We are pleased to announce: San Francisco, the City by the Bay, is the site of the next annual meeting of the Electrophoresis Society, Nov 3 - Nov 8, 2013. Don’t miss this one!

We hope you will make plans to attend 2013 Annual Meeting of the AES Electrophoresis Society, to be held at the Hilton San Francisco Union Square. This year’s program is highlighted by a diverse mix of sessions, including the following new topics:

- Electrohydrodynamics and Electrospinning
- Electrokinetics for Sample Preparation
- Microfluidics for Bioanalytical Applications
- Directed Assembly Under Electric Fields.

Additionally, we will be hosting an Award session, a Plenary session, a Poster session, and an opportunity for students to rub shoulders with leaders in the field at “Lunch with Leaders.” Invited speakers include Stephen Quake from Stanford University, Richard Mathies from UC Berkeley, and Marc Madou from UC Irvine.

This year’s Poster session will include cash awards for the best student posters. Late breaking submissions for the Poster session will be accepted until early October.

The Poster Reception is scheduled for Tuesday, Nov 5, while the AES Banquet will take place on Wednesday, Nov 6 at a local restaurant. We look forward to seeing you there!

Call for Papers closes on May 13th, 2013.
AES MEETING PROGRAM — 2013

T3000 Plenary Session of the American Electrophoresis Society
Invited lectures from leading researchers in the area of electrokinetics. These researchers are being asked to focus on a particular area of their interest and explain how their research in the area of electrokinetics has provided key insights and/or enabled key applications.

Chair: Amy Herr
Joint Graduate Group in Bioengineering
UCSF/UC Berkeley
Email: aeh@berkeley.edu

Chair: Rafael Davalos
Biomedical Engineering and Sciences
Virginia Polytechnic Institute
Email: davalos@vt.edu

T3001 Award Session of the American Electrophoresis Society
The Award Session honors people who have made significant contributions to electrophoresis and to AES, and whose work is well known in both the engineering and biology communities. Awardees receive a commemorative plaque and a lifetime membership to AES. Participation in this session is by invitation only.

Chair: Adrienne Minerick
Department of Chemical Engineering
Michigan Technological University
Email: minerick@mtu.edu

Chair: Amy Herr
Joint Graduate Group in Bioengineering
UCSF/UC Berkeley
Email: aeh@berkeley.edu

Chair: Aditya S. Khair
Chemical Engineering
Carnegie Mellon University
Email: akhair@andrew.cmu.edu

Co-Chair: Edgar D. Goluch
Department of Chemical Engineering
Northeastern University
Email: e.goluch@neu.edu

T3002 Advances in Electrokinetics and Electrophoresis: Fundamentals
Electrokinetics involves the use of electrical fields and electrical forces (between surfaces and particles) to produce a motion of colloidal particles within a medium. This environment could be either a fluid, porous or fibrous medium. Notable applications include those related to environmental process such as the decontamination of water or a soil, the cleaning of water for drinking purposes, and the decontamination of industrial effluents; electrostatics aspects in membrane-based separation processes is another excellent example as well as micro-filtration in electrically enhanced processes. Within this framework, a detailed analysis of particle-to-particle electrostatics forces, the experimental measurements of their magnitude, and computer-based simulation approaches are relevant for the advance of processes and technology involving electrokinetics principles. Therefore, contributions with novel approaches related to fundamental principles, modeling, and experimental studies will be welcomed. We would like to have a balance between a given problem, the motivation, and the outcome related to the solution. However, purely experimental contributions describing new and novel aspects of electrokinetics will be welcomed as well as theories and computational efforts helping to improve understanding of outstanding fundamental problems.

Chair: Aditya S. Khair
Chemical Engineering
Carnegie Mellon University
Email: akhair@andrew.cmu.edu

Chair: Shengnian Wang
Chemical Engineering
Micromanufacturing Engineering
Louisiana Tech University
Email: swang@latech.edu

T3003 Ionic Fluxes At Interfaces, Electrohydrodynamics, and Electrospinning
The talks in this session will focus on fundamental aspects of novel electrokinetic flows. This session specifically welcomes experimental, theoretical, and computational studies of electrokinetic flows involving ionic fluxes across interfaces due to heterogeneous reactions or between microchannels and nanochannels, membranes, and porous media. Example phenomena of interest include catalytic "Janus" nanomotors, concentration polarization, electrophoresis of ion-selective particles, biological ion channels in membranes, and intercalation dynamics in batteries. All topics on fundamental electrokinetics are welcome and are not limited to areas listed here.
T3004 Advances in Electrophoretic Protein Separation and Analysis
Studies of protein expression patterns play a vital role in understanding the complex responses of cells, tissues, and organisms to stimuli or mutations. While recent developments have allowed these patterns to be investigated at an unprecedented level of detail, further advances are needed in order to fully illuminate the interplay among the many factors governing cellular response. Specifically, new technologies are needed that provide quantitative information with high sensitivity and throughput. This session will focus on the development of such proteomic technologies and their applications. Of particular interest are papers describing advances in electrophoretic protein separations, novel means of detecting and quantifying proteins, methods of analyzing specific protein classes, mass spectroscopic methods, and other related technologies. Papers are also sought that present research on the proteomic analysis of post-translational modifications.

