

Virginia Academy of Science
100th Annual Meeting May 25-26, 2023



Celebrating the Centennial
1923 - 2023

William and Mary
Williamsburg, VA

The Virginia Academy of Science

The **Virginia Academy of Science** (VAS) is the fifth largest state, region, or city academy of science in the U.S.; it was founded in 1923 to promote the civic, academic, agricultural, industrial, and commercial welfare of the people of Virginia. Exemplary programs have included *Flora of Richmond and Vicinity*, Published, 1930, the first comprehensive multidisciplinary studies of the James River Basin and the Great Dismal Swamp, volunteer research assistance to Virginia in the instance of the Kepone pollution disaster, and leadership in establishing the Science Museum of Virginia.

Annual Meetings:

The Academy enjoys two annual meetings, one in Fall (historically, around the last week in October) and one in Spring (around the last week in May).

Our [Fall Meeting](#) is held as an Undergraduate Research Proposal fair, during which students from Virginia Universities (public and private) participate in a competitive poster session. Exceptional presentations are [awarded grant funding](#) from the Academy to complete their projects. Historically, we have been able to award up to eight \$750 research grants. Students who receive grant funding are expected to present their research at the subsequent Spring meeting of the Academy.

The 2023 Fall Meeting is *tentatively* scheduled for Saturday, October 28 at Virginia Union University in Richmond, VA

We always appreciate faculty who are willing to serve as judges at our Fall meeting. If you are interested, please contact Parrish Waters (rwaters@umw.edu).

Our [Spring Meeting](#) is a traditional expose of undergraduate and graduate research. We have enjoyed 100 years of meetings, bringing us to this Centennial Meeting at William and Mary. Students and representatives from over 30 Virginia organizations and Universities regularly participate in this meeting, presenting their research and ideas that span 16 scientific disciplines in oral and poster formats.

The Virginia Junior Academy of Science

[VJAS](#) is a national model for the new and renewing state junior academies and has been ranked among the top three in the nation for over two decades. Through VJAS and other programs, VAS annually reaches over 40,000 Virginia middle and high school students. Hundreds of volunteers make it possible for Virginia secondary students to experience these activities.

A Tradition of Excellence, A Commitment to Action Join the Virginia Academy of Science Support the Virginia Academy of Science

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2023 Officers of the Virginia Academy of Science



P
J. Sarg
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College

President-Elect.....
Vice-President.....
Secretary.....
Treasurer.....
Executive Office.....
Executive Officer Emeritus.....
Associate Executive Officer.....

Madison University, Harrisonburg, VA
Mary Washington, Fredericksburg, VA
Old Dominion University, Norfolk VA
Mary Washington, Fredericksburg, VA
Virginia Academy of Science, Richmond, VA
Arthur I. Conway. Virginia Academy of Science, Richmond, VA
Carolyn M. Conway. Virginia Academy of Science, Richmond, VA

