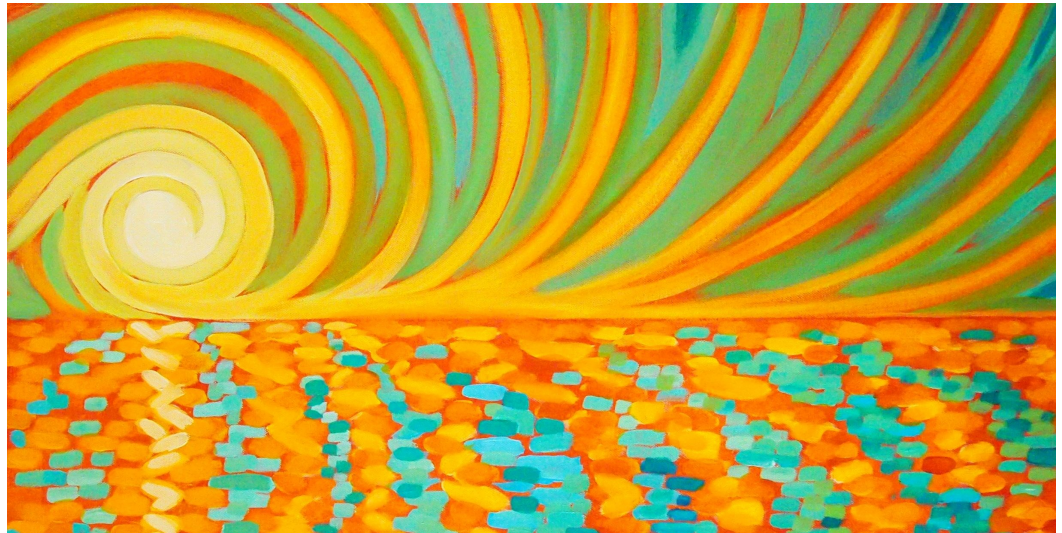


## Inside this issue:

2017 Annual Meeting	2-3
SciX 2017	4
2018 Annual Meeting	5-6
Election Results	7
Jumpstart Your Writing	8
AES on LinkedIn	8
Dielectrophoresis 2018	9



Many thanks to our supporters and friends for their generous contributions.

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Our traditionally strong meetings would simply not be possible without help from our supporters. Their donations are greatly appreciated.

Send news for the web page  
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to Webmaster

**Jaka Cemazar**  
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Send news for the newsletter  
to one of 4 Co-Editors:

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**Ed Goluch**  
[e.goluch@northeastern.edu](mailto:e.goluch@northeastern.edu)

**Tayloria Adams**  
[tayloria@uci.edu](mailto:tayloria@uci.edu)

Contact **Matt Hoelter**,  
AES Executive Director with  
questions about the Society  
[matt@aesociety.org](mailto:matt@aesociety.org)

## An Exciting New Day is Dawning for AES!

Join us as the annual meeting moves to SciX in Atlanta, GA (Oct 21-26)!

### Message from the President:

2018 is bringing exciting things and events to AES. As you will see in the following pages we will have our Annual Meeting at The Great Scientific Exchange conference, SciX for short, starting this year. This is exciting because it makes us part of a multi-disciplinary conference that reflects the nature of our society. Our 2018 Annual Meeting will be in Atlanta, USA from October 21 to the 26th, the call for papers is now open, and details can be found in the pages within. Professors Blanca Lapizco-Encinas and Alexandra Ros are doing an excellent job in putting together a memorable meeting. Registration fees are reduced and your fee will include the gala dinner and two brown bag lunches, representing a much better economic value than previous meetings. It is also a pleasure to announce the new "Blue Fingers" Student Award, which pays homage to our founders by recollecting a time when blue fingers were a sign of ongoing experiments. As with previous years, look forward to our exciting student poster session and prepare your manuscripts to submit to the special issue of the journal *Electrophoresis*.