Chair: Tom Berkelman
Senior Staff Scientist
Bio-Rad Laboratories
Thomas_Berkelman@bio-rad.com

Co-Chair: Phil Beckett
Proteomics Applications
GE Healthcare Bio-Sciences
Email: phil.beckett@ge.com

T3005 Advances in Electrokinetics and Electrophoresis: Bioanalytical, Biosensing, and Biomedical Applications
Medical diagnostic kits encompass a wide variety of portable analytical devices used to monitor and screen for medical conditions. They are rapidly being developed for use on a single-test basis and show promise as indispensable tools for clinical research, medical laboratories, and at home self-testing. The terms “microdevice,” “microchip,” “lab-on-a-chip,” and “micro-electromechanical systems” all refer to small, versatile, inexpensive, rapid-response devices that may be engineered for biomedical applications. Research in the areas of sample introduction, preparation, electrokinetic transport of biofluids, development of quantitative detection sensors, and the incorporation of genomic and proteomic biomarkers are needed to further the advancement of biomedical microdevices. Novel microanalytical tools are welcome, specifically those impacting applications such as genetic predisposition testing, rapid diagnosis of the presence of a particular disease or disorder, or those monitoring the efficacy of drug therapies. The goals of this session are to bring together researchers from academia, research labs, and industry to exchange ideas with the potential to revolutionize medical diagnostics.

Chair: Cullen Buie
Department of Mechanical Engineering
Massachusetts Institute of Technology
Email: crb@mit.edu

T3006 Electrokinetics for Sample Preparation
Sample preparation is the link connecting the real-world with microfluidic analysis. Partially overlooked in the past years, robust on-chip sample preparation must be further developed to enable practical applications such as environmental monitoring and point-of-care clinical diagnostics. This session is aimed at presenting how electrokinetics is enhancing sample preparation. Modeling and experimental contributions are welcome.

Co-chair: Rodrigo Martinez-Duarte
Ecole Polytechnique Fédérale de Lausanne
Email: drmartnz@gmail.com

T3007 Microfluidics: Bioanalytical Applications
Remarkable progress has been made in the fabrication micro- and nanoscale devices for the manipulation and detection of organisms and biomolecules. This session will focus on integration and detection aspects related to the emerging concept of a “chip-in-a-lab” as well as the more established “lab-on-a-chip” systems. Topics of interest include, but are not limited to, platforms for multi- and unicellular (biochemical or physical) analysis, immunoanalysis, electrochemical sensors, and various spectroscopic and separation tools in a microchip format. We are particularly interested in papers dealing with micro/nano scale systems and issues related to molecular (biochemistry), cellular, or systems biology. Both experimental and theoretical contributions are welcome.

Chair: Edgar D. Goluch
Department of Chemical Engineering
Northeastern University
Email: e.goluch@neu.edu
T3008 Electroporation, Electrophysiology, and Cell Electrokinetics

Electroporation is a technique that employs pulsed electric fields to create nanopores across the lipid bilayer. Reversible pore formation has been recognized as a powerful means to introduce macromolecules such as DNA into cells while maintaining cell viability. Recently, irreversible electroporation, which results in cell death, has been used for the ablation of undesirable tissue. Results indicate that due to its non-thermal nature IRE preserves important tissue components such as the extracellular matrix, major blood vessels, and nerves. The talks within this session will deal with single cell analysis via micro-electroporation technology, cellular polarization, and in vivo applications of electroporation such as gene therapy and electrochemotherapy.

Chair: Rafael Davalos
Biomedical Engineering and Sciences
Virginia Tech
Email: davalos@vt.edu

Co-Chair: Chang Lu
Biomedical Engineering and Sciences
Virginia Tech
Email: changlu@vt.edu

T3009 Electrokinetics in Non-Polar Media

This session welcomes experimental, computational, and theoretical papers on electrokinetic and electrostatic phenomena in non-polar media. Topics of interest include, but are not limited to, the origin, formation, and stabilization of charge carries; double layer charging and transient currents; and electrophoresis in non-polar fluids.

