

**58<sup>th</sup> Annual  
SAS/ACS/MSNO May Conference**

**May 21, 2014  
John Carroll University  
Dolan Science Center**

**FINAL PROGRAM**

**7:00 a.m.**      **Registration/Continental Breakfast:**  
(Edward M. & Ann Muldoon Atrium)

**8:00 a.m.**      **Opening Remarks:** (Donahue Auditorium)  
Amir Avishai, President, MSNO

Mike Setter, Department Chair, Chemistry, John Carroll  
University

**8:15 a.m.**      **Invited Address 1:** (Donahue Auditorium)  
Chair: Brian Perry

**Doug Rohde**, *MS Lake County Crime Lab*  
**Elizabeth K. Balraj**, *MD, Cuyahoga County Coroner, ret.*  
**Dennis Matejic**, *AAS Detective Sergeant, Highland Hts. Police*  
**Gary McKee**, *BA Detective Sergeant, Highland Hts. Police, ret.*

The Cleveland Cyanide Murder Case: How Spectroscopy Helped To Solve  
a Crime

**9:25 a.m.**      **Break (20 minutes):** (Edward M. & Ann Muldoon Atrium)

## Presentation Session I

	<b>Session IA</b> <b>Dolan A202</b> Chair: Marcus Tirado	<b>Session IB</b> <b>Dolan A203</b> Chair: Ina Martin	<b>Session IC</b> <b>Dolan E130</b> Chair: Adam Smith:
<b>9:45 a.m.</b>	IA-1 "Synthesis and Negative Thermal Expansion Properties of $Y_{2-x}La_xW_3O_{12}$ ( $0 \leq x \leq 2$ )"  <b>Hongfei Liu</b> <i>University of Toledo</i>	IB-1 "Degradation of Transparent Conductive Oxides: Interfacial Engineering and Mechanistic Insights"  <b>Heather Lemire</b> <i>Case Western Reserve University</i>	IC-1 "Melanopsin Ganglion Cells are Biplexiform with Dendrites that Extend into the Outer Retina"  <b>Jordan Renna</b> <i>University of Akron</i>
<b>10:10 a.m.</b>	IA-2 "Speciation of Elemental Components in Food and Environmental Samples utilizing Ion Chromatography Coupled to ICP-MS"  <b>Craig Seeley</b> ThermoFisher Scientific	IB-2 "Controlling the Shape of Metal Oxide Nanostructures with Lyotropic Liquid Crystal Templates"  <b>Matt Worden</b> Kent State University	IC-2 "Single-Cell Analysis: Fluorescence Microscopy Based Approaches to Connect Cellular Biochemistry to Cell Population Behavior"  <b>Michael Konopka</b> <i>University of Akron</i>
<b>10:35 a.m.</b>	IA-3 "Ruthenium Oxide Based Combined Electrodes as Nitric Oxide Sensors Towards Measuring NO in Cystic Fibrosis"  <b>Tiyash Bose</b> <i>Cleveland State University</i>	IB-3 "Three Dimensional Morphology of Phase Separated Mixed Poly(tert-butyl acrylate)/polystyrene Brushes Grafted on Silica Particles in Selective Polymer Matrices"  <b>Saide Tang</b> <i>Case Western Reserve University</i>	IC-3 "Measurement of the cell thickness, cell volume and intracellular water with a standard transmission microscope"  <b>Michael Model</b> <i>Kent State University</i>

**11:00 a.m.      Break (10 minutes):** (Edward M. & Ann Muldoon Atrium)

**11:10 a.m.      Yeager Award:** (Donahue Auditorium)  
 Chair: Doug Rohde

**Jean, The College**

**"Swellable"**

**11:40 p.m.      Lunch:** (O'Connell Reading Room)

## 12:45-1:45 p.m. Poster Session: (Second Floor Hallway)

Early stage scaling behaviour of Ni-36Al-5(Cr,Pt) alloys undergoing Type II hot corrosion at 700°C,  
**Maryam Zahiri Azar**, *Case Western Reserve University, Dept of Materials Science and Engineering*

Compositionally Dependent Structure of Metallic Glasses Quantified by X-ray Absorption Spectroscopy,  
**Azin Akbari**, *Case Western Reserve University, Dept of Materials Science and Engineering*

Specimen Preparation of Soft Matter Materials for Direct and Replica TEM Studies,  
**Min Gao**, *Kent State University, Liquid Crystal Institute*

Tailoring Particle Size, Microporosity and Surface Properties of Polymer and Carbon Spheres,  
**Nilantha P. Wickramaratne**, *Dept of Chemistry & Biochemistry, Kent State University*

Metallization of Polyester Films for High Barrier Applications,  
**Taneisha Deans**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Superhydrophobic Colloidally Textured Polythiophene Film as Superior Anti-Corrosion Coating,  
**Al de Leon**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Enhanced Corrosion Resistance of Rubber-Modified Polybenzoxazine/Graphene Oxide Nanocomposite Coating,  
**Eugene Caldon**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