2023 Officers of the Virginia Junior Academy of Science

Director..... Susan Booth
Associate Director..... Robin Curtis

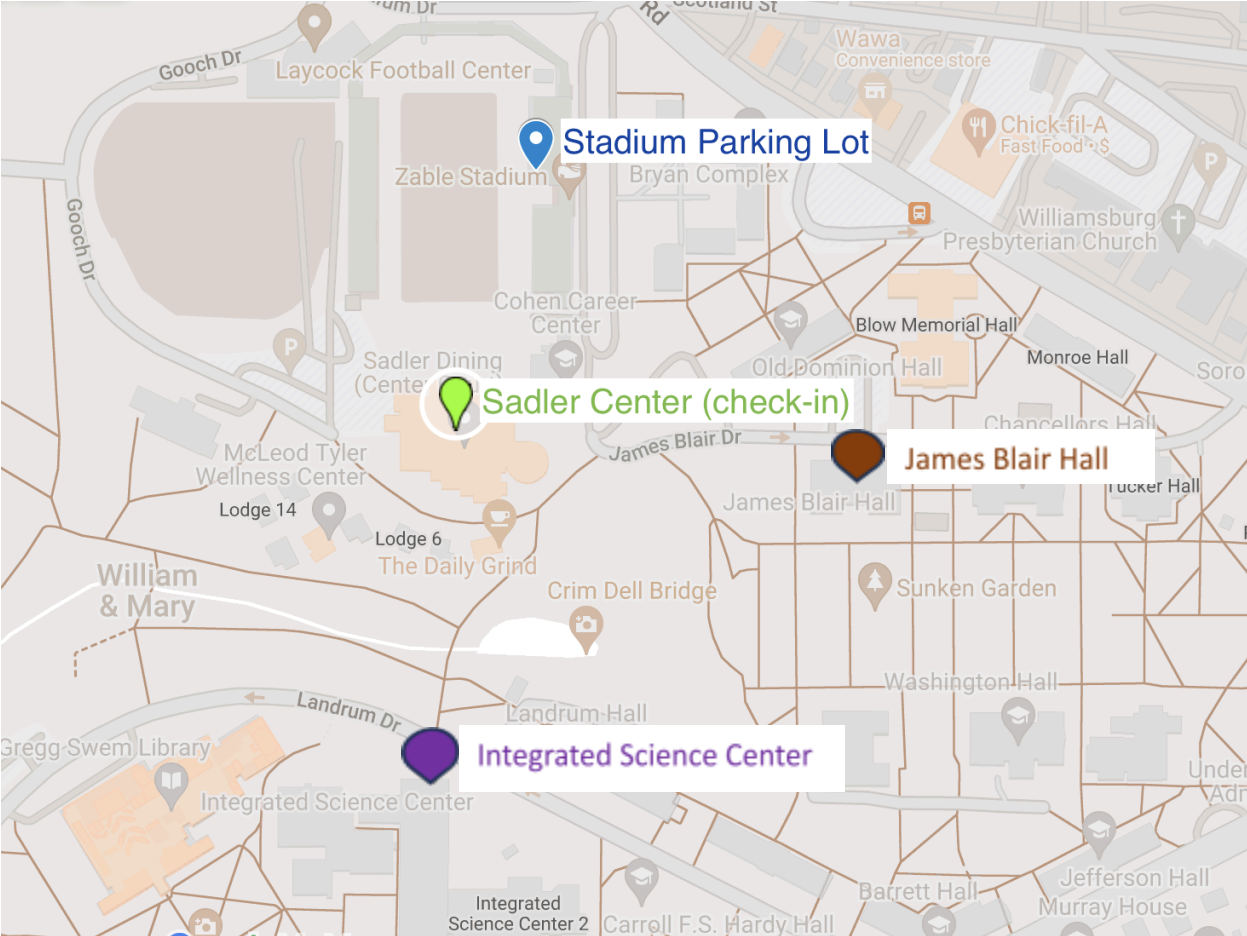
Student Leadership

Co-Presidents..... Laasya Konidala
Arman Lateef
Vice President..... Charlotte Cunningham
Secretary..... Yash Saxena
Communications Liaison..... Nitya Kumar

Co-Editors-in-Chief of *VJAS Voice*..... Jacob Tiller
Rania Lateef
VJAS Voice

VJAS Student Advisory Committee..... Lynn Tao
Sriyutha Morishetty
Harris Ilyas
Justin Kim

William and Mary campus map, Stadium Parking, Sadler Center (check-in), and James Blair Hall



President's Welcome

VAS Spring Conference Overview Schedule and Locations

Thursday, May 25

- 8:00-8:30 am Coffee and Light Pastries
- 8:00-10:00 am Check-in and Late registration
Sadler Center main floor
- 8:00-9:00 am VAS Poster Check-in and setup
- 8:30-12:00 pm **Oral Presentations by academic sections**
note individual section schedules
- 8:30-9:15 am **Environmental and Conservation Science / Natural History**
meeting in James Blair Hall 219
- 8:30-10:15 am **Entomology**
meeting in James Blair Hall 205
- 9:00-10:45 am **Education / Psychology**
meeting in Sadler Center 1111
- 9:15-11:45 am **Chemistry / Structural Biology**
meeting in Sadler Center 1280
- 9:45-11:45 am **Botany**
meeting in James Blair Hall 201
- 9:45-11:45 am **Biology**
meeting in James Blair Hall 223
- 3:15-4:15 pm **Astronomy, Math, Physics / Data Science, Computing, Statistics, and Material Science**
meeting in Sadler Center 2280.
- 3:15-4:30 pm **Medical Science / Biomedical and General Engineering**
meeting in James Blair Hall 221
- 12:00-12:30 pm Section Business Meetings
- 12:30-1:00 pm break before lunch
- 1:00-3:00 pm Lunch and Negus Lecture
- 3:30-5:00 pm **Poster Sessions-** *Poster Authors will be present to discuss posters and answer questions*
- 5:00-6:00 pm VAS Fellows Meeting
- 6:00-7:30 pm VAS Banquet, Awards, Installation of VAS Officers

Friday, May 26

- 9:00-11:00 am VAS Council Breakfast and Meeting
ALL VAS COUNCIL MEMBERS SHOULD ATTEND

