



**Wednesday, March 29**

**Graham Center Ballrooms**

**10:00AM – 4:00PM**

**Florida International University  
Modesto A. Maidique Campus**



## Welcome to the 2017 Conference for Undergraduate Research at FIU

The 2017 Conference for Undergraduate Research (CURFIU) at FIU is one of the largest multi-disciplinary undergraduate research conferences in the Southeast. This university-wide event showcasing the research of FIU students is open to undergraduates from any major. In addition to giving students an opportunity to demonstrate their work, it also allows research programs and faculty to share what their students are doing. This year almost 200 students are participating. The event also features nineteen panel discussions.

Undergraduate research is one of the pillars of student success. Every undergraduate should have the opportunity to engage in meaningful research and to share their research with others. CURFIU, as well as other FIU and external conferences, offer them venues to discuss their work and learn techniques for professional presentation.

CURFIU is organized by the Honors College on behalf of the entire university community. Research is at the core of our mission and almost all of our over 2,000 students are engaged in it. In addition to the conference, we sponsor the new undergraduate research hub, a searchable website where students can find research opportunities at FIU and throughout the country, and where faculty and research groups can post opportunities. I encourage you to visit the site at [undergradresearch.fiu.edu](http://undergradresearch.fiu.edu).

Special thanks to units and individuals who provided their support. Sonja Montas-Hunter, Assistant Vice Provost; Amy Reid, Program Coordinator for MARC U\*STAR; Stephen Fernandez, McNair Program Director; Robert Licklitter and Claudia Balzan, NIGMS RISE; Alexina Alonso, Office of Engagement; Massoud Sadjadi and Francisco Ortega, VIP; Maikel Alendy, FIU Online; Mauricio Rodriguez-Lanetty, QBIC; Philip Lloyd Hamilton, Director of Outreach & Program Development for Student Access and Success; and Eric Feldman, Office of Global Learning. CURFIU is a product of the extraordinary effort of conference chair **Allen Varela** and Yessenia Lopez Reyes who worked tirelessly to make this year's event a success.

I would also like to thank Provost Kenneth Furton for his unfailing support for undergraduate research and his confidence in making the Honors College the hub of multi-disciplinary undergraduate research at FIU.

Juan Carlos Espinosa  
Associate Dean, Honors College



# Schedule of Events

Please note that this schedule is subject to change

## ***Graham Center Ballroom***

10:00 AM – 12:00 PM	Poster Session #1 in Graham Center Ballrooms
12:00 PM – 2:00 PM	Poster Session #2 in Graham Center Ballrooms
2:00 PM – 4:00 PM	Poster Session #3 in Graham Center Ballrooms

## ***GL 100 B***

12:00 PM– 1:00 PM	Enrich Sweetwater <i>Cecile Houry (Honors College)</i>
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## ***GC 140***

10:00 AM – 11:00 AM	Discovery Lab and Telecommunications and Information and Technology Institute <i>S.S. Iyengar (Computing &amp; Information Sciences)</i>
11:00 AM– 12:00 PM	FIU Summer Research Internship <i>Amy Reid (MARC U*STAR)</i>
12:00 PM– 1:00 PM	IC-CAE Intelligence Fellowship <i>Aldo Fonseca (Jack D. Gordon Institute for Public Policy)</i>
1:00 PM– 2:00 PM	In Vivo Quantitative Electrophysiology <i>Jorge Riera Diaz (Biomedical Engineering)</i>
2:00 PM– 3:00 PM	Visual Arts and Student Research <i>Regina C. Bailey (CARTA)</i>
3:00 PM – 4:00 PM	Mosquito Genetics <i>Matthew DeGennaro (Biological Sciences)</i>



### **GC 150**

- 10:00 AM – 11:00 AM IC-CAE Intelligence Fellowship  
*Aldo Fonseca (Jack D. Gordon Institute for Public Policy)*
- 11:00 PM – 12:00 PM Honors in the Everglades: From ‘Tourism’ to Engagement  
*Peter A. Machonis (French Language & Literature)*
- 12:00 PM – 1:00 PM VIP - Vertically Integrated Projects  
*Francisco R. Ortega (Computing & Information Science)*
- 1:00 PM – 4:00 PM QBIC “Quantifying Biology in the Classroom”  
Research Symposium  
*Mauricio Rodriguez-Lanetty (Biological Sciences)*

### **GC 243**

- 10:00 AM – 11:00 AM MARC U\*STAR  
*Amy Reid (MARC U\*STAR)*
- 11:00 PM – 12:00 PM Virtual Reality: A Tool for Changing Journalism, Attitudes,  
and Behaviors?  
*Robert (Ted) Gutsche Jr.*
- 12:00 PM – 1:00 PM Presentations by Students in the Winkle Lab  
*Stephen Winkle (Chemistry)*
- 1:00 PM – 2:00 PM Image Guided Cancer Therapy  
*Anthony Mcgoron (Biomedical Engineering)*
- 2:00 PM– 3:00 PM Mummification  
*Gretchen Scharnagl (Honors College & CARTA)*
- 3:00 PM– 4:00 PM Are GMO mosquitoes the solution to the Zika crisis?  
*Mario Perez (Biological Sciences)*



