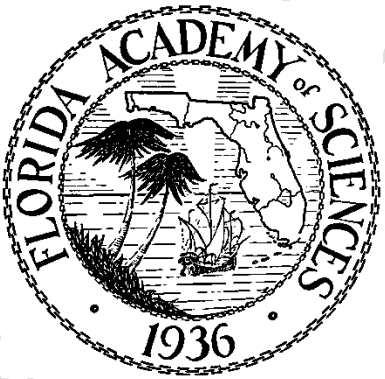
Florida Scientist

Volume 82 **Supplement 1**



83rd ANNUAL MEETING

Florida Institute of Technology
Melbourne, Florida
MARCH 8-9, 2019

ISSN: 0098-4590

FLORIDA ACADEMY OF SCIENCES
2018-2019

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Agricultural and Natural Resource Sciences: Ms. Julie Boswell, University of Florida and Dr. Wayne Hunter, USDA
Anthropological Sciences: Mr. Justin Maiers, University of South Florida
Atmospheric and Oceanographic Sciences: Dr. Michael Robinson, Barry University and Dr. David Karlen, Environmental Protection Commission of Hillsborough County
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Science Teaching: Dr. Tom Arnold, Lake Erie College of Osteopathic Medicine & Ms. Carmen Carpenter, South University
Social Science: Dr. Jennifer Wortham, University of Tampa

2019 PROGRAM ISSUE

The 83rd Annual Meeting of the
FLORIDA ACADEMY OF SCIENCES

in conjunction with the
FLORIDA JUNIOR ACADEMY OF SCIENCE

Florida Institute of Technology
Melbourne, Florida
March 8-9, 2019

FLORIDA SCIENTIST
Volume 82 Supplement 1
ISSN: **0098-4590** Price: $6.00

Published by the Florida Academy of Sciences
Bldg. 500(BIO)/Room 101
150 West University Blvd.
Melbourne FL 32901-6975
https://fas.fit.edu/
With headquarters at Florida Institute of Technology

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OVERVIEW

The 83rd Annual Meeting of the Florida Academy of Sciences is hosted by the Florida Institute of Technology in Melbourne, Florida. Abstracts on all aspects of science and engineering are printed in this program for all sections of the Academy.

FLORIDA INSTITUTE OF TECHNOLOGY

Founded at the dawn of the Space Race in 1958 as Brevard Engineering College, Florida Institute of Technology is the only independent, technological university in the Southeast. Florida Tech today is a comprehensive, research-intensive national university offering undergraduate, master's, and doctoral degrees that prepare students for careers of the future. As Florida's STEM University™ and headquarters of the Florida Academy of Sciences, Florida Tech's approach to academics is research-driven, high-tech, and hands-on, allowing our students to both gain knowledge and get real experience in applying it. Fields of study include science, engineering, aeronautics, business, humanities, mathematics, psychology, communication and education. PayScale.com ranks graduates' mid-career median salaries in the top two among Florida's universities and in the top 6% nationwide. The university has been named a Barron's Guide "Best Buy" in College Education, designated a Tier One Best National University in U.S. News & World Report, and is one of just nine schools in Florida lauded by the 2019 Fiske Guide to Colleges, which describes Florida Tech as one of the "best and most interesting institutions in the nation." In 2016, Times Higher Education ranked Florida Tech one of the top 20 small universities in the world. Additional information is available at www.fit.edu.

PARKING

FAS 2019 will take place during FIT's spring break. Abundant on-campus parking will be available along Babcock Street, University Boulevard, and Country Club Road, but the dedicated FAS parking lot will be the one on the west side of Country Club Rd. just north of its intersection with University Blvd. Avoid parking in spaces that are restricted by permanent signs.

REGISTRATION

ALL PARTICIPANTS AND ATTENDEES MUST REGISTER but you need not be a member of the Academy in order to present a paper or poster or attend the conference. The onsite Registration Desk will be open Friday, March 8, 7:30 AM-3:30 PM in Skurla Hall.

LOCAL ARRANGEMENTS

The Local Arrangements Chair for the Annual Meeting is Dr. Richard Turner (321-674-8196); he should be consulted for any special meeting needs.

MEALS
Cafeteria facilities will be open Friday and Saturday March 8t^{h} and 9th for lunch. Information on local early-morning or evening dining will be available at the FAS Registration Desk on the days of the meeting.

BANQUET AND RECEPTION
The Academy banquet is scheduled for Friday evening, March 8th promptly at 7:00 PM. **PLEASE NOTE:** No banquet tickets will be sold at the meeting. The FAS 2018 Medalist, Dr. Richard L. Turner, Florida Institute of Technology will present the banquet address, *"A Yankee's Calling to Florida, with apologies to Harriet Beecher Stowe"*. The banquet will be preceded by a reception at 6:00-7:00 PM in Evans Library with light refreshments for attendees to view a new display on the Florida Academy of Sciences as well as the FIT University Archives and the Digital Scholarship Laboratory.

FAS ANNUAL BUSINESS MEETING
The Annual Business Meeting of the Florida Academy of Sciences will be held on Friday, March 8th in Skurla Hall Room 110 (2:00-2:30 PM).

PLENARY SESSION SPEAKER
The Meg Gale Plenary Address will be given on Friday, March 8th at 2:30 PM immediately following the business meeting in Skurla Hall Room 110. Dr. Duane De Freese, Executive Director, IRL Council & Indian River Lagoon National Estuary Program, will be delivering the plenary address on *"Integrating 21st Century science, technology and policy as a foundation for large coastal ecosystem restoration and stewardship. Lessons from the Indian River Lagoon National Estuary Program"*.

ORAL PRESENTATIONS – ROOM LOCATION
The room numbers for all sessions are printed on the inside back-cover of this program; any addenda or revisions will be announced at the FAS registration desk.

FRIDAY POSTER SESSION
The poster session will be held on Friday, March 8th, from 3:30-6:30 PM in Skurla Hall, first and second floor hallways. Posters can be hung up Friday morning. We ask that poster authors be in front of their posters from 3:30 PM to 6:30 PM.

NOMINATIONS FOR THE FAS MEDAL RECIPIENT
The Florida Academy of Sciences will announce its 2019 Medalist at the Friday Evening Banquet. FAS encourages its members to submit formal nominations for candidates to be considered for the 2020 Medalist.

Nomination Procedure: Nominations will now be accepted for the Florida Academy of Sciences 2020 Medalist. The medal is presented each year at the annual meeting to a resident of the State of Florida who has contributed in an outstanding manner to the promotion of scientific research, to the stimulation of interest in the sciences, or to the diffusion of scientific knowledge. The candidate need not hold a Ph.D. He or she may be a research scientist, a philanthropist, an educator, a journalist, a science fair coordinator, or a member of industry, government, or other organization and who has met the criteria given above. An online form is available on the Academy's website at https://fas.fit.edu/annual-meeting/fas-medalist/. Please send the completed form to Dr. Kelli Hunsucker, Chair, Honors Committee, Florida Institute of Technology, Department of Ocean Engineering & Marine Sciences, 150 W. University Blvd. Melbourne, FL 32901-6975; or email her an electronic version at khunsucker@fit.edu. Your nomination form must arrive no later than 1 December 2019. The Committee might ask you to obtain a copy of your nominee's resume or *Curriculum vitae*.

FLORIDA JUNIOR ACADEMY OF SCIENCE ANNUAL MEETING

The Junior Academy will meet with the Florida Academy of Sciences at the annual meeting. As the student division of FAS, the Florida Junior Academy of Science provides opportunities that encourage middle and high school students in science by allowing them to compete, share, and network with other students and adults having common interests. The focus of this "*common bond*" among participants is their research activities. Persons interested FJAS should contact the FJAS Director: Ms. Leya Joykutty, email: leyajoykutty@gmail.com.

