Emilio C. Piesciorovsky – Curriculum Vitae

Email: emiliopiesciorovsky@hotmail.com

Phone: 785-477-6418

Work authorization: US citizen

Professional media: https://www.linkedin.com/in/emilio-piesciorovsky-7a72523a/

Education:

Year	Institution	Degree
2015	Kansas State University, Manhattan, KS	Philosophy Doctor in Electrical Engineering
2009	Kansas State University, Manhattan, KS	Master of Sciences in Electrical Engineering
2002	La Plata National University, Buenos Aires, Argentina	Master in International Marketing
1995	National Technologic University, Buenos Aires, Argentina	Electrical Engineer

PhD EE Thesis: Relay in the Loop Test Procedures for Adaptive Overcurrent Protection. Kansas State University, College of Engineering, Department of Electrical and Computer Engineering. Co-Major Professors: Noel N Schulz and Anil Pahwa, 2015. https://krex.k-state.edu/dspace/handle/2097/20537

MS EE Thesis: Heat Gain from Power Panelboard. Kansas State University, College of Engineering, Department of Electrical and Computer Engineering. Co-Major Professors: Warren White and Anil Pahwa, 2009. http://krex.k-state.edu/dspace/handle/2097/2348

M Mktg Thesis: Marketing Annual Plan for the Technologic High School No1. La Plata National University, College of International Marketing. Major Professor: Alberto Rubio.

Professional Experience:

*Research and academic experience, **Industry experience

*2023-present: Technical Professional – Level IV (Power System, Microgrids, Distributed Generation, Controls & Protection), Power Systems Resilience Group, Electrification and Energy Infrastructures Division - Oak Ridge National Laboratory, Hardin Valley Campus, Oak Ridge, TN.

*2020-present: Lab Space Manager – Advanced Protection Lab, The Grid Research Integration & Deployment Center (GRID-C), Power Systems Resilience Group, Electrification and Energy Infrastructures Division - Oak Ridge National Laboratory, Hardin Valley Campus, Oak Ridge, TN.

*2019-2022: Technical Professional – Level III (Power System, Microgrids, Distributed Generation, Controls & Protection), Power Systems Resilience Group, Electrification and Energy Infrastructures Division - Oak Ridge National Laboratory, Hardin Valley Campus, Oak Ridge, TN.

*2018-2019: Postdoc Research Associate (Power System, Microgrids, Distributed Generation, Controls & Protection), Power Systems in the Electrical and Electronics Systems Research Division - Oak Ridge National Laboratory, Oak Ridge, TN.

**2017: Electrical Engineer III - Electrical Substation Protection, Control & Integration Area - Casco Systems, Cumberland, ME.

*2016-2017: Postdoc Research Associate (Power System Protection) - Center for Energy Systems Research - Tennessee Technological University, Cookeville, TN.

*2015: Visiting Instructor - Burns & McDonnell K-State Smart Grid Laboratory - Electrical and Computer Engineering, Kansas State University, Manhattan, KS.

*2011-2014: Research and Teaching Assistant - Electrical and Computer Engineering, Kansas State University, Manhattan, KS.

*2007-2011: Research Assistant - American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and Mechanical Engineering, Kansas State University, Manhattan, KS.

**2006: Technical Sales Manager - Area of Electrical-Diesel Generators for Major Projects and Clients, SDMO, Buenos Aires, Argentina.

**2005-2006: Sales Engineer - Area of Power Technology, Asea Brown Boveri (ABB), Buenos Aires, Argentina.

**1998-2003: Sales Manager - Area of Power Cables for Electrical Contractors and Industries, Pirelli Power Cables and Systems, Buenos Aires, Argentina.

**1997-1998: Sales Engineer - Area of Centrifugal Pumps, Emilio Gaspareti Industrias Argentina (EGIA), Buenos Aires, Argentina.

*1988-1996: Teacher and Workshop Office Head - Technologic High School No. 1, Buenos Aires, Argentina.

Professional Activities:

Research and Teaching Activities

The activities as a Lab Space Manager and Technical Professional (IV) at Oak Ridge Laboratory were:

• I created and lead the Advanced Protection lab space, at the Grid Research Integration & Deployment Center (GRID-C), Hardin Valley Campus, Oak Ridge National Laboratory.
• I organized research project lab tasks, prepared safety protocols, ordered equipment, wrote technical tutorials, and offered technical support to colleagues at the Advanced Power System Protection lab space.
• I installed and designed an electrical substation-grid testbed with inside and outside intelligent electronic devices, to study the impact and detect type of cyber events (setting errors, cyber-attacks, etc.), using a real-time simulator with protective relays, power meters and communication devices in-the-loop.
• I led the research project about the driven adaptive protection/ decarbonization power restoration (DAP/DPR) algorithm for electrical substation/ feeders using a real-time simulator with protective relay interfaces.
• I collaborated in the electrical sensing and signals measurement, analytics, and test beds for resilient integration and examination of IBRs (PROGRESS MATRIX research project).
• I collaborated in the Darknet research project, using signature library events, creating an advanced power system protection algorithm for electrical fault detection with distributed ledger technology (DLT), installing an electrical substation-grid testbed with inside/outside substation devices and DLT, studying the impact of cyber events at protective relays, creating power system applications with DLT, installing an outdoor power line sensor testbed for high accuracy measurements, designing an adaptive protection with DLT and smart contracts for an electrical utility grid with owned DERs, and creating an electrical fault types/ location detection method for main feeders using low voltage sensors at line pole distribution transformers.
• I created an admittance method to detect different types of faults with light indicators on relay's front side, to improve actual sequence method applied by protective relays, comparing both methods with a real time simulator and relays in-the-loop.

- I collaborated with the installation of an outdoor medium-voltage power line sensor testbed, to study and compare new sensor technologies (Rogowski coil, voltage divider, optical sensors, etc.) with iron core sensors.
- I created a universal interface method to find unknown pinouts of IED for using with real-time simulator and hardware-in-the-loop, that was submitted as an invention to be patented on 2021.
- I worked in advanced distribution protection systems for microgrids with S&C IntelliRupter® - PulseCloser Fault Interrupters.
- I set a variable frequency testbed to study the high-frequency response (up to 20 kHz) for protective relays.
- I installed a PSL microPMU system to monitor breaker bus voltages, currents, power and frequency.
- I studied the impact of neutral capacitor geomagnetic induced current blocking devices in distance protection relays.
- I installed a testbed with a real-time simulator and protective relays to study low-level amplifier interfaces for hardware-in-the-loop.
- I wrote and submitted research proposals to national research programs at the Department of Energy, USA.
- I wrote technical reports, conference papers and journal articles.
- I collaborated in preparing list of materials, budgets and layout for the laboratory.
- I prepared demos for internal/external customers and presentations in conferences.

The activities as a Postdoc Research Associate at Tennessee Technological University were:

- I defined the layout for the electrical substation testbed installing the real-time simulator, protective relays, phasor measurement units, meters, power sources, relay test systems, satellite synchronized clock, remote terminal units, rack accessories and other equipment.
- I setup the electrical substation testbed based on a real-time simulator with relays and synchrophasor system in-the-loop.
- I performed experiments with real-time digital simulators with relays in-the-loop.
- I wrote abstracts and proposals for research grants.
- I prepared lectures, labs, and demos for courses integrated at Smart Grid Lab.
- I prepared instruction manuals and lab protocols.
- I prepared a training week on use of the real-time simulator with hardware in-the-loop at the electrical substation testbed.

The activities as a Research Assistant for the Burns & McDonnell- K-State Smart Grid Laboratory were:

- I defined the layout for the smart grid lab installing the real-time simulator, protective relays, meters, power sources, relay test systems, satellite synchronized clock, remote terminal units, rack accessories and other equipment. I developed relay tests,

experiments, demonstrations, projects and research and teaching activities applying multifunction, overcurrent, differential and distance protective relays, relay test systems and real time simulators.