**Poster Session 1**  
**10:00-12:00 P.M.**  
**GC Ballrooms**

1. Hassan Akram (Melanie Stollstorff)  
*“Characterizing a Link between the Gut Microbiome and Attention Deficit Hyperactivity Disorder”*
2. Anabel Alfonso (Carolyn Rosa)  
*“Adolescent Test Anxiety”* (APC-SWMHS)
3. Brianna Almeida (Jennifer Richards)  
*“Comparison of Stomatal Size and Density in the Naval and Lamina of Nymphaea odorata”*
4. Melania Antillon (Arvind Agarwal)  
*“Synthesis of Boron Nitride Nanotube Reinforced Aluminum by Roll Bonding Technique”*
5. Brooke Armesto (Elizabeth W. Bromery)  
*“Examining the Differences in Third Grade Teaching Styles and Standardized Test Preparation Methods Between Montessori-style Public Education and Traditional Public Education”* (WBHS)
6. Ninfamaria Arredondo-Walsh (Shuliang Jiao)  
*“Design and Implementation of External Plantar Plate Orthosis”*
7. Etienne Bellemare (Michael Bienvenu)  
*“I-395 Signature Bridge: Drainage Design Improvement”*
8. Jonathan Bernal (Francisco Ortega)  
*“Wearable Computing Approaches for More Intuitive Human-Computer Interaction”*
9. Saracristina Betancourt (Carolyn Rosa)  
*“Academic Stress and Depressive Symptoms”* (APC-SWMHS)
10. Diana Borrego & Lakshmini Balachandar (Jeremy Chambers & Jorge Riera Diaz)  
*“Evaluating Best AAV Serotypes for in Vivo Light-Based Intervention of Brain Astrocytes”*
11. Caterina Caringella (Mylene Feiler)  
*“Who Wins? A Historical and Correlational Review of American Presidential Elections and Their Favorability Through Proper Use of Media Platforms From 1933 to 2016”* (ISPA)
12. Heidi Castellanos & Rafal Cymer (Peter Machonis)  
*“Make your Time Valuable, Volunteer”*
13. Phabian Clarke (David Wernick)  
*“Human Trafficking in Cambodia: For Business or Pleasure?”*
14. Bryan Consuegra (Carolyn Rosa)  
*“Connection between aggressive player tendencies and the aesthetics/gameplay of a video game”* (APC-SWMHS)
15. Yulio Font (Suzanne Koptur)  
*“Development of Phoebis sennae and Phoebis philea Depending on Host Plant”*
16. Kristen Gandon (Carolyn Rosa)  
*“Social Media and Skills”* (APC-SWMHS)
17. Ingrid Gandra (Xu Han)  
*“The Potential Effect of Pyrogallol[4]arenes Derivative on Insulin Fibrillation”*
18. Amanda Gonzalez (Eric Lob)  
*“Fragmentation in Iraq: An Analysis of the Breakdown in Civilian-Military Relationship and What It Means for Global Terror”*

19. Carlos Gonzalez (Mylene Feiler) "*The Hollywood Sign over Mt Fuji: A Film Analysis of the American Occupation of Japan*" (ISPA)
20. Fernando Gonzalez (Jorge Riera Diaz) "*Irritative Zones in Focal Epilepsy: an EEG-fMRI Case Study*"
21. Leandra Gonzalez (Peter Machonis) "*Everglades Education: Lessons From Nature*"
22. Joel Greenup (Bennett Schwartz) "*Alice in Wonderland Syndrome in Patients with Brain Lesions and CSF Shunting*"
23. Ashley Harwood (Mylene Feiler) "*Counter Stereotyping Present in Grey's Anatomy*"
24. Valery Hidalgo (Peter Machonis) "*Drowning In Sunshine*"
25. Natasja Hirabayashi (Laura Mcpherson) "*Examining Interactions Between the Cardiovascular and Motor Systems in Individuals Post-stroke*"
26. Melissa Isoba (Elizabeth W. Bromery) "*Labeling of Genetically Modified Organisms*" (WBHS)
27. Elisia Lopez (Carolyn Rosa) "*Gender Roles and Female Leaders*" (APC-SWMHS)
28. Rachel Lopez (James Fourqurean) "*Spatial and Temporal Trends in Productivity of Florida Bay: *Thalassia testudinum* with Respect to Salinity*"
29. Sabrina Macias (Carolyn Rosa) "*Academic Strain and Nonmedical Prescription Stimulant Use Among High School Students*" (APC-SWMHS)
30. Kyle Martinez (Carolyn Rosa) "*Aggression and Violent Video Games*" (APC-SWMHS)
31. Paola Martinez (Michael Bienvenu) "*Plan Development & Environmental (PD&E) Study of the MDX SR836/Dolphin Expressway Southwest Extension*"
32. Philip W. Matteini (Mylene Feiler) "*Motivation in Miami-Wade County: Do High School Athletes Experience Extrinsic, Intrinsic, or Amotivation in their Daily Lives?*" (ISPA)
33. Shane McCann (Elizabeth W. Bromery) "*Backdraft Phenomena: A Study on Behaviors and Protocols*" (WBHS)
34. Emmanuel Medrano (Mauricio Rodriguez-Lanetty) "*Elucidating a Host Factor: Stimulating Symbiogenesis in the Algal Symbiont, *Symbiodinium trenchii**"
35. Giuliana La Mendola (Mylene Feiler) "*Pondering Personality: The Correlation Between Guilt-Proneness and the Six Personality Factors of the HEXACO Model on a Student's Academic Achievement*" (ISPA)
36. William Morgan (Mylene Feiler) "*Political Affiliations Influencing/Limiting Cellular Medical Research in The United States: How Do Presidential Ideologies or Political Party Affiliation Limit the Basis of Cellular Medical History Throughout American History from 1980 to 2017?*" (ISPA)
37. Emmalie Morisseau (Shakhar Bhansali) "*SATORI Trainer A Wearable Exercising Tracking Device Taking Your Fitness Goals to the Next Level*"
38. Muhammad Nasim Ul Ghani ( Iqbal Akhtar & Naisy Sarduy) "*Globalization and the Rise of 'Civilization States'*"

