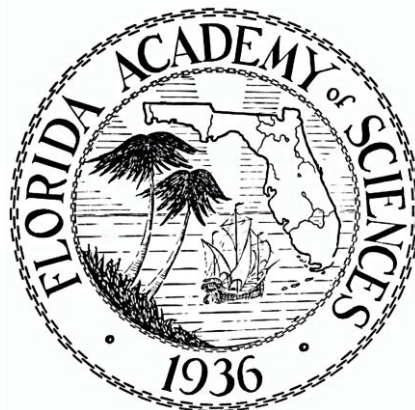


CALL FOR ABSTRACTS



The 90th Annual Meeting of the FLORIDA ACADEMY OF SCIENCES

will be held at

Saint Leo University
Saint Leo, Florida
March 19, 2027

All FAS abstracts must be submitted online at
<https://www.flacademyofsciences.org/abstract-submission/>

Abstract Deadline: Friday, 29 January 2027

Please note that acceptance is not guaranteed.

Abstract Topics: Abstracts on completed research projects (no research proposals allowed) in any aspect of science or engineering are solicited. You are cordially invited to organize additional sessions or symposia in any **area of science, engineering or science education**. For further information and procedures, visit the academy's web page located at <https://www.flacademyofsciences.org/fas-annual-meeting> or contact the FAS Program Chair, Dr. David Karlen (Environmental Protection Commission of Hillsborough County) at 813-627-2600 x1202, email karlen@epchc.org.

The Florida Academy of Sciences (FAS), the only professional STEM organization in Florida, is strongly and decisively dedicated to supporting diversity, equity, inclusion, and justice (DEIJ) in scientific practices and STEM education in the state of Florida. The Academy considers DEIJ values as being crucial to academics and to the advancement of scientific research in Florida. Scientists with distinct and diverse backgrounds and viewpoints are encouraged to participate in our annual meeting and other FAS events, as well as publish in the peer-reviewed journal [Florida Scientist](#).