AES congratulates our student awardees from the highly competed poster sessions in 2017! As a poster judge, it is always difficult to select a winner among so much talent. We are very proud of the dedication and innovation of young AES scientists and look forward to great things from them in the future. We also congratulate our Mid-Career and Lifetime Achievement awardees, Prof. Scott Martin and Prof. Ronald Pethig. Thank you both for setting excellent role models for all of us. This year we also welcome four new councilors to our governing board: Prof. Jason Dwyer, Prof. Mark Hayes, Dr. Darwin Reyes, and Prof. Stuart Williams. Congratulations on your elections! Lastly, we thank our outgoing president, Prof. Christa Hestekin, for moving AES forward in the last two years; Prof. Soumya Srivastava and Dr. Tayloria Adams for a successful 2017 annual meeting; and Prof. Jason Dwyer and Dr. Darwin Reyes for programming excellent AES sessions in the 2017 SciX meeting.

I look forward to continuing working with all of you these next two years to further strengthen our community. The governing board is working hard to increase the economic value of our membership, increase member recognition, and continue offering you excellent technical meetings with ample opportunities for meaningful networking. I'm proud to be member of this unique society of electrokinetics "geeks" who are setting new directions in diverse fields from electrophoresis to dielectrophoresis. I encourage you to share your excitement and be a champion for AES!

### Rodrigo Martinez-Duarte

Assistant Professor  
Mechanical Engineering  
Clemson University  
[rodrigm@clemson.edu](mailto:rodrigm@clemson.edu)  
[Website](#)



AES President, 2018

## 2017 AES Annual Meeting Memories, Minneapolis

**Thanks to all  
our presenters  
at the  
AES Student  
Poster Session!  
Congratulations  
to the  
Poster  
Award  
Winners!**



**1st place  
Victoria Harbour**

“Nvu-on-a-Chip: Optimizing Brain Endothelial Cell Culture for Microfluidic Modeling of the Nvu”

Co-authors: Bhuvana Mohanlal, Samuel Roy, Sagnik Basuray

New Jersey Institute of Technology



**2nd place  
Ishan Joshipura**

“Electro-hydrodynamics of Soft Liquid Metals at Low Voltages”

Co-author: Michael Dickey

North Carolina State University

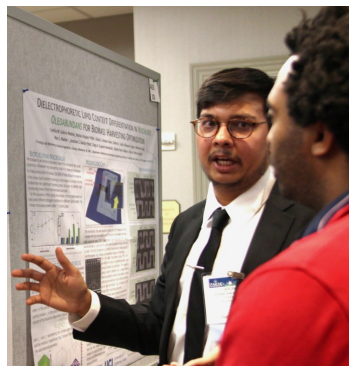


**3rd place  
Anikki Giessler**

“Dielectrophoretic Response of Condensed DNA Clusters in AC Fields”

Co-authors: Gabe Salmon, Alexandra Ros

North Carolina State University



**Honorable Mention  
Sourav Bandyopadhyay**

“DNA Gel Electrophoresis via Entropic Trapping: Insights From Monte Carlo Simulations”

Co-author: Victor Ugaz

Texas A&M University

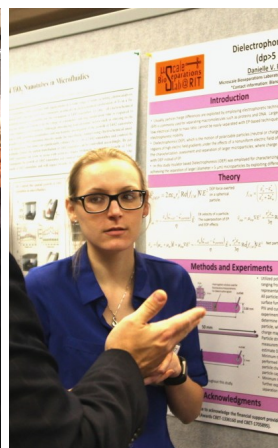
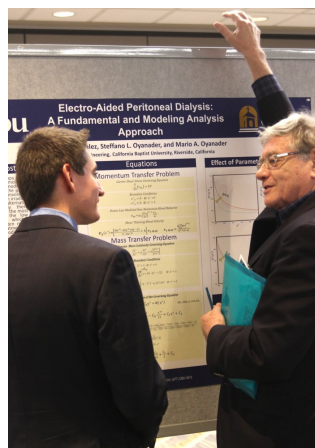


**Honorable Mention  
Diya Li**

“A Shear-Enhanced CNT-DEP NanoSensor Platform for Single Cell Protein Assay”