39. Kevin Nguyen (Carolyn Rosa) “*What are the Implications of One-to-one Technology Implementation?*” (APC-SWMHS)
40. Beatriz Oliva Martinez (Carolyn Rosa) “*Working as a High School Student vs Academic Performance*” (APC-SWMHS)
41. Nina Perdomo (Mylene Feiler) “*See the Bigger Picture: A Systematic Review on Vision Screenings and Quality of Life*” (ISPA)
42. Francisco Perez (Mylene Feiler) “*All the Emperor’s Men: Foreign influences During the War of the French Intervention (1861 – 1867) and Contemporary Mexican Politics*” (ISPA)
43. Carolina Pulgarin (Peter Machonis) “*A Hat to Die for*”
44. Emily Riumbau (Carolyn Rosa) “*Sex Trafficking Awareness Among Adolescents*” (APC-SWMHS)
45. Daniel Rivera (Jorge Riera Diaz) “*Propagation of Cortical Spreading Depression: Frequency and Velocity*”
46. Veronica Rodriguez (Elizabeth W. Bromery) “*Truth, Justice, and the American Way: A Case Study of Comic Books through the Lens of Society*” (ISPA)
47. Michelle Rojas (Carolyn Rosa) “*Ethics of Cystic Fibrosis Gene Therapies*” (APC-SWMHS)
48. Katrina Rosiak (Paulo Graziano) “*The Effects of Pediatric Obesity*”
49. Ray Seijas (Peter Machonis) “*Everglades Restoration: Can Water and Politics Mix?*”
50. Nicole Sevilla (Richard Schwarz) “*Rollerball High-Resolution Microendoscope Configuration for Ease of Translation During Mosaicking*”
51. Sameer Shaikh (Kalai Mathee) “*Whole-Genome Assembly of Multi-Resistant Pseudomonas aeruginosa Isolate*”
52. Vaishali Sharma (Leonard Elbaum) “*Positive Words and Devotional Chanting: A Pathway to Healing and Health?*”
53. Valeria Siegrist (Robert Hacker) “*Work in Progress*”
54. Noah Spiner (Peter Machonis) “*Does Nature Make you Happy?*”
55. Yordys Toledo (Manuel Alejandro Barbieri) “*Antimicrobial Agents from Plats: Antibacterial Activity of Plant Volatile Oils*”
56. Maria Torrado (Carolyn Rosa) “*What is the Most Viable Alternative that can Decrease the Number of Bipolar Offenders in Jails and Prisons?*” (APC-SWMHS)
57. Afra Toma (Angela Laird) “*Brain Meta-Analysis: An Approach to Assessing RDoC Social Processing Constructs*”
58. Afra Toma (Michael Christie) “*CPM for Developmentally Delayed Infants*”
59. Lazaro Trujillo (Peter Machonis) “*What’s that? ...Oh, Periphyton*”
60. Alejandro Uribe (Peter Machonis) “*Airboats: The Good, The Bad, and The Ugly*”
61. Lesliany Vargas (Mylene Feiler) “*The Effectiveness of Breast Cancer Awareness Campaigns on Hispanic American Women and Their Likelihood of Breast Cancer Screening in Miami*”

## Poster Session 2

12:00- 2:00 P.M.

### East and Center Ballrooms

1. Carlos Acosta (Francisco Fernandez-Lima & Paolo Benigni) "*Software Assisted Molecular Elucidation Based on TIMS-FT-ICR MS/MS Analysis of Complex Mixtures*"
2. Ariel Aguero (Shannon Pruden, Rosalie Odean, Priya Shimpi, and Paulina Bollat) "*Words in Space: Words with Implicit Spatial Associations Influence Anticipatory Attention*"
3. Lauren Aguilar, Juan Lizardi, Dionis Perez & Angie Estrada (Jessica Ramella-Roman) "*Clamp Fixture for Computer Navigated Total Hip Arthroplasty*"
4. Amy Alsheimer (Brian Fonseca) "*Espionage In The Making*"
5. Gretel Arcia Gonzalez (DeEtta Mills) "*Validation of StockMarks for Dogs Genotyping Kit for Canine DNA Profiling in Forensics*"
6. Agnes Arrinda, Kacie Kaile, Glen Saunders, Jose Garundo & Nashra Phanor (Ranu Jung) "*Convection Enhanced Delivery Brain Phantom Gel*"
7. Megan Bennett (Paul Feigenbaum) "*Teaching Life Skills to Promote Motivation in High School Seniors*"
8. Zoe Bernard, Caroline M. Betances, Pedro Da Costa, John Hidalgo & Juanpablo Olguin (Anthony McGoron) "*Image Guided Cancer Therapy: Developing a Process for Quantitative Organ Imaging*"
9. Luciarita Boccuzzi (Marta Garcia-Contreras & Camilo Ricordi) "*Effect of Inflammation on miRNA Expression in Pancreatic Beta Cells and their Exosomes*"
10. David Butcher & Jovany J. Betancourt (Jaroslava Miksovska) "*Determination of Effector Binding Affinities Using PAC*"
11. Laura Camafreita (Jeremy Pettit) "*Threat and Recreation Time: A Measure of Post-Error Slowing in Anxious Children using the Flanker Task*"
12. Darlene Carmichael (Asia Eaton) "*Priming and the Solicitude of Syrian Refugees*"
13. Armando Carrasquillo (Nipesh Pradhananga & Mario Eraso) "*A University-Based Summer Camp to Promote Construction Technology Career for High School Students*"
14. Andres Cavada (Masood Moghaddami) "*Simple Auto-Tuning Sliding Mode Control for Inductive Power Transfer Systems*"
15. Briana Cervantes (Alexander Agoulnik) "*Analysis of Small Molecule Antagonist Binding with Relaxin Receptor*"
16. Emmalie Christina Morisseau (Armando Barreto) "*Satori Trainer*"
17. Tesha Davilmar (Chintan Bhatt, Michele Jean-Gilles & Jessy G. Devieux) "*Correlations Between Perceptions of Gender Equitability, Intimate Relationship Power Dynamics, and Health Locus of Control Among Men and Women in Port-au-Prince, Haiti*"
18. Eiko Diaz (Brian Fonseca) "*An Assessment of the People's Liberation Army Navy*"



19. Bryant Estadella (Mauricio Rodriguez-Lanetty) *“Understanding the diversity and interaction between coral-associated Cyanobacteria and Cyanobacteriophages”*
20. Cristianne Fernandez, Rebecca Kwasinski, Kevin Leiva, Richard Schutzman & Edwin Robledo (Penelope Kallis, Francisco Perez-Clavijo, Ernesto A. Pretto & Anuradha Godavarty) *“Weekly Monitoring of Hemodynamic Changes in Diabetic Foot Ulcers”*
21. Roxanna Flores (Melanie Stollstorff) *“Individual Differences in Emotion-Cognition Interaction: Effect of Serotonin Transporter Genotype on Positive and Negative Emotional Distractor Suppression”*
22. Meghan Furrie (Saad AbiHamad) *“United States Neo-Imperialism and Iran”*
23. Juan Giraldo (Wei-Chiang Lin) *“Hybrid Spectroscopy Imaging System for In-Vivo Tissue Investigation”*
24. Robin Gomez (Sharan Ramaswamy) *“Towards the development of a bioreactor system that mimics the human circulation”*
25. Elaine Green & Jorge Limia (Vanessa Vieites, Bethany C. Reeb-Sutherland & Shannon Pruden) *“The Role of Experience in Gender Differences in Spatial Aptitude”*
26. Jeremy B. Guedes & Alison G. Simon (Kenneth G. Furton) *“Terpene Adsorption Analysis in Tedlar Air Sampling Bags”*
27. Jorge L. Hernandez (Seung Jae Lee) *“3D Printed Extraterrestrial Geomechanics 1.0”*
28. Omar Iglesias, Jose Sotomayor, Daniel Sotomayor, and Elvis Fernandez (Wilmer Arellano) *“Eco-Mated Irrigation System”*
29. Pachev Joseph (Naphtali Rische, Oliver Ullrich & Victor Potapenko) *“A Review of Data Repositories for the Long Tail of Computer Science”*
30. Brianne Kimura (Alicia Montalvo) *“The Effects of a Shoulder Care Intervention On Shoulder Benchmarks In Collegiate Softball Players”*
31. Rebecca Kwasinski, Cristianne Fernandez, Kevin Leiva, Richard Schutzman & Edwin Robledo (Penelope Kallis, Francisco Perez-Clavijo, Robert Kirsner & Anuradha Godavarty) *“Healing Vs. Non-Healing Hemodynamic Differences in Venous Leg Ulcers”*
32. Amelia Leon (Aaron Mattfeld) *“How the Retrosplenial Cortex Changes Throughout the Process of Associative Learning”*
33. Dayana Manganese, Juan Medina, David Collazos & Tidjan Simpson *“Complete Offloading Cushion for Wheelchair Bound Patients”*
34. Robin Mayrand (Ou Bai) *“Adaptable Energy Storing Device for Gym Equipment”*
35. Susan McCool (Cari Autry) *“The Efficacy of Therapeutic Recreation Program Simultaneously Utilizing Cognitive and Physical Interventions on Individuals with Mild Neurocognitive Disorder: A Meta-Analysis of the Literature”*
36. Jennifer Medina (Andrew Mann) *“Calculating  $V_{sin(i)}$  of Planet-hosting Young Stars”*
37. Brenda Melendrez (Dionne Stephens) *“Domestic violence among Women India”*

