



## **6<sup>th</sup> Annual Applied Polymer Technology Extension Consortium Symposium**



***Southeastern Louisiana University***

**Hammond, LA**

**November 17<sup>th</sup>, 2018**

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## **2018 APTEC Student Organizers**

Shreeja Bhatt

Shreya Bhatt

Mahitha Koduri

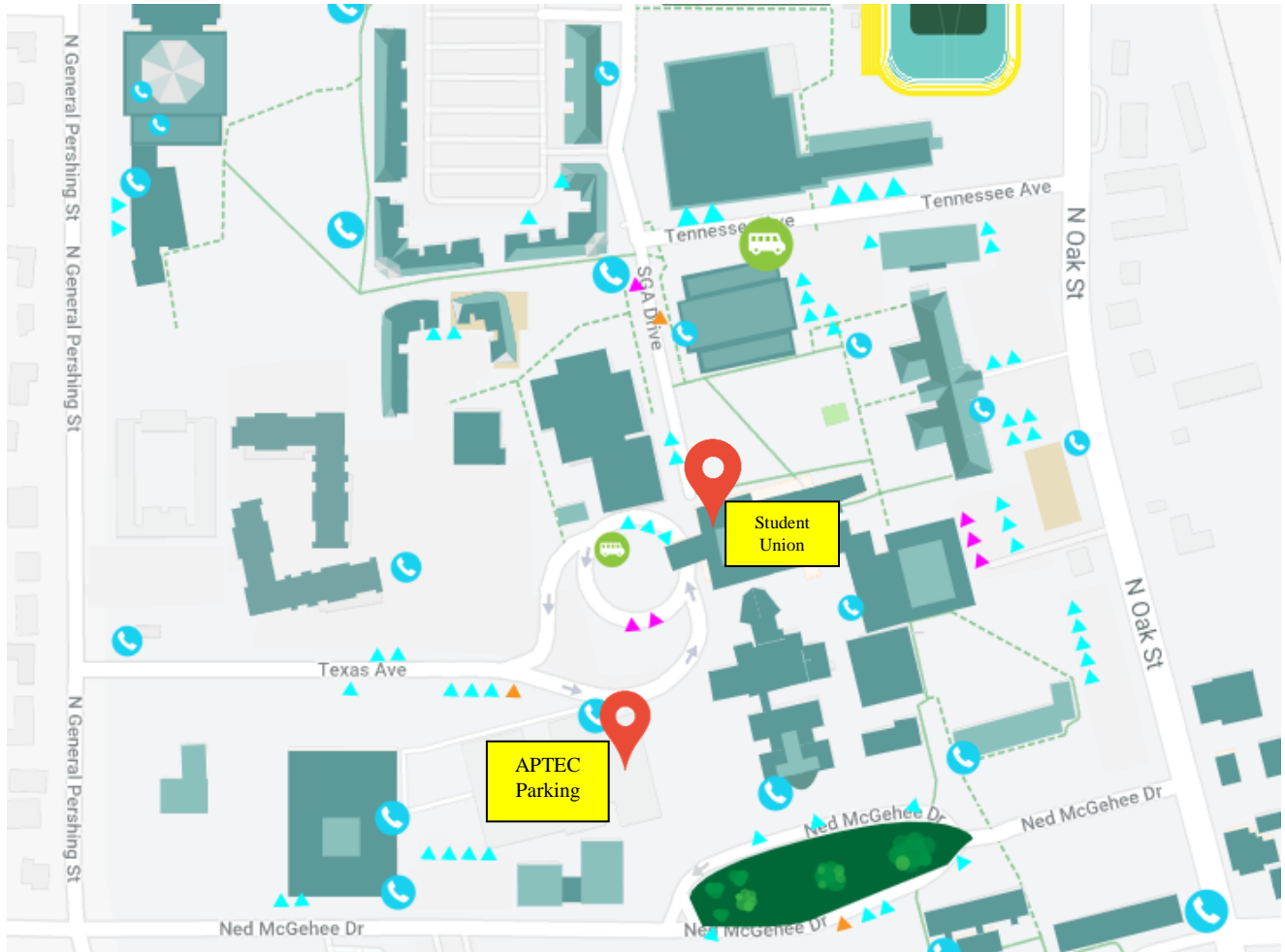
## **2018 APTEC Board of Directors**

Harold Young  
Robert Lochhead  
John Pojman  
Wayne Reed  
Rongjuan Cong  
Derek Patton