• I installed a remote metering site in the smart grid lab to collect real time data from more than 30 power meters installed across the KSU campus in collaboration with the Energy Environment Program. I developed lectures and demonstrations using power meters across the KSU campus.

• I prepared lectures, labs and demos for courses integrated at Smart Grid Lab.

• I advised two graduated students in their relay-in-the-loop test experiments, "Protection and Communication for a 230 kV Transmission Line using a Pilot Overreaching Transfer Tripping Scheme" by Lazaro S. Escalante De Leon. Acknowledgements at http://krex.k-state.edu/dspace/handle/2097/16899, and "Design of a Differential Protection Scheme for a 345 kV Transmission Line using SEL 311L Relays" by Tarangini K. Subrahmanyam. Acknowledgements at http://krex.k-state.edu/dspace/handle/2097/17645.

The activities as a Research Assistant for ASHRAE and Kansas State University were:

• I measured heat loss to create heat gain models for cable trays, fusible switches and breakers, NEMA motor starters, switchgears, motor control centers, panelboards, isolated and non- segregated bus bars, variable frequency drives, switch mode rectifiers and uninterruptible power supplies.

• I created a design guide to calculate heat gain of electrical and control equipment used in substations, industrial and commercial plants.

Industrial Activities

The activities as an Electrical Engineer (III) in the Electrical Substation Protection, Control & Integration area of CASCO Systems were:

• I performed project engineering/management tasks related to electrical distribution, transmission, generation and substation projects

• I developed power system fault analysis and arc flash studies, protection coordination calculations, protective relay settings and logic diagrams, and setting basis documents for electrical substation projects.

• I designed and commissioned electrical, control and protection systems with protective relays, remote terminal units, human-machine-interface, programmable logic controllers and others.

The activities as a Sales Manager and Engineer in the technical-commercial area of SDMO Industries, ABB, Pirelli Power Cables & Systems, and EGIA were:

- I worked with important businesses in the energy and industrial markets, organizing the business agenda per the type of customer, amount of money, and business steps (purchase, bid, or project).
- I followed up objectives and commercial strategies using a programmed agenda of businesses, and making more effective the concretion of each business.
- I worked with energy projects defining power equipment (lay out, fuses, switches, breakers, transformers, protections, cables, generators, and others) for industrial energy facilities and utility substations.
- I calculated costs and final prices. Also, I made engineering and lab data sheets, and other technical and commercial documents for private and public bids.
- I provided post-sales technical support for the electrical products and systems sold. That allowed me to make additional profits and to determine the clients´ satisfaction.
- I participated in different international and national shows and expositions to promote new lines of products, and increase the number of clients and new projects.

Courses:

Training and Course at Tennessee Technological University

- Advanced Smart Grid Lab Training, 2017: Introduction to real-time simulator with hardware in-the-loop, Experimental circuits, RT-LAB projects, Adaptive overcurrent protection for a microgrid with distributed generators, Bus feeder adaptive overcurrent protection, Real-time simulator with synchrophasor system in-the-loop, 10.5 contact hours/yr. (labs, demos, and projects).
- ECE7970 Intelligent Control and Protection of Power Systems (Smart grid lab integration), 2016, 23 contact hours/yr. (lectures and labs).

Courses at Kansas State University

- ECE686 Power System Protection, 2013-2015, 23 contact hours/yr. (lectures and labs).
- ECE780 Power Seminar, 2014, 2 contact hours (lecture).
- ARE533 Building Electrical Systems, 2013-2014, 2 contact hours/yr. (lectures).
- ECE511 Circuit Theory II, 2011-2012, 6 contact hours/yr. (lectures and labs).

Courses at the Technologic High School No. 1

- Electricity I. 1988-1996,12 contact hours/week, March to December (labs), course coordinator.
- Statics and Resistance of Materials. 1988-1996, 3 contact hours/week, March to December (lectures), course coordinator.
- Design of Machine Elements. 1988-1996, 3 contact hours/week, March to December (lectures), course coordinator.

Refereed Publications and Published Proceedings:

[43] Werth A, Borges Hink R, Hahn G, Piesciorovsky EC, Polsky Y. EmSense: A High-Resolution Emulated Sensor for Experiments with the Smart Grid and Distributed Ledger Technology, 2023 Resilience Week (RWS) Conference, National Harbor, MD, USA, 27-30 November 2023.
https://ieeexplore.ieee.org/document/10284603

[42] Borges Hink R, Hahn G, Werth A, Piesciorovsky EC, Lee A, Smith B, Barcio M, Brukiewa P, Monday W, Kuruganti T. Use Cases of Cyber Grid Guard in Electric Substations with Distributed Energy Resources. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/SPR-2023/2976, PUB ID: 197911, pp. 1-42, September 2023.

[41] Piesciorovsky EC, Warmack "Bruce" RJ, and Polsky Y. Medium-Voltage Testbed for Comparing Advanced Power Line Sensors vs. Measurement Transformers with Electrical Grid Events. VIDE LEAF Book Publisher, Advances in Energy Research: 4th Edition, eBook chapter, Editors: Xiaolong Li and Wen Wang, ISBN: 978-93-92117-09-1 pp. 1-29, October 2023.
https://videleaf.com/product/advances-in-energy-research-4th-edition/
https://videleaf.com/medium-voltage-testbed-for-comparing-advanced-power-line-sensors-vs-measurement-transformers-with-electrical-grid-events/

[40] Piesciorovsky EC and Morales Rodriguez ME. Assessment of the Phase to Ground Fault Apparent Admittance Method with Phase/Ground Boundaries to Detect Types of Electrical Faults for Protective Relays Using Signature Library and Simulated Events. VIDE LEAF Book Publisher, Prime Archives in Electronics: 1st Edition, eBook chapter, ISBN: 978-93-90014-22-4, Editor: Le Nhu Ngoc Thanh, pp. 1-22, October 2023.
https://videleaf.com/product/prime-archives-in-electronics/
https://videleaf.com/assessment-of-the-phase-to-ground-fault-apparent-admittance-method-with-phase-ground-boundaries-to-detect-types-of-electrical-faults-for-protective-relays-using-signature-library-and-simulated-events/

[39] Piesciorovsky EC, Borges Hink R, Werth A, Hahn G, Lee A, and Polsky Y. Assessment and Commissioning of Electrical Substation Grid Testbed with a Real-Time Simulator and Protective Relays/Power Meters in the Loop. VIDE LEAF Book Publisher, Advances in Energy Research: 4th Edition, eBook chapter, Editors: Xiaolong Li and Wen Wang, ISBN: 978-93-92117-09-1, pp. 1-26, September 2023.
https://videleaf.com/product/advances-in-energy-research-4th-edition/
https://videleaf.com/assessment-and-commissioning-of-electrical-substation-grid-testbed-with-a-real-time-simulator-and-protective-relays-power-meters-in-the-loop/

[38] Tsybina E, Ollis B, Omitaomu F, Piesciorovsky EC, Polsky Y, DeNeale S, Ghodeswar, A, Liu Y, Lara-Curzio E, Dobson P, Breunig H, Oldenburg C, Gasperikova E, Borglin S, Taylor M, Jordan P, Kneafsey T, Zhang Y, Mosey G, Hawthorne W,

Walker A, Ingram M. Clean Energy Technology Applications on US Mine Land: Technical Analysis. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/SPR-2023/2868, PUB ID: 192370, pp. 1-219, August 2023.
https://doi.org/10.2172/1996689

