

Candidates for Society Office

The following are biographical sketches and candidacy statements of the nominated candidates for the annual election of officers for the Society. Ballots (and instructions for voting either online or by mail) will be sent in January 2007 to all Voting Members of the Society. The offices not affected by this election are those of the Secretary and the Treasurer.

Candidate for President



BARRY MACDOUGALL is a Principal Research Officer at the National Research Council of Canada, where he has worked for the past 30 years. He received his Honors BSc from St. Francis

Xavier University in Nova Scotia and his PhD in electrochemistry from the University of Ottawa under the supervision of Brian Conway. He joined the NRC as a post-doctoral fellow with Morris Cohen in the "Corrosion Group" of the Division of Chemistry, and became a full NRC staff member in 1974. In 1990, Dr. MacDougall's research focus switched to semiconductor and microstructural electrochemistry, and in 1992 he established his own research group. That group grew significantly over the following years, with an emphasis on environmental electrochemistry, electrocatalysis, energy conversion/storage, electrochemical reduction of CO₂, and electrochemical process technology. Dr. MacDougall has over 110 scientific papers, 4 active patents and 4 book chapters. He is also an adjunct professor in the Dept. of Chemistry at the University of Ottawa, where he teaches a graduate course in electrochemistry.

Dr. MacDougall has been a member of ECS for more than 31 years, and was the chair of the Ontario-Québec (now the Canadian) Section in 1979-1980. Along with several other senior members of the Section, he initiated the section name change and established the Canadian Award of the Section. He received both the Lash Miller (1979) and Jacobsen (1990) Awards of the Canadian Section. He served on the ECS Corrosion Division from 1984 to 1996, and was chair from 1994 to 1996. He helped establish the Corrosion Division's "Morris Cohen Young Investigator Award" in 1991, named after his former mentor at NRC. He co-organized symposia on "Anodic Oxide Films" in 1981, 1985, 1992, and 2000, continuing the long-established series begun in the late fifties. He has co-organized several

(continued on page 60)

Candidates for Vice-President



WILLIAM (BILL) D. BROWN holds the rank of Distinguished Professor and presently serves as the Associate Dean for Research and the interim head of the Department of Electrical Engineering in

the College of Engineering at the University of Arkansas, Fayetteville. He also served as head of the Electrical Engineering Department from 1983 to 1998. In 1991, he established the High Density Electronics Center (HiDEC), a world-class electronics packaging center, and served as its director from 1991 to 1992 and from 2001 to 2003. Brown's research has resulted in more than 300 scientific papers, 340 conference/workshop presentations, and 22 educational publications. In addition, he has co-authored and/or co-edited 4 textbooks and 3 book chapters. He holds 12 U.S. patents with 3 others pending. He has received honors for both his teaching and research. Dr. Brown received the Thomas D. Callinan Award from the ECS Dielectric Science and Technology Division in 1996 and was elected to Fellow status by the Society in 2002. He was elected to Fellow status by the IEEE in 2005.

From 1969 to 1977, Dr. Brown was a Member of the Technical Staff at Sandia National Laboratories in Albuquerque, New Mexico, where he designed electronic test equipment, developed semiconductor device fabrication technologies, and studied the effects of defects and ionizing radiation on semiconductor devices. Since joining the University of Arkansas in 1977, his research interests have included microelectronic fabrication technology, semiconductor device physics and reliability, material synthesis and characterization, and materials applications. He received his BS from the University of Arkansas in 1969, his MS from Pennsylvania State University in 1970, and his PhD from the University of New Mexico in 1975, all in electrical engineering.

(continued on page 60)



JOSEPH R. STETTER'S interests span electrochemistry, physical, and environmental chemistry with particular emphasis on chemical sensors, sensor arrays, biosensors, and

electroanalytical chemistry. Dr. Stetter received his PhD in physical chemistry from the State University of New York at Buffalo in 1975. Dr. Stetter, now Center Director, Microsystems Innovation Center at SRI International (since 2004), also hold positions as President of TTI (a new startup company) and Research Professor of Chemistry at IIT. While these three positions sound daunting, they are all synergistic and involve one or more aspects of sensors and electrochemistry to which he has dedicated his career. Stetter has also held prior senior positions in industry, academia, and research institutions including: VP of Engineering (Nanomix, Inc., Emeryville, CA); Senior Research Chemist, Product Manager, and Director of Chemical Research (ES Div. Becton, Dickinson, and Company, a Fortune 500 company); Section Manager and Group Leader (Argonne National Lab); and full professor at IIT. In the 1970s, when Dr. Stetter was Director of Chemical Research at Energetics Science (a Division of Becton, Dickinson, and Company), he was responsible for the corporate direction and led the expansion of the Division's research department. While at BD in the late 1970s, he developed the first diffusion sampled electrochemical CO sensors and introduced the earliest personal monitors (CO diffusion dosimeters) in 1979. Since then, diffusion sampling for electrochemical sensors has become the industry standard for CO sensors and instruments in the worldwide loss prevention and safety markets. In addition, he developed a solid-state gas sensor for carbon monoxide and an electrochemical SO₂ sensor and was the first to interface