Daniel De Kee  
David Norwood  
Alex Reed  
Paul Russo  
Mark DeLong  
David Brad Wurm

**Location:** Student Union 3<sup>rd</sup> Floor, 303 Texas Ave, Hammond, LA 70402

(Geocoordinates: 30.514097, -90.467828)



**APTEC Parking is available at the parking lot located in between Texas Ave. and Ned McGehee Dr. and around the round-about**

<b><u>Event</u></b>	<b><u>Time</u></b>
<b>Registration and Breakfast (Students hang their posters)</b>	<b>8:00 – 9:00</b>
<b>Introductory remarks</b>	<b>9:00 – 9:15</b>
<b>Headliner - Dr. Tim Lodge</b>	<b>9:15 – 10:00</b>
<b>Poster Session 1</b>	<b>10:00 – 11:00</b>
<b>Teacher’s Workshop</b>	<b>10-11:30</b>
<b>Oral Presentations</b>	<b>11:15 – 12:15</b>
<b>Lunch</b>	<b>12:15 – 1:15</b>
<b>Keynote Speaker – Dr. Margaret Scheiner</b>	<b>1:15 – 2:00</b>
<b>Poster Session 2</b>	<b>2:00-3:00</b>
<b>Break</b>	<b>3:00 – 3:30</b>
<b>“Speed Dating”</b>	<b>3:30-5:00</b>

## **Abstracts for Oral Presentations**

### **Finding Lignin-Based Dispersants for Large-Scale Oil Spill Management: From Biopolymer to Ecofriendly Nanoparticles**

*Jin Gyun Lee, Louisiana State University*

Oil-herding is the one of promising methods for oil spill on the ocean, yet current nonbiodegradable herding agents have toxic impact on environment. We will introduce lignin nanoparticles as an ecofriendly material to manage large-scale oil spill.

### **Janus-Type Linear-Dendritic Block Copolymers for Targeted Drug Delivery**

*Jon Williams, University of Mississippi*

This talk covers the synthesis and characterization of biodegradable, biocompatible PAMAM/PLA block copolymers, along with properties of their self-assembled nanoparticles. This talk will also cover design rationale and in-vivo behavior.

## **Poster Presentation: Open Polymer Active Learning Laboratory (OPALL)**

The Open Polymer Active Learning Laboratory is based on Georgia Tech's several Design Collaboratives. These student-led spaces put learners at all levels in direct contact with equipment while teaching leadership and activating the curriculum. They are successful at boosting recruitment, student interest and confidence, but by design they are restricted in terms of the sophistication and durability of instrumentation they can supply. For example, polymer students do not get hands-on experience with gel permeation chromatography/multiangle light scattering. When such training is provided in the context of a conventional laboratory, we are usually forced to use demonstrations. In a typical 3-hour lab module, all students cannot get a feel for the experiment, let alone encounter and overcome failures and frustrations. OPALL is designed around the idea that an open lab, led by Learning Assistants, can expand the times when students can gain direct access to sophisticated equipment. It is designed for juniors, seniors and beginning graduate students. By stretching our open hours, we hope to get every student hands-on experience in key polymer characterization techniques. Learning Assistants can be underclassmen and even high school students who, though they lack theoretical knowledge, understand how to keep both the students and the equipment safe. In the process, Learning Assistants preview the life of near-peers just a few years ahead of them, prepare Standard Operating Procedures to boost their knowledge of technical writing, and gain confidence in spoken communication.