[37] Piesciorovsky EC, Hahn G, Borges Hink R, Werth A, and Lee A. Electrical Fault Detection, Power Quality, Distributed Energy Resource Use Case, and Cyber Event Applications with the Cyber Grid Guard System Using Distributed Ledger Technology. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/TM-2023/2921, PUB ID: 194293, pp. 1-31, August 2023.
https://doi.org/10.2172/1994679

[36] Piesciorovsky EC, Hahn G, Borges Hink R, Werth A, and Lee A. Electrical substation grid testbed for DLT applications of electrical fault detection, power quality monitoring, DERs use cases and cyber-events. Elsevier, Energy Reports journal, vol. 10, pp. 1099-1115, November 2023.
https://doi.org/10.1016/j.egyr.2023.07.055

[35] Piesciorovsky EC, Warmack "Bruce" RJ, and Polsky Y. Medium-Voltage Testbed for Comparing Advanced Power Line Sensors vs. Measurement Transformers with Electrical Grid Events, Energies, Special Issue: Thermo-Mechanical and Electrical Measurements for Energy Systems, 16(13), 4944, pp. 1-28, June 2023.
https://doi.org/10.3390/en16134944

[34] Piesciorovsky EC, Borges Hink R, Werth A, Hahn G, Lee A, and Polsky Y. Assessment and Commissioning of Electrical Substation Grid Testbed with a Real-Time Simulator and Protective Relays/Power Meters in the Loop, Energies, Special Issue: Real-Time Simulation of Power Systems and Power Hardware-in-the-Loop, 16 (11), 4407, pp. 1-26, May 2023.
https://doi.org/10.3390/en16114407

[33] Ferrari M, Smith T, Shepard N, Sundararajan A, Herron D, Piesciorovsky EC, Snyder I, Ollis B, Hambrick J, Sticht C, Marshall M. Real-Time Model-Adaptive Relaying Applied to Microgrid Protection, 2023 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT), Washington, DC, USA, 16-19 January 2023, pp. 1-5.
https://ieeexplore.ieee.org/document/10066421

[32] Piesciorovsky EC, Warmack RJ "Bruce", Richards JK, Polsky Y. Outdoor Test Bed Performance of a Power Line Sensor Using a Real-Time Event Simulator. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/TM-2022/2751, PUB ID: 186960, pp. 1-62, November 2022.
https://doi.org/10.2172/1899828

[31] Borges Hink R, Hahn G, Werth A, Piesciorovsky EC, Lee A, Monday W, Polsky Y. Oak Ridge National Laboratory Pilot Demonstration of an Attestation and Anomaly Detection Framework using Distributed Ledger Technology for Power Grid Infrastructure. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/TM-2022/2527, PUB ID: 180482, pp. 1-67, September 2022. https://doi.org/10.2172/1887685

[30] Piesciorovsky EC, Smith TM, Marshall M, Mukherjee SK. System and Method of Device Validation, United States Patent Application 20220200332. UT-Battelle, LLC (Oak Ridge, TN, US), Application Number: 17/548744, Publication Date: 06/23/2022, Filing Date: 12/13/2021
https://www.freepatentsonline.com/y2022/0200332.html

[29] Piesciorovsky EC and Morales Rodriguez ME. Assessment of the Phase to Ground Fault Apparent Admittance Method with Phase/Ground Boundaries to Detect Types of Electrical Faults for Protective Relays Using Signature Library and Simulated Events, International Transactions on Electrical Energy Systems, Article ID 1951836, 2022, pp. 1-20.
https://doi.org/10.1155/2022/1951836

[28] Piesciorovsky EC, Borges Hink R, Werth A, Hahn G, Lee A, Richards J, Polsky Y. Assessment of the Electrical Substation-Grid Test Bed with Inside/Outside Devices and Distributed Ledger. Oak Ridge National Laboratory, Electrification and Energy Infrastructures Division, Report: ORNL/TM-2022/1840, PUB ID: 172967, pp. 1-87, April 2022.
https://www.osti.gov/biblio/1864423/

[27] Ferrari Maglia M, Tolbert L, Piesciorovsky EC. Real-Time Emulation of Grid-Connected DFIG Wind Energy System with Model Validation from Sub-synchronous to Hyper-synchronous Operation under Unbalanced Conditions, 2022 IEEE Power & Energy Society General Meeting (PESGM), Denver, CO, July 17– 21, 2022.
https://www.osti.gov/servlets/purl/1885344
https://ieeexplore.ieee.org/document/9916807

[26] Mukherjee S, Marshall M, Smith T, Piesciorovsky EC, Snyder I, Sticht C. Adaptive Protective Relay Settings – A Vision to the Future, IEEE Rural Electric Power Conference (IEEE REPC), Savanah, GA, to be presented on April 5–7, 2022.
https://www.osti.gov/biblio/1863312

[25] Karnowski TP, Baldwin M, Benson J, Combs F, Fioravanti M, Lawlor P, Piesciorovsky EC, Taylor M. COTSPI End of Year FY2021 Report. Oak Ridge National Laboratory, Cyber-Physical Systems Group, Resilient Complex Systems Section, Cyber Resilience and Intelligence Division, National Security Sciences Directorate. Report: ORNL/LTR-2021/2323, Sponsor DOE NA-22, Classified report submitted as ORNL/NSSD-21/17, access through WebPMIS, December 2021.

[24] Piesciorovsky EC, Smith T, Mukherjee SK, Marshall MW. A Generic Method for Interfacing IEDs using Low Voltage Interfaces to Real-time Simulators with Hardware in the Loop. Elsevier, Electric Power Systems Research journal, vol. 199, pp. 1-13, October 2021.
https://doi.org/10.1016/j.epsr.2021.107431

[23] Piesciorovsky EC, Karnowski T. Variable Frequency Response Testbed to Validate Protective Relays up to 20 kHz. Elsevier, Electric Power Systems Research journal, vol. 194, pp. 1-10, May 2021.
https://doi.org/10.1016/j.epsr.2021.107071

[22] Piesciorovsky EC, Karnowski T. Current Magnitude and Frequency Response of SIPROTEC Relays. Oak Ridge National Laboratory, Power & Energy Systems, Report: ORNL/TM-2019/1437, PUB ID: 135813, pp. 1-27, June 2020.
https://info.ornl.gov/sites/publications/Files/Pub135813.pdf

[21] Piesciorovsky EC, Smith T, Ollis TB. Protection schemes used in North American microgrids. Wiley & Sons, Ltd., International Transactions on Electrical Energy Systems journal, vol. 30 (9), pp. 1-28, May 15, 2020.
https://onlinelibrary.wiley.com/doi/epdf/10.1002/2050-7038.12461

[20] Piesciorovsky EC, Tarditi AG. Modeling the Impact of GIC Blocking Devices on Distance Protection Relay Operations for Transmission Lines. Elsevier, Electric Power Systems Research journal, vol. 180, pp. 1-11, December 9, 2019.
https://doi.org/10.1016/j.epsr.2019.106135

[19] Hink Borges RC, Piesciorovsky EC. GMLC 1.4.9 Technical Report: Data Analytics for Electrical Distribution Systems with Micro PMUs. Report submitted to Oak Ridge National Laboratory, Power & Energy Systems, Report: ORNL/TM-2019/1304, PUB ID: 131667, pp. 1-45, October 2019.
https://info.ornl.gov/sites/publications/Files/Pub131667.pdf

[18] Ferrari Maglia MF, Piesciorovsky EC, Hambrick JC, Smith TM. Cost-Effective Three-Phase Current Amplifier for Real-time Simulators with Relays In-the-Loop. Manuscript presented at 51st North American Power Symposium, Wichita, Kansas, October 13 to 15, 2019.
https://doi.org/10.1109/NAPS46351.2019.9000320

