



UNIVERSITY  
OF MIAMI

SUMMER 2017

# REU SURF & SCOCORF

RESEARCH SYMPOSIUM

FRIDAY, JULY 28<sup>TH</sup>

COX SCIENCE BUILDING



SUPPORTED BY

THE UNIVERSITY OF MIAMI

THE NATIONAL SCIENCE FOUNDATION AND  
SYLVESTER COMPREHENSIVE CANCER CENTER

# SYMPOSIUM AGENDA

NSF Research Experience for Undergraduates (REU)  
&  
Summer Undergraduate Research Fellowship Program (SURF)

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## UNIVERSITY OF MIAMI SUMMER 2017

### **Morning Session**

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10:15 AM - 10:30 AM	Opening Remarks <b>Marc Knecht, Ph.D.</b> Associate Professor, Department of Chemistry University of Miami NSF REU Director	Cox Building Room 126
	<b>Zafar Nawaz, Ph.D.</b> Senior Associate Dean for Graduate and Post-Doctoral Studies Professor of Biochemistry & Molecular Biology University of Miami SURF Director	
	<b>Burton Rosenberg, Ph.D.</b> Associate Professor, Department of Computer Science University of Miami NSF REU Director	
	<b>Priyamvada Rai, Ph.D.</b> Associate Professor, Department of Medicine Sylvester Comprehensive Cancer Center SURF Director	
10:30 AM - 12:00 PM	Student Oral Presentations <b>REU and SURF Participants</b> See Next Page for Presenters	Cox Building Room 126

12:00 PM - 1:00 PM      **Reception**      Cox Building Atrium

### **Afternoon Session**

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1:00 PM - 2:00 PM	Student Poster Presentations <b>REU and SURF Participants</b>	Cox Building Atrium
2:00 PM - 2:15 PM	Closing Remarks <b>Sylvia Daunert, Pharm.D., M.S., Ph.D.</b> Professor and Lucille P. Markey Chair of Biochemistry & Molecular Biology Associate Director, Dr. JT Macdonald Biomedical Nanotechnology Institute University of Miami NSF REU Co-Director	Cox Building Room 126

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## UNIVERSITY OF MIAMI SUMMER 2017

### Student Oral Presentations

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- |                     |  |
|---------------------|--|
| 10:30 AM - 10:45 AM | <b>Alina Garcia</b><br>"Promising Drug Delivery In Vivo zebrafish larvae using carbon nanoparticles to target calcified bones"                                   |
| 10:45 AM - 11:00 AM | <b>Brianna Yaffe</b><br>"Triptolide causes cell death in acute myeloid leukemia cells via inhibition of c-Myc"   |
| 11:00 AM - 11:15 AM | <b>Samuel Cooper and Leon Lei</b><br>"Visualizing Classroom Social Networks of Hearing Impaired and Non-impaired Children with Real-time Automated Measurements" |
| 11:15 AM - 11:30 AM | <b>Leah Dodds</b><br>"The Role of Estrogen Receptor Signaling in the Early Events of High Grade Serous Ovarian Cancer (HGSC)"                                    |
| 11:30 AM - 11:45 AM | <b>Robert Costales</b><br>"Uncovering New Knowledge About Nerve Growth Using Clustering and Thresholding: Distinguishing Responders From Nonresponders"          |
| 11:45 AM - 12:00 PM | <b>Charles Steuerwald</b><br>"Assessing Potential Inhibition Sites in Protein Arginine Methyl Transferase 1"   |

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**Rachel Arens**

"Exploring Brain Meta Activation Patterns  
Using Neuroimaging Data"

Kenyon College

*Mentors: Dr. Lucina Uddin & Mr. Taylor Bolt*

**Samuel Cooper**

"Visualizing Classroom Social Networks of Hearing  
Impaired and Non-impaired Children with Real-time  
Automated Measurements"

Fayetteville State University

*Mentors: Dr. Daniel Messinger, Dr. Laura Vitali,  
& Dr. Mahsa Mirzargar*



**Robert Costales**

"Uncovering New Knowledge About Nerve Growth Using  
Clustering and Thresholding: Distinguishing Responders  
From Nonresponders"

Bard College at Simon's Rock

*Mentors: Dr. Vance Lemmon, Dr. John Bixby,  
& Mr. Matt Danzi*

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### **Sabrina De La Torre**

"Carbon dots become a promising drug delivery carrier  
in an *in vivo* study using zebrafish larvae"