PERMANENT OFFICE FOR THE ACADEMY

The FAS office is located at the Florida Institute of Technology:

Florida Academy of Sciences
Bldg. 500(BIO)/Room 101
150 West University Blvd.
Melbourne FL 32901-6975
https://fas.fit.edu/
Phone: (321) 831-2500
Email: flacademyofsciences@gmail.com

FLORIDA ACADEMY OF SCIENCES
2019 ANNUAL MEETING PROGRAM SUMMARY

The building and room numbers for each session are printed on the inside back cover of this program

TIME	EVENT
Thursday, 7 March 7:00 p.m.	FAS Council Meeting,
Friday, 8 March 7:30 a.m. – 3:30 p.m.	FAS Registration & Information Desk, Skurla Hall
Friday, 8 March 8:00 a.m. – 12:30 p.m.	FAS Concurrent Paper Sessions (for building and room locations, ask at the Registration Desk, or see the inside back cover of this program)
Friday, 8 March 12:30 p.m. – 2:00 p.m.	Lunch
Friday, 8 March 2:00 p.m. – 2:30 p.m.	FAS Annual Business Meeting – Skurla 110
Friday, 8 March 2:30 p.m. – 3:30 p.m.	Gale Plenary Lecture – Skurla 110
Friday, 8 March 3:30 p.m. – 6:30 p.m.	FAS Poster Session: Skurla Hall
Friday, 8 March 6:00 p.m. – 7:00 p.m.	FAS Banquet Reception – Evans Library lobby
Friday, 8 March 7:00 p.m. – 9:30 p.m.	FAS Banquet, 2018 Medalist Address and 2019 Medalist presentation – Denius Student Center, 2nd Floor, Hartley Room
Saturday, 9 March 8:00 a.m. – 3:00 p.m.	Junior Academy of Science Annual Meeting – Registration in Olin Engineering Complex

PLENARY ADDRESS

FRIDAY 2:30 p.m. Skurla Hall Room 110
KELLI HUNSUCKER, FLORIDA INSTITUTE OF TECHNOLOGY, presiding

2:30 p.m. PLE-01 Integrating 21st Century science, technology and policy as a foundation for large coastal ecosystem restoration and stewardship. Lessons from the Indian River Lagoon National Estuary Program DUANE DE FREESE, Executive Director, IRL Council & Indian River Lagoon National Estuary Program

BANQUET ADDRESS

FRIDAY 8:00 p.m. Denius Student Center – 2nd Floor, Hartley Room
KELLI HUNSUCKER, FLORIDA INSTITUTE OF TECHNOLOGY, presiding

8:00 p.m. BNQ-01 A Yankee's Calling to Florida, with apologies to Harriet Beecher Stowe. RICHARD L. TURNER, Professor Emeritus, Biological Sciences, Florida Institute of Technology

AGR = AGRICULTURAL AND NATURAL RESOURCES

FRIDAY 10:30 a.m. – 12:30 p.m.
JULIE BOSWELL, UNIVERSITY OF FLORIDA AND WAYNE HUNTER, USDA-ARS, presiding

10:30 a.m. WELCOME AND ANNOUNCEMENTS

10:45 a.m. AGR-01 Passive phloem release of *Candidatus Liberibacter asiaticus* from sweet orange. J.A. BOSWELL (1), W.B. HUNTER(2), S. LOPEZ (2). (1) Oak Ridge Institute for Sciences and Education Participant at USDA - Agricultural Research Service – Horticulture Research Laboratory, 2001 South Rock Road, Ft. Pierce, FL 34945; (2) USDA-ARS – Horticulture Research Laboratory, 2001 South Rock Road, Ft. Pierce, FL 34945.

11:00 a.m. AGR-02 BAPC-assisted CRISPR/Cas9 System: Targeted Delivery into Psyllid Adult Ovaries for Heritable Germline Gene Editing (Arthropoda: Hemiptera). W.B. HUNTER (1), M.T. GONZALEZ (1), J. TOMICH (2) (1). USDA, ARS, U.S. Horticultural Research laboratory, 2001 South Rock Road, Fort Pierce, FL 34945 USA. Wayne.hunter@ars.usda.gov, Tel. 772-462-5898 (2). Kansas State University, Department of Physics, 116 Cardwell Hall, Manhattan, Kansas 66506, USA jtomich@ksu.edu .

11:15 a.m. AGR-03 The Effect of Iron on Prodigiosin Production in *S. odorifera*. F. MANTHEY, W.B. HUNTER, USDA, ARS, U.S. Horticultural Research laboratory, 2001 South Rock Road, Fort Pierce, FL 34945 USA.

11:30 a.m. AGR-04 Field persistence study of entomopathogenic fungi for management of arthropod pests on citrus under protective screen. E.B. DUREN, P.B. AVERY, J.A. QURESHI and R.D. CAVE. Indian River Research & Education Center, University of Florida, 2199 South Rock Road, Fort Pierce, FL 34945.

11:45 a.m. AGR-05 DNA fingerprinting, barcoding and generating phylogenetic trees of medicinal plants. A.G. LOBATO and D.P. MAUL. School of Science, St. Thomas University, 16401 NW 37th Ave, Miami. Gardens, FL 33054.

12:00 p.m. AGR-06 Interaction of Silver (Ag) nanoparticles and imidacloprid: Contaminant Bioaccumulation by *Cucurbita pepo* (zucchini). C. MCMAHON AND R. DE LA TORRE ROCHE. Connecticut Agricultural Experimental Station, Department of Analytical Chemistry.

12:15 p.m. FAS SECTION MEETING: AGRI./NATURAL RESOURCES
JULIE BOSWELL, UNIVERSITY OF FLORIDA AND WAYNE HUNTER, USDA-ARS, presiding, presiding

AGR Posters – 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

AGR-P01 An Examination of the Anti-Microbial Effects of Trans-Cinnamic Acid. W.B. HUNTER, F. MANTHEY. U.S. Horticultural Research Laboratory: USDA-ARS, 2001 S. Rock Road, Fort Pierce, FL 34945, email: frank.manthey@usda.gov.

AGR-P02 Melanization pathway annotation in the Asian citrus psyllid. Y. DE LA FLOR, E.L.C. MASSIMINO, C. VOSBURG, H. WIERSMA-KOCH, W.B. HUNTER, and T. D'ELIA. Biology Department, Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981.

AGR-P03 Glycolysis and gluconeogenesis pathway annotation in *Diaphorina citri*. B. TAMAYO, K. KERCHER, H. WIERSMA-KOCH, and T. D'ELIA. Biology Department, Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981.

AGR-P04 A pathway to recovery: Evolutionary analysis of the yellow gene family in the citrus greening vector, *Diaphorina citri*. C. MASSIMINO, C. VOSBURG, H. WIERSMA-KOCH, and T. D'ELIA. Biology Department, Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981.

AGR-P05 Identification and Annotation of Chromatin Remodeling Complexes in *Diaphorina citri*. A. RAHMOUNE, H. WIERSMA-KOCH, T. D'ELIA. Biology Department, Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981.

AGR-P06 Annotation of the circadian rhythm pathway in *Diaphorina citri*. M. REYNOLDS, C. VOSBURG, H. WIERSMA-KOCH, and T. D'ELIA. (1) Biology Department, Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981.

AGR-P07 Exploratory analysis of citrus farming amidst the "greening" problem in Polk County, Florida. M. AMARAL, R. SANCHEZ-ARIAS and M.D. HORTON. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

AGR-P08 Antioxidant Properties of Porter weed/Verbena (*Stachytharpheta jamaicensis*). T. WILSON, S. ROSARIO, P. MAUL, M. PINA. School of Science, Technology & Health, St. Thomas University, 16401 NW 37 Ave, Miami Gardens FL 33054.

AGR-P09 Preliminary Study of the Antioxidant Activity of Comfrey (*Symphytum officinale*) Extracts Using Different Methods. C. DIEUDONNE, K. DAVID, M. PINA. School of Science, Technology & Health, St. Thomas University, 16401 NW 37 Ave, Miami Gardens FL 33054.

AGR-P10 Preparation and Analysis of Extracts from Brazilian Pepper Tree (*Schinus terebinthifolius*) Using Antioxidant Assays. A. MOAS, J. BROWN, A. TAPANES-CASTILLO, M. PINA. School of Sciences, Technology and Health, St. Thomas University, 16401 NW 37 Ave, Miami Gardens FL 33054.

AGR-P11 Fingerprinting for the Identification of Medicinal Plants. L. RUIZ and D.P. MAUL. School of Science, St. Thomas University, 16401 N.W. 37th Avenue, Miami Gardens, FL 33054.

AGR-P12 Allelopathy in *Casuarina equisetifolia* and *Pinus elliottii*. A.P. CONCEPCION, L.A. CENDAN, and D.P. MAUL. School of Science, St. Thomas University, 16401 N.W. 37th Avenue, Miami Gardens, FL 33054.

AGR-P13 Do Earthworm Diets Affect Nutrient Content in Vermicompost-based Fertilizers? A. PINEDA, L.A. CENDAN, and D.P. MAUL. School of Science, St. Thomas University, 16401 N.W. 37th Avenue, Miami Gardens, FL 33054.