[17] Tarditi AG, Dimitrovski A, Poole B, Duckworth RC, Li FR, Li Z, Liu Y, McConnell BW, Olsen RG, Poole BR, Piesciorovsky EC, Sundaresh L, Wang L, Yuan ZA. High Voltage Modeling and Testing of Transformer, Line Interface Devices, and Bulk System Components Under Electromagnetic Pulse, Geomagnetic Disturbance, and other Abnormal Transients, Grid Modernization Initiative US Department of Energy, DOE Contract Number: AC05-00OR22725, Oak Ridge National Laboratory, Power & Energy Systems, Report: ORNL/TM-2019/1143, PUB ID: 124348, , March 18, 2019.
https://info.ornl.gov/sites/publications/Files/Pub124348.pdf
https://www.osti.gov/biblio/1515663

[16] Piesciorovsky EC, Ollis B. Literature Review: Methods for Microgrid Protection. Oak Ridge National Laboratory Report, Power & Energy Systems, Report: ORNL/TM-2019/1085, PUB ID: 122017, pp. 1-20, February 2019.
https://info.ornl.gov/sites/publications/Files/Pub122017.pdf

[15] Piesciorovsky EC, Ferrari Maglia MF. Comparison of High-Speed Adaptive and Non-Adaptive Backup Overcurrent Protection on Fuse Feeders with Sensors. John Wiley & Sons, Ltd., International Transactions on Electrical Energy Systems, pp. 1-17, December 26, 2018.
https://doi.org/10.1002/etep.2812

[14] Hossain-McKenzie SS, Piesciorovsky EC, Reno MJ, Hambrick JC. Microgrid Fault Location: Challenges and Solutions, Sandia National Laboratory Report SAND2018-6745, pp. 1-46, June 2018.
https://www.researchgate.net/publication/325930386_Microgrid_Fault_Location_Challenges_and_Solutions?channel=doi&linkId=5b2d119ea6fdcc8506bdfffc&showFulltext=true

[13] Piesciorovsky EC, Schulz NN. Comparison of Programmable Logic and Setting Group Methods for Adaptive Overcurrent Protection in Microgrids. Elsevier, Electric Power Systems Research journal, vol. 151, pp. 273-282, May 27, 2017.
https://doi.org/10.1016/j.epsr.2017.05.035

[12] Piesciorovsky EC, Schulz NN. Comparison of Non-Real-Time and Real-Time Simulators with Relays In-The-Loop for Adaptive Overcurrent Protection. Elsevier, Electric Power Systems Research journal, vol. 143, pp. 657-668, November 17, 2016.
https://doi.org/10.1016/j.epsr.2016.10.049

[11] Piesciorovsky EC, Schulz NN. Fuse Relay Adaptive Overcurrent Protection Scheme for Microgrid with Distributed Generators. The Institution of Engineering and Technology journal, IET Generation, Transmission and Distribution, vol. 11 (2), pp. 540-549, 28 September 2016.
https://digital-library.theiet.org/content/journals/10.1049/iet-gtd.2016.1144

[10] PhD EE Thesis: Relay in the Loop Test Procedures for Adaptive Overcurrent Protection. Kansas State University, College of Engineering, Department of Electrical and Computer Engineering. Co-Major Professors: Noel N Schulz and Anil Pahwa, 2015.
https://krex.k-state.edu/dspace/handle/2097/20537

[9] Piesciorovsky EC, Schulz NN. Burns & McDonnell - K-State Smart Grid Laboratory: Protection, Communication & Power Metering. IEEE Power & Energy Society General Meeting, Maryland, Washington, DC Metro Area, July 27 to 31, 2014.
https://ieeexplore.ieee.org/document/6939136

[8] White WN, Piesciorovsky EC. Heat Gain from Electrical and Control Equipment in Industrial Plants, Part II. ASHRAE Research Project RP –1395. TC 9.2 Air Conditioning and Industry Committee, pp. 1-204, November 2011.
http://www.techstreet.com/ashrae/standards/rp-1395-heat-gain-from-electrical-and-control-equipment-in-industrial-plants-part-ii?product_id=1802171

[7] Piesciorovsky EC, White WN. Heat Gain from Power Panelboard – RP 1395. ASHRAE Summer Conference, Montreal, Canada, June 25 to 29, 2011. ASHRAE Transactions, vol. 117, pp. 1-14, Part 2, 2011.
http://www.techstreet.com/ashrae/standards/ml-11-012-rp-1395-heat-gain-from-power-panelboards?product_id=1812255

[6] White WN, Piesciorovsky EC. Heat Gain from Uninterruptible Power Supplies (RP-1395). ASHRAE Summer Conference, Montreal, Canada, June 25 to 29, 2011. ASHRAE Transactions, vol. 117, pp. 1-12, Part 2, 2011.
http://www.techstreet.com/ashrae/standards/ml-11-013-rp-1395-heat-gain-from-uninterruptible-power-supplies?product_id=1812225

[5] Piesciorovsky EC, White WN. Heat Gain from Adjustable Speed (Variable Frequency) Drives – RP 1395. ASHRAE Annual Conference, Albuquerque, New Mexico, June 26 to 30, 2010. ASHRAE Transactions, vol. 116, Part 2, pp. 608-617, 2011.
http://www.techstreet.com/ashrae/standards/ab-10-024-rp-1395-heat-gain-from-adjustable-speed-variable-frequency-drives?product_id=1760326

[4] White WN, Piesciorovsky EC. Heat Gain from Electrical and Control Equipment in Industrial Plants, Part II (RP-1395). A.S.H.R.A.E. Annual Conference, Albuquerque, New Mexico, June 26 to 30, 2010. ASHRAE Transactions, vol. 116, Part 2, pp. 618-638, 2011.
http://www.techstreet.com/ashrae/standards/ab-10-025-rp-1395-heat-gain-from-electrical-and-control-equipment-in-industrial-plants-part-2?product_id=1760295

[3] MS EE Thesis: Heat Gain from Power Panelboard. Kansas State University, College of Engineering, Department of Electrical and Computer Engineering. Co-Major Professors: Warren White and Anil Pahwa, 2009.
http://krex.k-state.edu/dspace/handle/2097/2348

[2] White WN, Piesciorovsky EC. Building Heat Load Contributions from Medium and Low Voltage Switchgear, Part I: Solid Rectangular Bus Bar Heat Losses (RP- 1395). ASHRAE Annual Conference, Louisville, Kentucky, June 20 to 24, 2009. ASHRAE Transactions, vol. 115 (2), pp. 369-382, 2009.
http://www.techstreet.com/ashrae/standards/lo-09-034-rp-1395-building-heat-load-contributions-from-medium-and-low-voltage-switchgear-part-i-solid-rectangular-bus-bar-heat-losses?product_id=1714048

[1] Piesciorovsky EC, White WN. Building Heat Load Contributions from Medium and Low Voltage Switchgear Part II: Component and Overall Switchgear Heat Gains (RP - 1395). ASHRAE Annual Conference, Louisville, Kentucky, June 20 to 24, 2009. ASHRAE Transactions, vol. 115 (2), pp. 382-395, July 1, 2009. http://www.techstreet.com/ashrae/standards/lo-09-035-rp-1395-building-heat-load-contributions-from-medium-and-low-voltage-switchgear-part-ii-component-and-overall-switchgear-heat-gains?product_id=1714050

Abstracts, Posters and Presentations:

[22] Piesciorovsky EC, Stenvig N, Gui Y, Olama MM, Bhusal N, Yadav A. Advanced Test Bed to Assess Event Disturbances in Electrical Grids with DERs using Intelligent Electronic Devices with Varying Sampling Frequencies for Measurement, Keynote speaker at the V-Renewable 2024, 7th Edition of Renewable and Sustainable Energy Virtual conference, March 22-23, 2024. Abstract presentation. https://www.sciwideonline.com/v-renewable2024/

[21] Piesciorovsky EC, March Monthly Power System Resilience Group Presentation, Multimeter Safety Talk/ A Successful Story: Electrical Substation Grid Test Bed, Oak Ridge National Laboratory, 2370 Hardin Valley Campus, Knoxville, March 5, 2024.

