Wednesday August 17, 2016

12: 50 p.m.  **Opening Remarks**,  Kathleen Stair, REU Program Director

1:00 p.m.  “Solution-Processed Short-Channel Carbon Nanotube Transistors”
Hadass Inbar, Materials Science & Engineering and Chemistry, Technion-Israel Institute of Technology
Mark Hersam, Supervising Faculty; Dr. Vinod Sangwan, Mentor

1:15 p.m.  “Polymer Doping of Flexible, Transparent, Solution-Processed Metal Oxide Transistors”
Joshua Tedesco, Materials Science and Engineering, Rutgers University
Tobin Marks, Supervising Faculty; Katie Stallings and Wei Huang, Mentors

1:30 p.m.  “Morphological Study of Cobalt Hydroxide-organic Hybrid Supercapacitor Materials”
Emily Beeman, Materials Science and Engineering, University of California, Davis
Samuel Stupp, Supervising Faculty; Garrett Lau and Nick Sather, Mentors

1:45 p.m.  “Tuning Carrier Concentration in Thermoelectric Materials: Yb₉Zn₄ₓSb₉”
Michael Wucher, Geology, Pomona College
Jeffrey Snyder, Supervising Faculty; Saneyuki Ohno, Mentor

2:00 p.m.  “NanoMine: Data Driven Discovery for Engineering Polymer Nanosystems”
Valentina Guarino, ¹ Engineering Sciences, College of DuPage
Cate Brinson, Supervising Faculty; Richard Zhao and Xiaolin Li, Mentors

2:15 p.m.  “SrMnO₃₋δ For Reduced Temperature TC Fuel Production”
Colin Kelliher, ² College of DuPage
Sossina Haile, Supervising Faculty; Ho-Il Ji, Mentor

2:30 p.m.  “Determining the Reaction Rate Constant of LSM using a Modified ECR Method”
Danielle Richards, Chemical Engineering, New Mexico Institute of Mining and Technology
Sossina Haile, Supervising Faculty; Anupama Khan, Mentor

2:45 p.m.  BREAK

3:00 p.m.  “Nonstoichiometry of La₀.₈Sr₀.₂MnO₃₋δ”
Muskaan Goyal, ³ Chemical Engineering, California Institute of Technology
Sossina Haile, Supervising Faculty; Timothy C. Davenport and Michael Ignatowich, Mentors

3:15 p.m.  “Fuel Production via Thermochemical Cycling of Doped Ceria”
Zach Lipel, ³ Chemical Engineering, California Institute of Technology
Sossina Haile, Supervising Faculty; Timothy C. Davenport and Michael Ignatowich, Mentors