AGR-P14 A comparison of oyster settlement monitoring techniques. A.M. VELAZQUEZ (1,2), G.A. COLDREN (2), V.G. ENCOMIO (3), (1) Indian River State College, 3209 Virginia Ave. Fort Pierce, FL 34981; (2) Florida Oceanographic Society, 890 NE Ocean Blvd. Stuart, FL 34996; (3) UF/IFAS Florida Sea Grant, 2614 SE Dixie Hwy. Stuart, FL 34996.

AGR-P15 Evaluating Agricultural Viability of Martian Regolith Simulants. J. RODRIGUEZ, N. HADLAND, D. MASAITIS, D. HANDY, A. PEREZ, H. BLACKBURN, C. MONTANEZ, D. BATCHELDOR, B. WHEELER, A.G. PALMER. Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901. Departments of Aerospace, Physics and Space Sciences, Ocean Engineering and Marine Sciences, Biomedical and Chemical Engineering and Sciences.

ANT = ANTHROPOLOGICAL SCIENCES
Meeting with GEO

FRIDAY 10:00 a.m. – 12:00 p.m.
JUSTIN MAIERS, UNIVERSITY OF SOUTH FLORIDA,
presiding

10:15 ANT-01 2100 years of climate adaptation in an Andean cloud forest. C.M. ÅKESSON (1), F. MATTHEWS-BIRD (1), M. BITTING (1), C.J. FENNELL (1), W.B. CHURCH (2), L.C. PETERSON (3), B.G. VALENCIA (1, 4), and M.B. BUSH (1). (1) Institute for Global Ecology, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901, (2) Department of Earth and Space Science, Columbus State University, Columbus, GA 31907, (3) Department of Marine Geosciences, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL 33149, (4) Department of Geology, Universidad Regional Amazónica IKIAM, Tena, Ecuador.

11:45 a.m. FAS SECTION MEETING: ANTHROPOLOGICAL SCIENCES
JUSTIN MAIERS, UNIVERSITY OF SOUTH FLORIDA, presiding

ANT Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

ANT-P01 Long-term Disturbance of a Major Andean National Park. M. NASCIMENTO (1), N. MOSBLECH (1), K. HORN (1), L. GIOSAN (2), and M.B. BUSH (1). (1) Dept. of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 W University Blvd., Melbourne, FL 32901. (2) Woods Hole Oceanographic Institution, 266 Woods Hole Road, Woods Hole, MA.

ANT-P02 Holocene histories of fire and land clearance at Laguna Huayabamba in northern Peru. Z. DAHL, C. SHADIK, and M.B. BUSH. Department of Ocean Engineering and Marine Science, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

ANT-P03 Patchy historical occupation of an Amazonian lake confirmed by extended maize pollen counts. J. VEIZAJ (1), C.M. ÅKESSON (1), C. MCMICHEAL (2), and M.B. BUSH (1). (1) Institute for Global Ecology, Florida Institute of Technology, 150 W. University Blvd., Melbourne, FL 32901, (2) Department of Ecosystem and Landscape Dynamics, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, Netherlands.

AOS = ATMOSPHERIC AND OCEANOGRAPHIC SCIENCES

FRIDAY 8:00 a.m. - 10:15 p.m.
MICHAEL ROBINSON, BARRY UNIVERSITY AND DAVID KARLEN, ENVIRONMENTAL PROTECTION COMMISSION OF HILLSBOROUGH COUNTY, presiding

8:00 a.m. WELCOME AND ANNOUNCEMENTS

8:15 a.m. AOS-01 Actionable strategies that small island countries of Oceania and Africa should take to address rising sea levels. G.A. MAUL. Florida Institute of Technology, 150 West University Boulevard, Melbourne FL 32901.

8:30 a.m. AOS-02 Investigation of Compounds Produced by Probiotic Bacteria Isolated from Healthy Coral on Florida Reefs. S. THOMPSON (1), B. USHIJIMAN (1), J. SNEED (1), S. GUNASEKERA (1), J. HOUK (1), G. AEBY (2), J. MEYER (3), W. LEE (1), C. HÄSE (4), V. PAUL (1). (1) Smithsonian Marine Station at Fort Pierce, Fort Pierce, FL; (2) Department of Biology, University of Hawaii at Manoa, Honolulu, HI; (3) Department of Soil and Water, University of Florida, Gainesville, FL; (4) Department of Biomedical Sciences,

Oregon State University, Corvallis, OR Corresponding author email: Sharon Thompson thompsonsc@mail.irsc.edu.

8:45 a.m. AOS-03 Effects of superbloom conditions on zooplankton density in the Indian River Lagoon, FL. J. JOHNSON and S. KREJCI. Department of Natural Sciences. Bethune-Cookman University, 640 Dr. Mary McLeod Bethune Blvd, Daytona Beach, FL 32714.

9:00 a.m. AOS-04 Examining zooplankton density related to seasonal and water quality conditions in the Halifax River Lagoon, FL. L. MCGREGOR AND S. KREJCI. Department of Natural Sciences. Bethune-Cookman University, 640 Dr. Mary McLeod Bethune Blvd, Daytona Beach, FL 32714.

9:15 a.m. AOS-05 Abundance and community richness of benthic amphipods in a shallow subtropical estuary. N. MALLICK and K.B. JOHNSON. Department of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

9:30 a.m. AOS-06 Gut Content Analysis of Benthic Foraging Fish Compared to Benthic Invertebrate Distributions. D.L. JUZWICK, K.B. JOHNSON, and J.M. SHENKER. Department of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

9:45 a.m. AOS-07 The Nautilus: A Novel Design to Investigate the Effectiveness of UV Exposure at Varying Distances. C. BRAGA, K.Z. HUNSUCKER, H. GARDNER, AND G.W. SWAIN. Center for Corrosion and Biofouling Control, Florida Institute of Technology 150 W. University Blvd. Melbourne, FL 32901

10:00 a.m. FAS SECTION MEETING, ATMOSPHERIC AND OCEANOGRAPHIC SCIENCES. MICHAEL ROBINSON, BARRY UNIVERSITY AND DAVID KARLEN, ENVIRONMENTAL PROTECTION COMMISSION OF HILLSBOROUGH COUNTY, presiding

AOS Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

AOS-P01 Determining spatial and temporal water quality changes in the Halifax River Lagoon (HRL), FL. J. WILLIAMS and S. KREJCI. Department of Natural Sciences. Bethune-Cookman University, 640 Dr. Mary McLeod Bethune Blvd, Daytona Beach, FL 32714.

AOS-P02 Mapping sediment pollution in Sykes Creek, Brevard County, Fl. B. FALLS, M SMITH, B. GEROVAC, and E. WIDDER. Ocean Research & Conservation Association, Inc., 1420 Seaway Drive, Fort Pierce, FL 34949.

AOS-P03 A baseline survey of barnacles at Port Canaveral, Florida. A.C. WASSICK, K.Z. HUNSUCKER and G.W. SWAIN. Department of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

AOS-P04 Feeding Selectivity of juvenile seahorses on wild zooplankton during early development. A. STUBBS, V. BISRAM, and S. KREJCI. Department of Natural Sciences. Bethune-Cookman University, 640 Dr. Mary McLeod Bethune Blvd, Daytona Beach, FL 32714.

BIO = BIOLOGICAL SCIENCES – SESSION A: PHYSIOLOGY AND MOLECULAR BIOLOGY

FRIDAY 8:45 a.m. – 10:00 a.m.
LAURA MUDD, BARRY UNIVERSITY, & IAIN DUFFY, SAINT LEO UNIVERSITY, presiding

8:45 a.m. WELCOME AND ANNOUNCEMENTS

9:00 a.m. BIO-01 Identification of Signaling Proteins at Fertilization in the sea star *Patiria miniata*. L. BATES, E. WISEMAN, J. KITSON, and D.J. CARROLL. Florida Institute of Technology. 150 W. University Blvd. Melbourne FL.

9:15 a.m. BIO-02 Identification of proteins released from the egg cell surface during fertilization. E. WISEMAN, L. BATES, and D.J. CARROLL. Department of Biological and Chemical Engineering and Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

9:30 a.m. BIO-03 The impact of algal symbiosis on the anthozoan immune response. S. LAZAR and A.G. PALMER. Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901. Departments of Ocean Engineering and Marine Sciences and Biomedical and Chemical Engineering and Sciences.

9:45 a.m. BIO-04 Disruption of endocytosis during chronic stress in *Caenorhabditis elegans*. R.N. PLAGENS, K.S. KIM GUISBERT, AND E.