(continued on page 61)

MacDougall

(continued from page 13)

other symposia, including one to honor Prof. Norio Sato at the 1999 meeting in Hawaii. Dr. MacDougall became a member of the Honors and Awards committee in 1996, and served for the next four years as chair of the Fellows Selection Subcommittee. In 2000, he became chair of the Honors and Awards Committee. Over the years, he has served on the Long Range Planning Committee, the Society Nominating Committee; he was significantly involved with the 2002 ECS Centennial Meeting, and its banquet, in Philadelphia. From 1984 to 1992, Dr. MacDougall was a Divisional Editor of the *Journal of The Electrochemical Society*. He received the Young Author's Award of ECS in 1976 and the Society's Carl Wagner Award in 1995. He is a Fellow of ECS, the National Association of Corrosion Engineers (NACE), and the Chemical Institute of Canada (CIC). ■

Brown

(continued from page 13)

Dr. Brown has served The Electrochemical Society as Treasurer (1998-2002) and the Dielectric Science and Technology Division as Secretary, Vice-Chair, and Chair. He has served on the Education Committee (1993-1998) and as its chair from 1994 to 1998. During this time, he was instrumental in the initiation of the highly successful Student Poster Session held at each ECS meeting. With his guidance and diligence, the Student Poster Session and the Society's Short Course programs were significantly improved and expanded in size and popularity. He has also served as Finance Committee chair (1998-2002); on the Society Meeting Committee (1998-2002); the Honors and Awards Subcommittee for the Henry B. Linford Award (1994-1997); the ECS *Letters* Editor Search Committee (2002-2004); and the Executive Committee of the Board of Directors as Treasurer (1998-2002). He presently serves on the Financial Policy Advisory Committee (1998-present; as chair 2002-present); the Audit Subcommittee as chair (2006-present); the Ad Hoc Gift Acceptance Committee responsible for formulating, implementing, and amending the gift acceptance policies of ECS (2001-present); the Development Committee (2002-present); the Solicitation Subcommittee of the Development Committee as chair (2004-present); the Subcommittee on Symposium Planning and

Proceedings Publications of the Ad Hoc Subcommittee on Long Range Planning (2003-present); and the Fellows Selection Subcommittee of the Honors and Awards Committee (2003-present). As a Society member, he has co-organized 28 symposia, including the well-regarded Silicon Nitride and Silicon Dioxide Thin Insulating Films, Low Temperature Electronics and High Temperature Superconductivity, Diamond Materials, and the III-V Nitride series. He has contributed a substantial number of papers to the Society's *Journal*, *Letters*, and proceedings volumes.

While serving as Treasurer of the Society, Bill was an ardent supporter of the Society's efforts to enhance our publications, augment the Society's international liaisons and activities, and establish an Office of Development because of the potential that such activities hold for the future of the Society.

Candidacy Statement

As a candidate for Vice-President of The Electrochemical Society, I believe my primary responsibility, if elected, will be to insure that the Society continues doing what it does best—disseminating the knowledge resulting from outstanding work by its members—and insuring that new programs, once approved by the Society membership, move forward in a timely manner. Key to this is the success of the Society itself, which can, in part, be quantified as increasing membership and member benefits; offering excellent leading-edge technical symposia and relevant short courses; and continuing to publish the internationally respected *Journal*, *Letters*, *Interface*, and symposia proceedings. I believe I can be an advocate and catalyst in these key areas by working with the membership—through the Society's committee structure, Board of Directors, and Executive Committee—on management and organizational decisions that will enhance the Society's professional status and technical excellence. The Office of Development also provides a strong source of support as the Society works to increase member benefits while maintaining reasonable annual dues and meeting registration fees, enhance its international image, promote student participation in meetings and operations, increase the quantity and stipend of its fellowship and scholarships, develop a closer relationship with industry, and electronically archive its many publications, while continuing to improve all other activities in which it has traditionally been involved. Because of the success of

the Development Office, the Society continues to address and accomplish a number of these objectives that could not otherwise be realized. Thus, it is important that the membership continue to contribute to the development effort of the Society. I also believe that it is extremely important to actively promote ECS internationally. The progress in internationalizing the Society in recent years provides strong evidence that the Society is determined to and will realize its goal of becoming a true international organization.