Section Chairs, 2026-2027, Florida Academy of Sciences

- AGR Agricultural and Natural Resources:** Dr. Tom D’Ella, Biological Sciences Department
Indian River State College, Fort Pierce, FL 34981, phone: 772-462-7492, email: tdelia@irsc.edu
- ANT Anthropological Sciences:** Dr. David Karlen, Environmental Protection Commission of Hillsborough County, 3629 Queen Palm Drive, Tampa, FL 33619, phone: 813-627-2600 x1202, email: karlen@epchc.org
- AOS Atmospheric and Oceanographic Sciences:** Dr. David Karlen, Environmental Protection Commission of Hillsborough County, 3629 Queen Palm Drive, Tampa, FL 33619, phone: 813-627-2600 x1202, email: mailto:karlen@epchc.org
- BIO Biological Sciences:** Ms. Kym Holzward, Water and Air Research, Inc., 6821 SW Archer Road, Gainesville, FL 32608, phone: 813-482-4028; email: kholzward@waterandair.com; and Co-Chair Dr. Melba Horton, Southeastern University, Lakeland, FL 33801, phone: 863-667-5542; email: mdhorton@seu.edu
- CMB Conservation and Management Biology:** Dr. I. Jack Stout, Department of Biology, University of Central Florida, Department of Biology, 4000 Central Florida Blvd., Orlando, FL 32816-2368, phone: 407-823-2919, email: i.stout@ucf.edu; and Co-Chair Ms. Kym Holzward, Water and Air Research, Inc., 6821 SW Archer Road, Gainesville, FL 32608, phone: 813-482-4028; email: kholzward@waterandair.com.
- CMS Computer/Mathematical Sciences:** Dr. Juan Calderon, Department of Mechanical Engineering, Embry-Riddle Aeronautical University, 1 Aerospace Blvd, Daytona Beach, FL 32114, phone: 863-399-8520, email: caldej28@erau.edu
- ENG Engineering:** Dr. Sesha Srinivasan, Clean Energy Research Center, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620, USA: phone: 813-451-1876, email: sesha.srinivasan@gmail.com; and Co-Chair Dr. Muhammad Ullah, Department of Electrical and Computer Engineering Florida Polytechnic University 4700 Research Way, Lakeland, FL, 33805, phone: 863-874-8663, email: mullah@floridapoly.edu
- ENV Environmental Chemistry and Chemical Sciences:** Dr. Jerome Williams, Department of Math and Science, Saint Leo University, 33701 State Road 52, Saint Leo, FL 33574, phone: 352-588-8336, email: Jerome.williams@saintleo.edu and Co-Chair Dr. Darin Bell, Saint Leo University, 33701 State Road 52, Saint Leo, FL 33574, phone: 352-588-7368, email: darin.bell@saintleo.edu
- GEO Geosciences:** Dr. Al Karlin, Dewberry, 1000 North Ashley Drive Suite 801, Tampa, FL 33602, phone: 813-421-8625, email: akarlin@Dewberry.com; and Co-Chair Dr. Bruce W. Nocita, S&ME, Inc. 111 Kelsey Lane, Suite E, Tampa, FL 33619, phone: 813-623-6646, email: bnocita@smeinc.com
- MED Medical Sciences:** Dr. Melissa Borgen, Department of Biomedical Engineering & Science, Florida Institute of Technology, 150 W. University Blvd. Melbourne, FL 32901, phone: 321-674-7133. email: mborgen@fit.edu and Co-Chair Dr. Shyam Mohapatra, College of Pharmacy, College of Medicine Internal Medicine, University of South Florida, 4202 E. Fowler Ave. Tampa, FL, 33620, phone: 813-974-8568, email: smohapat@usf.edu
- PSS Physics and Space Sciences:** Dr. Geuorgui Bourov, Embry-Riddle Aeronautical University, 600 S 1 Aerospace Blvd, Daytona Beach, FL 33574, phone: 386-323-8829, email: bouro987@erau.edu; Co-Chair Dr. Emadelden Fouad, Florida Polytechnic University 4700 Research Way, Lakeland, FL, 33805, phone: 941-822-5195, email: efouad@floridapoly.edu
- SOC Social Sciences:** Dr. Jennifer Wortham, University of Tampa 401 W. Kennedy Blvd. Tampa, FL 33606, phone: 813-257-1722, email: jwortham@ut.edu
- TCH Science Teaching:** Dr. Tom Arnold, phone: 941-782-5672, email: n4vhg@yahoo.com; and Co-Chair Dr. Matthew Tucker, LECOM-Bradenton, 5000 Lakewood Ranch Blvd, Bradenton, FL 34211, email: MTucker@lecom.edu
- Local Arrangements Chair:** Dr. Iain Duffy, Saint Leo University, 33701 County Road 52, St. Leo, FL 33574, phone: 352-588-8410, email: iain.duffy@saintleo.edu
- Program Chair:** Dr. David Karlen, Water Management Division, Environmental Protection Commission of Hillsborough County, 3629 Queen Palm Drive, Tampa, FL 33619, phone: 813-627-2600x1202, email: karlen@epchc.org

FLORIDA ACADEMY OF SCIENCES 90th ANNUAL MEETING

MARCH 19, 2027

MEETING INFORMATION

OVERVIEW

The 90th [Annual Meeting](#) of the Florida Academy of Sciences will be held at [Saint Leo University](#) on 19 March 2027. Abstracts on all aspects of science and engineering are solicited for general sessions in all [sections of the Academy](#) (list of sections on previous page). Any person or section interested in organizing a special session or symposium should contact the appropriate [Section Chair](#) or the [Program Chair](#) for further information.

Saint Leo University

[Saint Leo University](#) was founded in 1889 by Benedictine monks and is proud to be one of the oldest Catholic universities in Florida and the largest of four Catholic higher education institutions in Florida. Saint Leo University offers more than 60 high-demand undergraduate and graduate majors and minors, giving students the flexibility to earn their degree on campus, online, or at regional education centers nationwide. No matter the learning format, students benefit from the same rigorous academics, supportive faculty, and impactful learning experiences that define a Saint Leo education. Saint Leo University serves more than 14,000 students from all 50 states, the District of Columbia, three U.S. territories, and more than 100 countries. Saint Leo University is proud to be one of the nation's leading providers of higher education to the U.S. military. More about Saint Leo University's history can be found at: [St. Leo University History](#).