GUISBERT. Dept. of Biomedical and Chemical Engineering and Sciences Florida Institute of Technology, Melbourne, FL

10:00 a.m. BREAK

BIO = BIOLOGICAL SCIENCES –
SESSION B: ECOLOGY AND ORGANISMAL BIOLOGY

FRIDAY 10:15 a.m. – 12:30 p.m.
LAURA MUDD, BARRY UNIVERSITY, & IAIN DUFFY, SAINT LEO UNIVERSITY, presiding

10:15 a.m. BIO-05 New stygobitic amphipod and isopod species from the Floridan aquifer. T.R. SAWICKI and A.G. CANNIZZARO. Department of Biological Sciences, Florida Agricultural and Mechanical University, 1530 S Martin Luther King Jr Blvd, Tallahassee, FL, 32307.

10:30 a.m. BIO-09 Molecular genetic data reveals cryptic diversity among stygobitic amphipod species within the Floridan aquifer. A.G. CANNIZZARO and T.R. SAWICKI. Department of Biological Sciences, Florida Agricultural and Mechanical University, 1530 S Martin Luther King Jr Blvd, Tallahassee, FL, 32307.

10:45 a.m. BIO-10 Phenotypic response of exploited fish stocks to the establishment and subsequent performance of marine protected areas (MPAs). R.G. TURINGAN and R. FIDLER. Department of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 West University Boulevard, Melbourne, FL 32901.

11:00 a.m. BIO-11 Ontogenetic Disparities in *Acanthurus nigrofuscus* between Marine Protected Areas and Fished Reefs. M. CRAMER, R.G. TURINGAN, R. FIDLER. Florida Institute of Technology, Department of Ocean Engineering and Marine Sciences: 150 W. University Blvd. Melbourne, FL 32901.

11:15 a.m. BIO-12 Spatial patterns of fishes with cranial spines L.M. PENROD Florida Institute of Technology, Melbourne, FL

11:30 a.m. BIO-13 Digging in to Jewels: *Hemichromis letourneuxi*'s New Northern Limit and Predicted Response to Climate Change. J.R. BLANCHARD (1) and J.A. ANDREOLI (2). (1) Department of the Earth and Environment,

Florida International University, 3000 NE 151st St., Miami, FL 33181. (2) Department of Geography, University of Florida, 2046 NE Waldo Rd., Gainesville, FL 32611.

11:45 a.m. BIO-14 Feeding in fishes is both sensitive and non-sensitive to changes in water temperature: implications for organismal response to climate change. J. GOFANDI and R.G. TURINGAN. Department of Biological Sciences, Florida Institute of Technology, 150 West University Boulevard, Melbourne, FL 32901.

12:00 a.m. BIO-15 What are they eating? Spiny Spotfin Eel (*Macrognathus siamensis*) gastrointestinal contents from their invaded range in Florida. S.J. CARLUCCI and J.R. BLANCHARD. Department of the Earth and Environment, Florida International University, 3000 NE 151st St., Miami, FL 33181.

12:15 a.m. FAS SECTION MEETING, BIOLOGICAL SCIENCES
LAURA MUDD, BARRY UNIVERSITY & IAIN DUFFY, SAINT LEO UNIVERSITY, presiding –

BIO Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

BIO-P01 Discovery of six Actinobacteriophages in Tampa, Florida. C. ALEMAN, M. ALPERT, A. BACHICHA, S. BUSH, J. FRANKS, M. GONZALEZ, E. IDHOLO, V. MASSILLON, B. MORAVE, G. MOREAU, J. MURPHY, G. OST, K. SHOHAM, C. YUCATONIS, M. HOPSON-FERNANDES, C. LOGUE, D. WINGFIELD, L. SMITH and J. WYSONG. Mathematics and Sciences Division, Hillsborough Community College, Dale Mabry Campus, 4001 W. Tampa Bay Boulevard, Tampa, Florida 33614.

BIO-P02 Evaluation and comparison of bacteriophage, isolated from the soil bacterium *Microbacterium foliorum*, by new participants of the SEA-PHAGES program. H. KERNS, E. KATZ, C. BROWN, A. GEMMATI, V. LATALLADI, L. OGUEKE, L. OUELLETTE, K. SHOWERS, J. DUNCAN and I. DUFFY. Dept. of Math and Science, Saint Leo University, 33701 State Road 52, Saint Leo, FL 33574-6665.

BIO-P03 Tagging the *Bacillus subtilis* OpuBC protein with Acrylodan and Pyrene to make a choline biosenor. C. MCMAHON, I. ULLOA, C. SCHNEIDER and S.R. CRONIN. Department of Biology, Ave Maria University.

BIO-P04 *Chlamydomonas reinhardtii* response to bacterial quorum sensing signals. B. RICHARDSON (1), K. CUTSHAW (2), J. GOODE (2), and

A.G. PALMER (2). Department of Physics and Space Sciences (1), Departments Ocean Engineering and Marine Sciences and Biomedical and Chemical Engineering and Sciences (2), Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

BIO-P05 Isolation of a quorum sensing regulator in *Chlamydomonas reinhardtii*. K. CUTSHAW (1), J. GOODE (1), B. RICHARDSON (2), and A.G. PALMER (1). Department of Ocean Engineering and Marine Sciences and Biomedical and Chemical Engineering Sciences (1), and Department of Physics and Space Sciences (2), Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

BIO-P06 Effects of Reactive Oxygen Associated Molecules (ROAMs) on the Root System Architecture of *A. thaliana*. R. BALLENA (1), D. CHAVAN (1), A.G. PALMER (1,2). Department of Biomedical and Chemical Engineering and Sciences (1), Department of Ocean Engineering and Marine Sciences (2), Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

BIO-P07 The effects of N-acyl-homoserine lactones (AHLs) on the roots of Adult *Arabidopsis thaliana*. V.R. JENNE, P. MANTRI, and A.G. PALMER. Departments of Ocean Engineering and Marine Sciences and Biomedical and Chemical Engineering and Sciences. Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

BIO-P08 Assembly and Annotation of the Starfish Egg Transcriptome: Searching for the Elusive Molecular Controllers of Fertilization J. KITSON, L. BATES, E. WISEMAN, AND D. CARROLL. Department of Biomedical & Chemical Engineering & Sciences. Florida Institute of Technology. 150 W. University Blvd. Melbourne FL.

BIO-P09 Src Family Tyrosine Kinase of the *Patiria miniate.* M. BAGHBAN. Department of Biomedical & Chemical Engineering & Sciences. Florida Institute of Technology. 150 W. University Blvd. Melbourne FL.

BIO-P10 Identification of Src family tyrosine kinases in the egg and ovary transcriptomes of the sea star *Patiria miniate.* M. BAGHBAN, E. WISEMAN, L. BATES, and D.J. CARROLL. Department of Biomedical & Chemical Engineering & Sciences. Florida Institute of Technology. 150 W. University Blvd. Melbourne FL.

BIO-P11 Identification of CaM Kinase in the starfish (*Patiria miniata)* egg transcriptome. F. ALQADI. Department of BioMedical & Chemical Engineering & Sciences, Florida Institute of Technology, Melbourne, FL.

~~BIO-P12 Fruit fly personalities: flexible laterality correlates with exploratory behavior. M. GONZALEZ, A. VILLARROEL, R. NAPOLILLO, B. SABANE, S. SANCHEZ, J. HERNANDEZ, H. LASTER-TORRES, M. SANDOVAL, A. SOSA, T. FOX, J. RAMOS, K. RYBA, D. ALDUNATE, E. VALDES, J. COHEN, and M.P. ROBINSON. Department of Biology, Barry University, 11300 NE 2nd Ave, Miami, FL 33161.~~

BIO-P13 A comparison of phototaxic behavior in photosynthetic and non-photosynthetic sacoglossan sea slugs. L. TWELE, R. MOLINE, and M. MIDDLEBROOKS. College of Natural and Health Sciences, University of Tampa, 401 West Kennedy Blvd, Tampa FL 33606

BIO-P14 Identifying a new genetic signature underlying invasive potential in bluegill sunfish S.M. PEREZ, J. BAUMAN, K.S. KIM GUISBERT, M. ONEKA, I. KERNIN, N. HIGGINS, A. LOBO, M.M. SUBASI, D.J. CARROLL, R.G. TURINGAN and E. GUISBERT. Florida Institute of Technology

CMS = COMPUTER/MATHEMATICAL SCIENCES
Meeting with TCH

FRIDAY 8:00 a.m. – 10:00 a.m.
RICARDO JIMENEZ, BARRY UNIVERSITY, presiding

8:00 a.m. WELCOME AND ANNOUNCEMENTS

9:15 a.m. CMS-01 Increasing student numbers in Mathematics, J. WHITE, Saint Leo University

9:30 a.m. CMS-02 Artificial Intelligence and the Renaissance of Liberal Arts in the 21st Century. R. JIMENEZ. Department of Mathematics and Computer Science, Barry University, 11300 NE 2nd Avenue, Miami, FL. 33161.

