

Fellows of The Electrochemical Society

“*The Fellow of The Electrochemical Society was established in 1989 for advanced individual technological contributions in the field of electrochemical and solid-state science and technology; and active membership and involvement in the affairs of The Electrochemical Society.*”

—from the ECS Award rules

To celebrate the the twenty-fifth anniversary of the establishment of the ECS Fellow award Petr Vanýsek, Co-editor of *Interface*, interviewed Jerry Woodall, who was in at the birth of the award.

Interface: The first Fellows of ECS were named twenty-five years ago. I understand that you were instrumental in establishing the Fellows concept for the ECS. What made you think to try to establish it?

Woodall: ECS is a unique professional society. Unlike both APS and IEEE, which had existing Fellows programs that rewarded mostly academic-type excellence rather than proprietary industrial R&D excellence, ECS has a very broad-based membership across many professional disciplines, and varied venues of accomplishment. My view was that excellence at all levels of professionalism should have external and global recognition. Therefore, I thought if ECS could create a Fellows program that recognized not only academic type excellence, but also recognized professional excellence done in a highly proprietary environment, it would serve the career recognition needs of highly-motivated and talented professionals in a way that none of the other Fellows programs were doing.

Interface: When did you get this idea?

Woodall: Hard to pin that down. The embryo probably occurred in the mid-to late '80s.

Interface: How long did it take from the idea to put this in place and have the first class of Fellows named?

Woodall: It happened surprisingly fast. I was on the ECS Executive Committee at the time and I formed a subcommittee composed only of those who were in favor of the idea. (Not very democratic, but who cares now?) I got buy-in from the entire executive committee. I don't have records of it in my files, but I would say it did not take longer than a couple of years to get it passed by the ECS Board of Directors.

Interface: What was your function within ECS when you began your effort to establish the Fellows award? Did that help in establishing your goals?

Woodall: Because I was ECS President for '90-91, I was on the Executive Committee during the crystallization and final committee actions to realize the operational document. This was of great advantage because it allowed me to control attacks against the idea from nay-sayer members. It is incredible that there were “prominent” (and influential) members opposed to a Fellows program. I remember the very last committee meeting that finalized the document, one vociferous member showed up to suggest that we needed to have conversation about the worthiness of the program. Gerry Blom quipped “You're too late, it's a done deal.”

Interface: How important are awards, in general, within a scientific society?

Woodall: As long as they are considered prestigious, they are extremely important. They must be given out credibly to assure that they continue to be prestigious. When I joined IBM Research, I thought my career would be cradle-to-grave. That notion ended when the Pacific Rim started eating the U.S. lunch. Being an IBM Fellow along with my awards profile allowed me to pick and choose a desirable academic career. The National Medal of Technology even allowed me to go University of California-Davis as a distinguished professor at the age of 74. Therefore, awards are a way for professionals to vet their accomplishment when looking for a new job.

Interface: Just about every honor and award is accompanied by a scroll and the ECS Fellow is no exception. However, each fellow also receives a lapel pin, which is not as common. Were the details of the award also a part of the original discussion, or was it worked out later?

Woodall: Here again my lack of records test my memory. My belief is that details about the “trappings” were left to be worked out after the program was accepted by the Board.

Interface: And what about the detail in which the formula was developed to limit the total of the Fellows as well as the number awarded each year? Was that also worked out during the initial discussion?

Woodall: Again, from memory I believe that most of the criteria for Fellow awards along with the by-laws were worked out before presentation to the Board.

Interface: The means of dissemination of science have changed dramatically over the past years and the sense of belonging to a certain community is perhaps waning. Can a membership in a scientific society be equally attractive now, compared to how it was twenty-five years ago?

Woodall: Good point. However, I never went to an ECS meeting just to receive the dissemination of science or present technical papers. I also went to avail myself of networking with colleagues. Therefore, in my humble opinion, in order for ECS to remain vitally important and sustainable, it needs to play this card big time. So, leave the sessions alone. They will take care of themselves. But you need to have the major international players show up at the spring and fall meetings so they can talk to each other. You need them there so the new tenured track professors and new company hires can meet them. This also means more plenary sessions of emerging science and technology topics given by the gurus. Get them to come even if you have to pay for them.

Interface: What would you suggest to a person who would now like to come up with a similar idea as you had with the Fellows? What is required to go from an idea to completion?

Woodall: Well, I think having a bright person work out the methodologies of bringing new and old gurus working in emerging areas of interest to the mission of ECS to the biannual meetings is a worthy new idea and get buy-in by the Executive Committee. For example, ECS should own electric vehicle (EV) R&D at all levels. Bring in Elon Musk, Leaf's CEO, etc., and all the engineers who are working on them. Either fix or replace Li ion etc. This is especially important now that the R&D on semiconductor technology is rapidly maturing.

Interface: There was clearly some resistance at the beginning to establishing the program outside the Executive Committee. Did you ever think it was not worth the political effort or did you always know this was a good idea that needed to be pursued and that it would eventually win?

Woodall: I know this sounds arrogant, but there was never any doubt in my mind that the Fellows program would win. Why? When I was president of ECS, I convinced Ralph Gomory, IBM's Chief Scientist and Director of IBM Research, to give the plenary lecture at one of the meetings. He hesitated at first. Then I showed him a laptop computer and pointed out that every hardware component in it was a topic of R&D interest to and coverage by the ECS. Acceptance to speak followed in a few seconds.

Interface: How does one win, anyway?

Woodall: By developing a compelling idea that you really believe in and stacking the political movers and shakers deck in your favor.

Interface: Looking at the program and the classes of the Fellows now, how satisfied are you with the program that you put (or helped to put) in place? Is there anything you would have done differently?

Woodall: I see a fair and well-balanced list of high achievers from both the wet and dry sides that almost unanimously deserve to be called ECS Fellows. I offer now a word of caution vis-à-vis metrics for electing new Fellows. As a field matures, the highly visible "breakthroughs" occur with less frequency. So the selection committee needs careful and inclusive due diligence to identify and reward those loyal and long-term members who have in fact done highly impactful work in both academe and industry.

Interface: Thank you very much for giving us the time for this interview. And thank you for your service to ECS and for your life-long work in science and technology. ■

Find out more about ECS Fellows at www.electrochem.org/Fellows.

About the Guest



JERRY M. WOODALL was born and grew up in Washington, D.C. He attended MIT where he received a BS degree in metallurgy in 1960. He earned his PhD degree in Electrical Engineering at Cornell University in 1982, and has been a member of ECS since 1968. He was active in the Electronics Division and a cofounder of the Energy Technology Division. He served as the President of ECS (1990-1991) and was elected Fellow of The Electrochemical Society in 1992.

He is also a Fellow of the American Physical Society, IEEE, and AVS, is a member of the National Academy of Engineering, and Fellow of the National Academy of Inventors. Woodall spent most of the early and middle parts of his career at the IBM Thomas J. Watson Research Center, where he rose to the rank of IBM Fellow. His academic career included the invention and seminal work on compound semiconductor heterojunction materials and devices, including high efficiency red LEDs, the heterojunction bipolar transistor (HBT), and high efficiency solar cells. In 1998 he received the ECS Edward Goodrich Acheson Award. As a professor at Yale University he received the 2002 National Medal of Technology. Currently, he is Distinguished Professor of Electrical and Computer Engineering, University of California-Davis. Prof. Woodall may be reached at jwoodall@ucdavis.edu.