Chair: Paul Sides
Department of Chemical Engineering
Carnegie Mellon University
Email: ps7r@andrew.cmu.edu

T3010 Nanoscale Electrokinetics

The ability to manipulate and characterize nanostructures is of tremendous significance within biosensing, nanofabrication, and surface modification schemes for cells and tissues. Electrokinetics is emerging as one of the leading means to spatially control nanostructures within microfluidic and nanofluidic device platforms. This session will focus on fundamental aspects of DC and AC electrokinetics at the nanoscale level, such as elucidating the influence of streaming currents and surface conduction on nanostructures, as well as applied aspects, such as device platforms, scaling laws, fabrication and functionalization methodologies, and signaling and detection methodologies for particle manipulation and characterization.

Chair: Nathan Swami
Electrical & Computer Engineering
University of Virginia
Email: nswami@virginia.edu

Co-Chair: Fernanda Camacho
Chemistry & Biochemistry Dept
University of Arizona
Email: facamach@asu.edu

T3011 Electrokinetic Behavior of Micro- & Nanoparticles: Directed Assembly Under Electric Fields

The directed assembly and control of micro- and nanoparticles benefits a diverse set of engineering applications. An externally applied electric field is typically used to manipulate colloids, but a host of electrokinetic phenomena may be at play during these processes. Direct and indirect manipulation of particles is possible with electrophoresis, electroosmosis, dielectrophoresis, electrothermal flows, and induced charge electrokinetic phenomena. Papers both fundamental and applied in nature pertaining to the assembly of colloidal particles via these or closely related physical phenomena will be welcomed. Papers relating to the broad areas of microfluidics and colloidal crystallization are particularly desirable.

Chair: Stuart J. Williams
Department of Mechanical Engineering
University of Louisville
Email: stuart.williams@louisville.edu

Co-Chair: Christopher Wirth
Postdoctoral Scholar: Belgium
Katholieke Universiteit Leuven
Chemical Engineering
Email: Chris.Wirth@cit.kuleuven.be
AES Workshops during the 2013 Annual Meeting

Every year the Electrophoresis Society organizes technical workshops to be held on the Sunday before formal sessions begin. In the past these workshops have covered various topics: 2D Electrophoresis, Microfluidics, Electrokine

- **Gel Electrophoresis of Proteins and Western Blotting**
  - sponsored by **Bio-Rad Laboratories**.

- **Microfluidics and Electrokine**
  - sponsored by **LabSmith**.

More details coming soon! Check our workshops webpage for the latest updates.
Bath-time

A few months ago I had a rare opportunity to spend a few hours cleaning up my office. While I was sorting through piles of papers, I happened to come across a number of materials from Fall, 2007. Some big changes happened in my life during this period of time, and seeing these papers made me stop and take a look back at them.

Five years ago was definitely a period of transition for me. At work, I was a newly promoted associate professor and had just moved into the job of undergraduate program coordinator in our department at the same time that our enrollment was about to spike, and later assumed a leadership role in a biotechnology-focused master’s degree program. At home, my wife and I were expecting the birth of our first child. This combination of events created a perfect storm of new responsibilities that marked a huge step change from where my life had been just a few months before. And looking back now, I can see that I didn’t weather them very well.

I started off by promptly ignoring all the advice I had ever received about balancing one’s career and personal life. This is not surprising because I’m not good at taking advice, preferring instead to learn things the hard way. So my first instincts were predictable...just continue on as if nothing happened. But there was one small detail I failed to consider: although the number of things I needed to do was now significantly more, there was still the same amount of time in the day.

My inability to grasp the fundamental concept of time led me to do some crazy things (although they made perfect sense back then). My typical work week began on Sunday evening as I set off for my office to launch an all night offensive aimed at catching up on all the things I had gotten behind on during the previous week. These sessions were not technically all-nighters because I usually managed to take a ~ 2 hour nap (I had a camping mat, pillows, and blanket set up to make a cozy little bed beside my desk), but the effect was similar. This stunt set the tone for the rest of the week ahead, ensuring that I remained groggy throughout the rest of the weekend, and by limiting my caffeine intake to lower the tolerance I had steadily built up throughout the week (ensuring that I had a continual pounding withdrawal headache). By Sunday evening I was finally starting to feel refreshed, just in time to start the process all over again.

I reasoned that this schedule should be a walk in the park for someone like me. After all, I’d already earned my stripes through countless all night sessions of proposal writing, exam grading, etc. And at first this was essentially true. I could do it. But gradually things began to change. I became more and more forgetful, my productivity decreased. My longer hours at work translated into decreased work actually done. I found myself falling farther and farther behind, struggling to keep afloat. This schedule also began to take a toll on my health. I had run marathons in the past, but now had stopped exercising completely. I was now becoming susceptible to seasonal allergies and taking longer to recover. But because these things happened so gradually, I didn’t really notice. I simply forged ahead without stopping to look in the proverbial mirror.

