Advice on Choosing Research Topics and Writing Technical Papers: For early career and new faculty

Résumé

Success in research is about many things that go beyond just doing excellent research. It starts with choosing the specific topic, research question, audience, and journal, and then evolves through writing up and clearly presenting the results in figures, tables, and graphical art. The content of this talk is separated into three topics: choosing research areas and conducting hypothesis-driven research; creativity and the evolution of research; and publishing high quality figures and choosing good table of contents (TOC) art. This presentation is geared towards advanced PhD students, or new/early career (pre-tenure in the USA) faculty that would like advice on publishing and choosing impactful research topics.

Professor Bruce E. Logan is an Evan Pugh University Professor in Engineering, the Stan & Flora Kappe Professor of Environmental Engineering, and Director of the Engineering Energy & Environmental Institute at Penn State University. Logan is also the Editor of ES&T Letters, and a former Associate Editor of ES&T, both published by the American Chemical Society (ACS). His current research efforts are in renewable energy production and the development of an energy sustainable water infrastructure. Dr. Logan has mentored over 130 graduate students and post docs and hosted over 40 international visitors to his laboratory. He is the author or co-author of several books and over 500 refereed publications (>76,000 citations, h-index=136; Google scholar). Logan is a member of the US National Academy of Engineering (NAE), and a fellow of several professional organizations including the American Association for the Advancement of Science (AAAS) and the International Water Association (IWA). Logan is a visiting professor at several universities including HIT, Tsinghua University, Dalian University of Technology (China), with ties to several other universities in Saudi Arabia, the UK, and Belgium. He received his Ph.D. in 1986 from the University of California, Berkeley, and prior to joining Penn State in 1997 he was at the University of Arizona in Tucson.