Summer Undergraduate Research Symposium

Friday, July 23, 2021
## Symposium Agenda

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

### University of Miami Summer 2021

### Morning Session

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<td>9:30 AM – 10:00 AM</td>
<td>Opening Remarks from Program Directors, Dr. Priyamvada Rai and Dr. Burton Rosenberg</td>
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<tr>
<td>10:00 AM – 11:45 AM</td>
<td>SURF Student Oral Presentations  &lt;br&gt; <strong>See Next Page for Presenters</strong></td>
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<td>11:45AM – 12:00 PM</td>
<td>Break</td>
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<td>12:00 PM – 1:15 PM</td>
<td>REU Student Oral Presentations  &lt;br&gt; <strong>See Next Page for Presenters</strong></td>
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### Afternoon Session

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<td>1:15 PM – 1:55 PM</td>
<td>Lunch Break</td>
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<td>2:00 PM – 3:00 PM</td>
<td>Keynote Speaker: Janaki Sharma, M.D.  &lt;br&gt; “A Brief Primer for Stumbling into a Research Career”</td>
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<td>3:10 PM – 3:30 PM</td>
<td>Awards &amp; Closing Remarks</td>
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Symposium Agenda
Summer Undergraduate Research Fellowship Program (SURF)
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SURF Student Oral Presentations

10:00 AM - 10:10 AM
Nisa Ilsin
"THE FUNCTION OF STAT3 AND STAT5 IN NORMAL AND TRANSFORMED LYMPHOCYTES"
Mentor: Dr. Alejandro Villarino
Department of Microbiology & Immunology

10:10 AM - 10:20 AM
Yoland Victor
"DETERMINING THE ROLE OF THE mTOR PATHWAY IN THE ENDOSYMBIOTIC RELATIONSHIP BETWEEN ACYRTOSIPHON PISUM AND BUCHNERA APHIDICOLA BY CHARACTERIZING NUTRIENT SENSORS"
Mentors: Dr. Daniel Isom/Dr. Alexandra Wilson
Departments of Molecular & Cellular Pharmacology (Dr. Isom) & Biology (Dr. Wilson)

10:20 AM - 10:30 AM
Christopher Zeuthen
"UNDERSTANDING THE SUBCELLULAR MECHANISMS OF ACUTE TREATMENT WITH GROWTH HORMONE ON MOUSE CARDIOMYOCYTES"
Mentors: Drs. Wayne Balkan & Joshua Hare
Department of Medicine

10:30 AM – 10:40 AM
Helena Raposo
"UNCOVERING SEX-RELATED DIFFERENTIAL GENE EXPRESSION PATHWAYS IN DOPAMINERGIC NEURONS"
Mentor: Dr. Luis Tuesta
Department of Psychiatry & Behavioral Sciences

10:40 AM - 10:50 AM
Abraham Profeta
"EVALUATING THE EFFECTS OF PCK2 KNOCKDOWN ON RAD51 FOCSI FORMATION AND ITS ROLE IN OVARIAN CANCER"
Mentor: Dr. Sophia George
Department of Obstetrics, Gynecology & Reproductive Sciences
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SURF Student Oral Presentations

10:55 AM - 11:05 AM  Juana Quirno Costa
"EVALUATION OF RETINAL LAYERS AND QUANTIFICATION
OF RETINAL GANGLION CELLS IN HYPERTENSIVE AND
NORMOTENSIVE DBA/2J MICE"
Mentor: Dr. Sanjoy Bhattacharya
Department of Ophthalmology

11:05 AM - 11:15 AM  Douglas Obenrader
"TOWARD PREDICTING GPCR COUPLING TO Gα SUBUNIT
SUBTYPES"
Mentor: Dr. Daniel Isom
Department of Molecular & Cellular Pharmacology

11:15 AM - 11:25 AM  Ashlee Sealy
"UTILIZING COMPUTATIONAL METHODS TO IDENTIFY
POTENTIAL SMALL MOLECULE KINASE INHIBITORS OF
THE BUB1B KINASE"
Mentor: Dr. Stephan Schürer
Department of Molecular & Cellular Pharmacology

11:25 AM - 11:35 AM  Laura Misiera Lincheta
"PROFILING THE REDOX CHANGES ASSOCIATED WITH
PROGRESSION TO INCURABLE PROSTATE CANCER"
Mentor: Dr. Priyamvada Rai
Department of Radiation Oncology

11:35 AM – 11:45 AM  Robert DiCaprio
"AN ATTENUATED INTERFERON RESPONSE INHIBITS
ISGYLATION IN INDUCED PLURIPOTENT STEM CELLS"
Mentor: Dr. Emmanuel Thomas
Department of Pathology & Laboratory Medicine
REU Student Oral Presentations

12:00 PM - 12:10 PM  
**Annie DeForge**  
“MODELING CORTICAL NEURAL SURROUND EFFECTS USING DEEP NEURAL NETWORKS”  
Mentor: Dr. Odelia Schwartz  
Department of Computer Science

12:10 PM - 12:20 PM  
**Christian Jerry**  
“LANGUAGE DURING COVID-19: THE EFFECTS OF MASKS ON PRESCHOOLERS PROXIMITY & VOCALIZATIONS”  
Mentor: Dr. Daniel Messinger  
Department of Psychology

12:20 PM - 12:30 PM  
**Maya Murry**  
“EXPANDING THE HORIZONS OF REHABILITATIVE NEUROSCIENCE WITH DEEP NEURAL NETWORKS”  
Mentor: Dr. Vance Lemmon  
The Miami Project to Cure Paralysis

12:40 PM - 12:50 PM  
**Nestor Orozco-Llamas**  
“DENOISING OF RFID RECORDINGS USING KALMAN FILTERS”  
Mentor: Dr. Daniel Messinger  
Department of Psychology