DRIVING DIRECTIONS AND PARKING

[Saint Leo University](#) is in Pasco County at 33701 County Road 52, St. Leo, FL 33574. [Driving directions](#) are located on the Saint Leo University website: <https://www.saintleo.edu/student-experience/visit>. Once on campus look for signage with the Academy's name, acronym, or logo to direct you to meeting parking. Parking on campus will be free in designated FAS Meeting parking lots. [Campus map](#)

DAYS, TIMES AND SESSION SCHEDULES

The scheduling is:

- **Friday sessions** (all Senior Academy): AGR, ANT, AOS, BIO, CMB, CMS, ENG, ENV, GEO, MED, PSS, SOC, and TCH. See page 2 for explanation of abbreviations.
- **Saturday sessions:** [Florida Junior Academy of Science](#)

The scheduling details will be finalized in early March 2027.

REGISTRATION

All presenters and attendees must register and pay the appropriate registration fee.

Early registration (Until March 01, 2027):

- Regular member, \$40
- Regular non-member, \$55
- Student member, \$20
- Student non-member, \$25

Late registration (after March 01, 2027 including on-site registration):

- Regular member, \$45
- Regular non-member, \$60
- Student member, \$25
- Student non-member, \$30

Payment of 2026 or 2027 dues is sufficient for classification as a member or student member. **If you are unable to access the member portal with your email and password, your membership might not be up to date. If there are any issues login to your account, please email: <mailto:admin@flacademyofsciences.org>**

Register at:

- Members: <https://www.flacademyofsciences.org/meeting-registration/>
- Non-Members: <https://www.flacademyofsciences.org/registration-for-non-members/>

LOCAL ARRANGEMENTS

The **Local Arrangements Chair** for the Annual Meeting is **Dr. Iain Duffy** (see contacts, p. 2). He should be consulted about any special meeting needs.

LODGING

No reservations can be made through the Academy. There are several hotels located near Saint Leo, and several offer special rates for campus visitors. A **list of the hotels**, contact information, and discount codes is given at <https://www.saintleo.edu/student-experience/visit>.

Discounted reservations must be made directly with the hotels by calling their local telephone numbers. Final rate might depend on the time of year, length of stay, and the type of room selected. Be sure to mention that you are visiting Saint Leo University and ask for the Saint Leo rate.

MEALS

Breakfast, lunch, dinner, and snacks will be available at several locations on campus during the meeting. **Campus maps** and other information at the Registration Desk will direct participants to dining options on and near campus.

MEDALIST SESSION SPEAKER

The Medalist Address will be given on Friday, March 19th, immediately following the business meeting. The address will be given by the 2026 **FAS Medalist**, **Dr. Norma Alcantar**, University of South Florida, Chemical, Biological, and Materials Engineering.

FLORIDA JUNIOR ACADEMY OF SCIENCE ANNUAL MEETING

The **Junior Academy** will meet on Saturday March 20th, 2027. As the **student division of FAS**, the Florida Junior Academy of Science (FJAS) 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. The FJAS is seeking volunteers to assist in judging and to act as section moderators at its meeting on Saturday, March 20, 2027. The Junior Academy is also seeking individuals in early February of 2027 to evaluate research papers submitted for this meeting. Persons interested in participating in this rewarding experience should contact **Ms. Leya Joykutty**, FJAS Director, email: leyajoykutty@gmail.com

NOMINATIONS FOR THE FAS MEDALIST

The Florida Academy of Sciences encourages its members and non-members to submit formal nominations for candidates to be considered as the 2027 Medalist. A list of past medalists going back to the first award in 1963 can be found here: [Florida Academy of Sciences Medalists 1963–2026](#).

