



The following are biographical sketches and candidacy statements of the nominated candidates for the annual election of officers for ECS. Ballots (and instructions for voting either online or by mail) will be sent in January 2014 to all Voting Members of the Society. The office not affected by this election is that of the Secretary.

Candidate for President



PAUL A. KOHL is a Regents' Professor and Hercules Inc./Thomas L. Gossage Chair in Chemical and Biomolecular Engineering at the Georgia Institute of Technology. He received a PhD in Chemistry from The

University of Texas at Austin under Allen J. Bard. He was employed by AT&T Bell Laboratories from 1978 to 1989, where he was involved in creating new chemical processes for electronic components, including photoelectrochemical processing of semiconductors, highspeed electrodeposition, analysis of next generation semiconductor materials components, including electron and surface microscopy, and new materials and structures for advanced packaging of integrated circuits.

In 1989, he joined the faculty of Georgia Tech, where he is currently Director of the Interconnect Focus Center, one of six Semiconductor Research Corporation/DARPA MARCO Focus Centers. His research interests include electrochemical devices for energy conversion and storage, such as fuel cells and batteries, electrochemical deposition of metals for electronic packaging, new low dielectric constant materials for electronic devices and packages, and novel materials for electronic interconnect. Paul Kohl has 250 journal publications, 57 U.S. patents, and 400 conference presentations.

Paul Kohl has been a member of ECS since 1976. He is an ECS Fellow and has received the Carl Wagner and Thomas D. Callinan Awards. He has held a number of editorial positions including Founding Editor of *Interface* (1992-1995), Editor of the *Journal of The Electrochemical Society* (1995-2007), Founding Editor of *Electrochemical and Solid-State Letters* (1998-2003), and a Journal Divisional Editor (1985-1990). He was the first Chair (1995-1996) and cofounder of the Georgia Section. He has held a number of ECS volunteer positions including member of the Publication Committee (1987-2008), Technical Affairs Committee (1991-1994), Electronics Division advisor (1991-1994),

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Candidates for Vice-President



JOHNA LEDDY joined The Electrochemical Society while a graduate student at the University of Texas. She earned her BA at Rice University. After a postdoctoral appointment in the fuel cell program at Los

Alamos National Labs and tenure at the City University of New York, Queens College, Leddy joined the chemistry faculty at the University of Iowa, where she is affiliated with the Environmental Science and the Applied Math and Computer Science Programs.

Dr. Leddy and her group work in varied domains of electrochemical research: fundamentals of kinetics and transport, physical manipulation of electrocatalysis, electrochemical generation and storage, sensors, modified electrodes, electroanalysis, and modeling. A first physical manipulation of catalysis is achieved on introduction of micromagnets to electrodes, where dramatically-increased currents scale with magnetic moment and magnetic fields. This platform technology is demonstrated to increase efficiencies in batteries, fuel cells, Grätzel cells, and photoelectrocatalytic cells for H_2 evolution (HER). Micromagnets of sufficient field allow near diffusion limited electrolysis of CO at platinum. A second physical manipulation of catalysis is the ultrasonic irradiation of electrodes in a thin solvent layer. Kinetics for O_2 reduction (ORR) and methanol electrolysis are substantially improved. In the thin layer, frank cavitation is not observed and only electrode processes are impacted. Other projects include modification of electrodes with films of non-uniform density to control transport; breath sensors for ethanol, smoking by-products, and acetone; electroanalytical methods for characterizing films; and ammonia generation at algae modified electrodes. The efforts have generated papers in the *Journal of The Electrochemical Society*, *Electrochemical and Solid-State Letters*, and *ECS Transactions*, 200 presentations, and 25 U.S. Patents with 25 published, pending applications. Leddy co-authored the solution manual for *Electrochemical Methods*, and she is a Fellow of ECS.