Section: ENVIRONMENTAL AND CONSERVATION SCIENCE

Chair: James Haluska, Retired Oceanographer

Vice-Chair: Katherine O'Neill, Roanoke College

Secretary: Chelsea Peterrs, Roanoke College

Councilor: William Kissner, Dinwiddie County High School

ORAL PRESENTATION SESSION: Thursday Afternoon, May 25, 2023

James Blair Hall, Room 219, 3:15 pm – 4:00 pm

James Haluska, Presiding

8:30 Opening Remarks. TBA

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8:45 Factors associated with a complacent growth pattern in atlantic white cedar (*Chamaecyparis thyoides*) stands at the great dismal swamp, Southeastern Virginia, USA. D Kalmbach¹, RB Atkinson². ¹Environmental Science, Christopher Newport University, ²Organismal and Environmental Biology, Christopher Newport University

9:00 Comparison of swab and tissue samples for detection of *Ophidiomyces ophiodiicola* in Eastern Wormsnakes (*Carphophis amoenus amoenus*). RM Goodman¹, RP Mahaffy¹, G Blanvillain², HR Carman¹. ¹Biology Department, Hampden-Sydney College, ²Biological Sciences, Virginia Polytechnique and State University

9:15 Evidence for carnivory in harvestmen based on stable nitrogen isotopes and SEM analysis of fecal samples. Maynard Schaus, Victor R Townsend, Jr., Sara Wiltshire, Monika Metro. Biology, Virginia Wesleyan University

Section: ENTOMOLOGY

Chair: Thomas Kuhar, Virginia Tech

Vice-Chair: Kal Ivanov, Virginia Museum of Natural History

Secretary: Laura McHenry, Virginia Tech

Editor: Rob Ostrom, Virginia Tech

Councilor: Shannon Bradley, Old Dominion University

ORAL PRESENTATION SESSION: Thursday Morning, May 25, 2023

James Blair Hall Room 205 8:30 am-9:30

- 9:00 Opening Remarks. Thomas Kuhar Dept. of Entomology, Virginia Tech
- 9:15 Mating disruption of the diamondback moth in Southern Virginia. T Sydnor, T Kuhar, and A Del Pozo-Valdivia. Department of Entomology, Virginia Polytechnic Institute and State University
- 9:30 Investigating cucurbitacin gustatory stimulants for enhancing cucumber beetle control in cucurbits. D Nunez, and T Kuhar. Department of Entomology, Virginia Polytechnic Institute and State University
- 9:45 The effect of abiotic factors on *Beauveria bassiana* entomopathogenic fungal outgrowth. M Pagani, S Jaronski, and T Kuhar. Department of Entomology, Virginia Polytechnic Institute and State University

POSTER SESSION: Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm

Chesapeake

- ENTO 01 Investigating mate choice in the Dogbane Leaf Beetle, *Chrysochus auratus*. KG Nesser and JD Styrsky. Department of Biology, University of Lynchburg
- ENTO 02 Novel Group 30 insecticides may be the answer to wireworm control. H Swarm and T Kuhar. Department of Entomology, Virginia Polytechnic Institute and State University
- ENTO 03 Asian longhorned tick (*Haemaphysalis longicornis*) in Virginia – future research. M Sharpe, T Kuhar, and G Eastwood. Department of Entomology, Virginia Polytechnic Institute and State University
- ENTO 04 Investigating mate choice in the Dogbane Leaf Beetle, *Chrysochus auratus*. KG Nesser and JD Styrsky. Department of Biology, University of Lynchburg
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Sections: EDUCATION PSYCHOLOGY