Nomination Procedure: 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 the 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. The nominee does not need to be a member of FAS nor do you have to be a member to submit a nomination.

A nomination form ([docx](#) or [fillable pdf](#)) is also available on the Academy's website at

<https://www.flacademyofsciences.org/fas-medalist/>

Please email the completed form and any supporting materials as a pdf file to:

Dr. **Sesha Srinivasan**, Chair FAS Honors Committee, admin@flacademyofsciences.org

Or mail print materials to Dr. Srinivasan at:

Dr. Sesha Srinivasan, Chair

FAS Honors Committee

1821 Altavista Cir.,

Lakeland, FL 33810

Your nomination form must arrive no later than **January 15, 2027**. The Committee might ask you to obtain a copy of your nominee's resume or curriculum vitae.

COMMERCIAL AND INSTITUTIONAL EXHIBITS

Space is available on a first come first served basis. Exhibits by research institutions or organizations offering programs of an informational nature may be given free space. Parties interested in fees or free spaces should contact the FAS Office for details:

Florida Academy of Sciences, P.O. Box 668, Melbourne, FL 32902

Email - flacademyofsciences@gmail.com

STUDENT AWARDS

Students presenting papers at the [Annual Meeting](#) of the Academy, and who are registered for the Meeting, may be considered for [several awards](#). Details are presented below. Students wishing to be considered for one or more of these awards should indicate their interest on the [FAS abstract submission website](#). Dr. Sarah Krejci is the Awards Chair, and she can be contacted at: Dr. Sarah Krejci, at skrejci@vt.edu. Student awardees may be asked to submit a photo of themselves for the Academy website and social media.

1. [Outstanding Student Paper Award](#) – This award is presented by any of the Academy Sections to graduate and undergraduate students for oral and poster presentations.
2. [Al Hall Memorial Award \(student award in Engineering\)](#) – The student shall have the following or must meet the following criteria:
 - Enrolled full-time in an ABET accredited engineering school.
 - Be a Junior/Senior/Graduate Student.
 - Be an FAS student member prior to presenting a paper or poster at the Annual Meeting of the Academy.

The award shall be given for an oral paper or poster that judges at the Annual Meeting of the Academy deem outstanding in nature. This award shall be given only to one recipient annually. The winner of the [Al Hall Memorial Award](#) receives a monetary gift, plaque, and certificate for the outstanding paper and/or poster presentation at the FAS Annual Meeting.

3. [Dr. Elizabeth A. Hays Travel Award](#) – The Florida Academy of Sciences provides travel support to eligible college and university students and recent graduates who will present research at the FAS Annual Meeting. This program is supported by the endowed [Dr. Elizabeth A. Hays Travel Award Fund](#). To be [eligible](#) for a Hays Travel Award, an applicant must:
 - Be a current student or recent graduate of a Florida college or university, including students participating through dual enrollment. Recent graduates are eligible when presenting research completed as part of their undergraduate, master's, or doctoral studies. For purposes of this award, a recent graduate is an individual who completed their degree within 12 months of the Annual Meeting.
 - Be an author or co-author of an accepted oral or poster presentation at the FAS Annual Meeting.
 - Personally present the accepted work at the Annual Meeting. Applicants who are authors or co-authors but attend the meeting without presenting are not eligible for the Hays Travel Award.
 - ***APPLY ONLINE BY FEBRUARY 12, 2027:***
<https://www.flacademyofsciences.org/dr-elizabeth-a-hays-travel-award/>

FLORIDA ACADEMY OF SCIENCES 90th ANNUAL MEETING
MARCH 19, 2027

INSTRUCTIONS FOR ABSTRACT SUBMISSION

ONLINE SUBMISSION

The abstract online submittal form is available at: <https://www.flacademyofsciences.org/abstract-submission/>

Abstracts on completed research projects in any aspect of science or engineering are solicited (no research proposals allowed). All abstract submissions will be reviewed, and authors will be notified of abstract acceptance in February 2027.