38. Kevin Montenegro (Christian Fernandez) *"Monitoring Algal and Seagrass Species Diversity Changes in a Freshwater-Flooded, Coastal Wetland"*
39. Camila Monslave *"Examining the Relationship between Career Outcome Expectations and Physics Identity"*
40. Allan Nigri (Jim Riach) *"TBD"*
41. Eshrat Nikrooye-Asli (Brian Fonseca) *"US and Cuban Economic Cooperation: Expansion and Security"*
42. Armando J. Ochoa (Mark A. Finlayson) *"Differences in use of Metaphor between Narrative and Non-narrative Texts"*
43. Alastair Paragas (Nagarajan Prabhakar) *"Natural Language Processing"*
44. Lance Petalio, Alejandra Daviglius, Natalie Matos, Christian Castillo & Marco Zamora (Jacob McPherson) *"Improving Prosthetic Fitting for OrthoPro Prosthetics: Static Fitting Platform"*
45. Emely Pietri (Aldo Fonseca) *"Does China's strategic support force pose a threat to U.S. National Security"*
46. Awnna K. Rana (Vasileios Anagnostopoulos & Yelena Katsenovich) *"Investigation of the Properties of Acid-Contaminated Sediment and its Effect on Contaminant Mobility"*
47. Steven Revesz *"Design Proposal for the FIU Ion Propulsion Engine (FIPE)"*
48. Edwin A. Robledo, Richard Schutzman & Mia L. Boloix (Anuradha Godavarty) *"Modification of NIROS for Hemodynamic Imaging of Large Wounds"*
49. Alexis Rodriguez (Zenel Garcia) *"Thailand as a three-gendered society"*
50. Samantha Rodriguez & Mariangelica Banasco (Ligia Collado-Vides) *"The use of Dictyota as a Bioindicator of Differential Nutrient Availability in High and Low Relief Reefs in the Florida Keys"*
51. Lauren San Diego (Changwon Yoo, Katherine Tchir, SeungHyun Yoo, Shanna Burke & Juan Lizzi) *"Profiling Alzheimer's Gene Relationships using Bayesian Networks"*
52. Richard Schutzman (Anuradha Godavarty) *"Spatial Co-Registration of Visible and Optical Images"*
53. Alyssa Seidler & Megan Taylor (Eliza Nelson, Elizabeth Simpson, Stephen Suomi & George Konidaris) *"Reaching Kinematics in Infant Rhesus Monkeys (Macaca mulatta)"*
54. Kiara Serrano (Erica Holliday & Kathryn A. Cunningham) *"The Expression of 5-HT2aR And The 5-HT2cR In The Dorsal And Ventral Hippocampus"*
55. Alexis Smoot (Ravi Gudavalli & Yelena Katsenovich) *"Study of Synergetic Interactions between Uranium, Humic Acid, Silica Colloids and SRS Sediments at Variable pH"*
56. Sudip Subedi (Nipesh Pradhananga, Armando Carrasquillo & Francisco Lopez) *"Virtual Reality-based Personalized Learning Environment for Repetitive Labor-intensive Construction Tasks"*
57. Nidhi Suthar, Brittany Gonzalez, Jennifer Bustillos, & Pranjal Nautiyal (Archana Loganathan, Benjamin Boesl, Arvind Agarwal & Sharan Ramaswamy) *"Adipose Stem Cell Culture Efficacy on Graphene-Polymer Composite Substrates"*

58. Virgilio Velasco (Francisco Fernandez-Lima) “*Molecular Modeling of the Conformational Space of the Knot Protein Dehl*”
59. Nidhi Suthar, Brittany Gonzalez, Jenniffer Bustillos, & Pranjal Nautiyal (Archana Loganathan, Benjamin Boesl, Arvind Agarwal & Sharan Ramaswamy) “*Adipose Stem Cell Culture Efficacy on Graphene-Polymer Composite Substrates*”
60. Virgilio Velasco (Francisco Fernandez-Lima) “*Molecular Modeling of the Conformational Space of the Knot Protein Dehl*”
61. Heidy Zetina (Anthony Dick) “*Lateral Lemniscus Development*”
62. Karla Alejandra Montejó ((Jessica Ramella-Roman) “*Mueller matrix colposcope for the characterization of cervical collagen anisotropy*”

