SUNDAY PROGRAM, October 21st

Workshop: Electrokinetic Microfluidics: Theory and Hands-on Problems, Sunday 10/21/18, 9:00 am-4:00 pm  
Lecturer: Prof. Cornelius (Neil) Ivory, Washington State University  
Cost: $50 for students, $450 for conferee and $550 for non-conferee. Please register for this workshop during your conference registration.  
Description: This 6-hour workshop will focus on applying electrokinetic theory to relevant issues on a number of microfluidic platforms including capillaries, microchips, and nanochips.

Sunday Keynote: Sunday October 21st, 6:15 - 7:00 pm - On the Rising Tide of Plastic in the Ocean and What to Do About it  
Dr. Matthew Savoca (NOAA Southwest Fisheries Center and Hopkins Marine Station, Stanford University).

AES Blue Finger Award for Claire V. Crowther, Sunday 10/21/18, 7:00 - 8:00 pm  
The AES Blue Student Award recognizes the most outstanding student paper submitted for the AES Annual Conference by a graduate student. This award is presented as part of the student award ceremony at SciX.

<table>
<thead>
<tr>
<th>MONDAY, October 22</th>
<th>TUESDAY, October 23</th>
<th>WEDNESDAY, October 24</th>
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| **(18AES01) Fundamentals of Electrokinetics**  
Location: L401-403  
Chairs: Xiangchun Xuan & Adam Woolley | **(18AES04) Nanoscale Electrokinetics**  
Location: L401-403  
Chairs: Sagnik Basuray & Edgar Goluch | **(18AES06) Joint session between ACS and AES**  
Location: L401-403  
Chairs: Mark A. Hayes & Lane Baker |
| 9:15 Strong deformation of the thick electric double layer around a charged particle during electrophoresis  
Author: Aditya Khair | 9:15 Microfluidics, Automation, and Big-Data for Systems Biology  
Author: Hang Lu | 8:30 AM: PLENARY TALK - Development of electrophoretic assays  
AES Electrophoresis Mid-Career Award Plenary by Prof. Michael Roper. Location: Imperial A |
Author: Cornelius Ivory | 9:35 Frequency-selective electrokinetic enrichment of nanocolloidal biomarkers  
Author: Nathan Swami | 9:15 Ferrohydrodynamic separation of circulating tumor cells  
Author: Leidong Mao |
| 9:55 Roles of migration, diffusion and EOF in hysteresis ion transport in single asymmetric nanopores  
Author: Gangli Wang | 9:55 ESSENCE — Shear-enhanced, Flow-through Nanoporous Capacitive Electrode, a new electrochemical Spectroscopy  
Author: Sagnik Basuray | 9:35 Controlled oxidation as sample pretreatment  
Author: Carlos Garcia |
| 10:15 Strategies for particle dielectrophoresis  
Author: Blanca H. Lapizco-Encinas | 10:15 Nanopore single-molecule sensors for oligo- and polysaccharide analysis  
Author: Jason Dwyer | 9:55 High resolution temporal sampling of endocrine tissue dynamics using droplet microfluidics with integrated, mix-and-read assays  
Author: Christopher Easley |
| 10:35 Separation and recovery of sub-micron and micro particles by dielectrophoretic filtration in porous ceramic structures  
Author: Malte Lorenz | 10:35 Manipulating microbial factories for nanomanufacturing  
Author: Rodrigo Martinez-Duarte | 10:15 Nanofluidic measurements of surface charge  
Author: Lane Baker |