One-step Fabrication of Superhydrophobic/Superoleophilic Electrodeposited Polythiophene for Oil/Water Separation,  
**Raiza Imperial**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Free-Standing Nanoadhesive Film Incorporated with Curcumin for Biomedical Applications,  
**Douglas Naylor**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Enhanced Oxygen Barrier Property of Thermoplastic Polyurethane with in situ Photogenerated Palladium Nanoparticles,  
**Joey Dacula Mangadlao**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Transmission Electron Microscopy of InN Wires  
**Subrina Rafique**, *Case Western Reserve University, Department of Electrical Engineering and Computer Science*

Induced Gelation of Montmorillonite Clay by Graphene Oxide Acidity: Structure, Morphology and Application  
**Kramer Joseph Lim**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

Conducting Thin Films: Graphene Carbazole Functionalization and Electrodeposition  
**Paul Advincula**, *Case Western Reserve University, Dept of Macromolecular Science and Engineering*

## **Biology:**

The CTP Complex: A Protector and Mediator of Telomere Homeostasis,  
**Harry Scott**, *Case Western Reserve University, Medical School, Dept. of Pharmacology*

A Myopathy with Retiform Mitochondria,  
**Hisashi Fujioaka**, *Case Western Reserve University, Medical School, Electron Microscopy Facility*

Misplaced Mitochondria in a Human Myopathy,  
**Hisashi Fujioaka**, *Case Western Reserve University, Medical School, Electron Microscopy Facility*

Spatial Organization in Cell Signaling: Resolving the Mobility and Clustering of Membrane Proteins in situ,  
**William Comar**, *University of Akron, Department of Chemistry*

Time Resolved Microscopy Probe of Electrostatic Interaction Between Anionic Phospholipid Membranes and Polycationic Macromolecules, **Xiaojun Shi**, *University of Akron, Department of Chemistry*

A Comparison of Time-Resolved Fluorescence Microscopy Methods with DNA Standards,  
**Megan Kaliszewski**, *University of Akron, Department of Chemistry*

The PCL Acts as a Sperm Centriolar Precursor During Fertilization,  
**Atul Khire**, *University of Toledo Department Biological Sciences*

Visualizing Dynamic Instability of the Microtubule: Digital 3-D Models of Intracellular Processes,  
**Madeline D. Newcomb**, *Cleveland Institute of Art, Biomedical Art Department*

3D Biomedical Visualization Techniques to Demonstrate Platelet Collagen Adhesion in Humans,  
**Cameron Lada**, *Cleveland Institute of Art, Biomedical Art Department*

The Biomedical Art process of creating 3D Models of the Acrosome Reaction for Visual Communication  
**Ramzi Treer**, *Cleveland Institute of Art, Biomedical Art Department*

Structural insight into the Assembly of TRPV Channels,  
**Kevin W. Huynh**, *Case Western Reserve University School of Medicine Dept of Pharmacology*

Imaging of Isolated Disk Architecture from Rod Outer Segments of the Retina by Cryo-Electron Tomography,  
**Neetu M. Gulati**, *Case Western Reserve University School of Medicine Dept of Pharmacology*

## Presentation Session II

	<b>Session IIA Dolan A202</b> Chair: Christina Mastromatteo	<b>Session IIB Dolan A203</b> Chair: Valerie Woodward	<b>Session IIC Dolan E130</b> Chair: Jason Mears
<b>1:50 p.m.</b>	IIA-1  Interfacing Mass Spectrometry with Separation Methods for Synthetic Polymer Analysis  <b>Chrys Wesdemiotis</b> <i>University of Akron</i>	IIB-1  "AFM Analyses in Polymer Product Development & Process Troubleshooting"  <b>Harlan Wilk</b> <i>PolyInsight</i>	IIC-1  "The Ribosome Facilitates Protein Synthesis using Molecular Mimicry for Diverse Functions"  <b>Derek Taylor</b> <i>Case Western Reserve University</i>
<b>2:15 p.m.</b>	IIA-2  "Discovery of Magic Matrices and Novel Applications in Mass Spectrometry"  <b>Sarah Trimpin</b> <i>Wayne State University</i>	IIB-2  "Infrared Analysis at the AFM Tip: NanoIR™"  <b>Dave Voci</b> <i>Anasys Instruments</i>	IIC-2  "Application of combined energy-dispersive X-ray spectroscopy and electron energy loss spectroscopy to investigate the iron architecture and properties in Myeloid Blood Cancers"  <b>Valeria Visconte</b> <i>Cleveland Clinic</i>
<b>2:40 p.m.</b>	IIA-3  "LC-MS/MS based Proteomics to study Protein Abundance, Modification, and Turnover"  <b>Belinda Willard</b> <i>Cleveland Clinic</i>	IIB-3  "AFM as a Nano-viscometer"  <b>Steve Eppell</b> <i>Case Western Reserve University</i>	IIC-3  "Utilizing Quantitative Microscopic Cytometry to Study the Complex Biological System"  <b>Masahiro Hitomi</b> <i>Cleveland Clinic</i>
<b>3:05 p.m.</b>	IIA-4  "Heavy Ion Mass Spectrometry -- from Bacteriophage HK97 Capsids to Whole Virion"  <b>Mark Bier</b> <i>Carnegie Mellon University</i>	IIB-4  "Development and Use of Robust Probes for Tip Enhanced Raman Spectroscopy (TERS)"  <b>Jacob Scherger</b> <i>University of Akron</i>	IIC-4  "The Application of Imaging Analytics in Biomedical Research and Development"  <b>Amit Vasanji</b> <i>ImageIQ, Inc.</i>