### **Poster Session 3**

**2:00-4:00 P.M.**

#### **GC Ballrooms**

1. Paula Almeida (Angela Simon) “*Out of Kendall*”
2. Gabriel Arias (Mauricio Rodriguez-Lanetty) “*The Role of Symbiosis on Cnidarian Immune Competence*”
3. Hannah Batista (Brian Fonseca) “*IC-CAE Fellowship*”
4. Alexander Bolufer (Francisco Fernandez-Lima & Alyssa Garabedian) “*Peptide Sequence Influence on the Conformational Dynamics of the Intrinsically Disordered ATHP 3 Peptide*”
5. Alex Capaldo ( Fenfei Leng) “*Targeting Transcription-Coupled DNA Supercoiling for Discovery of Bacterial DNA Gyrase Inhibitors*”
6. Daniel Carp (Maidique Modesto) “*A Meta-Analysis of Leadership Success Factors*”
7. Alexandra Chavez (Ethan Roberts) “*Securing the Internet of Things*”
8. Nusaiba Chowdhury (Hamid Shahrestani) “*Engineering Senior Design*”
9. Ana C. Correa (Markus Thiel) “*Transnational Waters: A Look at Their Ability for Cooperation*”
10. Morgan Crawley (Katie Hart) “*The Effect of Parental Literacy on Dialogic Reading Intervention Outcomes*”
11. Nicholas Espinosa, Saraisabel Carricaburu, Oscar Fernandez & Vittoria Lovecchio (Jonathan Viera & Juan Lopez) “*UpTech Program*”
12. Daylen Fiallo (Peter Machonis) “*Without the Everglades: Economic Impact*”

13. Roxanna Flores (Melanie Stollstorff) *“Individual Differences in Emotion-Cognition Interaction: Effect of Serotonin Transporter Genotype on Positive and Negative Emotional Distractor Suppression”*
14. Michaela Francis (Chintan Bhatt) *“Physically Active Lifestyle and the Practice of Safe Sexual Behavior in Miami-Dade County, Florida”*
15. Justin Franco (Gretchen Scharnagl) *“An Examination of the Factors that Contribute to the Formation of Exclaves”*
16. Tyler Friedman (Salvatore Barbera) *“Defensive Medicine: a Comparison of Private Practices and Hospital Systems”*
17. Daniel Gimeno (Camilo Molano & Francisco Alberto Fernandez-Lima) *“Molecular modeling of conformational space of the knot protein YibK”*
18. Diana Gonzalez (Robert Lickliter) *“The Effects of Prenatal Light Exposure on Social Responsiveness in Bobwhite Quail Chicks”*
19. Vidia Gokool (Jose Almirall) *“Single Blind comparison of Automotive Glass by Laser Ablation – Inductively Coupled Plasma – Mass Spectrometry (LA-ICP-MS)”*
20. Nicholas Hernandez (Francisco Fernandez-Lima) *“Crude oil characterization using SARA fractionation and GC-MS”*
21. Nhan Hoang & Paolanthon Mora (Vanessa Vieites, Bethany C. Reeb-Sutherland & Shannon M. Pruden) *“The Role of Wayfinding Experience on Spatial Anxiety: Implications for Spatial Aptitude”*
22. Miranda Kerr (Peter Machonis) *“Returning Miami Beach to The Everglades”*
23. Alejandra Lavendre, Gloria Figueroa, and Tiyash Parira (Marisela Agudelo) *“Alcohol Modulates DC-SIGN Expression in Monocyte-derived Dendritic Cells as Demonstrated by Real Time PCR and Single Cell Imaging Flow Cytometry”*
24. Jose Lopez (Yerko Berrocal) *“Knowledge of Traumatic Head Injuries Involving the Student Population at Florida International University: An Analysis of the Modifiable Risk Factors”*
25. Danielle M. Lyn (Fred Blevens) *“The New Press Index: Varying Effects of Press Freedom and it’s Relation to Citizen Journalism”*
26. Andrew Marichal (Zahra Hazari, Natasha Blanch & Vishodana Thamotharan) *“To Teach or Not to Teach.”*
27. David Marte (Antoine Hardy) *“Trendsetting Now”*
28. Brian Mayorga (Jin He) *“Break Junction Technique for Studying Individual Biological Molecules”*
29. Brian Mayorga, Valeria Grisales, Diego Aguilar & Richard Schutzman (Ranu Jung) *“Body Powered 3D Printed Hand Prostheses”*
30. Aaron Mencia, Alessandra Puig-Santana, Amaya Bueno, Elizabeth Rodriguez Valent, Rafael Aguilar, Ehlam Imam, Jessica Maldonado, Victorien Meray & Martha Caceres (Sian Evans) *“Hand Preferences in Owl Monkeys (Aotus spp.) Using a Single Task Assessment”*
31. Denise Medina (Sharan Ramaswamy) *“Flow Field Post Repair in Critical Aortic Valve Stenosis: Implication to Recurring Disease States”*

32. Asad Mirza & Arash Moshkforoush (Nikolaos M. Tsoukias) "*Mathematical Model of Plasma Membrane Electrophysiology in a Single Pericyte Cell*"
33. Daniel Moy (Fenfei Leng) "*Exploring DNA Topological Barrier Using Fluorescence Resonance Energy Transfer (FRET)*"
34. Jonathan Munoz (Bruce McCord & Thaddeus Mostowtt) "*Assessment of Chloride, Sulfate, and Nitrate Aggregating Agents for Surface Enhanced Raman Spectroscopy (SERS) Analysis of Synthetic Cannabinoids*"
35. Ruben Munoz (Kemal Akkaya) "*Integrating a Raspberry Pi 3 with a Hand-made Smart Meter*"
36. Olivia Napper (Aldo Fonseca) "*Hydro-Security in West Africa: Analysis of the Region's Environmental Security in Regards to the Concurrent Effects of Climate Change and Water Resource*"
37. Michael Angelo Ojeda (Yong Cai) "*The Bioaccessibility of Methylmercury in Rice and Fish*"
38. Daniel Quintero (Kevin Luongo) "*CTC Quantity Assessment Through Microfluidic Detection Device*"
39. Daniel Rapado (Jaroslava Miksovskaja) "*Investigation of the hydrophobic sites of DREAM*"
40. Erica Riera (Peter Machonis) "*Selling the Swamp*"
41. Jose Rojas Sanchez (Benjamin Boesl & Dwayne McDaniel) "*Development of a Novel Health Monitoring System for Adhesively Bonded Composite Joints using Magnetoelectric Nanoparticles*"
42. Gabriel Padro (Leonard Elbaum) "*Biomechanical Detections*"
43. Marielena Pena (Iqbal Akhtar) "*Media/Entertainment in Comparison to Mysticism in Global Culture*"
44. Nathalie Perez & Ivette Troitino (Dionne Stephens) "*Gendered Sexual Health Beliefs' influence on Black College Men's HPV Vaccine uptake decision making*"
45. Jeslyn Rodriguez (Aaron Mattfield) "*Changes in the Connection between the Ventral Striatum and Medial Prefrontal Cortex with Age as Measured by Diffusion Weighted Imaging*"
46. Ednise Sainval (Brian Fonseca) "*Cooperation or Corporation? The Role of Non-Governmental Organizations (NGCOs) in Diminishing the Civil Society of Haiti Through Lack of Communication*"
47. Maria J. Santiago (Jaroslava Miksovskaja) "*Interactions of Neuronal Calcium Sensor DREAM with Zinc*"
48. Ella Smith (Peter Machonis) "*Generation Glades*"
49. Natalie Smith (Kendra J. Adams & Francisco Fernandez-Lima) "*Analysis of Hydroxylated Polychlorinated Biphenyls using nESI-TIMS-MS*"
50. Woodrow Starnes (Wilmer Arellano) "*Device for Confocal Microscopy Assistance*"
51. Sophia Tchir, Carolina Vias, Jairo Munoz & Jefferson Salan (Anthony Steven Dick & Steven L. Small) "*The Cerebellum's Relationship to Language Function*"