Co-authors: Satyajyoti Senapati, Hsueh-Chia Chang, Siyuan Zhang

University of Notre Dame





## 2017 AES Annual Meeting Memories, Minneapolis

### Congratulations Ronald Pethig Recipient of the 2017 AES Lifetime Achievement Award

Ronald Pethig is Emeritus Professor of Bioelectronics at the School of Engineering, University of Edinburgh. He received training in electrical engineering and physical chemistry and has enjoyed many years working with cell biologists and biomedical engineers (e.g., as an adjunct scientist since 1982 at the Marine Biological Laboratory, Woods Hole; adjunct professor of physiology at the Medical University of Charleston, 1984-88). His main research interest has been the dielectric and electrochemical properties of biological materials, and in particular the development of the electrokinetic method of dielectrophoresis for characterizing and manipulating cells and other bioparticles for biomedical applications. In 2001 he received the Herman P Schwan Award for work in bio-dielectrics. Amongst other activities he currently serves as Editor-in-Chief of *IET Nanobiotechnology* and enjoys beekeeping.

A highlight of Wednesday's award session was Ron's presentation titled "Exploring the '2nd Frontier' of Dielectrophoresis and its Application in the Biomedical Sciences."



From left: Fatima Labeed, Joel Voldman, Michael Hughes, Ronald Pethig, Stuart Williams.

### Thanks to our Plenary Speakers

- **Ronald Pethig**  
University of Edinburgh
- **Michael Hughes**  
University of Surrey
- **Joel Voldman**  
MIT
- **Fatima Labeed**  
University of Surrey
- **Stuart Williams**  
University of Louisville
- **Amy Shen**  
Okinawa Institute of Science and Technology Graduate University
- **Vincent Remcho**  
Oregon State University
- **Jeff Wang**  
Johns Hopkins University
- **Lisa Holland**  
West Virginia University

### A Huge Thanks to the 2017 Annual Meeting Organizers!!



#### Soumya K. Srivastava University of Idaho

Soumya K. Srivastava has been Assistant Professor of Chemical Engineering at the University of Idaho, Moscow since 2013. Her research focuses on application of electrokinetics for microfluidic bio-separations of infectious cells and rare-earth elements suited for designing lab-on-a-chip systems. Before joining UI, she was an assistant research professor in the Gene and Linda Voiland School of Chemical Engineering and Bioengineering at Washington State University from 2010 to 2013. She obtained her doctorate in chemical engineering at Mississippi State University in 2010. Srivastava is an active member of AIChE, AES, ASEE, SWE, and Sigma-Xi. Email: [srivastavask@uidaho.edu](mailto:srivastavask@uidaho.edu).



#### Tayloria Adams University of California, Irvine

Dr. Tayloria Adams is a postdoctoral research fellow in the Neurology Department at UC-Irvine. Her research uses dielectrophoresis to characterize and separate neural stem cells for eventual neurodegenerative disease treatment. Before joining UCI, she completed her MS and PhD in Chemical Engineering at Michigan Tech University where she studied the dielectric properties of mesenchymal stem cells and red blood cells. Dr. Adams is a recipient of the NSF Postdoctoral Fellowship in Biology and UCI Chancellor's Postdoctoral Fellowship. Email: [tayloria@uci.edu](mailto:tayloria@uci.edu).

## SciX 2017 Meeting Memories, Reno

# Congratulations Scott Martin Recipient of the 2017 AES Mid-Career Award

R. Scott Martin is Professor and Chair of Chemistry at Saint Louis University. He received his BS and MS degrees from Missouri State University and a PhD in analytical chemistry from the University of Missouri-Columbia. He was then a NIH post-doctoral fellow in the Department of Pharmaceutical Chemistry at the University of Kansas. Dr. Martin started at Saint Louis University in 2003, where he was promoted to Associate Professor in 2008 and Full Professor in 2012. He served as the College of Arts and Sciences Endowed Chair in Chemistry from 2011-2015. He has also received other recognition including being named program chair of the 65th Midwestern Universities Analytical Chemistry Conference (MUACC 2011); the Graduate Mentor Award (Saint Louis University Graduate Student Association, 2011); member of the Board of Directors for the Association for LabAutomation (2009-2010); program chair for the LabAutomation conference (2009); and member of the editorial board for *Electrophoresis* (2005-2008). He has been actively involved with the journal *Analytical Methods*, which strives to publish early applications of new analytical methods with clear societal impact. This includes serving as an Associate Editor (2013-2017) and Editor-in-Chief (2017-present). His research interests