12:50 PM – 1:05 PM  
**Santiago Cortes & Thomas Spangler**  
“INCORPORATING THE GAMESS PROGRAM INTO THE GAML SOFTWARE”  
Mentor: Dr. Orlando Acevedo  
Department of Chemistry
REU Student Oral Presentations

1:05 PM - 1:15 PM

Kevin Wu
“INTEGRATED COMPUTATIONAL GESTURAL AND TIMBRAL MAPPING FOR MUSICAL EXPRESSIONS”
Mentor: Dr. Mitsunori Oghara
Department of Computer Science
Dr. Janaki Sharma is an oncologist and assistant professor of medicine specializing in the treatment of genitourinary malignancies. Her clinical and research interests are in development of novel therapeutics for prostate cancer. She currently holds the Paul Calabresi Career Development Award (K12). She completed medical school at the University of Kansas followed by internal medicine residency at Albert Einstein College of medicine in New York. She also pursued advanced training in oncology and geriatrics there.
Student Participants
Summer Undergraduate Research Fellowship Program (SURF)

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Nisa Ilsin
Rice University
Mentor: Dr. Alejandro Villarino
Department of Microbiology & Immunology

Robert DiCaprio
University of Miami
Mentor: Dr. Emmanuel Thomas
Department of Pathology & Laboratory Medicine

Laura Misiara Lincheta
University of Miami
Mentor: Dr. Priyamvada Rai
Department of Radiation Oncology
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Douglas Obenrader
University of Michigan-Ann Arbor
Mentor: Dr. Daniel Isom
Department of Molecular & Cellular Pharmacology

Abraham Profeta
Cornell University
Mentor: Dr. Sophia George
Department of Obstetrics, Gynecology & Reproductive Sciences

Juana Quirno Costa
Florida International University
Mentor: Dr. Sanjoy Bhattacharya
Department of Ophthalmology
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Helena Raposo
Oregon State University
Mentor: Dr. Luis Tuesta
Department of Psychiatry & Behavioral Sciences

Ashlee Sealy
University of Miami
Mentor: Dr. Stephan Schürer
Department of Molecular & Cellular Pharmacology

Yoland Victor
University of Miami
Mentors: Dr. Daniel Isom/ Dr. Alexandra Wilson
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Christopher Zeuthen
Emory University
Mentors: Dr. Wayne Balkan/ Dr. Joshua Hare
Department of Medicine

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Santiago Cortes
Johns Hopkins University
Mentor: Dr. Orlando Acevedo
Department of Chemistry

Annie DeForge
Bentley University
Mentor: Dr. Odelia Schwartz
Department of Computer Science

Christian Jerry
Indiana University
Mentor: Dr. Daniel Messinger
Department of Psychology
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Maya Murry
Cornell University
Mentor: Dr. Vance Lemmon
The Miami Project to Cure Paralysis

Nestor Orozco-Llamas
Middlebury College
Mentor: Dr. Daniel Messinger
Department of Psychology

Thomas Spangler
University of North Carolina Wilmington
Mentor: Dr. Orlando Acevedo
Department of Chemistry

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Student Participants
NSF Research Experience for Undergraduates (REU)

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Kevin Wu
University of Miami
Mentor: Dr. Mitsunori Ogihara
Department of Computer Science
Thanks and Acknowledgements

We wish to thank all of the faculty mentors and their lab personnel for providing guidance and inspiration to the SURF students for the past ten weeks.

In addition, we are extremely appreciative of the time and effort provided towards our bioinformatics mini bootcamp, weekly career development seminar presenters, keynote speaker and symposium judges: Drs. Nagi Ayad, Aristeidis Telonis, Zinzi Bailey, Laura Bianchi, Antoni Barrientos, Chelsea Skelley, Roberta Brambilla, Peter Larsson, Vlad Slepak, Scott Welford, Pedro Salas, Arun Malhotra, Feng Gong, Sandra Lemmon, Stephen Symes, Erietta Stelekati, Alejandro Villarino, Luis Tuesta, Viraj Sanghvi, Sophia George, Hassan Al-Ali, Michael Gaines, Addys Karunaratne, Justin Taylor, Zhipeng Meng, Kurt Schesser, Vasileios Stathias and Janaki Sharma.

We are grateful to our postdoctoral fellows, Drs. Madeleen Diaz, Priyanka Maiti, David McMillan, Andrea Da Fonseca Ferreira, Rachele Sangaletti, Emily Huang, and our graduate trainees, Clara Troccoli, Brett Colbert, Leah Dodds, Beatriz Mateo-Victoriano, Rolando Lyles, Tyler Cunningham, Duneia McManus, Samara Vilca, Anna Bianchi, Yaa Abu, Valeria Copello, Ayush Rana and Kathryn LaPorte, for generously committing their time and efforts to assist our SURFers with critical reading of literature, for providing them advice and information about academic careers and for helping them with their abstracts and presentations. We would also like to thank Mr. Charles Lowman, Mr. Matthew Brandon and Ms. Vaughn Edelson for their roles in administrative support and event coordination.

Finally, we are extremely grateful to Dean Henri Ford, Dean Prado, Dr. Carl Schulman, Dr. Stephen Nimer, Dr. Kerry Burnstein, Dr. David Lee, and Dr. R. Grace Zhai for their strong support and investment in this valuable training experience for our future researchers and physician-scientists.

The SURF team
Dr. Priyamvada Rai (Program Director), Mr. Santos Cayetano, Ms. Sarah Sandiford, Ms. Theresa Votolato, Ms. Rositsa Kalinova, Ms. Maya Kono

Sponsors and Contributors

Office of Graduate Studies

Sylvester Comprehensive Cancer Center
University of Miami Health System

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University of Miami