**(18MPAES) 11:00 AM-12:00 PM - AES POSTER SESSION**  
Location: Imperial B - Sponsored by WILEY ELECTROPHORESIS

**11:45 AM-1:15 PM**  
Business Meeting - Location:L404  
Brownbag lunch available at Exhibit Hall. Visit Exhibition.

**11:45 AM-1:15 PM**  
Brownbag lunch available At Exhibit Hall. Visit Exhibition.
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<th>Time</th>
<th>Monday, October 22</th>
<th>Tuesday, October 23</th>
<th>Wednesday, October 24</th>
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<tbody>
<tr>
<td>1:30-3:30 PM</td>
<td>Capillary zone electrophoresis for bottom-up proteomics</td>
<td>Microscale Electrokinetics and Electroporation: Location: L401-403 Chair: Blanca Lapizco-Encinas &amp; Alexandra Ros</td>
<td>Microfluidic electrophoresis for separation and cellular analysis Location: L401-403 Chair: Lisa Flanagan &amp; Mei He</td>
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<tr>
<td>1:30</td>
<td>Capillary zone electrophoresis for bottom-up proteomics</td>
<td>Microfluidic electrophoresis for bacterial cell envelope phenotyping Author: Cullen Buie</td>
<td>1:30 Absolute miRNA Quantification Without Exosome Isolation or RNA Extraction Author: Zeinab Ramshani,</td>
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<td>1:50</td>
<td>Yoctomole Detection of Specific Proteins and Live-Cell Imaging of MicroRNA Author: Chris Le</td>
<td>Dielectric changes in membrane properties of porcine kidney cells before and after porcine parvovirus infection Author: Sanaz Habibi</td>
<td>1:50 Microfluidic electrophoresis for transfecting 3d-cultured cells and tissues Author: Mei He</td>
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<td>2:10</td>
<td>Perfect electrophoretic kinetic filter* for selection of pharmaceutical hits with desirable on-target residence…. Author: Sergey Krylov,</td>
<td>Modulation of the blood-brain barrier by high frequency pulsed electric fields using a microfluidic model Author: Philip Graybill</td>
<td>2:10 Membrane capacitance, cell surface glycosylation, and cell fate Author: Lisa Flanagan</td>
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<td>2:30</td>
<td>The Effect of Various Surface Treatments on the Dielectrophoretic Behavior of Escherichia coli Author: Claire V. Crowther, AES Blue Fingers Awardee</td>
<td>Numerical study of the effect of electrokinetic transport on bacterial electroporation Author: Jeffrey Moran</td>
<td>2:30 Microbial-culture independent antibiotic susceptibility assessment by AC electro-phenotyping Author: Nathan Swami</td>
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<td>2:50</td>
<td>(18MAES) 3:15 – 3:45 PM - AES POSTER SESSION Location: Imperial B - Sponsored by WILEY ELECTROPHORESIS</td>
<td>(18AES07) Electrophoresis in Industry and in Teaching Location: L401-403 Chair: David Charlot &amp; Christopher Harrison</td>
<td>(18AWD07) AES Mid-Career Award Session in Honor of Prof. Michael Roper. Location: L401-403 Chair: Jason R. Dwyer &amp; Rodrigo Martinez-Duarte</td>
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<td>3:50-5:30 PM</td>
<td>3D printed microfluidic devices for capillary electrophoresis of pre-term birth biomarkers Author: Michael J. Beauchamp</td>
<td>Electrophoratography and training: The equation for capital fundraising Author: David Charlot</td>
<td>3:50 Developing and Applying New Phospholipid Coatings in CE Separations Author: Christopher Harrison</td>
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<td>4:10</td>
<td>Chemically Tuned Nanopore Sensor Platforms for Single-Molecule Sensing Author: Jason Dwyer</td>
<td>Commercialization of novel technologies and selection of market applications Author: Les Ivie</td>
<td>4:10 Differentiating cell to cell signaling with a platform for separating beta-cell secretions Author: Dana Spence</td>
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<td>4:30</td>
<td>Electrically driven sample preparation and analysis in microfluidic devices Author: Adam Woolley</td>
<td>Training the next generation of capillary electrophoresis users and experts Author: Christopher Harrison</td>
<td>4:30 Investigating extracellular matrix effects on endothelial cell metabolism using microfluidics and mass spectrometry Author: James Edwards</td>
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<td>4:50</td>
<td>Utilizing Dielectrophoresis to Probe the Biophysical Differences of Listeria monocytogenes Serovars Author: Claire V. Crowther</td>
<td>Electrophoresis using an iPad-based Brownian dynamics simulator Author: Victor Ugaz</td>
<td>4:50 LED-induced fluorescence detector arrays for improved resolution in capillary electrophoresis Author: Christopher Baker</td>
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<td>5:10</td>
<td>Improving the Understanding of Early Stage Amyloid Aggregation Using Microchannel Electrophoresis Author: Xavier Redmon</td>
<td>AES Electrophoresis Society: Land of Opportunities Author: Rodrigo Martinez-Duarte</td>
<td>5:10 Electrochemical quantification of small molecules and proteins through customized instrumentation and bioconjugate schemes Author: Christopher Easley</td>
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<td>6:00-7:30 PM</td>
<td>Dinner on your own</td>
<td>Dinner on your own with self-assembly at Max Lager's Wood-Fired Grill &amp; Brewery</td>
<td>BANQUET – INCLUDED EVENT “The great Science Fiction Exchange”</td>
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