**Scott Martin (right) receives the AES Mid-Career Award from Mark Hayes.** In addition to the award presentation, Scott delivered a plenary lecture titled "Using Microchip Electrophoresis and Electrochemical Detection to Investigate Cellular Communication"

involve the use of microchip devices for monitoring biological systems. This includes development of methods for analyzing cells on-chip through integration of techniques such as cell culture, electrophoresis and electrochemistry.

Learn more about Scott's research in his recent [interview with LC/GC Magazine](#).

The AES Mid-Career Award recognizes exceptional contributions to the field of electrophoresis, microfluidics, and related areas by an individual who is currently in the middle of his or her career.

#### PREVIOUS AWARDEES:

- 2016 - Amy E. Herr ([LC/GC interview](#))
- 2015 - Adam T. Woolley ([LC/GC interview](#))
- 2014 - Kevin Dorfman ([LC/GC interview](#))
- 2013 - Todd Squires

## AES Congratulates the SciX 2017 Student Poster Award Winners

#### 1st place – Thu Nguyen

Capillary Electrophoresis-Based Enzyme Assay of Acetyl Coenzyme A Carboxylase  
Gilman Group, Louisiana State University, Department of Chemistry

#### 2nd place – Wyatt Stevens

Sequence Based Separation of DNA Using Microfluidic Chip Electrophoresis  
McGown Group, Rensselaer Polytechnic Institute, Department of Chemistry and Chemical Biology

#### 3rd place – Dai Hyun Kim

A Deterministic Ratchet for Sub-Micrometer Particle Separation  
Ros Group, Arizona State University, Department of Chemistry & Biochemistry

## Thanks to our SciX 2017 Organizers!



**Jason Dwyer**

Associate Professor  
Department of Chemistry  
University of Rhode Island  
[jason\\_dwyer@uri.edu](mailto:jason_dwyer@uri.edu)



**Darwin Reyes-Hernandez**

Engineering Physics Division,  
Physical Measurement Lab  
NIST  
[darwin.reyes@nist.gov](mailto:darwin.reyes@nist.gov)

FACSS  
PRESENTS

SciX2018

October 21-26, 2018  
Marriott Marquis, Atlanta, GA

## Join us for the 2018 AES Annual Meeting at SciX 2018

October 21-26, 2018, Atlanta, GA

AES is excited to invite you to join us for the kickoff of our all new Annual Meeting as we join the SciX 2018 conference in Atlanta this fall! Partnership with SciX will provide new opportunities to connect with your colleagues in academia and industry with interests in the fundamentals and applications of electrokinetics, electrophoresis, dielectrophoresis, separations, and microfluidics

We are planning a program packed with innovative technical sessions, insightful plenary speakers, an engaging poster session, and the vibrant fun atmosphere that makes SciX conferences so popular.

Please join us in Atlanta as we launch an outstanding new conference experience for AES!

### HIGHLIGHTS

- **Better value, reduced registration fees.** In addition to access to all technical programming sessions, your registration now includes the gala dinner, two brown bag lunches, and more: AES Members \$650, AES Students \$200.
- **Trans-disciplinary interaction with SciX associated societies.** Catch up with old friends and meet new ones at sessions organized to be highly relevant to your research.
- **All AES awards presented in a single venue.** Join us in recognizing significant achievements in the field of electrokinetics. In addition to Lifetime Achievement and Mid-Career Awards, AES is excited to introduce the **NEW "Blue Fingers" Student Award** recognizing an outstanding paper submitted by a graduate student.
- **Special proceedings issue with *ELECTROPHORESIS*.** AES will team again with the journal *ELECTROPHORESIS* to publish a special proceedings issue featuring of the work presented at the AES Annual Meeting.