[20] Werth A, Borges Hink R, Hahn G, Piesciorovsky EC, Polsky Y. EmSense: A High-Resolution Emulated Sensor for Experiments with the Smart Grid and Distributed Ledger Technology, 2023 Resilience Week (RWS) Conference, National Harbor, MD, USA, 27-30 November 2023. Poster presentation.

[19] Piesciorovsky EC, Borges Hink R, Werth AW, Hahn G. Commissioning of Electrical Substation Grid Testbed with IEDs and Cyber Grid Guard. OPAL-RT's 15th International Conference on Real-Time Simulation. Lisbon, Portugal, November 13-16, 2023. Abstract presentation.

[18] Piesciorovsky EC, Borges Hink R, Werth AW, Hahn G. DarkNet Sponsor (Chris Irwin) Tour and DLT Testbed Presentation/Demo: Electrical Substation Grid Testbed with Cyber Grid Guard and Cyber-attack Event. Advanced Protection Lab, Grid Research Integration and Deployment Center (GRID-C), Oak Ridge National Laboratory, 2370 Hardin Valley Campus, Knoxville, November 8, 2023.

[17] Piesciorovsky EC, Borges Hink R, Werth AW, Hahn G, Polsky Y and Lee A. Advanced Electrical Substation Grid Blockchain Multipurpose Test Bed for Electrical Fault Detection, Power Quality Monitoring, Cyber Events, and Distributed Energy Resources. The IEEE International Conference on Smart Energy Grid Engineering (SEGE 2023), Ontario Tech University, Oshawa, Canada, August 13-15, 2023. Online Session I: Modern Energy Development and Management. Abstract was presented on 8/15/23.

[16] Piesciorovsky EC, Warmack Bruce RJ and Polsky Y. Event Testing of Advanced Power Line Sensor with Measurement Transformers. The IEEE International Conference on Smart Energy Grid Engineering (SEGE 2023), Ontario Tech University, Oshawa, Canada, August 13-15, 2023. Online Session II: Smart Grid and Power Control Technology. Abstract was presented on 8/15/23.

[15] Piesciorovsky EC and Reno M., "Driven Adaptive Protection/ Decarbonization Power Restoration (DAP/DPR) Algorithm for Electrical Substation/ Feeders Using a Real-Time Simulator with Protective Relay Interfaces – Focuses on Protective Relay Misoperations". Oak Ridge National Laboratory and Sandia National Laboratory. Funding Research Presentation for Advanced Grid Modeling (AGM) Seminar, Visit of Ali Ghassemian, Program Manager of AGM & North American Energy Resilience Model, Division of Grid Controls and Communications, Office of Electricity, U.S. Department of Energy. Oak Ridge National Laboratory, Main Campus, Building 5100, Room 276, June 20, 2023.

[14] Werth A, Hahn G, Borges Hink R, Piesciorovsky EC. Cyber-resilience of Blockchain for the Electric Grid, Abstract-oral presentation, 11th Annual Oak Ridge Postdoctoral Association Research Symposium, Oak Ridge National Laboratory main campus, May 18-19, 2023.

[13] Borges Hink R, Werth A, Hahn G, Piesciorovsky EC. Securing Distributed Energy Resources (DERs) through Data and Device Verification, Abstract-oral presentation, 11th Annual Oak Ridge Postdoctoral Association Research Symposium, Oak Ridge National Laboratory main campus, May 18-19, 2023.

[12] Piesciorovsky EC, Borges Hink R, Werth A, Hahn G. Assessment of the Electrical Substation-Grid Testbed with Inside/Outside Devices and Distributed Ledger Technology. The IEEE International Conference on Smart Energy Grid Engineering (SEGE 2022), Ontario Tech University, Oshawa, Canada, August 10-12, 2022. Abstract was presented on 8/12/22.

[11] Piesciorovsky EC, Karnowski T. Power System Metering - High Frequency Variable Response & Testbed for Protective Relays Up To 20 kHz. The IEEE International Conference on Smart Energy Grid Engineering (SEGE 2022), Ontario Tech University, Oshawa, Canada, August 10-12, 2022. Abstract was presented on 8/11/22 and received the best presentation award (Session 1) at the conference.

[10] Borges Hink R, Werth A, Hahn G, Piesciorovsky EC, Polsky Y. Hyperledger fabric blockchain enhanced remote attestation architecture for the electric grid, Abstract-poster presentation, 10th Annual Oak Ridge Postdoctoral Association Research Symposium, July 14-15, 2022.

[9] Werth A, Borges Hink R, Hahn G, Piesciorovsky EC, Polsky Y. EmSense: A High-Resolution Emulated Sensor for Experiments with the DarkNet Infrastructure, Abstract-

poster presentation, 10th Annual Oak Ridge Postdoctoral Association Research Symposium, July 14-15, 2022.

[8] Piesciorovsky EC, Smith T, Mukherjee SK, Marshall MW. A Generic Method for Interfacing IEDs using Low Voltage Interfaces to Real-time Simulators with Hardware in the Loop. OPAL-RT Technologies, RT21 Virtual Edition Conference. Montreal, Canada, September 16-17, 2021. Abstract presentation.

[7] Piesciorovsky EC, Morales Rodriguez ME, Srinivas N, Wilson A. Inverse Phase-to-Ground Fault Apparent Impedance Method to Detect Type of Faults for Protective Relays, Using Signature Library and Simulated Events. The IEEE International Conference on Smart Energy Grid Engineering (SEGE 2021), Ontario Tech University, Oshawa, Canada, August 11-13, 2021. Abstract presentation.

[6] Piesciorovsky EC, Tarditi AG. Modeling the impact of GIC neutral blocking devices on distance protection relay operations for transmission lines. OPAL-RT Technologies, RT20 Virtual Edition Conference. Montreal, Canada, June 18-19, 2020. Abstract presentation.

[5] Tarditi AG, Duckworth RC, Li FR, Li Z, Liu Y, McConnell BW, Olsen RG, Piesciorovsky EC, Poole BR, Sundaresh L, Wang L. Oak Ridge National Laboratory, Lawrence Livermore National Laboratory and University of Tennessee Knoxville, Washington State University, DOE Program Manager: K. Cheung. Testing and Modeling of HEMP and GMD Transients on High-Voltage Transformers. Grid Modernization Lab Consortium Meeting, Washington DC, September 4-7,2018.

[4] Piesciorovsky EC, Schulz N. Comparison of Non-real Time and Real Time Simulators with Relays in-the-loop for Adaptive Overcurrent Protection. OPAL-RT Technologies, Regional User Seminar, Atlanta, Georgia, February 15, 2017. Abstract presentation.

[3] Piesciorovsky EC, Schulz NN. Burns & McDonnell - K-State Smart Grid Laboratory: Protection, Communication & Power Metering - Integrated Smart Grid Laboratory. Proc. IEEE PES Transmission & Distribution Conference & Exposition, Chicago, Illinois, April 14 to 17, 2014.

[2] Piesciorovsky EC, Schulz NN. Protection Power System Course and Smart Grid Laboratory Integration - Burns & McDonnell - K-State Smart Grid Laboratory. Proc. ASEE Midwest Section Annual Conference, Salina, Kansas, September 19, 2013.

[1] Piesciorovsky EC, Schulz NN. Burns & McDonnell - K-State Smart Grid Laboratory: Protection, Communication & Power Metering - Integrated Smart Grid Laboratory. Proc. Research and the State Poster Session, Kansas State University, Manhattan, Kansas, October 29, 2013.