9:45 a.m. FAS SECTION MEETING: COMPUTER/MATHEMATICAL SCIENCES, RICARDO JIMENEZ, presiding

CMS Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

CMS-P01 Theoretical adaptive immune-inspired intrusion prevention system. C.A. TOOLSIE, M.D. HORTON, and N.K. NAJAFABADI. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

CMS-P02 Dermatological biomarker on preventing security breaches of electronic health records in Advanced Dermatology and Cosmetic Surgery Florida: a conceptual framework. S. BOYD, M. AKBAS, and M.D. HORTON. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

CMS-P03 Deep Learning: How deep is too deep in sporting match prediction? L. ALVAREZ, M. SINGH CHAWLA, S. HAWTHORNE, S. MONDESIRE. St. Thomas University.

CMS-P04 Neural network based prediction and simulation of local red tide occurrence in Florida. M. MEDVED (1), M. AKBAS (1), and M.D. HORTON (2). (1) Department of Computer Science, (2) Department of Natural Sciences, Florida Polytechnic University, 4700 Research Way, Lakeland FL 33805.

CMS-P05 A hand-based device towards a keyboard-free computer interaction. A. NOVAK (1), A. HAMAM (1), and M.D. HORTON (2). (1) Department of Computer Science, (2) Department of Natural Sciences, Florida Polytechnic University, 4700 Research Way, Lakeland FL 33805.

ENG = ENGINEERING SCIENCES

FRIDAY 8:30 a.m. - 10:00 a.m.
JOHN BAKER, TALLAHASSEE, FL, & SESHA SRINIVASAN, FLORIDA POLYTECHNIC UNIVERSITY presiding

8:30 a.m. WELCOME AND ANNOUNCEMENTS

8:45 a.m. ENG-01 Point-Cloud Based Relative Navigation for Autonomous Spacecraft Close Proximity Formation Flight. B. BLACKWELL. Florida Institute of Technology, 150 W University Blvd Melbourne, FL 32901.

9:00 a.m. ENG-02 Dynamics of Spacecraft Orbital Refueling with a Constant Mass Flow Rate. C. CLARK, T. GO, M. GO, A. AZELIS. Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W University Blvd. Melbourne, FL 32901. mwilde@fit.edu.

9:15 a.m. ENG-03 Surface Modification of the Sp2 Network of Carbonaceous Nanomaterials. M. GANESAN (1), C. WARREN (2), D. KIM (1), V. ROLLIN (1), F. MADIYAR (3). (1) Dept. of Aerospace Engineering, ERAU, Daytona Beach, FL, 32114; (2) Dept. of human factors and Behavioral Neurobiology, Daytona Beach, Fl 32114; (3) Dept. of Physical Science, ERAU, Daytona Beach FL, 32114

9:30 a.m. ENG-04 Feasibility study of high dolomite pebbles for carbon capture. C. MC BEN JOE, D. DODSON, S.L. WALLEN, G. ALBARELLI, B. BIRKY, J. DHAU, S. SRINIVASAN. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

9:45 a.m. FAS SECTION MEETING: ENGINEERING SCIENCES, JOHN BAKER, & SESHA SRINIVASAN, FLORIDA POLYTECHNIC UNIVERSITY presiding

ENG Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

ENG-P01 Development of Adaptable Human-Machine-Interface for Teleoperation over Time Delay. M.N. CHAN. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901.

ENG-P02 Control development of autonomous landing of a quadcopter on a moving platform. R. MANGSATABAM. Department of Aerospace, Florida Institute of Technology, 150 W University Blvd, Melbourne, FL 32901

ENG-P03 CubeSat Docking and Resource Sharing Mechanism. S. KUNITO. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901.

ENG-P04 Trim Forces and Free Response to Configuration Changes on General Aviation Aircraft. B. KISH, M. WILDE, R. KIMBERLIN, I. SILVER. Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901. bkish@fit.edu.

ENG-P05 Comparing Specific Excess Power of Five General Aviation Aircraft. B. KISH, M. WILDE, R. KIMBERLIN, I. SILVER. Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901. bkish@fit.edu.

ENG-P06 Transferable Mechanisms for Radiation Resistance N. PATRAWALLA. Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901.

ENG-P07 Design and Fabrication of Custom Built Variable Photocatalytic Continuous Reactor for Water Detoxification. W. LIPTAK, M.K. NELSON, S.L. WALLEN, S. SRINIVASAN. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

ENG-P08 Comparison of the efficiency of Photocatalytic Remediation of Landfill Leachate and Wastewater with a Solar Simulator and UV-Visible Light Batch Reactor. M.K. NELSON, E. CARMONA, S.L. WALLEN, S. SRINIVASAN. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

ENG-P09 Dilution Series and Standardization Analysis for the Wastewater Treatment Processes. J. NURSE, M.K. NELSON, S.L. WALLEN, S. SRINIVASAN. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

ENG-P10 Recyclable functionalized diatoms as carbon dioxide scrubber. G. DOBACK, C. SCADUTO, C. COUGHLIN, and M.D. HORTON. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

ENV = ENVIRONMENTAL CHEMISTRY AND CHEMICAL SCIENCES

FRIDAY 10:15 a.m.-11:15 a.m.
DARRIN BELL., SAINT LEO UNIVERSITY, presiding

10:15 a.m. WELCOME AND ANNOUNCEMENTS

10:30 a.m. ENV-01 Detection and Implications of n-Alkanes and n-Alkenes in Chukchi Sea Sediments S. SASU, M. SOHN, K. WINKELMANN Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901.

10:45 a.m. ENV-02 Detection and phytoremediation of calcium perchlorate as a model for perchlorate removal in a Martian habitat. D. HANDY, A. PALMER. Department of Aerospace Physics and Space Sciences, Ocean Engineering and Marine Sciences, and Biomedical and Chemical Engineering and Sciences. Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

11:00 a.m. FAS SECTION MEETING: ENVIRONMENTAL CHEMISTRY. & CHEMICAL SCIENCES. DARRIN BELL, SAINT LEO UNIVERSITY, presiding

ENV Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

ENV-P01 Distribution of Emerging Organic Contaminants in Indian River Lagoon Sediments G. BELSON (1), A. PALMER (1,2). Department of Ocean Engineering and Marine Sciences (1) and Department of Biomedical and Chemical Engineering and Sciences (2), Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

ENV-P02 A systematic review of the ecosystem, biology, and biochemistry of Florida red tide. S. HARVEY, T. FANARA, T. ARNOLD, and J. GNARRA. Lake Erie College of Osteopathic Medicine, 5000 Lakewood Ranch Blvd. Bradenton, FL 34211. Mote Marine Laboratory, 1600 Ken Thompson Parkway. Sarasota, FL 34236.

ENV-P03 Extraction of Biologically Active Components (BACs) using Ultrahigh- Pressure Extraction. K. RIVERA, A. LARSON, S. PANDEY, S. KESHARWANI, F. MADIYAR. Department of Chemistry & Biochemistry, South Dakota State University, SD, Department of Pharmaceutical Sciences at South Dakota State University, SD, Department of Aerospace Physiology and Neurobiology, Embry Riddle Aeronautical University, FL. Department of Physical Sciences, Embry Riddle Aeronautical University, FL..

GEOSCIENCES

Meeting with ANT

FRIDAY 10:00 a.m.-12:00 p.m.
AL KARLIN, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, presiding

10::00 a.m. WELCOME AND ANNOUNCEMENTS

10:15 a.m. ANT-01

10:30 a.m. GEO-01 A preliminary water budget study of the Mwogo and Mbirurume basins in Rwanda, Africa. E. NDAGIJIMANA and C. BROWN. School of Engineering, University of North Florida, Skinner-Jones Hall, Room 1214, 1 UNF Drive, Jacksonville, Florida 32224.

10:45 a.m. GEO-03 Topobathymetric LiDAR in Inland Waterways – A case study of Rainbow Springs, FL. A. KARLIN, A. NAYEGANDHI, C.W. WRIGHT; R.J. TROCHE, and M. ASLAKSEN, JR. Southwest Florida Water Management District, Dewberry Engineers, NASA, NOAA, NOAA/NGS.

11:00 a.m. GEO-04 Use of baseline data to document change in vegetation coverage at the Salt Marsh-Mangrove ecotone along Florida's Gulf Coast. C. MILLER, Saint Leo University.