Florida International University

*Mentors: Dr. Isaac Skromne & Dr. Roger LeBlanc*



### **Leah Dodds**

"The Role of Estrogen Receptor Signaling in the  
Early Events of High Grade Serous Ovarian Cancer (HGSC)"  
University of Miami

*Mentors: Dr. Sophia George, SCCC*



### **Alexander Fischer**

"Techniques for Extracting and Analyzing  
Axon Paths in 3D Images of Mouse Optic Nerves"

University of Massachusetts, Amherst

*Mentors: Dr. Vance Lemmon, Dr. Victor Milenkovic,  
& Dr. Mahsa Mirzargar*



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### **Connor Galvin**

"Design of an Electroactive Protein Based Biosensor through Incorporation of Non-Canonical Amino Acids"

Miami Dade College

*Mentors: Dr. Sylvia Daunert & Dr. Leonidas Bachas*

### **Alina Garcia**

"Promising Drug Delivery In Vivo zebrafish larvae using carbon nanoparticles to target calcified bones"

University of Florida/Miami Dade College

*Mentors: Dr. Isaac Skromne & Dr. Roger LeBlanc*



### **Seraphina Gibson**

"Path planning in approximations to 3D and 4D configuration spaces"

Oberlin College

*Mentors: Dr. Victor Milenkovic & Ms. Chloe Arluck*



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### **David Grossman**

"Properties of Texture in Convolutional Neural Networks"

University of Miami

*Mentors: Dr. Odelia Schwartz*

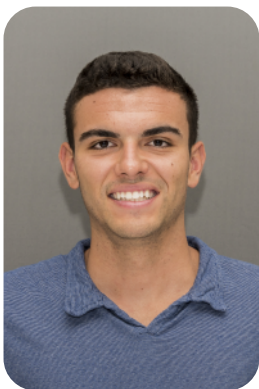


### **Christopher Joly**

"Peptide-Template Metal Nanoparticles:  
Synthesis and Effect on *Caenorhabditis elegans*"

University of Virginia

*Mentors: Dr. Marc Knecht & Dr. Kevin Collins*



### **Ariel Lavi**

"To Be Announced"

University of California at Los Angeles

*Mentors: Dr. Odelia Schwartz*



# STUDENT PARTICIPANTS

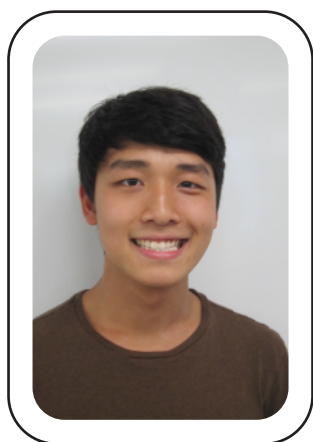
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### **Leon Lei**

"Visualizing Classroom Social Networks of Hearing Impaired and Non-impaired Children with Real-time Automated Measurements"

Brown University

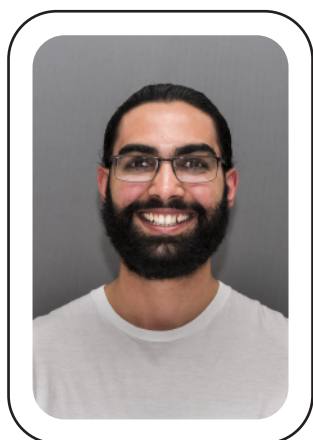
*Mentors: Dr. Daniel Messinger, Dr. Laura Vitali,  
& Dr. Mahsa Mirzargar*

### **J. Blake McLemore**

"Photocatalytic degradation of aldrin and dieldrin by m-BiVO<sub>4</sub>/BiOBr/Pd ternary composite"

Rose-Hulman Institute of Technology

*Mentors: Dr. Marc Knecht, Dr. Leonidas Bachas,  
& Dr. Michal Toborek*



### **Yasniel Meana**

"Investigation of the Electronic and Structural Factors Affecting the Release of Dyes from Alginate Beads"

Miami Dade College

*Mentors: Dr. Francisco Raymo & Dr. James Baker*



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**Patricia Otero**

"Investigation of the Electronic and Structural Factors Affecting the Release of Dyes from Alginate Beads"