**ELECTROPHORESIS**

### IMPORTANT DATES

- **April 30. Deadline to submit abstracts for oral presentations.** Abstracts can be submitted via the [online portal](#). Select "AES Electrophoresis Society" as the Topic Code.
- **July 31. Deadline to submit abstracts for poster presentations.** Abstracts can be submitted via the [online portal](#). Select "AES Electrophoresis Society" as the Topic Code.
- **September 28. Deadline to take advantage of the discounted conference hotel rate** of \$204 + taxes at the Marriott Marquis (conference venue). Go to the [accommodations page](#) to make your online reservation. Students: Send an email to [scix@scixconference.org](mailto:scix@scixconference.org) for information on how to reserve a room at the conference student rate of \$143 + taxes.
- **September 28. Advance registration deadline.** Check the AES and SciX websites for information once the registration portal becomes active.

Paper Information	
Paper Title*	<input type="text"/>
20 words max	
Presentation Preference *	<input type="radio"/> Oral or Poster <input type="radio"/> Oral <input type="radio"/> Poster
Topic Code	<input type="text" value="AES Electrophoresis Society"/>
select at least one*	<input type="text"/>



THE GREAT SCIENTIFIC EXCHANGE

# SCIX2018

OCTOBER 21-26  
Marriott Marquis, Atlanta, Georgia

## Meet the Organizers of the 2018 AES Annual Meeting



**Alexandra Ros**



Dr. Alexandra Ros is an Associate Professor in the School of Molecular Sciences and faculty member of the Center for Applied Structural Discovery (CASD) at the Biodesign Institute at Arizona State University. She received her Diploma in Chemistry from the Ruprecht-Karls University in Heidelberg, Germany, and her PhD from the Swiss Federal Institute of Technology, Lausanne, Switzerland. Since her PhD, Dr. Ros has been interested in microfluidic platforms and their analytical applications. Dr. Ros joined the Biophysics and Nanoscience Group at Bielefeld University, Germany, in 2000 where she followed her interests in microfluidics and biophysics during her postdoctoral training. From 2001-2007, she served as principle investigator at Bielefeld University, Germany, on several projects investigating migration mechanisms and single cell analysis in the microfluidic format. In 2007, she finished her Habilitation and received the Venia Legendi in Experimental Physics from Bielefeld University. Dr. Ros joined Arizona State University in 2008 as Assistant Professor and was promoted to Associate Professor in 2014. In the same year she became faculty member of the Center for Applied Structural Discovery (CASD) at the Biodesign Institute. In 2015-16, Dr. Ros was appointed visiting scientist at the Georg-August University Göttingen, Germany. She received an NSF Career Award in 2012 as well as a Fellowship for Experienced Researchers from the Alexander-von-Humboldt Foundation, Germany, in 2015. Dr. Ros' current research interests include migration mechanisms in the micro- and nanoenvironment, single cell analysis, surface design, and developing microfluidic tools for crystallography. <https://biodesign.asu.edu/alexandra-ros>.



**Blanca H. Lapizco-Encinas**



Blanca H. Lapizco-Encinas is an Associate Professor in the Department Biomedical Engineering at the Rochester Institute of Technology. Her current research efforts are focused on the development of microscale electrokinetic techniques for the manipulation of bioparticles. Her main research objective is to develop electrokinetic-based microdevices that would answer the needs of a wide array of applications, from cell assessments for clinical/biomedical applications to food safety and environmental monitoring. Her research work has been funded by the NSF and other funding agencies in the US and Mexico. Her research efforts have received awards from the Mexican Academy of Sciences and the L'OREAL for Women in Science program. Research findings from her group have been published in numerous peer-reviewed journals articles and presented at international conferences. She serves as a Deputy Editor for the Journal *ELECTROPHORESIS* and has served as Vice-President and Councilor for the AES Electrophoresis Society. <https://www.rit.edu/kgcoe/biomedical/facultystaff?profile=blanca-lapizco-encinas>.

