*, SINAP Zhangjiang campus, Shanghai, China.
- March 22, 2016 **Invited talk** with title *The VHF-Gun, the LBNL High-Brightness Electron Photo-Injector for MHz-Class Repetition-Rate Applications*, at OSA 2016 High-Brightness Sources and Light-Driven Interactions Congress, Long Beach, CA, US, March 2016.
- November 3, 2014 **Invited talk** with title *APEX cathode test results and dark current characterization* at the P3 Photocathode workshop in Berkeley, CA.
- October 2, 2013 **Invited talk** with title *APEX, Recent Results from the APEX Project at LBNL*, at 2013 National Particle Accelerator Conference, Pasadena CA, USA.
- July 15, 2013 **Seminar** with title *APEX, The Advanced Photoinjector Experiment*, LNLS Seminar, Campinas, Brazil, July 15, 2013.
- June 3, 2013 **Invited plenary talk** with title *High-brightness high-duty cycle electron injectors*, at the 1st European Advanced Accelerator Concepts Workshop (EAAC2013), La Biodola, Isola d'Elba, Italy.
- May 25, 2012 **Invited talk** with title *Overview of Recent Progress on High Repetition Rate, High Brightness Electron Guns*, 2012 International Particle Accelerator Conference, New Orleans LA, USA.
- April 26, 2012 **Seminar** with title *APEX: A Normal-Conducting Low-Frequency RF Photo-Injector for the Next Generation Light Source*, RPM Seminar, LBNL Physics Division – Berkeley CA, USA.
- August 23, 2011 **Invited tutorial talk** with title *High brightness electron injectors for 4th generation light sources*, 2011 Free Electron Laser Conference - Shanghai, China.
- June 3, 2011 **Colloquium** with title *Design Studies for a Next Generation Light Source Facility*, Naval Postgraduate School, Monterey CA, US.
- June 29, 2010 **Seminar** with title *A normal conductive RF photo-injector for high repetition rate X-ray free electron lasers*, Cornell University - Ithaca, NY, US.
- February 8, 2010 **Seminar** with title *A normal conductive RF photo-injector for high repetition rate X-ray free electron lasers*, DESY - Zeuthen Seminar, Berlin, Germany.
- November 18, 2009 **Invited talk** with title *High Average Power, High Brightness Electron Beam Sources*, at the 47th ICFA Advanced Beam Dynamics Workshop “The Physics and Applications of High Brightness Electron Beams” - Maui, Hawaii, USA, November 2009.

- May 26, 2009 **Invited talk** with title *Highlights from the 13th Beam Instrumentation Workshop*, at the 2009 DIPAC conference, Basel, Switzerland, may 2009.
- April 17, 2009 **Seminar** with title *The LBNL CW normal-conducting RF photo-injector*, Brookhaven national Laboratory, Upton, NY, USA.
- July 10, 2008 **Seminar** with title *Coherent Synchrotron Radiation Studies at the Advanced Light Source and the IKNO proposal*, Laboratori Nazionali di Frascati dell'INFN, Frascati, Italy.
- June 17, 2008 **Seminar** with title *A CW normal-conductive RF gun for FEL and ERL applications*, Argonne National Laboratory, Argonne, IL USA.
- June 2, 2008 **Invited talk** with title *Non Destructive Transverse Profile Monitors*, at the Instrumentation Workshop for ERL @ CSR, Ithaca, NY USA, June 2008.
- May 8, 2008 **Invited talk** with title *Recent beam measurements and new instrumentation at the Advanced Light Source*, at the 2008 Beam Instrumentation Workshop, Tahoe City, CA USA, June 2008.
- November 17, 2006 **Seminar** at the Center for Beam Physics of the AFRD Division of the Lawrence Berkeley National Laboratory with title: *Coherent synchrotron radiation studies at the Advanced Light Source*.
- August 19, 2005 **Invited talk** at the Workshop on Production and Applications of High Peak Power, Short Pulse, THz Radiation at SLAC with title: *Schemes for generating THz radiation*.
- June 10, 2005 **Seminar** at the SLAC Theory Club Meeting with title: *THz Coherent Synchrotron Radiation from the 'Femtosing' Experiment at the ALS*.
- October 16, 2003 **Seminar** with title *Producing high power, broadband terahertz coherent synchrotron radiation in storage rings*, at SLAC, Stanford, CA, USA.
- February 21, 2000 **Seminar** with title *Luminosity*, at Seminars on DAΦNE, LNF INFN Frascati, Italy.
- September 1998 **Invited talk** with title *Prestazioni di DAΦNE (DAΦNE Performance)* at the LXXXIV National Congress of the Italian Physics Society, Salerno, Italy.
- September 1994 **Invited talk** with title *Il linac di DAΦNE (The DAΦNE Linac)* at the LXXX National Congress of the Italian Physics Society, Lecce, Italy.

References

Available upon request.