11:15 a.m. GEO-05 Expanding Capabilities. M-L. TRUONG, RieglUSA, 7035 Grand National Drive, Suite 100, Orlando, FL 32813. MTruong@RieglUSA.com.

11:30 a.m. GEO-06 Big Data, Bigger Decisions T. BOHN. Surdex Corporation 520 Spirit of St. Louis Blvd Chesterfield, Mo.

11:45 a.m. FAS SECTION MEETING: GEOSCIENCES
AL KARLIN, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, presiding

GEO Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

GEO-P01 Vegetation history of the Junín Plateau during past interglacial events. J. SCHIFERL and M. BUSH. The Institute for Global Ecology, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

GEO-P02 Human-Induced State Change in a Resilient 9000-year Andean System. S. BASKIN, M. NASCIMENTO, and M. BUSH. Dept. of Ocean Engineering and Marine Sciences, Florida Institute of Technology, 150 W University Blvd., Melbourne, FL 32901.

GEO-P03 Using historical photos to map the timing of mangrove colonization of overwash islands in Tampa Bay. W. ELLIS, C. BLY, I. JACUS, D. BARTHEL, S. AGUILAR Saint Leo University

GEO-P04 UAV Data Collection and Data Analyses with the July 2017 Land O' Lakes Sinkhole. G. SPEED, L. COLLINS University of South Florida Libraries, Digital Heritage and Humanities Collections.

MEDICAL SCIENCES

FRIDAY 10:30 a.m. - 12:00 p.m.
ANA JIMENEZ, BARRY UNIVERSITY AND MARK BEST, LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE, presiding

10:30 a.m. WELCOME AND ANNOUNCEMENTS

10:45 a.m. MED-01 Pathogen sensing using Nanoelectrode Arrays. F.R. MADIYAR (1,4), S. BASSET (2), O. FAROOQ (1), S. ROTHENBURG (2,3), C. CULBERTSON (4), J. LI (4). (1) Department of Physical Sciences, Embry-Riddle Aeronautical University, Daytona Beach, FL 32114 (2) Department of Biology, Kansas State University, Manhattan, KS 66506 (3) Department of Medical Microbiology and Immunology, School of Medicine, University of California at Davis, Davis, CA 95616 (4) Department of Chemistry, Kansas State University, Manhattan, KS 66506.

11:00 a.m. MED-02 Arbovirus Preventive Health Behaviors. B. MAYI (1), M. MENON (2), and W. STERNGLANZ (2). (1) College of Medical Sciences, Nova Southeastern University, Fort Lauderdale, FL; (2) College of Psychology, Nova Southeastern University, Fort Lauderdale, FL.

11:15 a.m. MED-03 Identification and characterization of a heat shock response regulatory network E. GUISBERT, R.N. PLAGENS, N.L. GOLDEN, S.M. PEREZ, I.A. MOSSIAH, and K.S. KIM GUISBERT. Department of Biomedical and Chemical Engineering and Sciences Florida Institute of Technology.

11:30 a.m. MED-04 Molecular Imaging Reveals New Targets for Drug Development against Alzheimer's Disease. S. XU. Department of Biomedical and Chemical Engineering and Sciences Florida Institute of Technology

11:45 a.m. MED-05 To Breathe or Not to Breathe: Is the Air Deadly? L. BENTZEL, Florida Polytechnic University.

12:00 p.m. FAS SECTION MEETING: MEDICAL SCIENCES
ANA JIMENEZ, BARRY UNIVERSITY AND MARK BEST, LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE, presiding

MED Posters - 3:30 p.m.-5:30 p.m. Friday – Skurla Hall

MED-P01 Quantifying DLGAP1 antisense levels in neural progenitor cells derived from patients with Autism Spectrum Disorder. A. PETERSON (1), G. COTTO GONZALEZ (1), M. DI SANTI (1), V. ROA FORSTER (2), S. GUTIERREZ (1), R. PETIT (1), M. MULERO (1), L. RAMOS (1), A. VALLS (1), D. DYKXHOORN (3), A. TAPANES-CASTILLO (1). (1) School of Science, Technology and Health, St. Thomas University, 16401 NW 37 Ave, Miami Gardens, FL 33054, (2) Dept. of Natural Sciences, Miami-Dade College InterAmerican Campus, 627 SW 27 Ave, Miami, FL 33135, (3) Hussman Institute for Human Genomics, University of Miami Miller School of Medicine, 1501 NW 10 Ave, Miami, FL, 33136.

MED-P02 *Leishmania parasitophorous* vacuole membranes display phosphoinositides that create conditions for continuous Akt activation and a target for miltefosine in *Leishmania* infections. N. ZHANG (1), S. PRASAD (2), C- E. HUYGHUES DESPOINTES (1), J. YOUNG (1) and P.E. KIMA (1). (1) University of Florida, (2) Nova Southeastern University.

MED-P03 Methionine Deprivation Induced Effects on the Growth of Various Cancer Cells. E. DIAZ (2), R. NOSAL (2), K.V. VENKATACHALAM (1,2,3). (1) College of Medical Sciences, (2) College of Osteopathic Medicine, (3) College of Allopathic Medicine, Nova Southeastern University, Ft. Lauderdale, FL-33328. Corresponding Author: venk@nova.edu.

MED-P04 Investigating the potential connection between STING-mediated inflammatory signaling and the Fanconi Anemia genome maintenance pathway. J. D'ANDREA, M. NANJUNDAN, and Y. KEE. Department of Cell Biology, Microbiology, Molecular biology, Collage of Arts and Sciences, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620.

MED-P05 Galunisertib monohydrate selectively inhibits TGF-beta signaling and is a viable targeted therapy solution for TGF-beta and Activin A signal promiscuity in cancer. S. FARMER and C. ANDL. Burnett School of Biomedical Sciences, College of Medicine, University of Central Florida, Orlando, FL 32827

MED-P06 Focal Adhesion Kinase and MDR1 Crosstalk in platinum resistant Ovarian Cancer. A. LEVY (2), K. THALLAPUREDDY (1), A. RATHINAVELU (1). (1) Rumbaugh Goodwin Institute for Cancer research, Nova Southeastern University; (2) College of Medical Sciences, Nova Southeastern University

MED-P07 *Schinus terebinthifolius* extracts inhibit breast cancer cell migration in vitro. S. GUTIERREZ (1), R. PETIT (1), A. PETERSON (1), M. DI SANTI (1), J. BROWN (1), C. PLANCHART (1), M. CRUZ POLANCO (1), V. TROKHYMCHUK (1), V. NAZAIRE (2), A. VALLS (1), D.P. MAUL (1), L. FERNANDEZ-TORRES (1), M. PINA (1), A. TAPANES-CASTILLO (1). (1) School of Science, Technology, and Health, St. Thomas University, 16401 NW 37 Avenue, Miami Garden; (2) School of Science, Miami-Dade College North Campus, 11380 NW 27 Avenue, Miami, FL 33167.

MED-P08 Neuraminic Acid Residues in Pulmonary Adenocarcinomas: Digital Assessment. L. DRIBIN (1), E. KUBÍKOVÁ (2), P. BABÁL (2). P. WEISMANN (2), L. DANIHEL (2), A.T. MARIASSY (1). (1) Nova Southeastern University, College of Medical Sciences, 3200 S. University Dr., Ft. Lauderdale, FL 33328, USA; (2) Comenius University, School of Medicine, Bratislava 81372, Slovakia.

MED-P09 Between two NuRDs. N.L. GOLDEN, K.S. KIM GUISBERT, E. GUISBERT. Department of Biomedical and Chemical Engineering and Sciences Florida Institute of Technology.

MED-P10 Gastrointestinal Barrier: Keratin Cytoskeleton and Heat Shock Proteins to the Rescue. A. MASHUKOVA (1) and P. SALAS (2). (1) Department of Physiology, College of Medical Sciences, Nova Southeastern University, 3200 South University Drive, Fort Lauderdale, FL and (2) Department of Cell Biology, University of Miami Miller School of Medicine, 1600 NW 10th Ave, Miami, FL.

MED-P11 Identification of a Small Molecule That Modifies MglA/SspA Interaction and Impairs Intramacrophage Survival of *Francisella tularensis*. A.P. WRENCH (1), C.L. GARDNER (2), C.F. GONZALEZ (2), G.L. LORCA (2). (1) Nova Southeastern University, (2) University of Florida.