Education

Chair: Deborah Neely-Fisher, Reynolds Community College

Vice-Chair: Kurt Michael, Liberty University

Secretary: Melani Loney, Old Dominion University

Editor: Swati Agrawal, University of Mary Washington

Councilor: Se Jeong, Regeneron Pharmaceuticals

Psychology

Vice-Chair: Heidi Villanueva, Virginia Union University

Secretary: Abby Braitman, Old Dominion University

Editor: Michelle Lange, Christopher Newport University

ORAL PRESENTATION SESSION: *Thursday Morning, May 25, 2023*

Sadler Center, Room 1111 9:15 am-10:45

- 9:15 Keynote: Self-Regulated Learning in Science. L. Bol Educational Foundations and Leadership, Old Dominion University
- 9:45 Concept mastery integration into General Chemistry CUREs Laboratory Experiments for Science Majors. D White and M Waddell Department of Chemistry and Biochemistry, Hampton University
- 10:00 Concept mastery integration into General Chemistry CUREs Laboratory Experiments for Science Majors. D White and M Waddell Department of Chemistry and Biochemistry, Hampton University
- 10:15 Differences in Relationship and Sexual Satisfaction and Social Support Between Only Lesbian, Mostly Lesbian, and Bisexual Women. MI Turner Virginia Consortium Program in Clinical Psychology
- 10:30 Making a robust soybean meal for animal diet. AO Okedigba¹, L Rosso², D Yu³, H Huang³, CH Shang², B Zhang², DGS Capelluto¹ ¹Department of Chemistry and Department of Biology, ²School of Plant and Environmental Sciences, ³Department of Food Sciences, Virginia Polytechnic and State University

POSTER SESSION: *Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm*

Chesapeake

- EDPSY 01 Public science on climate change: A test of data integrity of authentic research with 9th graders. M Steimer, A Burbach, R Atkinson Department of Organismal and Environmental Biology, Christopher Newport University
- EDPSY 02 Vigilance Decrement Arises due to Changes in Bias and Lapses but not Sensitivity: A Preregistered Replication Study. T Rose. Department of Psychology, Old Dominion University

Sections: CHEMISTRY STRUCTURAL BIOLOGY, BIOCHEMISTRY, BIOPHYSICS

Chemistry

Chair: Vincent DePaul Nziko, Hampton University

Vice-Chair: Peter Njoki, Hampton University

Secretary: Thomas Devore, James Madison University

Editor: Thomas Devore, James Madison University

Councilor: Edmund Ndip, Hampton University

Structural Biology, Biochemistry, Biophysics

Chair: Nathan Wright, James Madison University

Vice-Chair: Randall Reif, University of Mary Washington

Secretary: Christopher Berndsen, James Madison University

ORAL PRESENTATION SESSION: Thursday Morning, May 25, 2023

Sadler Center, Room 1280 9:15 am – noon

Thomas Devore, Presiding

- 9:15 Opening Remarks. T.C. DeVore
- 9:30 Halogen-bonding capable functionalized gold nanoparticles molecular detection schemes. MC Leopold and ST Gilmore. Department of Chemistry, University of Richmond
- 9:45 Lanthanide metal ions-Triggered supramolecular gelation of visible-light-switchable amino acid functionalized arylazopyrazole ligands. J Geter. Department of Chemistry and Biochemistry, Hampton University
- 10:00 Impact of phosphoinositides on TOM1's commitment to cargo trafficking. TG Roach. Department of Biological Sciences, Virginia Polytechnic Institute and State University
- 10:15 Materials for photodynamic therapy (PDT): Evaluation of linear and nonlinear (NLO) properties. EMN Ndip. Department of Chemistry and Biochemistry, Hampton University
- 10:30 Applying supervised machine learning and computational methods to site selective C-H functionalization. S Stephens and K Lambert. Department of Chemistry and Biochemistry, Old Dominion University
- 10:45 Break.
- 11:00 What constitutes the ideal fluorescent cell stain? MR Korn. Department of Biology and Chemistry, Liberty University
- 11:15 Apoptosis induction in jurkat T-lymphocytes by proton pump inhibitors (PPIs). S Murali and RD Reif. Department of Chemistry and Physics, University of Mary Washington
- 11:30 VAS chemistry section: Looking back: Looking forward. TC DeVore. Department of Chemistry and Biochemistry, James Madison University
- 11:45 Where does the VAS chemistry section go from here? Panel discussion
- 12:00 SECTION BUSINESS MEETING – Election of Section Officers, Business & Announcements.

POSTER SESSION: *Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm*
Chesapeake

- CSBP 01 In situ mechanochemical kinetics monitoring of ball mill reactions. S. Pagola and O Oladimeji Department of Chemistry and Biochemistry, Old Dominion University
- CSBP 02 Investigating electrolytes for use with Mn-rich disorder rocksalt cathodes in lithium-Ion batteries. CL Connor Department of Chemistry and Department of Material Science and Engineering, Virginia Polytechnic and State University
- CSBP 03 Flow chemistry synthesis of polysubstituted pyrrole. E Ramirez, EW Goldman and R Dominey, Department of Chemistry, University of Richmond
- CSBP 04 Computational geometry and reactivity between penicillin's beta-lactam ring and serine residue of a transpeptidase in the cellular antibiotic inhibition mechanism. E Lawrence, P Makori, T Bailey and IF Hahn Department of Biology and Department of Chemistry & Biochemistry, Hampton University
- CSBP 05 Theoretical calculations of glycosidic bonding structures and reactivities in the nucleotides of DNA. M Gatling, M Bernard, Z Mayo, T German, K Pryor, C Smith and IF Hahn Department of Biology and Department of Chemistry and Biochemistry, Hampton University
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Section: BOTANY