Patent Applications and Invention Disclosures:

US Provisional Patent Application # 202305372. Oak Ridge National Laboratory. Title: Method for Assessing and Commissioning Electrical Substation Grid Testbeds with a Real Time Simulator and Protective Relays and Power Meters in the Loop. Main Inventor: Piesciorovsky EC, Co-Inventors: Borges Hink R, Werth A, Hahn G, Polsky Y, February 15, 2024.

US Provisional Patent Application # 63434227. Oak Ridge National Laboratory. Title: Phase to Ground Fault Apparent Admittance Method with Phase/Ground Boundaries for Detecting Fault Types: Main Inventor: Piesciorovsky EC, Co-Inventors: Borges Hink RC, Werth A, Hahn G, Ferrari Maglia MF, Morales Rodriguez ME, October 1, 2023.

US Provisional Patent Application # 63533144. Oak Ridge National Laboratory. Title: A Distributed Ledger Technology Framework for Power Grid Infrastructure. Main Inventor: Borges Hink R, Co-Inventors: Werth A, Hahn G, Piesciorovsky EC, August 17, 2023.

Invention Disclosure ID# : 202305403. Oak Ridge National Laboratory. Title: Electrical Fault Detection and Power Quality Monitoring at Electrical Substation Grid with Customer-Owned Distributed Energy Resources, By Using a Cyber Grid Guard System with Distributed Ledger Technology. Main Inventor: Piesciorovsky EC, Co-Inventors: Borges Hink R, Werth A, Hahn G, Polsky Y, June 27, 2023.

Invention Disclosure # 202305366. Oak Ridge National Laboratory. Title: Cyber Grid Guard A Distributed Ledger Technology Framework for increasing the trustworthiness of Power Grid Infrastructure. Main Inventor: Borges Hink R, Co-Inventors: Piesciorovsky EC, Werth A, Hahn G, May 8, 2023.

Invention Disclosure # 81941854. Oak Ridge National Laboratory. Title: Analog Monitoring for Wind Turbine Cyber Protection and Health. Main Inventor: Karnowski TP, Co-Inventor: Piesciorovsky EC, January 12, 2023.

Invention Disclosure # 81935411. Oak Ridge National Laboratory. Title: Phase to Ground Fault Apparent Admittance Method with Phase/Ground Boundaries for Detecting Fault Types: Main Inventor: Piesciorovsky EC, Co-Inventors: Borges Hink RC, Werth A, Hahn G, Ferrari Maglia MF, Morales Rodriguez ME, February 11, 2022.

US Permanent Patent Application # 17/548,744. Oak Ridge National Laboratory. Title: System and Method of Device Validation. Main Inventor: Piesciorovsky EC, Co-Inventors: Smith TM, Marshall M, Mukherjee SK, December 12, 2021.

US Provisional Patent Application # 63/27743. Oak Ridge National Laboratory. Title: Interfacing IEDs using Low-Voltage Interfaces to Real-Time Simulators with Hardware in the Loop. Main Inventor: Piesciorovsky EC, Co-Inventors: Smith TM, Marshall M, Mukherjee SK, December 18, 2020.

Invention Disclosure # 81923278. Oak Ridge National Laboratory. Title: Universal Adapter for Protective Relay to Hardware in The Loop Systems. Main Inventor: Piesciorovsky EC, Co-Inventors: Smith TM, Marshall M, Mukherjee SK, August 8, 2020.

Invention Disclosure # 201804234. Oak Ridge National Laboratory. Title: Amplifier Based Hybrid Interface for Digital Simulators. Main Inventor: Buckner MA, Co-Inventors: Ericson MN, Hambrick JC, Irminger P, King Jr TJ, Piesciorovsky EC, Smith TM, Snyder IB, Warmack RJB, Ferrari Maglia MF, September 5, 2018.

Lay Publications:

Piesciorovsky EC, Borges Hink R, Werth A, Hahn G. and Anabelle Lee. Enhancing Electrical Grid Efficiency and Security Using Blockchain Innovation. Science Featured Editor. 720 King St W Suite 2000, Toronto, ON, M5V 3S5, Canada. March 15, 2024. https://sciencefeatured.com/2024/03/15/enhancing-electrical-grid-efficiency-and-security-using-blockchain-innovation/

Borges Hink R, Piesciorovsky EC, Werth A, and Hahn G. Focus on Grid: Blockchain helps increase electric grid resiliency by S. Heather Duncan. REVIEW Magazine, Oak Ridge National Laboratory, Vol. 56 No 2, Spring 2023. https://www.ornl.gov/blog/ornl-review/archive

Borges Hink R, Piesciorovsky EC, Werth A, Hahn G, Lee A and Polsky Y. Researchers use blockchain to increase electric grid resilience. Oak Ridge National Laboratory, Social Media Article, November 2022. https://www.ornl.gov/news/researchers-use-blockchain-increase-electric-grid-resiliency

Piesciorovsky EC. Integrating Equipment and Software in the Smart Grid Lab: Creating a Smart Overcurrent Protective Scheme in a Radial Distribution System. EPAP Newsletter, College of Engineering, Electrical and Computer Engineering Department, Kansas State University, pp. 1, December 2014.

Piesciorovsky EC. Integrating Equipment and Software in the Smart Grid Lab, Creating a Smart Overcurrent Protective Scheme in a Radial Distribution System. Annual Report, Electrical and Computer Engineering Department, Kansas State University, pp. 2, 2013.

Smart Grid Lab Instruction Manuals and Protocols:

Piesciorovsky EC. Real Time Simulator with Synchrophasor System in the Loop, Instruction Manual. Center for Energy Systems Research, Tennessee Technological University, Cookeville, Tennessee, pp. 1-112, 2017. https://www.researchgate.net/publication/318431717_Real-time_Simulator_with_Synchrophasor_System_in-the-Loop_-_Instruction_Manual

Piesciorovsky EC. Real Time Simulator with Protection Systems in the Loop, Instruction Manual. Center for Energy Systems Research, Tennessee Technological University, Cookeville, Tennessee, pp. 1-127, 2017.
https://www.researchgate.net/publication/318431722_Real-time_Simulator_with_Protection_System_in-the-Loop_-_Instruction_Manual

Piesciorovsky EC. Communication and Setting Parameters of Protective Relays, LP1-2016 Lab Protocol. Center for Energy Systems Research, Tennessee Technological University, Cookeville, Tennessee, pp. 1, 2016.

Research Support:

Driven Adaptive Protection/ Decarbonization Power Restoration (DAP/DPR) Algorithm for Electrical Substation/ Feeders Using a Real-Time Simulator with Protective Relay Interfaces. Oak Ridge National Laboratory ($ 300,000 per year) Sandia National Laboratory ($ 300,000 per year), Role: PI: Emilio C Piesciorovsky, Co-PI: Matthew J Reno, 2023-2025.

PROving GRid sweep Electrical Sensing and Signals – Measurement, Analytics, and Testbeds for Resilient Integration and eXamination of IBRs (PROGRESS MATRIX). Oak Ridge National Laboratory. $ 1,500.000. Role: PI: Nils Stenvig, Technical Professional: Emilio C Piesciorovsky, 2023-24.

Darknet project: Signature library events, Advanced power system protection algorithms for electrical fault detection with distributed ledger technology (DLT), Electrical substation-grid testbed with inside/outside substation devices and DLT, Impact of cyber events at protective relay, Power system applications with DLT, Outdoor power line sensor testbed for high accuracy measurements, Adaptive protection with DLT and smart contracts for an electrical utility grid with owned DERs, Electrical fault types/ location detection method for main feeders using low voltage sensors at line pole distribution transformers. Oak Ridge National Laboratory. $ 10,000,000. Role: Technical Professional: Piesciorovsky EC, PIs: Yarom Polsky/ Teja Kurunganti, 2020-2023.