A short time after the 2010 AES/AIChe meeting in Salt Lake City, I developed a sinus infection that stuck with me for over a month. I had never experienced this before (either a sinus infection or such a persistent illness). This was a catalyst to make me take stock over the next year and gradually make some positive changes. But this was not easy to do because it forced me to accept my own limitations. I mean really accept them and become at peace with them. The most significant change has been to maintain a regular sleep pattern as much as possible. I have found this to be absolutely critical because my foray into extended sleep deprivation flipped a switch that changed something inside me. I just don’t have the stamina to pull all-nighters like I used to. I can only do it occasionally now, but it takes me longer to recover.

Other changes that have made a big difference include learning to say “no” more often (I’m told I still don’t say it enough, but predictably don’t listen to the advice), and becoming more organized (I used to be able to re-
member everything in my head, but I’ve lost a lot of my ability to do that). Another thing that has helped is to seek out opportunities for training in skills that can help in the workplace environment (conflict management, leadership, etc.). These activities have provided a new toolbox that enables me navigate situations with confidence that I would have previously found intimidating, thereby reducing the accompanying stress levels.

My outlook has changed tremendously during the past year. I am more at peace with myself and have learned to view each day as gift filled with opportunity. I know this is a lifelong journey, but there are little breakthroughs all the time. Last week, for example, I reached a particularly important milestone of being able to take the time to bathe every day for an entire week, something I can’t recall having been able to do since 2007. Right here, at this moment, nothing could be more satisfying!

Victor M. Ugaz (ugaz@tamu.edu) is Associate Professor and K. R. Hall Development Professor in the Artie McFerrin Department of Chemical Engineering at Texas A&M University. Comments and suggestions are welcome.

Mark Hayes receives Benedetti-Pichler Award

Our very own Mark Hayes (AES Vice-President and ASU associate professor) will be honored by The American Microchemical Society with the Benedetti-Pichler Award in recognition of his major contributions to the development of new technology for analyzing ultra small volumes of biological fluids and tissues. The award recognizes outstanding contributions in the field of microchemistry.

On a related note Mark was also recently interviewed as part of the 2013 podcast series, as a finalist for the 2012 FACSS-SciX Innovation Award, for his work, “Punctuated Microgradients for Electric Field Separations.”

Congratulations Mark!!

Special issue, “Dielectrophoresis 2013”

AES member Blanca Lapizco-Encinas invites you to take a look at the special issue, Dielectrophoresis 2013, of the journal ELECTROPHORESIS, published as issue 7 of volume 34.

This special issue consists of 18 valuable contributions from research groups in USA, Europe and Asia. It is divided into four parts: (i) Fundamentals, (ii) Nanoanalysis, (iii) Biomedical Applications, and (iv) Bioanalytical Applications. This is a unique collection of articles presenting the latest findings on dielectrophoresis-based microdevices.

This is the second installment in this series that started with “Dielectrophoresis 2011” published as issues 17 and 18 of volume 32. For further information visit the journal's webpage.
Attention AES members, you are cordially invited to participate in SciX 2013, a meeting hosted by The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) that focuses on analytical chemistry and related sciences. The abstract submission deadline has just been extended to May 24!

For the fourth year, the AES Electrophoresis Society is co-organizing sessions with FACSS to include such topics as dielectrophoresis, micro- and nanofluidics, new applications of conventional electrophoresis, and Next gen electric field driven separations.

The SciX meeting will be held September 29 – October 4, 2013 in Milwaukee, WI. The organizers for the joint FACSS/AES session are Alexandra Ros of Arizona State University Department of Chemistry and Biochemistry and Edgar Goluch of Northeastern University Department of Chemical Engineering.

This year, session topics include Cell and Organelle Electrophoresis, Electrically Driven Processes in Nanofluidic Devices, Electrophoresis, Omics, and Dielectrophoresis, as well as an AES award session.

Important Dates
May 24 (New!!): Abstract submission for SciX 2013 oral presentations closes.
July 31: Abstract submission for Poster Presentations closes, last day to edit submitted Abstracts.

For more information, please visit www.aesociety.org/meetings/SCIX2013/index.php

Announcing the 2013 AES Mid-Career Award

AES is delighted to announce that Professor Todd Squires, Associate Professor of Chemical Engineering at University of California, Santa Barbara, is the inaugural recipient of the AES Mid-Career Award!

This recognition is given for 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.

The award will be presented at SciX 2013. Congratulations Todd!!