Florida Academy of Sciences AI Policy: The Florida Academy of Sciences (FAS) recognizes that artificial intelligence (AI) tools are becoming increasingly integrated into research, education, and professional practice. FAS encourages contributions that advance the construction of Large Language Models (LLMs), Convolutional Neural Networks (CNNs), and similar technologies. Contributors should use AI tools ethically, transparently, and in ways that uphold the FAS mission of promoting scientific excellence. AI should be used to assist, and not replace, critical thinking, originality, or scholarly integrity. FAS requires researchers to fully disclose the use, context, and extent of AI on all contributions (see below). Researchers remain fully responsible for verifying accuracy and ensuring compliance with professional and academic standards.

For abstract submission for student awards, FAS requests complete names of all authors, email addresses and contact information (including street addresses, city and ZIP codes), organizational departments, student status (undergraduate or graduate) phone numbers, *etc.* Please identify which student author will be presenting and include name and email of student's advisor.

PUBLICATION OF FAS ABSTRACTS

All accepted and presented abstracts will be published in *Florida Scientist* (Volume 90).

DIRECTIONS FOR ABSTRACT PREPARATION

Abstracts must be typed (or text may be cut-and-pasted) into the appropriate submission windows on the website (see [URL](#)). **We ask all authors to adhere strictly to the instructions shown below to achieve uniform publication; please follow the directions carefully. Failure to adhere to the instructions will delay the acceptance of your abstract.** Sample abstracts follow at the end of this document and are also posted on the [online submission](#) website shown above.

Abstract Size: No more than 350 words (*including* title, authors, affiliations, *etc.*). ***It is crucial for publication that abstracts are kept within this limit...the submission software is designed to truncate abstracts at 350 words.***

Order of parts: Title, author(s), affiliation(s), text (including acknowledgment of financial and technical assistance).

Title: Upper case 1st letter for the 1st word of the title, and for 1st letter of proper nouns, followed by a period.

Author(s): Immediately following title. Author's first name, middle initials (optional) and last name. If multi-authored, use "and" in lowercase before last author. Use superscript numbers in parenthesis to indicate different author affiliations (please see example abstracts). Author(s) section should be followed with a period.

Affiliation(s): Immediately following author(s). Name of institution, city, state abbreviation. Use standard abbreviations (e.g., Dept., Inst., Univ., Geol.) only if necessary to save space for text and followed with a period.

Text: Immediately following affiliations. According to standard typing of scientific text in respective discipline. Italicize genus and species names.

Keywords: Up to five keywords (these are not counted as part of the word count limit).

Corresponding author: Email address of primary author/presenter

POSTERS

Poster exhibits of STEM studies on any topic are encouraged and will be displayed during the annual meeting. *Poster presentations must include an abstract to be submitted online by January 29, 2027.* All poster abstracts will appear in the Program Issue. Available space for posters is limited and only 100 posters can be accommodated. Acceptance will be on a first come, first served basis so early submission is encouraged. Additional poster submissions may be asked to switch to an oral presentation.

POSTER FORMAT

Maximum size is approximately 3'×4'. We request posters to be printed/displayed in landscape view.

AUDIO VISUAL EQUIPMENT

The standard presentation format will be PowerPoint slides submitted to the session chair prior to the session meeting. We expect presenters will have their PowerPoint presentations available on their personal thumb-drive/memory-stick devices to be uploaded onto the room computer 15 minutes before the beginning of their session.

Presenters should contact the [Program Chair](#) if they require any special AV equipment.

WHEN TO SUBMIT

The deadline for abstract submittal is *Friday, January 29, 2027*, but FAS *strongly* encourages early submissions.

PLANNING YOUR PRESENTATION

Each speaker will have 15 minutes for their presentation. There will be no exceptions to this rule. It is recommended that your presentation last approximately 12 minutes to allow time for questions. Your [Section Chair](#) or moderator will give you a signal as the end of 12 minutes approaches. Please plan on being present when the session in which you are going to speak begins. Your [Section Chair](#) may have instructions that speakers need to hear. In addition, if you are going to be using special AV equipment you should be in the meeting room 15 minutes before the start of your session to see that this equipment is working properly.