MED-P12 Geranylgeranylacetone increases lifespan and suppresses Alzheimer's disease-related phenotypes in *C. elegans*. I. MOSSIAH, S. PEREZ, and E. GUISBERT. Department of Biomedical and Chemical Engineering and Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

MED-P13 Towards Testing Candidate Alzheimer's Treatments: Development and Optimization of an RT-qPCR Assay for Sir2p Activation. T. POSCH, D. ZULETA, and S.R. CRONIN. Department of Biology, Ave Maria University, 5050 Ave Maria Blvd. Ave Maria FL 34142

MED-P14 Analysis of Amyloid Fiber Gel. D. GOSAVI, M. ZHANG, S. DIXIT, H. BINOMAR, S. XU Department of Biomedical, Chemical Engineering and Sciences, Florida Institute of Technology, Melbourne, FL

MED-P15 Minimum detectible changes associated with tissue dielectric constant (TDC) measurements as applicable to assessing lymphedema status. H.N. MAYROVITZ, A.T. MIKULKA, and D. WOODY. Dr. Kiran C. Patel College of Osteopathic Medicine, Nova Southeastern University, 3200 S. University Drive, Ft. Lauderdale, Florida 33328.

MED-P16 An approach to clarify effects of eccrine gland activation on skin tissue dielectric constant (TDC). B. EISENMAN and H.N. MAYROVITZ. College of Osteopathic Medicine and Medical Sciences, Nova Southeastern University, 3301 College Avenue, Fort Lauderdale, FL 33314.

MED-P17 Efficacy of Bacitracin against common gram-positive nosocomial infections in a natural lipid solvent. L. LU and J. HEYL. Lake Erie College of Osteopathic Medicine – Bradenton, 5000 Lakewood Ranch Blvd, Bradenton, FL 34211.

MED-P18 Effect of lipid compounded Gramicidin on *S. aureus*, *S. epidermis*, and *E. coli*. Z. ALLA, R. CHAMBERS, M. ALLI, and T. ARNOLD. Lake Erie College of Osteopathic Medicine School of Pharmacy, 5000 Lakewood Ranch Blvd, Bradenton, FL 34211.

MED-P19 Analysis of Antibiotic Resistance in Environmental Bacteria. L.S. MBIZA, T. TAYLOR, E. BELLO, R.A. LONG. College of Pharmacy & Pharmaceutical Sciences, Florida A&M University, Tallahassee, FL.

MED-P20 A systematic review on the research describing the pathophysiology of the Florida red tide and blue-green algae blooms. N. PARISIS, A.A. ARIAS, and M. BEST. Lake Erie College of Osteopathic Medicine, 5000 Lakewood Ranch Blvd, Bradenton, FL 34211.

MED-P21 Florida red tide update – public health. M. VON ZIMMERMAN, and M. BEST. Lake Erie College of Osteopathic Medicine, 5000 Lakewood Ranch Blvd., Bradenton, FL 34211.

MED-P22 Assessing the risk of toxin transfer from algae blooms to subsistence fishing communities in Martin County. B.T. FALLS, A.R. RICHARDS, & E.A. WIDDER. One Health, Ocean Research & Conservation Association, Inc., 1420 Seaway Drive, Fort Pierce, FL 34949.

PSS = PHYSICS & SPACE SCIENCES

FRIDAY 8:00 a.m. – 12:30 p.m.
GEUORGUI BOUROV, EMBRY-RIDDLE AERONAUTICAL UNIVERSITY., presiding

8:00 a.m. WELCOME AND ANNOUNCEMENTS

8:15 a.m. PSS-01 Calculation and Measurement of the Interstrip Capacitance on the Readout Board of the GE2/1 GEM Detector. S. BUTALLA and M. HOHLMANN. Department of Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901.

8:30 a.m. PSS-02 Production and Testing of a 3D-Printed THGEM. J. COLLINS, J. HAMMOND, and M. HOHLMANN Florida Institute of Technology, Department of Aerospace, Physics and Space Sciences, 150 West University Blvd, Melbourne, FL 32901.

8:45 a.m. PSS-03 Construction and test of a modular gas electron multiplier for a future electron-ion collider. M. BOMBERGER, J. CHESSLO, N. PITTS, A. WIKRAMANAYAKE, M. HOHLMANN. High Energy Physics Laboratory A, Department of Aerospace, Physics, and Space Sciences, Florida Tech, 150 W. University Blvd, Melbourne FL 32901.

9:00 a.m. PSS-04 Simulation of the forward region of a detector at a future electron ion collider. A.E. WIKRAMANAYAKE, M. BOMBERGER, N. PITTS, M. HOHLMANN. High Energy Physics Laboratory A, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL, 32901.

9:15 a.m. PSS-05 Construction and Testing of the uRWELL Detector for Large Area Tracking Applications. S. ARENDS, J. MIKSANEK, M. HOHLMANN. Florida Institute of Technology, Department of Aerospace, Physics and Space Sciences, 150 West University Blvd, Melbourne, Fl 32901.

9:30 a.m. PSS-06 Operation, Assembly, and Quality Control Testing of 10cm × 10cm GEM Detector to be used for Real Time Radiation Monitoring of High Altitude Aircraft and Spacecraft Flights. D. MADDEN, Z. PAUL, M. HOHLMANN, O. DOULE. Dept. of Aerospace, Physics, and Space Sciences and Dept. of Computer Engineering and Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

9:45 a.m. PSS-07 3D Reinforcing Shells for High-Pressure Ionization Counters. R.A. AUSTIN, T.J. LARSON, and M. SMITH. Florida Polytechnic University, 4700 Research Way, Lakeland, FL 33805.

10:00 a.m. BREAK

10:15 a.m. PSS-08 Characteristics of currents in upward lightning flashes initiated from the Gaisberg Tower. N. WATANABE (1), A. NAG (1), G. DIENDORFER (2), H. PICHLER (2), W. SCHULZ (2), V.A. RAKOV (3), and H.K. RASOUL (1). (1) Department of Aerospace, Physics and Space Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901, (2) Austrian Lightning Detection and Information System, OVE Service GmbH, Kahlenberger Strasse 2A, 1190 Vienna, Austria, (3) Department of Electrical and Computer Engineering, University of Florida, Gainesville, FL 32611.

10:30 a.m. PSS-09 Autonomous Rendezvous and Docking Satellite Maneuver experiments using Air Bearing Vehicles. S. KWOK CHOON, M. WILDE. Florida Institute of Technology

10:45 a.m. PSS-10 Hubble parameter measurement constraints on the redshift of the deceleration– acceleration transition, dynamical dark energy, and space curvature. O. FAROOQ, F.R. MADIYAR, S. CRANDALL, and B. RATRA. Embry-Riddle Aeronautical University.

11:30 a.m. PSS-11 Using Hubble Parameter Measurements to Find Constraints on Dark Energy Based on Different Cosmological Models. W. WILSON, O. FAROOQ, F. MADIYAR. Embry-Riddle Aeronautical University 600 S Clyde Morris Boulevard Daytona Beach, FL 32114.

11:45 a.m. PSS-12 Using Hubble Parameter vs Redshift Data to Place Constraints on Dark Energy Based on Different Cosmological Models. W. WILSON, O. FAROOQ, F. MADIYAR. Embry-Riddle Aeronautical University.

12:00 p.m. PSS-13 Light curve asymmetries in eclipsing binaries. M. KNOTE, K. JOHNSTON, S. CABALLERO-NIEVES, and E. PERLMAN. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

12:15 a.m. FAS SECTION MEETING: PHYSICS AND SPACE SCIENCE, GEUORGUI BOUROV, EMBRY-RIDDLE AERONAUTICAL UNIVERSITY, presiding.

PSS Posters - 3:30 p.m.-5:30 p.m. Friday – Skurla Hall

PSS-P01 Crustal magnetic field map overlaid on 3-D surface of Mars topography for illustration of solar wind interactions. C. SHANAHAN, S. PRYOR, C. RUSH, J.A. RIOUSSET Department of Aerospace, Physics, and Space Sciences Florida Institute of Technology, Melbourne, FL 32901.

PSS-P02 Variable Star Classification Using Multi-View Metric Learning K.B. JOHNSTON (1), S.M. CABALLERO-NIEVES (1), A.M. PETER (2), V. PETIT (3) and R. HABER (4). (1) Aerospace, Physics and Space Sciences Dept., Florida Institute of Technology, 150 W. University Blvd., Melbourne, FL; (2) Computer Engineering and Sciences Dept., Florida Institute of Technology, 150 W. University Blvd., Melbourne, FL; (3) Physics and Astronomy Dept., University of Delaware, Newark, DE (4) Mathematical Sciences Dept., Florida Institute of Technology, 150 W. University Blvd., Melbourne, FL.