Chair: Andrea Weeks, George Mason University

Vice-Chair: John Hayden, University of Richmond

Secretary: Joshua A. Kincaid, Shenandoah University

Editor: Joshua A. Kincaid, Shenandoah University

Councilor: Conley McMullen, James Madison University

~~ORAL PRESENTATION SESSION: Thursday Morning, May 25, 2023~~

James Blair Hall Room 201, 9:00 am-12:00

- 9:00 Opening Remarks.
- 9:15 Reflections on Virginia plant ecology and the Virginia Academy of Science. SA Ware College of William and Mary, Department of Biology
- 9:30 Some notable women botanists in the Virginia Academy of Science. MB Lobstein Professor Emeritus Northern Virginia Community College
- 9:45 Paul Merriman, his flora, and early history of the University of Richmond Herbarium. WJ Hayden University of Richmond, Department of Biology
- 10:00 Break/Make-Up Time
- 10:15 The Virginia Natural Area Preserves Act of 1989: Implementation and Impact. JC Ludwig. Virginia Department of Conservation and Recreation, Division of Natural Heritage
- 10:45 An historic fall-zone record for *Aneura sharpii* (*Marchantiophyta*, *Aneuraceae*) in Virginia. WJ Hayden. University of Richmond, Department of Biology
- 11:00 Break/Make-Up Time
- 11:15 Accumulation of heavy metals in *Conyza canadensis* and implications for phytoremediation. PB Wright. Christopher Newport University, Department of Organismal and Environmental Biology
- 11:30 What can we learn by a complacent growth pattern in an 80-yr chronology of Atlantic White Cedar? R Atkinson and D Kalmbach Christopher Newport University, Department of Organismal and Environmental Biology
- 11:45 Break/Make-Up Time.
- 12:00 SECTION BUSINESS MEETING - Election of Section Officers, Business & Announcements.
- POSTER SESSION:** *Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm*
Chesapeake
- BOTN 01 Floristics and History of the Lost Clopton Bog/Lea's Meadow Site, Richmond, Virginia. RAS Wright Sr. Associate Regulatory Specialist, Wetland Studies and Solutions, Inc.
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Section: BIOLOGY

Chair: Parrish Waters, University of Mary Washington

Vice-Chair: April Wynn, University of Mary Washington

Secretary: Deborah O'Dell, University of Mary Washington

Councilor: Michael Price, Liberty College of Osteopathic Medicine

ORAL PRESENTATION SESSION: Thursday Morning, May 25, 2023

James Blair Hall Room 223, 9:45-12:00 pm

Parrish Waters, Presiding

- 9:45 Opening Remarks. Parrish Waters
- 10:00 Assessment of histone acetyltransferase homologs in *Cryptococcus neoformans*. PV Bridy, Y Wang, FB Kho, GD Isaacs, Department of Biology and Chemistry, Liberty University
- 10:15 The Effects of Exercise on Brain-derived Neurotrophic Factor and Cortisol on Cognitive Function. CG Collins, RP Waters. Department of Biological Sciences, University Mary Washington
- 10:30 An inquiry into the validity of the tube test as a measure of dominance in mice. T Philbeck, R.P.Waters Department of Biological Sciences, University Mary Washington
- 10:45 *Clostridioides difficile* has evolved a unique variation of a conserved signaling pathway. EB Purcell. Department of Chemistry and Biochemistry, Old Dominion University
- 11:00 Break.
- 11:15 Dilution effect: *Posthodiplostomum* spp. infection patterns in Centrarchid fish hosts. ML Upperman, M Zimmerman, Department of Biology and Chemistry, Shenandoah University
- 11:30 THP-1 monocytes as a model for screening potential immunogens in Alpha Gal Syndrome: potential immunogens in *Amblyomma americanum* cause monocyte differentiation. C Baker, A McLaughlin, S Hall, W Moore Department of Biology and Chemistry, Liberty University
- 11:45 The characterization of two novel calcium ion transporter proteins in *Toxoplasma gondii*. EA Sizemore, S Agrawal. Department of Biological Sciences, University Mary Washington
- 12:00 SECTION BUSINESS MEETING - Election of Section Officers, Business & Announcements.