52. Christopher Tonarely (Manny Torres)  
*“Value in the Art World; Growth in Unlikely Places”*
53. Elizabeth Torres & Sandy Gonzalez (Eliza Nelson) *“A Comparison of Hispanic Infant Populations on Vocabulary Size”*
54. Eleni Tsalikis (Jonathan S. Comer, Leah Feinberg, Amanda Sanchez, Elizabeth Miguel, & Cristina T. del Busto) *“The Relationship Between Parent Accommodation and Child Anxiety Severity: Examining Differences between a Clinical and Community Sample”*
55. Guillermo Uribe (Peter Machonis)  
*“Tamiami Trail – Bridging the Distance”*
56. Mingwei Yang & Afia Anjuman (Yong Cai)  
*“Surface-Enhanced Raman Spectroscopy study of Arsenic Speciation under Cellular Matrix influence”*
57. Marco Zamora Bulla (Armando Villalta, Jenna Kastenschmidt and Jovani Cataland)  
*“The Effect of Muscle Cell Differentiation on IRE1a Activation and the Unfolded Protein Response”*

### **Participating High School Research Programs**

APC-SWMH (AP Capstone-Southwest Miami Senior High School)

ISPA (International Studies Preparatory Academy)

WBHS (West Broward High School)



#### WHAT:

The **Fulbright US Student Program** is a prestigious international exchange grant that allows students to either pursue research or study abroad or to teach English abroad for up to one year. Over 1,000 grants are available each year in over 140 countries. The US Department of State funds this program, and it was developed by the US Congress in 1946 as an effort to promote mutual understanding between cultures.

#### WHO:

Graduating college seniors, graduate students, young professionals, and artists. To be eligible for the Fulbright U.S. Student Program, you must be a **U.S. citizen** and have at least a **bachelor's degree by fall 2018**. Depending on the country of application, you may also need to prove that you have proficiency in the language spoken in that country. The application for the 2018-2019 grant year will open in April 2017, and FIU's campus deadline is **September 1<sup>st</sup>**. Grant funding for FIU study abroad programs during your undergraduate career.

#### HOW:

Visit <https://goglobalfiu.edu.fullbright-us-student-program/> to see a schedule of information sessions, learn about the program timeline, and to contact FIU's Fulbright Campus Advisors.

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“

In FSU's Sociocultural and International Development Education Studies (SIDES) program, I have built strong connections with faculty and peers. The program prepared me to work with multicultural communities and advocate for those who are most vulnerable.

”

*-Marline Guerrero, M.S. '14*

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in the world at [education.fsu.edu/sides](http://education.fsu.edu/sides).



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Our programs provide academic and financial support to undergraduate and graduate researchers while presenting opportunities to engage in faculty mentoring and professional development.

#### **Graduate Minority Opportunities Program**

GMOP provides a \$2,000 scholarship to assist minority students newly admitted into an FIU master's or doctoral program.

#### **FEF McKnight Doctoral Fellowship**

The fellowship is designed to increase the number of African American and Hispanic faculty members with Ph.D. degrees in arts & sciences, business, engineering, health sciences, nursing, and the visual/performing arts. McKnight Fellows receive \$12,000 from the Florida Education Fund and an additional supplement from FIU.

#### **McNair Post-Baccalaureate Achievement Program**

The McNair Scholars Program prepares undergraduate students interested in STEM fields for doctoral studies through engagement in research and other scholarly activities.

#### **McNair Graduate Fellowship**

The fellowship provides support for promising undergraduate McNair Scholars to pursue their graduate education at FIU. Annual scholarship support for doctoral students is \$23,000. Master's students receive \$15,000 annually.

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## **Panels & Workshops**

### **GL 100B**

**12:00 PM – 1:00 PM**

ENRICH Sweetwater

Chair: Cecile Houry. Student Participants: Guillermo Garrido, Candace Greenland, Trevor Holden, Denise Montague, Barbara Ortega, Frank Trujillo

Engaged in Research in the Community through Honors (ENRICH) is a service-research course launched in Fall 2011 by the Honors College. The class examines some of the social, cultural, economic, political, environmental, educational, and health issues faced by the City of Sweetwater and its residents. Students select a topic related to their majors and/or interests. After conducting primary and secondary research on the topic, students work with university faculty members or administrators, city officials, non-profit leaders, and/or corporate agents to develop creative solutions to problems and implement them.

### **GC 140**

**10:00 AM – 11:00 AM**

Discovery Lab and Telecommunications and Information Technology Institute

Topics for Discussion: The Use of Game Theory in Cybersecurity for Protection of Computer Networks, Virtual Reality, New Applications of STEM Education and Telebot Technologies

Chair: S.S. Iyengar. Student Participants: Sheila Alemany, Jonathan Beltran, Manuel Garcia, Jose Maldonado.

Dr. S.S. Iyengar is a leading researcher in the fields of distributed sensor networks, computational robotics, and oceanographic applications, and is perhaps best known for introducing novel data structures and algorithmic techniques for large-scale computations in sensor technologies and image processing applications.

**11:00 AM – 12:00 PM**

FIU Summer Research Internship Program

Chair: Amy Reid. Presentations by students from MAST Medical at Homestead and TERRA Environmental Research Institute High Schools who participated in the FIU SRI Program in summer 2016.