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PETER S. FEDKIW, Alumni Association Graduate Professor and Head of the Department of Chemical and Biomolecular Engineering at North Carolina State University, received his BChE degree in 1974 from

the University of Delaware and his PhD in chemical engineering in 1979 at the University of California, Berkeley. Professor Fedkiw joined the NCSU faculty in 1979 and was promoted to Associate and Full Professor in 1983 and 1989, respectively. From 1995 to 2008 Fedkiw was a part-time, Intergovernmental Personnel Act employee of the Chemical Sciences Division, U.S. Army Research Office (ARO) in Research Triangle Park, NC. He supported ARO's Advanced Energy Conversion Program by advocating, formulating, and managing basic research activities underpinning portable power systems for the dismounted warrior. Professor Fedkiw was named Guest Professor in the College of Materials Science and Chemical Engineering, Zhejiang University in 2007. He has advised 17 postdoctoral research associates and directed 43 graduate students, the majority of whom were PhD candidates.

Professor Fedkiw's research expertise is electrochemical engineering, and in his 34-year career at NCSU he has published in a variety of areas including: theoretical studies of current-distribution problems; electrochemical-based mass-transfer separation processes; optimal control of electrochemical reactors; polymer electrolyte membrane reactors for electrosyntheses and fuel cells; electrodeposition of nanocrystalline metals and nanocrystalline composites; composite electrolytes and nanofiber anodes for rechargeable lithium (ion) batteries; and oxygen reduction electrocatalysts, among others. Fedkiw has published over 110 peer-reviewed papers and has received seven patents issued or pending. His students and he have presented over 130 papers, posters, and talks, the majority of which have been at ECS meetings.

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Candidates for Treasurer



E. JENNINGS (EJ) TAYLOR is Chief Technical Officer and Intellectual Property Director at Faraday Technology Inc., an electrochemical engineering company that he founded in 1991. His vision for Faraday

was to explore the possibilities of pulse and pulse reverse electrolysis and shift the focus of electrochemical process technologies from chemical additions and often hazardous electrolytes to “electric field” control with simple, environmentally benign electrolytes. With contributions from a very talented Faraday staff, Dr. Taylor has collaborated on (1) electrodeposition processes for copper for electronic applications, chrome coatings, alloys for SOFC interconnects, lead-free tin solders and fuel cell catalysts; (2) electrochemical surface finishing for automotive gears, stainless steel valves and niobium superconducting radio frequency cavities, titanium and nickel aerospace engine components, and fuel cell and flow battery bipolar plates; (3) electrochemical water treatment technologies; (4) novel electrochemical cells for printed circuit boards; and (5) corrosion sensing technologies. These activities have led to approximately 120 technical papers and approximately 33 patents with numerous conference presentations and patents pending. Dr. Taylor and his colleagues at Faraday were recognized by the National Association of Surface Finishers for contributions to the field of pulse/pulse reverse surface finishing with the 2008 Blum Scientific Achievement award. He has recently guided Faraday through a strategic acquisition and continues to serve as Chief Technical Officer at Faraday and Intellectual Property Director for the parent corporation, Physical Sciences Inc.

Dr. Taylor is passionate about innovation and Faraday’s technologies are commercialized through the process of “open innovation” whereby Faraday works closely with corporate clients to demonstrate engineering readiness and manufacturability at the bench- and pilot-scale, then transitions the manufacturing process to the client’s facility. The competitive advantage associated with the technology is typically transferred to the client via patent licensing, although Faraday has also sold eight patents.

Taylor has a BA in chemistry (1976) from Wittenberg University, and MS and PhD degrees in materials science (1981) from the University of Virginia where he studied

under Glenn Stoner. His dissertation research was directed toward oxygen reduction kinetics related to fuel cells and conducted at Brookhaven National Laboratory under the direction of S. Srinivasan, W. O’Grady, J. McBreen, and G. Stoner. Subsequently, he obtained an MS in Technology Strategy and Policy (1991) from Boston University and is admitted to the U.S. Patent & Trademark Office bar (Reg. No. 53,676).

Dr. Taylor joined ECS in 1979 while a non-resident graduate student at Brookhaven National Laboratory. After receiving his PhD in 1991 from the University of Virginia, Dr. Taylor conducted battery research at the corporate R&D center for International Nickel Corp., served as Manager of Fuel Cell Research at Giner Inc., and served as Manager of Electrochemical Technologies at Physical Sciences Inc.