POSTER SESSION: Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm

Chesapeake

- BIOL 01 THP-1 monocytes as a model for screening potential immunogens in Alpha Gal Syndrome: potential immunogens in *Amblyomma americanum* cause monocyte differentiation. C Baker, A McLaughlin, S Hall, W Moore Department of Biology and Chemistry, Liberty University
- BIOL 02 Enhancement of plastic degradation by the bacterium *Ideonella sakaiensis* TD Gruber, MK Lorenger, C Salazar, L Le, J Reed. Department of Molecular Biology and Chemistry, Christopher Newport University
- BIOL 03 Screening marine extracts for antibiotic potential against *Staphylococcus aureus* and Methicillin-Resistant *Staphylococcus aureus*. M Gagliano. George Mason University
- BIOL 04 Exploring the Regulation of PTOV1 Gene Expression Functions. A Cedeno, S Irvin, K Pennington. Department of Biological and Environmental Sciences, Longwood University
- BIOL 05 Cloning expression vectors for hPTOV1 in *D. melanogaster* cells. Q Kehoe, X Holman, K Pennington. Department of Biological and Environmental Sciences, Longwood University
- BIOL 06 Cafestol and Quinic Acid as Novel Agents for the Attenuation of Type. AM Ramerth. Liberty University
- BIOL 07 Examination of putative histone acetyltransferases in *Cryptococcus neoformans*. FB Kho, PV Bridy, Y Wang, GD Isaacs. Department of Biology and Chemistry, Liberty University

- BIOL 08 Investigating the changes in morphology and composition of the duodenum in response to sodium benzoate intake in mice. L Carl, B Velayudhan. Department of Biology, James Madison University
- BIOL 09 Small bioactive compounds obtained from coffee promote glucose uptake in human adipocytes. AM Ramerth, AK McLaughlin, S Hall, SA Jampole, HR Violette, ME Bones, CL Baker, WT Moore. Department of Biology and Chemistry, Liberty University
- BIOL 10 Use of bacterial magnetic nanoparticles for human cell binding. R Mills, EA Tellez, D Trubitsyn. Department of Biological and Environmental Sciences, Longwood University
- BIOL 11 Effect of Social Isolation on Depression-like Symptoms in Male Mice. Dylan Crann, RP Waters. University of Mary Washington.
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Sections: ASTRONOMY, MATH, PHYSICS DATA SCIENCE, COMPUTING, STATISTICS MATERIALS SCIENCE

Astronomy, Math, and Physics

Chair: Craig Group, University of Virginia
Vice-Chair: Charles Crook, Rapp Community College
Secretary: Joseph Rudmin, James Madison University
Editor: Marco Aldi, Virginia Commonwealth University
Councilor: Craig Group, University of Virginia

Data Science, Computing and Statistics

Vice-Chair: Mary Ann Hoppa, Norfolk State University
Editor: Yen-Hung (Frank) Hu
Councilor: Susan Zehra, Old Dominion University

Materials Science

Chair: Lynnette Madsen, Svedberg Sciences, Inc
Vice-Chair: Ram Gupta, Virginia Commonwealth University
Secretary: David Green University of Virginia
Editor: Costel Constantin, James Madison University
Councilor: Gary Pickrell, Virginia Tech

ORAL PRESENTATION SESSION: Thursday Afternoon, May 25, 2023

Sadler Center, Room 2280 3:15 pm – 4:00 pm

- 3:1 3:1 *Optimal harvesting policy in a predator-prey system: A case study in the Chesapeake Bay*
5 5 *fisheries.* J Herrmann, M Sparks, and I Panayotova. Department of Mathematics, Christopher
Newport University.
- 3:3 3:3 *A new Python library for merging HDF5 data files.* A Sandhu. Department of Physics,
0 0 University of Virginia.
- 3:4 3:4 *A History of the Astronomy, Math, and Physics Section of the Virginia Academy of Science.* J
5 5 D. Rudmin. School of Integrated Science, James Madison University.
- 4:0 4:0 *A Novel Spatial Clustering Method based on density estimation using Delaunay Triangulation.*
0 0 S Zhou and G Wang. Department of Mathematics, William and Mary.

POSTER SESSION: Thursday Afternoon, May 25, 2023, 3:00 - 5:00 pm

Chesapeake

- ADCM 01 *Optimal harvesting policy in a predator-prey system: A case study in the Chesapeake Bay*
fisheries. J Herrmann, M Sparks, and I Panayotova. Department of Mathematics,
Christopher Newport University.
- ADCM 02 *A new Python library for merging HDF5 data files.* A Sandhu. Department of Physics,
University of Virginia.
- ADCM 03 *A History of the Astronomy, Math, and Physics Section of the Virginia Academy of Science.*
JD Rudmin. School of Integrated Science, James Madison University.
- ADCM 04 *A Novel Spatial Clustering Method based on density estimation using Delaunay*
Triangulation. S Zhou and G Wang. Department of Mathematics, William and Mary.