In addition to the traditional member recruiting methods, I believe that the Society should continue to develop programs that capture the imagination and interests of high school and college students—the future generations of scientists and engineers. Such programs should define electrochemistry and solid-state science, encourage them to consider careers in these two rather broad technical categories, and introduce ECS, its role, and unique attributes as a professional society. More proactive programs, directed at bringing potential members to Society meetings, need to be explored. Finally, sincere efforts must be made to immediately involve new members in Society activities at both the local and national levels so that they will quickly develop a love for and a commitment to the Society and its future successes.

The Society has been and continues to be very dynamic because it is receptive to fresh interpretations of its mission and the methods used to achieve its objectives. ECS is, in fact, a mover and a shaker in the professional society arena. This is evidenced by the fact that the Society was one of the first professional societies to offer online meeting registration, to do 'article at a time' publication, to employ a full-time development officer; and it wisely purchased property for its headquarters instead of leasing. The purchase of the headquarters property and the present construction of another building on the property provide for needed diversification of assets and a reasonably stable source of income. I believe that ECS must continue to explore new ideas for all aspects of the organization, and this can best be done by having the Society officers actively solicit input from the membership and then be willing to implement changes consistent with the Society's objectives in a forward-looking, fiscally responsible manner. Sometimes there is financial risk involved in innovation, but occasionally carefully calculated risks must be taken if the Society is to grow and prosper.

There is no doubt that The Electrochemical Society is technically focused and fiscally healthy at the present time because of a long history of having qualified and dedicated leaders and an outstanding headquarters staff. During the period 1998-2002, I had the privilege of serving the Society as Treasurer, a position from which I was able to observe and participate in the operation of the Board of Directors and the Executive Committee. As a result of serving in this position, I feel qualified to serve as Vice-President of the Society. I believe that challenges will continue to present themselves to the Society; but with the help and feedback of the membership, ECS can further improve on the successes that have made it a highly respected organization. The future will be exciting times to be involved with ECS. I would consider it a great honor to be elected by the membership to help guide the Society as Vice-President. ■

Stetter

(continued from page 13)

these new amperometric sensors to a GC to demonstrate ppb-level detection. The electrochemical sensor for hydrazine determination, both developed and patented by Dr. Stetter in the 70s, was used during the first launches of the U.S. space shuttle and this electrochemical approach is still used today.

While at the Argonne National Lab in suburban Chicago, Dr. Stetter led the interdisciplinary team to develop the first operational "sensor-array-based" instrument with pattern recognition. This technology, developed during 1981-1984, received the IR-100 Award (1984) for the construction of the advanced "CPS-100" Hazardous Gas Monitor, and is the world's first fully operational "electronic nose" instrument contained in a camera bag, complete with sensor array, pattern recognition algorithm, and instrument system for detection and identification of hazardous gases on the spot. This instrument toured with the U.S. DOE technology transfer exhibits, which traveled throughout the United States in the 1980s. Dr. Stetter founded and was president of Transducer Research, Inc. (TRI) from 1983-1996 where he and co-workers produced the first micro-amperometric sensors. Stetter's tiny sensor designs used less than 300 μ L of electrolyte and were commercialized by TRI in 1991. These new amperometric sensors were the "first" miniature low-volume sensors in the industry and this new approach now allows great flexibility

in sensor design and has become standard in the sensor industry. This 1991 sensor design is still in production today for toxic gas sensors for the protection of human health and the environment worldwide in products like TSI Inc.'s Q Track.