Dr. Taylor has served on various National Science Foundation Advisory Committees including as past Chair and current member of the Small Business Innovation Research program AdComm, member of the Engineering Directorate AdComm, and member of the Business and Operations AdComm. He also serves on several nonprofit boards including the Wright Brothers Institute, a “collaboratory” whose mission is to promote innovative solutions and commercialization related to U.S. Air Force technologies. Dr. Taylor is also committed to student education and Faraday has provided intern opportunities for undergraduate and graduate students, patent law students, and high school science and math teachers.

During his 30+ years as a member of the ECS, Dr. Taylor has served as Secretary, Treasurer, Vice-Chair, and Chair of the Boston Section of the Society. He currently chairs the Sponsorship Committee, serves on the Development Committee and is a member of the Executive Committee of the Industrial Electrolytic and Electrochemical Engineering Division. He has presented an ECS Tutorial titled “Intellectual Property for Electrochemical Scientists, Engineers, and Technologists,” and recently presented an ECS “Hot Topic” breakfast briefing entitled, “The Role of Small Businesses in the Innovation Ecosystem.”

Statement of Candidacy

I am deeply honored to be nominated for the position of Treasurer of ECS. I understand both the stewardship and fiduciary responsibilities associated with being a member of the Society’s Executive Board and the Office of Treasurer. I accept these responsibilities without reservation.

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ENRICO TRAVERSA in 1986 received his “Laurea” (Italian Doctoral Degree), *summa cum laude*, in chemical engineering from the University of Rome La Sapienza. In March 2013 he joined the King

Abdullah University of Science and Technology (KAUST) as Professor of Materials Science and Engineering, after being, from April 2012, the Director of the Department of Fuel Cell Research at the International Center for Renewable Energy, Xi’an Jiaotong University, China. He joined the University of Rome Tor Vergata in 1988, where since 2000, he has been a Professor of Materials Science and Technology, now on leave of absence. At the same university, from 2001 to 2008 he was the Director of the PhD Course of Materials for Health, Environment, and Energy. From January 2009 to March 2012, he was a Principal Investigator at the International Research Center for Materials Nanoarchitectonics (MANA) at the National Institute for Materials Science (NIMS), Tsukuba, Japan, leading a unit on Sustainability Materials.

Professor Traversa is an author of more than 500 scientific papers (more than 310 of them published in refereed international journals) and 16 patents, and edited 28 books and special issues on journals. He is listed in the Essential Science Indicators/Web of Science as a highly cited researcher, both in the Materials Science and Engineering categories, and his h-index is 44.

Elected in 2007 in the World Academy of Ceramics, he was also elected to its Advisory Board (2010-2014). In 2011 he was a recipient of the Ross Coffin Purdy Award of the American Ceramic Society for the best paper on ceramics published in 2010. He was recipient in 2011 of a “1000 Talent” Scholarship from the Government of China. He served The Electrochemical Society on several committees, and he was Chair of the High Temperature Materials Division (2009-2011). He was elected a Fellow of the Electrochemical Society in 2013. From 2003 to 2009, he was member of the International Relations Committee of the Materials Research Society (MRS). He is currently Editor-in-Chief of *Materials for Renewable and Sustainable Energy* and an Associate Editor for the *Journal of Nanoparticle Research*. He is one of the Volume Organizers of the *MRS Bulletin* for 2014.

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PAUL A. KOHL*(continued from page 18)*

Energy Division advisor (1991-1994), Editor selection committee (1990 and 2003), and Long Range Planning Committee (1991-1995). He is currently the Chair of the Technical Affairs Committee. ■

JOHNA LEDDY*(continued from page 18)*

Professor Leddy, who chaired the Physical and Analytical Electrochemistry Division, served as Secretary of the Society from 2008-2012. She has served on the standing committees of Finance, Individual Membership, and Nominating, and has chaired Education, Society Meeting, and the Ways and Means committees. Leddy served on the New Technologies Subcommittee and the Publication Committee, and is now a member of Publications Subcommittee. Leddy co-organized six student poster sessions and 21 symposia for ECS, including the first Electrochemical Energy Summit. She has edited numerous ECS volumes, chaired the Summer Graduate Fellowships Committee, and helped establish a new ECS Society award. Leddy is well-versed in the activities, achievements, and uncertainties of the Society.