- Jonathon Nelson (Marisela Agudelo) *“Alcohol Modulates CD209 Expression in Monocyte Derived Dendritic Cells (MDDCs)”*
- Ana Delgado & Saeed Juggan (Sharan Ramaswamy) *“Morphological and Growth Pattern Analysis on Canine Adipose Cells”*
- Jenna Allen (Jennifer Rehage) *“Does Morphology Predict Invisibility?”*
- Briana Williams (Nadja Schreiber Compo) *“Blind Versus Informed Interviewing: The Importance of Encoding Quality and Visual Cues”*
- Abel Senti (Alejandro Barbieri) *“The Chemistry and Biological Activities of Natural Products from Tropical Plants”*

**12:00 PM – 1:00 PM**

Intelligence Fellowship – Challenges and Threats to National Security in the 21<sup>st</sup> Century

Aldo Fonseca will present a workshop about the work of the Jack D. Gordon Institute for Public Policy and the new Intelligence Fellowship, an IC-CAE workforce development initiative. A highly selective program, the Intelligence Fellowship provides opportunities for students to integrate rigorous coursework, research, and mentorship in pursuit of a career in the U.S. Intelligence Community. Students will be awarded a Certificate in National Security Studies upon completion of the program.

**1:00 PM – 2:00 PM**

In Vivo Quantitative Electrophysiology

Student researchers in the lab of Dr. Jorge Riera will discuss some aspects of “quantitative electrophysiology” relevant to neuroscience.

Jorge Riera obtained a B.S. in Physics at the University of Havana (1988), a M.S. in Biophysics as “Junior Associate” of the International Centre for Theoretical Physics, Trieste (1995-1998), and a Ph.D. in Physics at the University of Havana with a CNRS fellowship at the Pitie-Salpetriere Hospital, Paris. Riera’s main scientific interest is to develop methods for the integration of different neuroimaging modalities based on the modeling of mesoscopic phenomena in the cerebral cortex. Members from Dr. Riera’s lab use these methods to develop clinical tools for the diagnosis, monitoring and treatment of several brain disorders, like epilepsy, dementia, stroke and migraine.

**2:00 PM – 3:00 PM**

Visual Arts and Student Research  
Regina C. Bailey

Regina Bailey is an art historian who has overseen accreditation for both the Art Museum at FIU and the Bass Museum in Miami, Beach, FL. She has used her policies and procedures for their technical assistance program. She is also a peer reviewer for the American Association of Museums and has served as a panelist for the Art in Public Places for Dade County and the State of Florida and the State of Florida Division of Cultural Affairs.

**3:00 PM-4:00 PM**

Mosquito Genetics

Students from the lab of Matthew DeGennaro will present their work.

- Brian Garcia Rodriguez “*Role of the Allatotropin Receptor in the behavior and physiology of the Aedes aegypti mosquito*”
- Renata Gallegos “*Understanding Aedes aegypti Feeding and Mating Behaviors Through CCHamide2 Mutagenesis*”
- Hans Lapica “*BuildingTools for Neurogenetics in Aedes aegypti*”

Matthew DeGennaro is a neurogeneticist with 20 years of experience in biomedical research. Throughout his scientific career, he has used molecular genetics to address biological questions. His graduate training at NYU Medical Center was with Ruth Lehmann, one of the founders of developmental genetics, who has made fundamental contributions to the fields of germ cell and RNA biology. DeGennaro's postdoctoral training at Rockefeller University was with Leslie Vosshall, a leader in the area of olfaction who initially identified insect olfactory receptors and determined their unique mechanism of action.

## GC 150

### **10:00 AM-11:00 AM**

Intelligence Fellowship – Challenges and Threats to National Security in the 21<sup>st</sup> Century

Aldo Fonseca will present a workshop with students participating in the Intelligence Fellowship, an IC-CAE workforce development initiative. A highly selective program, the Intelligence Fellowship provides opportunities for students to integrate rigorous coursework, research, and mentorship in pursuit of a career in the U.S. Intelligence Community. Students will be awarded a Certificate in National Security Studies upon completion of the program.

### **11:00 AM-12:00 PM**

Honors in the Everglades: From ‘Tourism’ to Engagement

Students from the Honors College class on the Everglades will present their research projects. The course is team-taught by linguist Peter A. Machonis and tropical biologist Devon Graham. The class provides an in-depth, hands-on study of issues concerning Everglades National Park by examining not only the Everglades eco-system and the politics surrounding its conservation, but also literature and art about the Everglades. It requires active participation from each student and can be physically challenging, since classes take place outdoors, rain or shine, and involve physical activities such as hiking, biking, canoeing, and walking through the swamp or slough slogging.

### **12:00 PM – 1:00 PM**

VIP (Vertically Integrated Projects)

Presentations by students in the VIP program (Vertical Integrated Projects) based in the Department of Computing and Information Sciences. The panel is chaired by Francisco R. Ortega. The Vertically Integrated Projects (VIP) program aims to involve everyone on campus in innovation. VIP unites undergraduate education and faculty research in a team-based context. Undergraduate VIP students earn academic credit, while faculty and graduate students benefit from the design/discovery efforts of their teams. VIP extends the academic design experience beyond a single semester, with students participating for up to three years. It provides the time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **1:00 PM-4:00 PM**

QBIC “Quantifying Biology in the Classroom”  
Research Symposium

QBIC (Quantifying Biology in the Classroom) is a program for students interested in a more in-depth approach to the biological sciences. Our integrative four-year curriculum emphasizes the study of living systems, while providing students the tools to critically evaluate biological concepts. Our graduates are well prepared to excel in any biological science professional or graduate program.

- Mariluz Soula (Jennifer C. Peeler, Thomas P. Sakmar) “*Quantifying Relative Levels of Canonical and Non-canonical Ubiquitination of Human Dopamine Receptor 4 Using Proximity Ligation Assay*”
- Brian A. Ho (Robert S. Washburn, Max E. Gottesman) “*Dissecting the Mechanism of E. coli Rho Termination*”
- Brian Garcia (Eric Salgado, Stephen Harrison) “*Rotavirus Entry into Polarized Columnar Madin-Darby Canine Kidney Cells*”

- Emmanuel Medrano (Anthony J. Bellantuono, Daniel G. Merselis, Mauricio Rodriguez-Lanetty) *“Effect of Symbiotic State on the Proteome of Exaiptasia pallida”*
- Gabriel Arias (Daniel Merselis, Anthony Bellantuono, Mauricio Rodriguez-Lanetty) *“Symbiosis Enhances Immune Defense in the Sea Anemone Exaiptasia pallida”*
- Hilma R Gallegos (Hiroko Sano, Matthew DeGennaro) *“Understanding Aedes aegypti Feeding and Mating Behaviors Through CCHamide2 Mutagenesis”*
- Jovany Betancourt (David Butcher, Jaroslava Miksovska) *“Determination of Effector Binding Affinities using PAC”*
- Zolia Brummer (Jamie Carroll Theobald) *“Effect of Size on Drosophila melanogaster Visual Acuity”*

## **GC 243**

**10:00 AM-11:00 AM**  
**MARC U\*STAR**

FIU's MARC U\*STAR program specifically targets those rising juniors who have indicated an interest in Biomedical or Behavioral Sciences research and a determination to pursue a PhD. Program director Amy Reid chairs a panel of students in the program.

