NU-MRSEC Research Experience for Undergraduates  
Closing Symposium  
Tuesday, August 14 and Wednesday, August 15, 2018  
Abbott Auditorium, Pancow Hall

TUESDAY, August 14, 2018
12:35 p.m.  Opening Remarks, Kathleen Stair, REU Program Director

1:00 p.m.  "The Tunability of Hybrid Supramolecular and Covalent Polymer Hydrogels"  
Cynthia Perez, Biomedical Engineering, University of Texas at San Antonio  
Prof. Sam Stupp, Supervising Faculty; Dr. Liam Palmer & Thomas Cote, Mentors

1:15 p.m.  "A House Divided: Salt Identity Effects on Laponite Gel Structures"  
Gabriella Diaz, Chemical Engineering, Texas A&M University, Kingsville  
Prof. Kenneth Shull, Supervising Faculty; David Delgado, Mentor

1:30 p.m.  "Investigating YBaMn2O5⁺δ for Applications in Two-step Thermochemical Fuel Production"  
Kenneth Crossley, Physics, Colorado College  
Prof. Sossina Haile, Supervising Faculty; Xin Qian & Dr. Emanuela Mastronardo, Mentors

1:45 p.m.  "Determining the Interface Conductivity of Nb-doped SrTiO3 (Nb-STO) with Various Electrodes,“  
Gillian Hagen, Physics, Mount Holyoke College  
Prof. Sossina Haile, Supervising Faculty, Dr. Dahee Lee & Ruiyun Huang, Mentors

2:00 p.m.  "Exploring Group 6 Hexacyanometallates for Applications in Quantum Computing,”  
Orion Forowycz, Integrated Sciences Program, Northwestern University  
Prof. Danna Freedman, Supervising Faculty; Tyler Pearson & Daniel Laorenza, Mentors

2:15 p.m.  "Simultaneous Polymer Synthesis and Self-assembly for Nanopatterning,”  
Taija Stoner-Harris, Chemistry, Southern University of Baton Rouge  
Prof. Mizhou Wang, Supervising Faculty; Zhe Qiang, Mentor

2:30 p.m.  BREAK

2:45 p.m.  "Flexible Field Effect Transistors via Polymer Doping in Metal Oxide Matrix,“  
Andy Cheung, Chemistry, Hong Kong University of Science and Technology  
Prof. Tobin Marks, Supervising Faculty; Wei Huang, Mentor

3:00 p.m.  "Comparing Large-scale Shear Mixed Graphene to Industry Standards for Electronic Ink Applications,”  
Justin Qian, Materials Science and Engineering, University of Pennsylvania  
Prof. Mark Hersam, Supervising Faculty; Julia Downing and Dr. Ted Seo, Mentors

3:15 p.m.  "Optimizing Annealing Conditions for Composite Thin Films,”  
Monica Inouye, Chemistry, California State University Fullerton  
Prof. Mark Hersam, Supervising Faculty; Prof. Haihua Wang & Sonal Rangnekar, Mentors

3:30 p.m.  "Interfacial Contact Schemes in High-Performance MoS 2 - Based Transistors,”  
Vineetha Bheemarasetty, Materials Science and Engineering & Applied Physics, Carnegie Mellon University  
Prof. Lincoln Lauhon, Supervising Faculty; Michael Moody & Jack Olding, mentors

3:45 p.m.  "Cryogenic Mechanical Properties of Polymers for Aerospace Applications,”  
Ryan Tris, Engineering, College of DuPage  
Prof. Kenneth, Supervising Faculty; Matthew Eaton, Mentor
4:00 p.m. “Cr Variation in W-Free Co-Based Superalloys,”
Spencer Taylor, Materials Science and Engineering, University of North Texas
Prof. David Dunand, Supervising Faculty; Fernando Reyes, Mentor

WEDNESDAY, August 15, 2018

9:30 a.m. “Photo-Triggered Polymerizations for Functional Bioactive Polymers Studies in ATRP and ROMP,”
Steven Schara, Materials Science and Nanoengineering; Chemistry, Rice University
Prof. Nathan Gianneschi, Supervising Faculty; Hao Sun, Mentor

9:45 a.m. “Epifluidic Mapping of Sweat Production,”
Adriane Roberson, Biology, Southern University of Baton Rouge
Prof. John Rogers, Supervising Faculty; Tyler Ray, Mentors

10:00 a.m. “A Dye-free Method of Visualizing Sweat in Wearable Devices”
Steve Rebollo
Dr. Ying Jia (NUFAB) and Tyler Ray (Rogers), Mentors

10:15 a.m. “Optimizing freezing and etching parameters for CryoSEM analysis of hydrogels,”
Kavya Anjum
Dr. Reiner Bleher and Eric Roth (NUANCE BioCryo facilities), Mentors

10:30 a.m. “Liquid-Graphene Interactions Using Environmental SEM,”
Benjamin Kaiser, Physics, Bethel University
Prof. Vinayak Dravid, Supervising Faculty; Jingshan Du, Mentor

10:45 a.m. BREAK

11:00 a.m. “Effects of Spark Plasma Sintering on the Microstructure of Thermoelectric Materials,”
Jill Rix
Karl Haggland (NUANCE) and Xiaoming Zhang (Dravid), Mentors

11:15 a.m. “Study of CuOx Thin Films Supported on α-TiO2(110) Single Crystal Substrate for Heterogeneous Catalytic Applications”
Manuel Osorio, Physics, DePaul University
Prof. Michael Bedzyk, Supervising Faculty; Anusheela Das, Mentor

11:30 a.m. “Novel Metal-Insulator Transition in Molybdenum Oxynitride,”
Nathan Szymanski, Pure Physics & Applied Match, University of Toledo
Prof. James Rondinelli, Supervising Faculty; Lauren Walters & Richard Saballos, Mentors

11:45 a.m. “Tuning the Electronic Structure of Two-dimensional Materials through Molecular Assembly”
Trevor Steiner, Materials Science and Engineering, University of Minnesota
Dr. Pierre Darancet, Supervising Faculty; Dr. Qunfei Zhou, Mentor

12:00 p.m. “Interaction of Hydrogen Peroxide and Phosphates in Lignin Depolymerization,”
Awa Porgo, Chemical Engineering, Stevens Institute of Technology
Prof. Justin Notestein, Supervising Faculty; Louisa Savereide-, Mentors

12:15 p.m. Photo, Certificate presentations & Lunch

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