Statement of Candidacy

All professional societies face challenges of membership, meetings, mission, and relevance. ECS has weathered much of the storm well. The Society's research domain remains highly-relevant. Meetings are thriving, where record breaking attendance is common, as attendees regularly number more than a third of the Society's 8,000 members. ECS is actively committed to its mission—to promote and disseminate research in electrochemical and solid state science and technology.

To remain viable and relevant, it is critical that ECS continue to acknowledge and to engage its challenges and opportunities.

The first challenge is to ensure the viability of ECS publications. ECS is the last not-for-profit publisher in electrochemistry. What unique attributes as a societal publisher allow ECS to disseminate research and to preserve the integrity of the science? ECS provides rigorous review and attends to the scientific acumen of its members. As a Society, ECS is uniquely positioned to ensure high quality scientific content and to exploit the interplay between ECS meetings and publications. As a not-for-profit publisher, ECS can explore new publication media and employ tools, such as Open Access, that are less attractive to commercial publishers. To promote its mission, ECS must be able to effect change rapidly and remain true to its tradition of scientific excellence.

A first opportunity evolves from recognition that ECS is increasingly international, with more than half our members from outside of North America. How can ECS promote worldwide participation in its activities? ECS can engage with other scientific organizations. ECS meetings and publications are forums for exchange of ideas. Publications use electronic media. Exploiting electronic tools at meetings and workshops, ECS can further promote scientific excellence and worldwide participation. For both publications and meetings, timely planning and execution of ideas is critical.

A second opportunity lies in promoting researchers early in their careers. Invitations to young researchers to become authors and speakers recognizes new ideas in electrochemistry. Support for meeting attendance promotes membership and broadens the technical program. A third opportunity to promote electrochemistry and solid state science and technology is in expanding extra-societal education.

ECS is a dynamic environment for the interplay among researchers in industry, academia, and the national labs of many countries. It has been a privilege to work with ECS members committed to the common goals of electrochemical and solid state research. It would be an honor to use my experience at ECS to promote ECS members in their mission to preserve the integrity of the science and to disseminate electrochemical and solid state research. ■

PETER S. FEDKIW*(continued from page 18)*

Professor Fedkiw has been a member of The Electrochemical Society since joining in 1975 as a graduate student. He is also a member of the American Chemical Society, American Institute of Chemical Engineers (AIChE), American Association for the Advancement of Science, and Sigma Xi. He was chair for the AIChE Annual Meetings programming area in Electrochemical Fundamentals. He has been an active participant in ECS meetings and governance. He helped organize in its formative years the highly successful General Student Poster Session. He has been a member and/or chair of the following Society Committees: Ad Hoc Gift Committee, Audit, Contributing Membership, Development, Education, Finance, Financial Policy, New Technology Subcommittee, Society Meeting, and Ways and Means. Within the ECS IE&EE Division, he has been a member of the New Electrochemical Technology Award Committee and the Student Awards Committee. Dr. Fedkiw was Society Treasurer and member of the Executive Committee from 2002 to 2006, and he was elected ECS Fellow in 2003.

Statement of Candidacy

The Electrochemical Society at 111 years old is the premier member-driven organization for the collection and dissemination of knowledge in solid-state and electrochemical science and technology. Because of exemplary leadership of past ECS officers, generous volunteer efforts from members, and professional and dedicated headquarters staff, the Society has grown into the world-class organization that it is today. The 8,000 ECS members encompass approximately 70 countries, and it is our members who are the Society's most valuable resource. It is imperative that Society leadership continues to conduct ECS business with a mindset that serves our members' interests and professional needs while focusing on the mission of ECS to advance the theory and practice of electrochemical and solid-state science and technology. If elected, I will strive to assure the Society is a fluid organization, poised to respond to opportunities that benefit our members and align with the Society's mission.