Adaptive protection and Grid Emulation Lab (Updated and New OPAL-RT Simulators), Oak Ridge National Laboratory. $ 200,000. Role: PI: Piesciorovsky EC, 2020.

Microgrids Controls Development, Oak Ridge National Laboratory. $ 500,000. Role: Technical Professional, PI: Smith TM and King TJ Jr, 2019.

High Frequency Response of Intelligent Electronic Devices, Oak Ridge National Laboratory. $ 250,000. Role: Technical Professional, PI: Karnowski TP, 2019.

Grid Modernization Laboratory Consortium 1.4.9 – Integrated Multi Scale Machine Learning, US Department of Energy. Lawrence Berkeley National Laboratory (Lead

Performer), Oak Ridge National Laboratory and partners. $ 3,730,000. Role: Postdoc Research Associate, PI: Borges R., 2019.

Advanced protection systems for microgrids, Oak Ridge National Laboratory. $ 500,000, Role: Postdoc Research Associate, PI: Smith TM, 2018-2019.

High Voltage Modeling and Testing of Transformer, Line Interface Devices, and Bulk System Components Under Electromagnetic Pulse, Geomagnetic Disturbance, and other Abnormal Transients. Grid Modernization Initiative US Department of Energy, Oak Ridge National Laboratory. $ 2,200,000. Role: Postdoc Research Associate, PI: Tarditi AG, 2018.

Rapid digital-twin development framework for quantitative assessment of grid cyber-resilience. Laboratory Directed Research & Development Full Proposal for Director's R&D and Strategic Hire Funding. Resilient Cyber-Physical Systems Initiative, Oak Ridge National Laboratory. $ 1,915,000, Role: Co-Investigator, PI: Kerekes RA, 2018.

Synchrophasor system in the Smart Grid Lab, Center for Energy Systems Research, Tennessee Technological University. Schweitzer Engineering Laboratories. $ 24,880, PI: Piesciorovsky EC, 2016.

Activation of core at OP5600 real-time simulator in the Smart Grid Lab, Center for Energy Systems Research, Tennessee Technological University. OPAL RT. $ 22,217, PI: Piesciorovsky EC, 2016.

Installation of the Burns & McDonnell-K-State Smart Grid Lab. Electrical Power Affiliates Program at Kansas State University. $ 500,000, Role: Research Assistant and Lab Instructor, PI: Schulz NN, 2012-2014.

Heat gains from electrical and control equipment in industrial plants. American Society of Heating, Refrigerating, and Air-Conditioning Engineers. $ 192,000, Role: Research Assistant, PI: White WN, 2007-2010.

Book Referee:

Conde Enriquez A., Overcurrent Relay Advances for Active Protection in Modern Electricity Networks. Energy and Power, Elsevier and Academic Press, Energy Book Proposal Review Form submitted on April 18, 2021 (payment for this work was donated to the American Red Cross).

Manuscript Referee:

Electric Power Systems Research: 2022

IEEE Open Access Journal of Power and Energy: 2020

IEEE Transactions on Power Delivery: 2020, 2017.

IET Generation, Transmission & Distribution: 2019, 2018.

Honors and Awards:

Best Presentation Award (Session 1), IEEE International Conference on Smart Energy Grid Engineering (SEGE 2022), Ontario Tech University, Oshawa, Canada, August 10-12, 2022, Piesciorovsky EC, Power System Metering - High Frequency Variable Response & Testbed for Protective Relays Up To 20 kHz.

Senior Member of the Institute of Electrical and Electronics Engineers, 2020.

Outstanding Graduate Student Teaching Award, Kansas State University, College of Engineering, Department of Electrical and Computer Engineering, 2014.

Notable Scholarly Graduate Student Achievement, Kansas State University, Graduate Student Council, 2010.

ASHRAE Transaction Paper Award for best paper; "Building heat load contributions from medium and low voltage switchgear part II: component and overall switchgear heat gains (RP-1395)", American Society of Heating, Refrigerating and Air-Conditioning Engineers, 2009.

Continuing Education and Research:

Wilczek Frank, 2004 Nobel Prize Winner for Physics. Wigner Lecture at Oak Ridge National Laboratory, Iran Thomas Auditorium at the Spallation Neutron Source, Oak Ridge, TN, 1:00 – 2:30 pm, April 1, 2024.

Piesciorovsky Emilio C., Monthly Power System Resilience group meeting presentation, A Successful Story: Electrical Substation Grid Testbed for Multiple Projects - Safety Topic: Use of Digital Multi-meters and Dangers, 2370 Hardin Valley Campus, Oak Ridge National Laboratory, Knoxville, TN,1:00 – 2:00 pm, March 2, 2024.

Qualified Electrical Worker Level 2/3 Safety Training (2 hours) for three phase power systems up to 600 VAC, Main campus, 5100 Building, Rm 134, Oak Ridge National Laboratory, TN, February 14, 2024.

Counter Threat Awareness Training (5hs), US Department of State, Diplomatic Security Service, Director of Foreign Affairs Security Training Center, Brent L Brown, August 2, 2023.

Schweitzer Engineering Laboratories Training (24hs), APP 3530: SEL-3530 Real-Time Automation Controller (RTAC) Event, SEL Charlotte Training Center, 901 Center Park Dr, Charlotte, NC 28217, June 6-7-8, 2023.

Laboratory Space Manager, Human Performance Improvement (HPI) Training (2 hours), Brandy Young from Idaho National Laboratory, Main campus, 5100 Building, Lecture Hall Rm 128, Oak Ridge National Laboratory, TN, March 24, 2023.

Lab Space Manager, Dynamic Learning Session Training (8hs). Interactive course that builds practical skills through lecture, discussion, simulations, and exercises. September 7, 2022. Oak Ridge National Laboratory, Main Campus, Building 5200, Emory Conference Room.

Emilio C Piesciorovsky was selected as an Oak Ridge National Laboratory candidate for being the country coordinator of Argentina at the Net Zero World Initiative on March 4, 2022. Then, he will compete with other candidates from ten national laboratories at the Net Zero World Action Center.

GRID-C Videography Shoot Event, Emilio C Piesciorovsky (Leader), Drew Herron and Neil Shepherd. Lab space: Grid Network Emulation, Control unit: Real time simulator with SEL 451 relays and SEL 734 power meters in the loop. Situation: lights flashing, computers showing data, open cabinets, person working at station. Script line: to evaluate technologies before integration into the living grid. ORNL, GRID-C 2370 HVC, Knoxville, TN, August 26, 2021, 2 - 2:30 pm.

DOE Darknet Task 5 Meeting with David Wells. Power system testbed presentation: Real time simulator and protective relays with IEC 61850 (2370 HVC, lab space 252), FY21 progress to date and planned activities for the next two quarters, Emilio C Piesciorovsky. Oak Ridge, TN, June 1, 2021.

Emilio C Piesciorovsky is a graduate student Adviser, Title: Impact and Prediction of Household Waste Based on Population Consumption, Graduated student: Pablo G Marchionni, Master of Business Administration, National Technologic University, La Plata, Buenos Aires, Argentina, 2021-22.

Presentation Skills - Sharing Your Science (1.5 hour), Web Training Course, Oak Ridge National Laboratory, TN, April 28, 2021.

Laboratory Space Manager Self-Assessment, Walking Trough (2 hours), Oak Ridge National Laboratory, TN, March 29, 2021

Laboratory Space Management (2 hours), Web Training Course, Oak Ridge National Laboratory, TN, March 23, 2021

Qualified Electrical Worker Level 2/3 Training (2 hours), Training Course, Oak Ridge National Laboratory, TN, March 4, 2021.