Florida International University

*Mentors: Dr. Francisco Raymo & Dr. James Baker*

**Xavier Poole**

"Photocatalytic activity and Pd coating of SrTiO<sub>3</sub> and its effects on *C. elegans*"

Georgia Southern University

*Mentors: Dr. Marc Knecht & Dr. Kevin Collins*



**Markanday Ravi**

"Exploratory analysis of diabetes data using R and Shiny"

Barrett Honors College, Arizona State University, Tempe

*Mentors: Dr. Burton Rosenberg & Dr. Mahsa Mirzargar*

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### **William Scudder**

"Utilizing Zebrafish to Investigate the Anticonvulsant Properties of Caged Diazepam"

University of Dallas

*Mentors: Dr. Francisco Raymo & Dr. Julia Dallman*

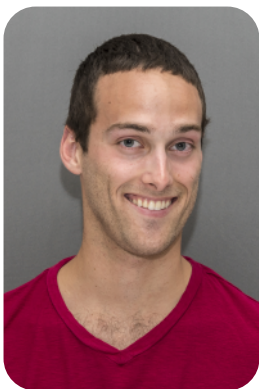


### **Charles Steuerwald**

"Assessing Potential Inhibition Sites in Protein Arginine Methyl Transferase 1"

University of Buffalo

*Mentors: Dr. Orlando Acevedo*

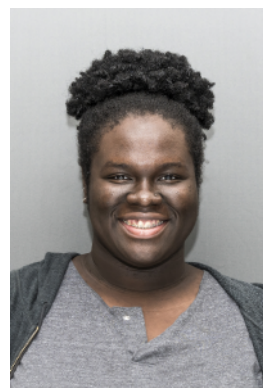


### **Christina Valcin**

"Design of Bioluminescent Molecular Beacon with Aptamer and Gold Nanoparticles as Quencher"

University of Miami

*Mentors: Dr. Angel Kaifer & Dr. Sapna Deo*



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**John Varriano**

"Photoinduced charge transfer of a biomimetic drug-amino acid complex in a CB8 host"  
CUNY Hunter College  
*Mentors: Dr. Amy Scott & Dr. Sapna Deo*

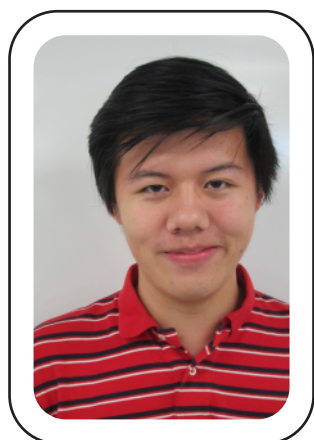
**Aleida Vieyra**

"Synthesis and Analysis of Small Fluorescent Kinase Probes"  
University of Florida  
*Mentors: Dr. James Wilson & Dr. Ralf Landgraf*



**Forrest Wang**

"Development of an OPLS-AA Force Field for Molecular Dynamic Simulations of Pyridinium-based Ionic Liquids"  
University of Pittsburgh  
*Mentors: Dr. Orlando Acevedo & Mr. Brian Doherty*



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### **Brianna Yaffe**

"Triptolide causes cell death in acute myeloid  
leukemia cells via inhibition of c-Myc"

University of Florida

*Mentors: Dr. Sulagna Banerjee, SCCC*



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## NOTES

# THANKS AND ACKNOWLEDGEMENTS

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We wish to thank all of the graduate, post-doctoral, and faculty mentors for providing guidance and inspiration to the REU and SURF students for the past ten weeks.

In addition, we are extremely appreciative of the time and effort on the part of our weekly seminar presenters: Drs. Marc Knecht, Zafar Nawaz, Michael Gaines, Pedro Salas, Shanta Dhar, Priyamvada Rai, Sandra Lemmon, Wasif Khan, Rachele Sangaletti, Sarah Greenblatt, Emily Huang, and Mr. Jairo Betancourt. We are also grateful to Dr. Athina Hadjixenofontos and Mr. Joel Zysman from the Center for Computational Science for their presentations.

We would also like to thank Mr. Charles Lowman, Mr. Santos Cayetano, and Dr. Trajen Head for their roles in administrative support and event coordination.

Finally, we are grateful to Drs. Sylvia Daunert, Leonidas Bachas, Zafar Nawaz, Roger LeBlanc, and Kerry Burnstein for their dedicated leadership, strong support, and investment in this valuable training experience for future scientists.

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