## AES 2017 Election Results

Please join us in congratulating and welcoming these new leaders to the AES Board!

A complete listing of AES officers with more information can be found online at

### AES Councilors 2018-2020



**Jason R. Dwyer**

Associate Professor  
Department of Chemistry  
University of Rhode Island

I am an Associate Professor of Bioanalytical Chemistry at the University of Rhode Island, where I have been a faculty member since 2009. Within the nanofluidics component of my research program, my efforts in solid-state nanopore single-molecule sensing have the most prominent overlap with the AES. I served as an AES Session Chair at SciX 2015 and then AES Section Program Co-Chair at SciX 2016 and 2017. I have a useful perspective, from not having been in an AES field earlier in my career, that will be helpful in marketing the society, in particular in supporting efforts to expand the society membership.



**Mark A. Hayes**

Professor  
Department of Chemistry and Biochemistry  
Arizona State University

I have been involved in electric field-based separations and manipulations for nearly twenty years, with my first publications focused field-based control of electroosmosis in capillaries [Anal. Chem. 1992, 64, 512-516]. We are still very active in the area, and about half of my publications fit within interest areas of AES. I have been very active and successful at helping organize and execute international meetings. Starting with organizing sessions in 2000 for FACSS, I was asked to be Program Chair for 2003, then Governing Board Chair for 2005, and I have served on the Long Range Planning Committee (2004-2010, Chair 2009-10) in addition to being the current Marketing Chair (2009-2012). I believe I have contributed to the mission of the AES Electrophoresis Society as Vice President, President, and Pas-President. I would like to continue to contribute in the role of Councilor.



**Darwin R. Reyes, PhD**

Leader, BioMEMS and Microsystems Task  
Engineering Physics Division, Physical Measurement Lab  
National Institute of Standards and Technology

Darwin Reyes has been working for more than 10 years on the development of cell-based assays using dielectrophoresis as a method to manipulate cells in microfluidic devices. He's actively developing tools for new applications in diagnostics and basic research. Darwin organized a workshop at NIST on Standards for Microfluidics, which included industrial and academic participants from around the world. He will apply the lessons learned from the workshop and his experiences at the MicroTAS conference (Art in Science award, Technical Program Committee, etc.) to help the development of students and professionals in this field while promoting excellence and scientific knowledge, core values of the AES.



**Stuart J. Williams**

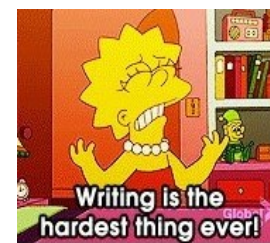
Associate Professor  
Department of Mechanical Engineering  
University of Louisville

Dr. Stuart Williams' research is in microfluidics with an emphasis on electrokinetic methods for particle manipulation and analysis, including dielectrophoresis and impedance spectroscopy. Dr. Williams has been the chair or co-chair of the AES Annual Meeting session "Soft Matter Electrokinetics" since its inception in 2014; he has also served on the organizing committee of Dielectrophoresis 2014 and Dielectrophoresis2016. Stuart will work with AES to increase its social media presence with an emphasis on educating the general public about electrokinetics through a dedicated AES YouTube channel.

## 3 Easy Ways to Jumpstart Your Writing

by Victor M. Ugaz

It doesn't matter if you're a student, a faculty member, or a seasoned industry veteran; everyone struggles with writing at some point. But if writing is so important, why does it seem so hard? Here are three easy things you can try to ease the pain. They have helped me immensely.



### 1. Set realistic goals.

We've all stared at it. The dreaded blank page of a new document window on the word processor screen. How will this ever turn into a complete manuscript? Where does one even begin? Setting realistic writing goals can help to overcome this barrier. Set aside a regular time to write and determine how many words you can reasonably compose during that period. A goal of 300-400 words is a good starting point for a daily writing goal. The key is to set the bar at a level you are likely to achieve *and stick to it*. Make your daily goal a top priority. You'll be surprised how satisfied you'll feel.