Dr. Stetter was an adjunct professor at the Illinois Institute of Technology since 1983, but joined IIT full time (Professor of Chemistry) in 1997. At IIT, Dr. Stetter continued his interest in advanced sensor technology and developed a new practical sensor product using conductive plastics that are still sold today through a company he founded in 1999 (TTI, Transducer Technology, Inc). This new approach to the amperometric gas sensor explores the use of nanoparticles in the sensor design and construction to improve both performance and manufacture. Overall, Dr. Stetter's research and development in sensors has educated students and postdocs, produced publications and patents, and provided practical commercial products for large, medium, and small (startup) companies. The scientific advances are documented in dozens of university theses, more than 200 publications, and numerous presentations given by Dr. Stetter. Commercial products based on Dr. Stetter's more than 27 years of sensor research and development work are in use today, protecting workers and the public health. An additional line of products, based on nanotechnology and MEMS, is emerging. Dr. Stetter, in addition to his major involvement in ECS volunteer work, is a member of Sigma Xi since 1980, and a member of the American Chemical Society since 1969. He has won awards for his work, including three IR-100 Awards; the Federal Laboratory Consortium Special Award for Excellence in Technology; Transfer, the Argonne National Laboratory Inventor's award; the 2002 TMAC (Technology Management Association of Chicago) "Entrepreneur-of-the-Year" award; and two NASA New Technology Awards. Dr. Stetter has served on the Board of Directors of four U.S. corporations, has been a worldwide invited lecturer and speaker, and has served on national and international science advisory boards and meeting steering committees. He is currently serving on the International Meeting on Chemical Sensors 12 (IMCS 12) steering committee. He has also served as an editor for several scientific peer review journals, has been a guest international editor for *Sensors and Actuators*, and has been chair of the Electronic Nose Symposium (ISOEN 2001, held joint with ECS in Washington DC), and chair of the On-site Analytical Conference. Currently, he continues

his commitment to protection of human health and the environment with dedication to scientific research and society in areas of improved sensors, electroanalytical methods, MEMS, and commercial instruments.

Candidacy Statement

More important to you are my ECS interests and how, as Vice-President of ECS, I can play a vital role in improving the value of ECS for all of us, for you personally, and for our science, engineering, and society.

For many years, I have been involved with ECS in many ways: I have published in ECS journals; presented papers in symposia at virtually all ECS meetings for more than 10 years; edited proceedings volumes; and have refereed ECS journal articles. I have served on ECS committees (Technical Affairs, Symposium Subcommittee, Board of Directors, Nominating, etc.); led ECS Divisions (past Secretary/Treasurer, Vice-Chair, and Chair of the Sensor Division); have been an advisor to other ECS Divisions, co-organized dozens of ECS symposia, and organized an international meeting at ECS (ISOEN 2001, Washington DC, with proceeding volume published). These ECS experiences have given me a unique perspective with which to view ECS, its members, and the needs of both.

With a long history of scholarship, business experience, and entrepreneurship; and with leadership positions in academia, industry, and national laboratories, I believe I have a unique vantage point from which to see issues from both a business point of view as well as a scientific, technical, and environmentally- and socially-moral point of view. I have worked as a professor in academia (seven years), at a national lab (ANL, five years), started and sold a successful business (CEO, 13 years), and served on boards of directors. Additionally, I have a proven track record of being a solid negotiator in both business and academia and have provided a career full of successful creative solutions to difficult issues that were beneficial to all parties.

ECS is not broken and does not require fixing and so I am not a reform candidate. There is a grand tradition of excellence at ECS; but there are the challenges facing ECS in the years to come and I would be honored to be a vice-president and an integral part of the ECS leadership in the years to come. No one has a crystal ball; but we live in an ever-globalized world wherein the currencies of increasing importance are knowledge, innovation, and

(continued on next page)

Stetter

(continued from previous page)

teamwork. We see teams increasing in importance in the proposals we write and the projects we do every day. The atmosphere of collegial global teamwork needs to be nurtured within ECS.

Our ECS is all about two meetings each year and our excellent and timely publications within which the membership and co-participants worldwide move forward the frontiers of knowledge and report their innovations. These vehicles give ECS the continuing opportunity to be a major factor in global scientific progress and I am dedicated to making our ECS meeting the one you will choose to attend and the ECS

your publication venue of choice. In this age of increasing numbers of meetings to choose from, I will continue to work diligently to make ECS meetings and publications the best technically and scientifically-socially-relevant that they can be. We need to always draw the best and the brightest to our meetings and journals. We will keep ECS on top by ever-increasing our interactions with the best and strongest international steering committees for topical meetings, and increase contributions from the best and the brightest for our publications with more direct involvement from more of our own ECS membership—you. Also, I will work diligently to make meetings easier for symposium organizers

as these volunteers are the keys to our meetings for all Divisions. I am committed to continue to improve our already excellent ECS publications and their impact factor in the international community. Although there have been many demands on my time, I repeatedly have chosen to commit my professional society efforts to ECS participation because I believe the ECS is an already an exceptional group of people with a great future. Together we can make it so.

In the end, I can promise that I will be dedicated to ECS's continued success in all areas important to our membership. I plan to continue to serve the vibrant ECS community and hope that I have earned your vote for Vice-President this year. ■