3:30 p.m.  “Synthesis and Characterization of Large Single Crystals of Superconducting NiBi”
Kelly Powderly, Chemistry and Integrated Sciences, Northwestern University
Danna Freedman, Supervising Faculty; Samantha Clark, Mentor
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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
<th>Faculty/s Mentor(s)</th>
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<tbody>
<tr>
<td>3:45 p.m.</td>
<td>“Prototyping Alloys Designed for Additive Manufacturing”</td>
<td>Samuel Cabrera, Mechanical Engineering, University of California, Irvine</td>
<td>Gregory Olson, Supervising Faculty; Dr. Ricardo Komai, Mentor</td>
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<td>4:00 p.m.</td>
<td>“Limits on Phase Separation Kinetics in Ni-Al Alloys: An Atom-Scale Study”</td>
<td>Tim Murat, Chemical and Biological Engineering, University of Wisconsin-Madison</td>
<td>David Seidman, Supervising Faculty; Sungil Baik, Mentor</td>
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<td>4:15 p.m.</td>
<td>“The Atomic Layer Deposition of Tin Sulfide”</td>
<td>Sarah Rappaport, Materials Science &amp; Engineering, Northwestern University</td>
<td>Lincoln Lauhon, Supervising Faculty; Michael Moody, Mentor</td>
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<td>4:30 p.m.</td>
<td>“Development of a Synthesis Technique for 2D Hexagonal Boron Nitride”</td>
<td>Robynne Paldi, Materials Science &amp; Engineering, University of California, Merced</td>
<td>Vinayak Dravid, Supervising Faculty; Jeff Cain and Even Hanson, Mentors</td>
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<td>1:00 p.m.</td>
<td>“Microfluidic Synthesis of Giant Liposomes”</td>
<td>David Cadena, Physics, University of Texas at San Antonio</td>
<td>Derk Joester, Supervising Faculty; Michael Whittaker, Mentor</td>
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<td>1:15 p.m.</td>
<td>“Trion Identification in WSe₂ for Trion-Polariton Cavities”</td>
<td>Ryan Bailey-Crandell, Physics, Oregon State University</td>
<td>Nathan Stern, Supervising Faculty; Teodor Stanev, Mentor</td>
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<tr>
<td>1:30 p.m.</td>
<td>“Optical Properties Modeling of Metallic Nanoparticle Array”</td>
<td>Yue Yu, Physics, Grinnell College</td>
<td>George Schatz, Supervising Faculty; Marc Bourgeois, Mentor</td>
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<td>1:45 p.m.</td>
<td>“Template-Stripped Aluminum Arrays for Ultraviolet Plasmonics”</td>
<td>Lisa Au, Chemistry, Carleton College</td>
<td>Teri Odom, Supervising Faculty; Michael Knudson and Thaddeus Reese, Mentors</td>
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<td>2:00 p.m.</td>
<td>“The Study of the Synthesis and Growth Mechanism of Silver Triangular Nanoprisms”</td>
<td>Meaghan Bruening, Chemistry, St. Catherine University</td>
<td>Richard Van Duyne, Supervising Faculty; Lingxuan (Betty) Peng, Mentor</td>
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<td>2:15p.m.</td>
<td>“Nanomechanical Properties of the Polybutadiene in 3D Printed ABS”</td>
<td>Kelly Ruffenach, Materials Science &amp; Engineering, Rutgers University</td>
<td>Catherine Brinson, Supervising Faculty; David Collinson and Matthew Eaton, Mentors</td>
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<td>2:30 p.m.</td>
<td>“Polymer Doping: Not Illegal”</td>
<td>Michael Allen, Materials Science &amp; Engineering, University of Utah</td>
<td>Kenneth Shull, Supervising Faculty; David Delgado and Kazi Sadman, Mentors</td>
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<td>2:45 p.m.</td>
<td>BREAK</td>
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<td>3:00 p.m.</td>
<td>“Optimizing Protocol for Investigating Metal Soap Protrusions at the Microscale in Georgia O’Keeffe Paintings”</td>
<td>Anne Claire Wageman, Chemistry, University of Texas at Austin</td>
<td>Marc Walton, Supervising Faculty; Dr. Johanna Salvant, Mentor</td>
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3:15 p.m.  “Studying the Composition of Daumier Bronzes Using Handheld-XRF Techniques”
Seth Young, Chemical Engineering, Oklahoma State University
Marc Walton, Supervising Faculty; Emeline Pouyet, Mentor

3:30 p.m.  “Structural Characterization of TruC”
Deanna Badong, Biochemistry, Mills College
Alfonso Mondragón and Monica Olvera de la Cruz, Supervising Faculty; Clarence Chan and Aykut Erbas, Mentors

3:45 p.m.  “Computational Design and Optimization of Helix Networks with Pre-Strained Bi-Elastomer Strips”
Raudel Avila, Mechanical Engineering, The University of Texas at El Paso
Yonggang Huang, Supervising Faculty; Yeguang Xue, Mentor

4:00 p.m.  Certificate presentation

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Support from: ¹ 3M Corporation, ² College of DuPage Foundation, ³ CalTech SURF program,
⁴ Center for Hierarchical Materials Design (CHiMaD) - NIST award number 70NANB14H012, ⁵ Grinnell College,
⁶ Carleton College, ⁷ Center for Computation & Theory of Soft Materials (CCTSM)