QUESTIONS?

Contact your [Section Chair](#) (page 2), or the [Program Chair](#), Dr. David Karlen at: karlen@epchc.org. Please check the FAS website for further updates: <https://www.flacademyofsciences.org/fas-annual-meeting/>

Abstract sample, one or more than one author from same institution:

Thirty-year trends in the benthic macroinvertebrate community of Tampa Bay.

David J. Karlen, Thomas L. Dix, Kevin W. Campbell, Julie Christian, Barbara K. Goetting, Sara E. Markham, Joette Jernigan, Anthony Chacour, Kirsti Martinez.
Environmental Protection Commission of Hillsborough County, Tampa, FL.

Tampa Bay is the largest open water estuary in Florida and is home to one of the largest ports on the east coast of the United States. The Environmental Protection Commission of Hillsborough County has been collecting sediment samples in Tampa Bay since 1993 to monitor sediment contaminants and long-term changes in the benthic macroinvertebrate community, as a measure of the Bay's ecological health. Over the 30-year period, 1993-2022, a total of 2,011 samples were processed, and approximately 1,600 benthic macroinvertebrate taxa have been identified. Overall median species richness was 38 taxa/sample with a median abundance of 6,575 individuals/m². The most abundant species were the cephalochordate *Branchiostoma floridae* and the brachiopod *Glottidia pyramidata*, comprising 4.98% and 4.03% of the overall abundance, respectively. Sediment composition and dissolved oxygen were the physical factors that most strongly influenced the benthic community structure. Species richness increased from the upper to lower segments of the Bay, which corresponded to increasing salinity and decreasing silt+clay content. Temporal changes in the benthic community structure correlated with salinity and water quality. Decreases in species richness and changes in species composition were observed in lower salinity years. An overall increasing trend in the benthic species richness was apparent over the 30-year monitoring period which reflects observed changes in Tampa Bay's water quality and seagrass coverage.

Keywords: Tampa Bay, long-term monitoring, benthic infauna, benthic communities.
Corresponding author: David Karlen, karlen@epchc.org

Abstract sample, more than one author from two or more institutions:

Post-restoration recovery of the benthic macrofaunal community at the McKay Bay dredge hole in Tampa Bay. David J. Karlen⁽¹⁾, Kris A. Kaufman⁽²⁾, Thomas L. Dix⁽¹⁾, Kevin W. Campbell⁽¹⁾, Joette M. Jernigan⁽¹⁾, Sara E. Markham⁽¹⁾ and Barbara K. Goetting⁽¹⁾. ⁽¹⁾ Environmental Protection Commission of Hillsborough County, Tampa, FL, ⁽²⁾ Southwest Florida Water Management District, Tampa, FL. Dredge holes are submerged borrow pits left when sediments are dredged to provide fill for construction projects. The Tampa Bay Estuary Program conducted a study evaluating the habitat quality of dredge holes in Tampa Bay in 2003 and ranked the McKay Bay dredge hole as the worst in terms of poor water and sediment quality and a degraded benthic community. The study recommended that this dredge hole should be filled in order to eliminate hypoxic conditions and allow for the establishment of a healthy benthic community. The Southwest Florida Water Management District provided funding for filling the dredge hole using fill material provided by Port Tampa Bay from the dredging of a new berth and a mitigation project on the McKay Bay peninsula. The Environmental Protection Commission of Hillsborough County conducted pre- and post- restoration benthic monitoring to evaluate the success of the project. A total of 30 sites were sampled in August 2011 prior to restoration and resampled in May 2014 approximately 1 year after the dredge hole was filled. Fifteen sites were within the dredge hole and 15 sites were located outside of the dredge hole as controls. Post-restoration results indicated improvements in bottom dissolved oxygen within the restored area and an increase in benthic species richness. Benthic species composition was also more similar between the dredge hole and control sites indicating the restoration was successful in restoring the benthic community.

Keywords Tampa Bay, dredge hole, restoration, benthic infauna, sediment habitats
Corresponding author: David Karlen, karlen@epchc.org

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