Because of our worldwide membership, Society leadership must support initiatives that sustain and expand our international presence. The Society has made great strides in this regard and efforts must persist to serve constituents by continuing to sponsor jointly conferences with international organizations and groups of similar mission and to hold ECS annual meetings outside of the continental United States. The grand-challenge type problems are best addressed through interdisciplinary approaches and international collaborations, and ECS offers venues to exchange the latest scientific and technical developments while fostering interactions among the world's leading scientists and engineers.

The life blood of future Society membership is students. An investment in this human resource will ensure a healthy and vitalized ECS, and growth in student membership and student chapters will be a focus of my efforts as a member of the Executive Committee. I will work to increase the number of student chapters worldwide and seek means to enable increased number of students to present their work at Society meetings.

Challenges continue to confront the Society's publications from competition with commercial publishers. Society leadership must assure the viability and growth of our publications in this competitive environment while maintaining core values. The Society's decision to publish four journals to better reach and serve target audiences was the right move and care must now be taken to provide avenues for the cross-fertilization of ideas and approaches across the "wet" and "dry" sides of the Society. I will work with publication editors and staff to define and implement creative approaches to continue ECS publications as the pre-eminent source

of scientific and engineering knowledge in electrochemical and solid-state science and technology without compromise in quality and scholarly content.

Clearly, new Society programs or activities come at a financial cost and risk; we must not be timid in new undertakings but we must be fiscally prudent. As a past ECS Treasurer, I am attuned to these issues, and I will work with headquarters staff, Society officers, and the Board of Directors to assure our Society remains fiscally sound and resources are marshaled wisely for the benefit of members.

I am honored and humbled to stand as a candidate for Vice President. The Society's history has demonstrated that the combination of the right executive leadership along with informed member input has enabled ECS to adapt well to evolving circumstances and challenges. With your support and vote, I intend to enhance the value the Society provides members and lead our venerable organization in its second century of service to the electrochemical and solid-state science and engineering community. ■

E. JENNINGS (EJ) TAYLOR

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As a member of ECS for over 30 years, I fully appreciate the strong impact ECS has had on my professional development and career. I will work diligently to ensure that ECS remains on solid financial footing and continues to be a leader in the area of electrochemical science and engineering. I appreciate the technical breadth and diversity of ECS and I will work with all levels of governance of ECS to ensure continued success. I also understand the importance of the three-legged stool of ECS: academia, national laboratories, and industry, and will work with all to enhance the collaborative opportunities available within the framework of ECS. Finally, I believe that my experience on various ECS committees and nonprofit boards, as well as my entrepreneurial experience will provide a useful perspective regarding ECS governance issues, especially those related to fiduciary duties.

In summary, I am passionate about innovation, the advancement of electrochemical science and technology, and student education, and will continue to look for ways for ECS to promote these issues into the future. If elected I will diligently perform my fiduciary duties and tirelessly support the strategic direction of ECS. ■

ENRICO TRAVERSA

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Statement of Candidacy

I am honored and delighted to be nominated as a candidate for the ECS Treasurer position. I have been an active member of ECS for over 15 years and I have served the Society on several committees, and in the HTM Division, of which I am now the Past Chair. I have organized symposia at meetings, together with editorial activity as an editor of proceedings volumes and *ECS Transactions* volumes. It will be a privilege to continue to serve ECS in one of its prominent leadership roles such as the Treasurer. ECS has taken a very important role in my professional career and I will feel compelled by the duty to preserve the financial health of ECS and to foster and expand for the future a financially sound Society.

The main activities for revenue for ECS are publications and meetings. In these fields, new habits in the research communities are creating fierce competition, which is mostly detrimental for nonprofit peer societies. ECS is aware of these problems and actions have been taken in the recent past, the most important of which is the creation of four new journals. In the position of Treasurer, if elected, I will try to contribute to confirming the role of ECS as leader in the publication of electrochemical science and technology research, and in organizing increasingly successful meetings.

Another important feature of ECS that has always attracted me is its truly international nature. As evident from my past accomplishments, breaking borders to foster international collaboration has been one of my main ideals and goals. I am sure that the targets of innovation may be reached at a faster speed through international collaboration, for the common benefit. I will contribute to maintain and expand international nature of ECS, trying to involve the Society in new countries emerging in electrochemical research, not yet represented significantly in the Society. ■

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