### 2. Write less, revise more.

How many times have you spent hours painstakingly perfecting each sentence in your paper before moving on to the next. Instead of this agonizingly slow and incredibly inefficient sentence-by-sentence process, try following the advice of Dr. Kristin Sainani, Associate Professor of Health Research & Policy at Stanford University, who suggests breaking the writing process into three phases: *pre-writing*, *writing*, and *revision*. Organize all your materials during the pre-writing stage so that you can focus exclusively on getting your thoughts down during the writing phase. This frees you from distractions so that you can just write. Don't worry about achieving perfection, you'll have plenty of time for that during the revision stage. It may sound crazy, but you'll actually spend less time writing if you follow this approach, leaving more time for refining your work.

### 3. Craft an engaging narrative. It's as easy as A-B-T.

Everybody loves a good story; we're naturally wired that way. Hollywood screenwriters know this. That's why most movies and television shows adopt a consistent narrative structure based on three simple words: And, But, Therefore—A-B-T. The idea is to begin with two statements of agreement (the “and”), followed by a statement of contradiction (the “but”), and finally a statement of resolution (the “therefore”). Let's try a simple example: Electrophoresis involves the transport of charged species in an electric field. And electrophoretic techniques have become a workhorse of molecular biology by enabling easy size-based DNA separations. But proteins are difficult to separate in this way because the interplay between size and charge is more complicated than in DNA. Therefore we are developing multi-dimensional techniques that isolate the effects of size and charge on electrophoretic mobility so that high-resolution protein separations can be achieved. As scientist turned filmmaker Randy Olson points out in his book *Houston, We Have a Narrative: Why Science Needs a Story*, many great communicators have mastered this narrative structure; from Watson and Crick's seminal paper introducing the DNA double helix to Trey Parker and Matt Stone in TV's *South Park*. You can do it too, and once you do you'll be amazed how the ABT framework transforms your writing. Check out Randy's book to learn more.



### Helpful Resources

- Sainani, K. *Writing in the Sciences*. [Online course on Coursera](#).
- Olson, R. (2015). *Houston, We Have A Narrative: Why Science Needs Story*. Chicago: University of Chicago Press.



## AES Thanks Christa Hestekin!

### Outgoing AES President

Please join us in thanking Christa Hestekin for her service and dedication to AES during her term as President. The gavel was passed on to incoming president Rodrigo Martinez-Duarte during the 2017 Annual Meeting in Minneapolis.

## Get Connected with AES

Join our LinkedIn group today



Did you know that AES maintains a group on LinkedIn? This site provides a convenient forum to share your exciting new results, start discussions, and seek advice from fellow AES members. Posts made to the group are visible on the LinkedIn feed of other group members, and possibly their LinkedIn connections who may not be AES members.

In addition to our website's *News* section, you can also announce your job openings in our LinkedIn group's *Jobs* section. The group can be found by searching the name “American Electrophoresis Society,” or at the following URL:

<https://www.linkedin.com/groups/3744247>.



# DIELECTROPHORESIS 2018

SAVE the DATE

**JULY 23-25, 2018**

University of Surrey, Guildford, UK



## Conference Organizers



**Michael Hughes**  
University of Surrey  
[m.hughes@surrey.ac.uk](mailto:m.hughes@surrey.ac.uk)



**Nicolas Green**  
University of Southampton  
[ng2@ecs.soton.ac.uk](mailto:ng2@ecs.soton.ac.uk)

- Third installment of this biennial international meeting
- Topics include: AC electrokinetic methods in general, novel applications of dielectrophoresis (DC, insulator methods, droplets and liquids), and dielectrophoresis for biological applications (including disease diagnostics and therapeutics)
- Outstanding and diverse group of scientists at the forefront of research in dielectrophoresis and nonlinear electrokinetics
- Website for abstract submission will be forthcoming soon. Please contact the Organizers with any questions.
- Mark your calendars now!



**AES**  
Electrophoresis Society  
*"Advancing Electrokinetic Science"*

**IOP** Institute of Physics