**3:30 p.m.      Break (20 minutes):** (Edward M. & Ann Muldoon Atrium)

## Presentation Session III

	<b>Session IIIA Dolan A202</b> Chair: Rick Kus	<b>Session IIIB Dolan A203</b> Chair: Danqi Wang	<b>Session IIIC Dolan E130</b> Chair: Derek Taylor
<b>3:50 p.m.</b>	<p>IIIA-1</p> <p>“TEM Analytical Application Advancement”</p> <p><b>Stephen Mick</b> <i>Gatan Inc.</i></p>	<p>IIIB-1</p> <p>“In-situ Characterization of Polymers by DualBeam: Applications and Techniques”</p> <p><b>Trevan Landin</b> <i>FEI Company</i></p>	<p>IIIC-1</p> <p>“Structural Studies of Drp1 Provide Mechanistic Insight into Mitochondrial Fission”</p> <p><b>Jason Mears</b> <i>Case Western Reserve University</i></p>
<b>4:15 p.m.</b>	<p>IIIA-2</p> <p>“Raman Characterization of Cold-Drawn Poly-L-lactide: A Bio-Implant Material”</p> <p><b>Venkata N K Rao. Bobba</b> <i>Cleveland State University</i></p>	<p>IIIB-2</p> <p>“Transmission Kikuchi Diffraction (TKD in SEM): Extending the Applications of EBSD via a Century-Old TEM Technique”</p> <p><b>Warren MoberlyChan</b> <i>Oxford, Inc.</i></p>	<p>IIIC-2</p> <p>“Examining Drp1 Conformational Changes and Domain Interactions in the Mitochondrial Fission Complex using cryo-EM”</p> <p><b>Christopher Francy</b> <i>Case Western Reserve University</i></p>
<b>4:40 p.m.</b>	<p>IIIA-3</p> <p>“Self-assembled Functional Anisotropic Nanomaterials: From Gold Nanorods to Carbon Materials”</p> <p><b>Chenming Xue</b> <i>Kent State University</i></p>	<p>IIIB-3</p> <p>“Transmission Electron Microscopy of Microstructure Evolution in AlxCu<sub>100-x</sub> Alloys”</p> <p><b>Jörg M.K. Wiezorek</b> <i>University of Pittsburgh</i></p>	<p>IIIC-3</p> <p>“Engineering Tobacco Mosaic Virus for Applications in Nanotechnology”</p> <p><b>Michael Bruckman</b> <i>Case Western Reserve University</i></p>

**5:05 p.m.**      **Break (15 minutes):** (Edward M. & Ann Muldoon Atrium)

**5:20 p.m.**      **Best student paper/poster awards** (Donahue Auditorium)  
Chair: Regan Silvestri, Tom Steele

**5:30 p.m.**      **Morley Lecture** (Donahue Auditorium)  
Chair: Mark Waner

**Stuart Rowan**, Case Western Reserve University

**“Structurally Dynamic Polymers: Using Reversible Bonds to Access Macroscopically-Responsive Materials”**

**6:30 p.m.**      **Reception** (Edward M. & Ann Muldoon Atrium)

**7:00 p.m.**      **Program** (O'Connell Reading Room)

**Recognition of Meeting Sponsors** – Amir Avishai

**Bell Award Presentations** – Tom Steele

**Morley Award Presentation** – Mark Waner

**Closing Comments** – Brian Perry

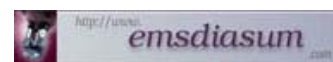
**7:20 p.m.**      **Dinner** (O'Connell Reading Room)

The 58th Annual May Conference Organizing Societies would like to thank these

**RYDBERG SPONSORS** for their support



**IONIC SPONSORS** for their support



**ATOMIC SPONSORS** for their support



**APPFIVE**

**MAGER SCIENTIFIC**



**ICP & ICP-MS Services**