PSS-P03 Finding the most effective algorithm to determine stellar variability. S. THOMAS, and K. JOHNSTON. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne FL, 32901.

PSS-P04 The Hunt for Low Mass Companions to Massive Stars in M17. H. THOMSEN, A. RAINOT, M.C. RAMIREZ T. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne FL, 32901.

PSS-P05 Multiplicity Survey of Be type stars in Search for Companions K. KAMP, T. PAINE, S. FOWLER, J. MEADE, and M. LE. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne FL, 32901.

PSS-P06 Studying B-types Stars Using Speckle Imaging, M. LE. Department of Aerospace, Physics, and Space Sciences, Florida Institute of Technology, 150 W. University Blvd. Melbourne FL, 32901. This project looks to investigate further the role of binaries in the formation of Be stars, Cepheid Variables and supernova II progenitors.

RES = FLORIDA COMMITTEE ON RARE & ENDANGERED PLANTS & ANIMALS

DR. I. JACK STOUT, UNIVERSITY OF CENTRAL FLORIDA, Presiding

RES Posters - 3:30 p.m.-5:30 p.m. Friday – Skurla Hall

RES-P01 Florida east coast diamondback terrapin in the southern Indian River Lagoon. J.S. HERR (1), N.P. HO (2), E. DARK (3), and J.A. MOORE (1). (1) Florida Atlantic University 5353 Parkside Drive Jupiter, FL 33458. (2) Coastal Biology Incorporated Sanford, FL 32771. (3) Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves 3300 Lewis Street Fort Pierce, FL 34981.

RES-P02 A Comparative Metagenomic Study of the Microbiome of an Endangered Florida Lupine Species (*Lupinus aridorum*). Y. KHAN (1), J.V. LOPEZ, C. PETERSON (2). (1) Nova Southeastern University; (2) The Rare Plant Conservation Program, Bok Tower Gardens.

SOC = SOCIAL SCIENCES

FRIDAY 8:15 a.m. – 9:30 a.m.
JENNIFER WORTHAM, UNIVERSITY OF TAMPA., presiding

8:15 a.m. WELCOME AND ANNOUNCEMENTS

8:30 a.m. SOC-01 Proof, explanation, and justification in mathematical practice. M. MIZRAHI. School of Arts and Communication, Florida Institute of Technology, 150 W. University Blvd., Melbourne, FL 32901.

8:45 a.m. SOC-02 International correlations among national per capita wealth, income inequality and age-standardized risk (ASR) of breast cancer. A. GALLAGHER (1), C. HENGARTNER (2), and J. MONTAGUE (3). (1) Callen-Lorde Community Health Center, 356 W 18th Street, New York, NY 10011, (2) Department of Biology, Barry University, 11300 NE 2nd Ave, Miami Shores, FL 33161, (3) 121 Lafayette Road Apt 411, Syracuse, NY 13205.

9:00 a.m. SOC-03 International correlations among selected national dietary consumptions and age-standardized risk (ASR) of breast cancer. A. GALLAGHER (1), C. HENGARTNER (2), and J. MONTAGUE (3). (1) Callen-Lorde Community Health Center, 356 W 18th Street, New York, NY 10011, (2) Department of Biology, Barry University, 11300 NE 2nd Ave, Miami Shores, FL 33161, (3) 121 Lafayette Road Apt 411, Syracuse, NY 13205.

9:15 a.m. SOC-04 Childhood Trauma as a Predictor of Depression in Adulthood. A.M. MAY. Barry University, Miami Shores, FL 33161.

9:30 a.m. FAS SECTION MEETING: SOCIAL SCIENCES.
JENNIFER WORTHAM, UNIVERSITY OF TAMPA., presiding

SOC Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

SOC-P01 Addiction, the reward pathway, and social networking platforms: a systematic review. V. CHISHOLM, C. WHITEHEAD, and B. KELLER. Lake Erie College of Osteopathic Medicine, 5000 Lakewood Ranch Blvd, Bradenton, FL, 34211

SOC-P02 How do blogs facilitate the promotion of health narratives in people with Systemic Lupus Erythematosus, and why are "success stories" not the ultimate goal? A.A. ROLAND. Florida Atlantic University. 5353 Parkside Drive, Jupiter, FL 33458.

SOC-P03 Early-childhood trauma as a determinant of unhealthy adult attachment styles. K. NICOLAEV. Barry University, 11300 NE 2nd Avenue, Miami Shores, FL 33161.

SOC-P04 Childhood Trauma and The Development of Purpose in Life, R. JOHNSON and L. BACHELLER. Department of Psychology, Barry University, 11300 NE 2nd Avenue, Miami Shores, FL 33161.

SOC-P05 The Effects of The Definition Focus on Attitudes Toward Transgender People. J. VOSS Barry University.

TCH = SCIENCE TEACHING
Meeting with CMS

FRIDAY 8:00 a.m. – 10:00 a.m.
THOMAS ARNOLD, LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE & CARMEN CARPENTER, SOUTH UNIV., presiding

8:00 a.m. WELCOME AND ANNOUNCEMENTS

8:15 a.m. TCH-01 An Interprofessional Research Program Involving Students of Osteopathic Medicine and Pharmacy T.P. ARNOLD.; Lake Erie College of Osteopathic Medicine, Bradenton Florida, 34211

8:30 a.m. TCH-02 Testing hypotheses about mathematical practice: Are aesthetic judgements in mathematics purely aesthetic? M. INGLIS (1) and A. ABERDEIN (2). (1) Mathematics Education Centre, Loughborough University, Loughborough, Leicestershire. LE11 3TU, (2) School of Arts and Communication, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901.

8:45 a.m. TCH-03 Supplemental Instruction & Its Role in Teaching and Learning General Chemistry at a Small Liberal Arts University J.K. WILLIAMS, Department of Mathematics & Sciences, Saint Leo University, P.O. Box 6665 Saint Leo, FL. 33574

9:00 a.m. TCH-04 Implementation of the SEA-PHAGES Phage Discovery and Bioinformatics Lab – a Course-based Undergraduate Research Experience - at Hillsborough Community College, Tampa, Florida. M. HOPSON-FERNANDES, C. LOGUE, D. WINGFIELD, L. SMITH, and J. WYSONG. Mathematics and Sciences Division, Hillsborough Community College, Dale Mabry Campus, 4001 W. Tampa Bay Boulevard, Tampa, Florida 33614.

9:15 a.m. CMS-01

9:30 a.m. CMS-02

9:45 a.m. FAS SECTION MEETING: SCI. TEACHING
THOMAS ARNOLD & CARMEN CARPENTER, presiding

TCH Posters - 3:30 p.m.-6:30 p.m. Friday – Skurla Hall

TCH-P01 Approaches to Advance Recognition of Various Strengths by Students: Comparison of Self-assessment and Online Assessment Tests. S. BYK (1), C. PURVIS (1), Y. ZAGVAZDIN (1), A. MASHUKOVA (1), and E. SCHMITT-LAVIN (2). (1) College of Medical Sciences and (2) Halmos College of Natural Sciences and Oceanography, Nova Southeastern University, 3200 South University Drive, Fort Lauderdale, FL 33328.

TCH-P02 Strengths and Personality Personal Preference Profiles in First Year Optometry Students. S. BYK (1), C. PURVIS (1), Y. ZAGVAZDIN (2), A. MASHUKOVA (2), B. ZHANG (3), I. HENSON (3). (1) Department of Anatomy

and (2) Physiology, College of Medical Sciences, and (3) Medical Sonography Program, Pallavi Patel College of Health Care Sciences, Nova Southeastern University, 3200 South University Drive, Fort Lauderdale, FL 33328.

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FAS 2019 SCHEDULE

Oral Sessions	***Friday Morning***
AGR	10:30 a.m. - 12:30 p.m.
ANT *(with GEO)*	10:00 a.m. - 12:00 p.m.
AOS	8:00 a.m. - 10:15 a.m.
BIO	8:45 a.m. - 12:30 p.m.
CMS *(with TCH)*	8:00 a.m. - 10:00 a.m.
ENG	8:30 a.m. - 10:00 a.m.
ENV	10:15 a.m. - 11:15 a.m.
GEO *(with ANT)*	10:00 a.m. - 12:00 p.m.
MED	10:30 a.m. - 12:00 p.m.
PSS	8:00 a.m. - 12:30 p.m.
RES	Posters only
SOC	8:15 a.m. - 9:30 a.m.
TCH *(with CMS)*	8:00 a.m. - 10:00 a.m.

Poster Session: Skurla Hall
3:30 PM – 6:30 PM

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