Section: MEDICAL SCIENCES BIOMEDICAL ENGINEERING

Medical Sciences

Chair: Balaji Nagarajan, Virginia Commonwealth University

Vice-Chair: Connor O'Hara, Virginia Commonwealth University

Secretary: Ram Gunta, Virginia Commonwealth University

Councilor: Ryann Finnegan, Virginia Commonwealth University

Biomedical Engineering

Chair: Paul Wetzel, Virginia Commonwealth University

Vice-Chair: Rupak Dua, Hampton University

Secretary: Shawn DiRocco, Virginia Commonwealth University

Councilor: Thoma Haas, Virginia Commonwealth University

ORAL PRESENTATION SESSION: Thursday Afternoon, May 25, 2023

James Blair Hall Room 221, 3:15–4:30 pm

- 3:15 Comparison of mutant IDH1 and IDH2 chondrosarcoma show higher carcinogenic potential in IDH1 cells. CJ Osgood¹, J Phillips¹, and MW Stacey². ¹Department of Biological Sciences, Old Dominion University ²Frank Reidy Research Center for Bioelectronics, Old Dominion University
- 3:30 Data-driven modeling: Lessons learned from the COVID-19 pandemic. N Rychagov¹, J Rekus², M Singer², and I Panayotova². ¹Department of Neuroscience, Harvard University; ²Department of Mathematics, Christopher Newport University
- 3:45 Generation of SKBR3 breast cancer cell populations with varying HER2 expression levels. M Christian and A Marz. Department of Biology, Norfolk State University
- 4:00 Investigation of Biomedical Properties of Cancer Cells Using Optical Tweezing. Y Sefa-Boateng¹, MF Hossain¹, B Moreno¹, J Jones¹, K Santiago¹, P Mead¹, S Pradhan², and M Bahoura^{1,2} ¹Department of Engineering, Norfolk State University, ²Center for Materials Research, Norfolk State University
- 4:15 Development of Silver Nanowire Integrated Gold Thin Film Hybrid Substrate for Investigation of Breast Cancer Cells Using Surface Enhanced Raman Spectroscopy. MF Hossain¹, S Pradhan², M Bahoura^{1,2}, K Santiago¹, P Mead¹, G Slaughter³, S Downes⁴, and J Cooper⁴, ¹Department of Engineering, Norfolk State University, ²Center for Materials Research, Norfolk State University, ³Center for Bioelectronics and Department of Computer and Electrical Engineering, Old Dominion University, ⁴Department of Chemistry and Biochemistry, Old Dominion University

NOMINATIONS FOR VAS FELLOWS

Virginia Academy of Science members are invited to submit nominations for Fellows to be named at the 2024 Annual Meeting. A potential Fellow must be an *active member of the Academy* and have contributed to science in one or more of the following ways: (a) outstanding scientific research, (b) inspired teaching of science, or (c) significant leadership in the Academy.

Nomination letters, with adequate supporting information, must be received by the Executive Officer no later than October 1, 2023. Nominations will be forwarded to the Awards Committee for consideration and possible recommendation to Council. Upon recommendation to Council, election to Fellow status will be by majority vote of the Academy Council.

To be considered by the Awards Committee, each nomination letter must be signed by at least three Academy members making and/or supporting the nomination. Alternatively, each person supporting the nomination may submit an individual nomination letter. The nomination letter should include detailed biographical information and adequate supporting information (including a current CV or resume) to be used by the members of the Awards Committee and the Academy Council in evaluating the credentials of the nominee for Fellow status. The supporting information should be in a form appropriate for subsequent publication in the *Virginia Journal of Science* and/or *Virginia Scientists*.

Additional information about the Selection of Fellows may be found in the 1999 Spring issue of the *Virginia Journal of Science* [50(1):77] or may be accessed at www.vacadsci.org/fellows.htm.

For additional information, contact VAS Executive Officer, Dr. Philip Sheridan at psheridan@vacadsci.org or 804-864-1451.

Nomination letters with supporting materials for FELLOWS should be sent to:

Philip Sheridan, Executive Officer
Virginia Academy of Science
2500 W. Broad Street
Richmond, Virginia 23220.

or email to psheridan@vacadsci.org with 'VAS FELLOWS' as the subject line. Deadline for receipt of nominations and support materials is October 1, 2023.