EEID Safety and Operations All Hands Training (2 hours), Web Seminar Course, Oak Ridge National Laboratory, TN, January 13, 2021.

DOE Microgrid R&D Peer Review Meeting: Advanced and Adaptive Protection Schemes for Microgrids with Inverter Based Distributed Generators, Web seminar, June 10-11, 2020.

EESRD/ETSD Cross-Division Learning Workshop. Oak Ridge National Laboratory, 2350HVC, Hardin Valley, TN, December 5, 2019.

DOE Microgrid R&D Program Meeting. Presentation: Advanced Protection Schemes for Microgrid (Oak Ridge National Laboratory), FY19 accomplishments, FY20 progress to date, planned activities for the next two quarters, Maximiliano Ferrari Maglia, Emilio C Piesciorovsky and Travis Smith. Arlington, VA, December 3-4, 2019.

Energy and Environmental Sciences Energy Talks: Networked Microgrids and Transactive Controls. Ben Ollis, Weinberg Auditorium - 4500 N Building, Oak Ridge National Laboratory, TN, September 12, 2019.

Typhoon Hardware in the Loop Training (6 hours), Grid-Connected Battery Inverter, Terrestrial Microgrid with Intentional Islanding, Control Design and Rapid Prototyping, Electric Power Research Institute (EPRI), Knoxville, TN, June 13, 2019.

CAPE Training (24 hours), Computer-Aided Protection Engineering Course, 2018: Database Editor, Short Circuit, One-Line Diagram, Coordination Graphics, Relay Setting, Relay Checking, System Simulator, Line Constants, Power Flow, Short Circuit Analysis, Breaker Duty. Electrocon International Inc., Puerto Rico Electric Power Authority (PREPA), San Juan, PR, October 15-18, 2018.

CPR/AED Training (4 hours), Heart Saver First AID CPR AED - American Heart Association, Roane State Community College, Knoxville, TN, June 6, 2018.

Qualified Electrical Worker Level 2-3 Safety Training (8 hours), Oak Ridge National Laboratory, Oak Ridge, TN, March 23, 2018.

Electrical Safety Low Voltage Qualified Operator Training (8 hours), Oak Ridge National Laboratory, Oak Ridge, TN, March 20, 2018.

North American Synchrophasor Initiative (NASPI) 2016, 1st International Synchrophasor Symposium, United States of America, Atlanta, March 22 to 24, 2016.

IEEE PES Transmission & Distribution Conference & Exposition, Chicago, Illinois, April 14 to 17, 2014.

OPAL RT-LAB Training Week. Burns & McDonnell – K-State Smart Grid Laboratory", 2095 Rathbone Hall, Kansas State University, October 21-24, 2013.

American Society for Engineering Education (ASEE) Midwest Section Annual Conference, Salina, Kansas, September 19, 2013.

NovaTech Overland Park Technical Symposium, Overland Park, Kansas, July 9, 2013.

NovaTech Kansas Utility Technical Symposium, Overland Park, Kansas, July 26, 2012.

Schweitzer Engineering Laboratories Product Training, Overland Park, Kansas, May 15, 2012.

ASHRAE Summer Conference, Montreal, Canada, June 25 to 29, 2011.

ASHRAE Annual Conference, Albuquerque, New Mexico, June 26 to 30, 2010.

ASHRAE Annual Conference, Louisville, Kentucky, June 20 to 24, 2009.

Public Education and Outreach:

Electric Power Board Utility Visit, "Adaptive Relay Protection Research Project – Riverside Microgrid", oral presentation and demonstration, Power Systems in the Electrical and Electronics Systems Research Division, Oak Ridge National Laboratory, Oak Ridge, TN, January 17, 2020.

New York Power Authority Electrical Utility Visit, "Relay in-the-loop with low-level test interface and amplifier using a real-time simulator", oral presentation and demonstration, Power Systems in the Electrical and Electronics Systems Research Division, Oak Ridge National Laboratory, Oak Ridge, TN, July 19, 2018.

Real-time Simulation Seminar, "OP-4510 Real Time Simulator with Hardware in the Loop", oral presentation, Power Systems in the Electrical and Electronics Systems Research Division, Oak Ridge National Laboratory, Oak Ridge, TN, June 19, 2018.

Open House 2017, Tennessee Valley Authority Visit, "Monitoring a fault situation with PMUs and phasor data concentrator", oral presentation and demonstration, Smart Grid Laboratory, Center for Energy Systems Research, Tennessee Technological University, Cookeville, TN, March 30, 2017.

Open House 2014, "Burns & McDonnell – K-State Smart Grid Lab Introduction", video, 2095 Rathbone Hall, Kansas State University, Manhattan, KS, April 3 and 4, 2014.

EPAP Executive Meeting, "KSU student's experience and perspective", oral presentation, Kansas State University, Olathe, KS, March 12, 2013.

Open House 2013, "Temporary fault and line recloser", oral presentation and demonstration, 2095 Rathbone Hall, Kansas State University, April 20, 2013.

EPAP 2013, "Burns & McDonnell – K-State Smart Grid Laboratory", video, 2095 Rathbone Hall, Kansas State University, Manhattan, KS, September 11, 2013.

National American Power Symposium (NAPS) 2013, "Burns & McDonnell – K-State Smart Grid Laboratory", tour, video and oral presentation, 2095 Rathbone Hall, Kansas State University, Manhattan, KS, September 24, 2013.

Smart Grid Lab Dedication, "Over-current protection - Relay display sequence" video and demonstration, 2095 Rathbone Hall, Kansas State University, Manhattan, KS, October 23, 2012.

EPAP 2012, "Over current protection - Relay display sequence - Current phasor diagrams", oral presentation and demonstration, 2095 Rathbone Hall, Kansas State University, Manhattan, KS, September 5, 2012.

Professional and Academic Organizations:

Institute of Electrical and Electronics Engineers (IEEE) – Senior Member 2020-present.

Institute of Electrical and Electronics Engineers (IEEE) – Member 2013-2019.

Kansas State Alumni Association – Member 2016-present

Software:

Microsoft Expression Encoder 4, ETAP, PowerWorld, CAPE®, MATLAB-Simulink, RT-LAB, DIGSI 4 Version 4.93, AcSELerator-Quickset, SEL-5401, SEL-5801, SEL-5020, SEL-5073 SYNCHROWAVE Phasor Data Concentrator System, SEL-5078-2 SYNCHROWAVE Central Synchrophasor Visualization and Analysis, IntelliLink® Setup Software, microPMU File Converter, microPMU Configurator 3.6.0.3, open PDC software, DOBLE Protection Suite, Test Universe OMICRON, NI-LabVIEW Signal Express, Redhat, Cadence (PSpice), HOMER, AutoCAD, and SAP.

Power System Simulator, Protection, Measurement & Communication Equipment:

Power system simulators: OPAL-RT OP5600 and OP4510, CMC 256 OMICRON, SEL-AMS relay test systems, DOBLE F6150 test device, and F5850 IntelliRupter® Interface.

Microprocessor protections: SIPROTEC 7SJ61, SIPROTEC 7SJ62, SEL 451, SEL 351S, SEL 311L, SEL 411L, SEL 700G, SEL 387L, SEL 421L protective relays, and S&C IntelliRupter® PulseCloser Fault Interrupters (Protection & Control, and Communication Modules).

Synchrophasor equipment: SEL 2407 satellite-synchronized time source, SEL synchrophasor relays, SEL 3373 phasor data concentrator, PSL microPMUs.

Communication devices: SEL 2020 and SEL 2032 communication processors, SEL-3530 real-time and Orion LX automation controllers.