- Haroldo Rodriguez (Kalai Mathee) *“Impact of Smoking on Postoperative Complications after Anterior Cervical Discectomy and Fusion”*
- Mariluz Soula (Alexander Agoulnik) *“Quantifying Relative Levels of Canonical Ubiquitination of Human Dopamine Receptor 4 Using Proximity Ligation Assay”*
- Kiani Oro (Jonathon Comer) *“Evaluating Internet-delivered Methods for the Treatment of Early Child Social Anxiety: A Randomized Controlled Evaluation of the I-CALM Program”*
- Daniela Alvarez (Shannon Pruden) *“Does Parent Spatial Ability Predict Child Spatial Ability?”*
- 

**11:00 AM-12:00 PM**

### **Virtual Reality: A Tool for Changing Journalism, Attitudes, and Behaviors?**

Castro, C., Ovalle, L., Falkenhagen, J., Hernandez, D., Garcia, E., de Armas, A., Forte, A., Hanna, T., Meléndez, C., Reyes, L., Holt, L., Bilge, N., Marino, M. I., Shumow, M., & Gutsche, Jr., R. E.

In this session chaired by Robert ‘Ted’ Gutsche Jr., students involved in FIU's Mobile Virtual Reality Lab discuss the methodological possibilities, challenges, and limitations in using virtual reality to expose the role of proximity, built and natural environments, and interactions with various scenarios and subjects. Projects discussed are related to environmental communication and racial discourse. Session participants will also be exposed to VR technology and participate in student-produced virtual experiences.

**12:00 PM-1:00 PM**

### **Presentations by Students of Stephen Winkle**

- Philip Villar ( Stephen Winkle) *“Cooperativity and Competition in the Binding of N-methylpyridyl Porphines to DNA”*
- Cinthya Tinoco ( Stephen Winkle) *“Sequence Selectivity in the Binding of 8-Methoxypsoralen to PhiX174 DNA”*

- Stephan Mouhanna ( Stephen Winkle) *“Effects of Heterocyclic Diamidine Binding on Actinomycin Binding to DNA”*
- Natalie Moussa ( Stephen Winkle) *“Effects of Actinomycin Binding on Heterocyclic Diamidine Binding to DNA”*

**1:00 PM – 2:00 PM**

**Image Guided Cancer Therapy**

Chair: Anthony Mcgoron

Chair: Anthony Mcgoron. Student Presenters: Pedro Da Costa, Zoe Bernard, Caroline Betances, Juanpablo Olguin, John Hidalgo, Ralph Valentin

Drug carriers at the nanoscale may be able to overcome the undesirable effects of traditional chemotherapeutic agents by maximizing their availability at the target site, and minimizing effects on healthy tissue. The loose interconnections and intercellular openings among tumor vasculature endothelial cells can be easily extravasated by drug loaded nanoparticles (NPs) to improve drug delivery. This phenomenon of localizing NPs in the leaky vasculature of tumor tissues is an example of passive targeting and referred to as Enhanced Permeability and Retention (EPR). The drug carrier also prevents the recognition of drug molecules by cellular efflux pumps such as P-gp and hence helps overcome multi-drug resistance (MDR). The therapeutic potential of NPs can be further magnified by tagging them with appropriate ligands that selectively interact with tumor cell membrane receptors, an example of active targeting. NP carriers also have the advantage of being able to carry multiple therapeutic drugs simultaneously with a molecular imaging agent. Molecular Imaging allows visualization of not only organs and cells but also biochemical processes within the cells that are associated with specific disease. This information can improve the accuracy of a diagnosis, provide better assessment of the severity of disease and even monitor the response to therapy.

**2:00 PM-3:00 PM**

**Mummification**

**Gretchen Scharnagl**

Gretchen Scharnagl’s interests include environmental art, social commentary, and specimen logic in her art practice as well as a wide range of community and collaborative artistic ventures. Scharnagl breaks down barriers and forms connections between disciplines and between professor and student. She has presented papers on art in suburbia, environmental art and strategies of teaching. Scharnagl blurs the definition of author, material and what can be art with media that range from pencil drawings to installations to performance.

**3:00 PM-4:00 PM**

**“Are GMO mosquitoes the solution to the Zika crisis?”**

**Mario Perez**

Genetically modified mosquitoes: Coming soon to a neighborhood near you  
How much do you really know about the risks and benefits of releasing GMO mosquitoes?  
*“Are GMO mosquitoes the solution to the pending Zika crisis?”*

**A public debate presented by the 2017 FIU Biological Sciences QBIC Science Café**

**Moderator** - Renata Gallegos

**In favor of:** Mariluz Soula, Aymun Ahmed and Thomas Spencer

**Against:** Brian Ho, Paola Martinez and Gabriel Arias

**Specific topics:**

What are the benefits of releasing genetically modified mosquitoes? Or are genetically modified mosquitoes better or worse than other forms of prevention?

How much of a problem is insecticide resistance?

Is South Florida the best location for releasing genetically modified mosquitoes to combat Zika virus?

Vector-borne diseases have *re-emerged* in areas where GMOs, especially those that transmit the lethal gene, have successfully removed/reduced mosquito populations. This implies GMOs will need to be released continuously in order to prevent re-emergence.

Are there any evolutionary or ecological risks or implications to using GMO mosquitoes?

Genetic modification could become monopolized and cost can go up, or Will Oxitex be another “Monsanto”?

Is it ethical to expose people to GMO mosquitoes?

Can horizontal gene transfer prompt an unprecedented effect on the current fauna/ flora where the expected GMO mosquitoes are to be released?

Will female wild mosquitoes evolve to avoid mating with GMO male mosquitoes?

Who will pay for the GMO mosquitoes here in the United States and Abroad? How much would you pay for a mosquito?



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