## **Titles of Poster Presentations**

### **Poster Session 1:**

1. Accelerated Annealing for 3D Printed PLA through Microwave-Assisted Heating  
*Ju Dong, Louisiana State University*
2. Development of spray foam insulation from microwave liquefaction of woody underbrush  
*Xingyan Huang, Louisiana State University*
3. Poly(2-acrylamido-2-methylpropane sulfonic acid) and Poly(N-isopropylacrylamide) grafted Cellulose Nanocrystals: Synthesis and Characterization  
*Meichun Li, Louisiana State University*
4. High interfacial area bipolar membranes  
*Subarna Kole, Louisiana State University*
5. Acid doped polycation and polybenzimidazole membranes for high temperature fuel cells  
*Gokul Venugopalan, Louisiana State University*
6. Towards the synthesis of polyhydroxylated flavonol analogs as potential chemotherapeutic agents against skin cancer  
*Xuyen Nguyen and Clarissa Smith, Southeastern Louisiana University*
7. Comparative analysis of the catalytic properties of pt(0) nano-dispersed in a range of siloxane matrices toward hydrosilylation reactions  
*Samuel Ginglio IV, Southeastern Louisiana University*
8. Low resistant ion-exchange membranes for membrane capacitive deionization  
*Varada Menon Palakkal, Louisiana State University*

9. Determining the extent of counterion condensation in block copolymer electrolytes  
*Qi Lei, Louisiana State University*
10. Rheological Performance of Oil Well Cement Slurries Containing Cellulose  
*Zhengjie Tang, Louisiana State University*
11. Recent Breakthroughs in Frontal Polymerization  
*Daniel Gary, Louisiana State University*
12. 3D cell culturing in a thiol-acrylate hydrogel using a base-catalyzed Michael addition  
*Anowar Hossain Khan, Louisiana State University*

**Poster Session 2:**

13. Electropolymerization of NIR-II Active Organic Semiconducting Triblock Copolymers  
*Duong Ngo, The University of Mississippi*
14. Investigating solution size changes of dendritic and linear equivalent polymers in a range of solvents  
*Oluwapelumi Kareem, Tulane University*
15. Effect of rod forming systems on liquid crystal phase transitions  
*Jessica Stelzel, Georgia Institute of Technology*
16. Solution Self-Assemblies of Sequence-Defined Ionic Peptoid Block Copolymers  
*Garrett Sternhagen, Louisiana State University*
17. Organic Acid Assisted ROP of NTA's towards Well-Defined Polypeptides  
*David Siefker, Louisiana State University*
18. Amphiphilic Polypeptoid- Functionalized Halloysite Nanotubes as Emulsion Stabilizers towards Oil Spill Remediation  
*Tianyi Yu, Louisiana State University*

19. 3D Printing of polyNIPAM in Liquid Phase  
*Yusheng Guo, Louisiana State University*
  
20. Recyclable Bio-based Thermoset Furan-Epoxy Networks via Diels-Alder Crosslink and Reinforced by Nanocellulose Crystal for Lighter and Stronger Composites  
*Luc Le, Georgia Institute of Technology*
  
21. Investigating Dendrimer Kinetics through the Synthesis of Bis-MPA Branched  
*McKenna Redding, Tulane University*
  
22. Boron-mediated anti-aldol reactions of substituted phenylacetates  
*Angela Thomas and Tommy Walls, Southeastern Louisiana University*



Keynote Speaker – Dr. Margaret Scheiner from Oak Ridge Associated Universities



*Dr. Margaret Scheiner is the program manager at Oak Ridge Associated Universities. She was a lecturer and research program coordinator at Florida State University.*

*Dr. Scheiner earned her Ph.D. in Industrial & Manufacturing Engineering from Florida State University and her B.S. in Materials Science & Engineering from Cornell University. Her research interests concern advanced materials.*

Headliner – Dr. Timothy P. Lodge from the University of Minnesota



*Dr. Timothy Lodge is a Regents Professor and a Distinguished McKnight University professor in the Department of Chemical Engineering and Materials Science at the University of Minnesota, Twin Cities.*

*He is recognized for his research in polymer science, and his principle research interests are in multicomponent polymer systems. His work includes synthesis of model polymers, characterization of their molecular features, assessment of the material structure and exploring dynamic processes.*