NOMINATIONS FOR VAS HONORARY LIFE MEMBERS

At the 1999 Annual Meeting, the VAS Council approved a number of changes in the By-Laws. One of these changes was to establish a new category of membership, Honorary Life Membership, to honor persons for long and distinguished service to science. Honorary Life Members will have all the rights and privileges of Regular Members but will be exempt from paying dues. Previous active membership in VAS is not a requirement for eligibility.

VAS members are invited to submit nominations for Honorary Life Members to be named at the 2020 Annual Meeting. **Nomination letters, with adequate supporting information, must be received by the Executive Officer no later than October 1, 2023.** Nominations will be forwarded to the Awards Committee for consideration and possible recommendation to Council. Upon recommendation to Council, election to Honorary Life Member status will be by majority vote of the Academy Council.

In order to be considered by the Awards Committee, each nomination letter must be signed by at least three Academy members making and/or supporting the nomination. Alternatively, each person supporting the nomination may submit an individual nomination letter. The nomination letter should include detailed biographical information and adequate supporting information (including a current CV or resume) to be used by the members of the Awards Committee and the Academy Council in evaluating the credentials of the nominee for Honorary Life Membership status. The supporting information should be in a form appropriate for subsequent publication in the Virginia Journal of Science and/or Virginia Scientists. Additional information about the Selection of Honorary Life Members may be found in the 1999 Spring issue of the Virginia Journal of Science [50(1):77] or may be accessed at www.vacadsci.org/honlifememb.htm.

For additional information, contact VAS Executive Officer, Dr. Philip Sheridan at psheridan@vacadsci.org or 804-864-1451.

Nomination letters with supporting materials for HONORARY LIFE MEMBERS should be sent to:

Philip Sheridan, Executive Officer
Virginia Academy of Science
2500 W. Broad Street
Richmond, Virginia 23220

or email to psheridan@vacadsci.org with 'VAS HONORARY LIFE MEMBER' as the subject line.

Deadline for receipt of nominations and support materials is October 1, 2023.

Selected Programs of the Virginia Academy of Science

The Virginia Journal of Science is America's fourth largest state academy journal in circulation (after New York, Chicago, and Ohio) and goes to 47 states and 12 countries overseas. A professionally refereed quarterly, **The Journal** publishes original research articles and research notes in the various disciplines of science, mathematics, and engineering: cross-disciplinary papers on advances in science and technology and their impact on society are invited. Minutes of The Academy and notices are also published. Many significant contributions were first published in **The Journal** and its articles have a high rate of citation. Authors are allowed the first 15 pages, including figures, without charge (\$50 per page for the 16th subsequent pages). Subscription rates are \$40.00 per year. Selected back issues available.

For additional information, contact Christopher Osgood at cosgood@odu.edu or 757-683-6778.

Virginia Scientists, the Academy's newsletter is published three times yearly and serves to communicate information about the Academy; regional conferences; various state science institutions; organizations, agencies, and corporations; and Virginia's researchers, science educators, and their students. Articles and notices are cordially invited. In addition to members, it is sent to Virginia legislators, selected agencies, and college and university presidents. For information, contact William Kissner at wkissner@dcpsnet.org.

The **Virginia Junior Academy of Science** is one of the Nation's foremost junior academies. In addition to the nationally recognized annual refereed paper competition involving hundreds of volunteers, VJAS and VAS programs reach about 40,000 Virginia secondary students each year. Over \$80,000 in scholarships, prizes, research support grants, trips to national meetings and events are awarded annually. Scientists and science educators are encouraged to adopt school science programs, classes, and clubs; to provide information on Academy programs; and to foster new clubs and opportunities for Virginia's youth.

For additional information, contact Susan P. Booth at susan.science@gmail.com or 757-897-3104.

Fall Undergraduate Research Meeting: In Fall 2001 VAS held the first Fall Undergraduate Research Meeting which focused on support of undergraduate student research. Subsequently this meeting has been held on an annual basis. Awards of \$750 are given to top student proposals that are chosen by judges. The awardees selected at the 2022 Fall Undergraduate Research Meeting at Eastern Mennonite University will present the results of their funded research

projects at the 2023 VAS Annual Meeting at William and Mary. Guidelines and location for the 2023 Fall Meeting can be found [here](#). The 2023 Fall Meeting is *tentatively* set for October 28, 2023 at Virginia Union University in Richmond, VA. To obtain additional information about the Fall Undergraduate Research Meeting, you can go directly [to our website](#) or contact Philip M. Sheridan, Executive Officer, Virginia Academy of Science at psheridan@vacadsci.org or 804-864-1451.

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