

# RAS

Forty-Sixth Annual  
Rochester Academy of Science  
Fall Paper Session  
Saturday, November 9, 2019



<https://sites.monroecc.edu/papersession/>



**Monroe  
Community  
College**

STATE UNIVERSITY  
OF NEW YORK





# RAS 2019 FALL PAPER SESSION SCHEDULE

*Saturday, November 9, Welcome to Rochester Academy of Science Conference*

8:30AM – 9:15AM	<b>Registration</b> - Warshof Conference Center Monroe A&B Refreshments
9:15AM – 9:25AM	<b>Address</b> from MCC Provost and Vice President, Academic Services, Andrea Wade and RAS President Michael Grenier
9:30AM – 10:30AM	<b>Oral Session I</b> – Building 12, <i>See program for details</i>
10:30AM – 10:45AM	<b>Break and Poster Set-up</b> - R. Thomas Flynn Campus Center, Atrium & Terrace
10:45AM – 11:45AM	<b>Oral Session II</b> – Building 12, <i>See program for details</i>
11:45AM – 12:45PM	<b>Poster Session</b> – R. Thomas Flynn Campus Center, Atrium & Terrace
12:45AM – 1:00PM	<b>Pre-Ordered Lunch pickup:</b> Warshof Conference Center Monroe A&B
1:00PM – 2:00PM	<b>Keynote Address</b> - Larry King Memorial Lecture: Dr. Warren D. Allmon, Warshof Conference Center Monroe A&B



## **Dr. Warren D. Allmon**

Warren D. Allmon is the Director of the Paleontological Research Institution (PRI) in Ithaca, NY and – since 2008 -- the Hunter R. Rawlings III Professor of Paleontology in the Department of Earth and Atmospheric Sciences at Cornell University. He earned his A.B. in Earth Sciences from Dartmouth College in 1982, and his Ph.D. in Earth and Planetary Sciences from Harvard University in 1988. He became PRI's fourth Director in 1992. Since then, he has been instrumental in rejuvenating PRI's internationally-known fossil collections; starting its local, regional, and national programs in Earth science education; and in planning and fundraising for the Museum of the Earth, PRI's \$11 million education and exhibit facility which opened in September 2003. In November 2004, Allmon helped secure a formal agreement of affiliation between PRI and Cornell, ending more than 70 years of official separation.

Allmon is the author of more than 300 technical and popular publications. He is a Fellow of the Geological Society of America and the Paleontological Society, and was the recipient of the 2004 Award for Outstanding Contribution to Public Understanding of Geoscience from the American Geological Institute.

### **ABSTRACT**

“Paleontology is sometimes thought of as just dinosaurs, or dead fossils. But paleontology is the only record we have of the actual history of life on Earth, and therefore the only test case available for judging the potential effects of present and future environmental change – including climate change -- on Earth's biota. The past is not just past. It is a crucial source of data for predicting, and preparing for, the future.”

# **ACKNOWLEDGEMENTS**

## **Special Thanks**

MCC President Dr. Anne M. Kress  
MCC Provost and VP, Academic Services Dr. Andrea Wade  
MCC Board of Trustees  
RAS President Michael Grenier

## **RAS 19@ MCC Steering Committee**

Ryan Clemens  
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Daniel Raimondo  
Azwana Sadique  
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Jaime Smith  
Lincoln Reid  
RAS Volunteers

# RAS 2019 - Oral Session I

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## 9:30 AM – 10:30 AM **BIOLOGY** **Building 12, Room 103 (1)**

### **Botany**

### **Building 12, Room 105**

**Chair: Jennifer Markham, Biology**

*FOUR YEARS OF MANUAL REMOVAL OF CATTAILS (TYPHA) MAINTAINS HABITAT STRUCTURE IN A SENSITIVE PEATLAND.*

Koty Kurtz, Kathryn Hunt, Faith Page, and C. Eric Hellquist, SUNY Oswego

*IMPACT OF SLENDER FALSE-BROME (BRACHYPODIUM SYLVATICUM) ON PLANT COMMUNITIES IN NEW YORK STATE.*

Megan Aubertine and Kathryn Amatangelo, The College at Brockport

*EXPLORING THE EFFECTS OF INVASIVE SLENDER FALSE-BROME (BRACHYPODIUM SYLVATICUM) ON TEMPERATE FOREST ECOSYSTEM PROCESSES.*

Andrew Leonardi and Kathryn Amatangelo, The College at Brockport

*UNDERSTANDING MILE-A-MINUTE'S (PERSICARIA PERFOLIATA) PHENOLOGY AND TREATMENT CONTROL METHODS IN WESTERN NEW YORK.*

Erica Mackey and Kathryn Amatangelo, The College at Brockport

### **Microbiology**

### **Building 12, Room 105 (2)**

**Chair: Professor Rich Stevens, Biology**

*A SURVEY OF THE CUTANEOUS BACTERIA OF THE SPOTTED SALAMANDER (AMBYSTOMA MACULATUM).*

Richard T. Stevens, Monroe Community College, NY

*EFFECTS OF HYDROLOGY, MANAGEMENT AND PAST LAND-USE ON CARBON AND MICROBIAL COMMUNITIES IN RESTORED WETLANDS.*

Benjamin Hamilton, Carmody McCalley, Rochester Institute of Tech., NY

*ACID WHEY AS A VIABLE FEEDSTOCK FOR SUBMERGED FERMENTATION OF GANODERMA SPECIES.*

Harshal Kansara, Sarad Parekh, Christopher Cater, Thomas Trabold and Jeffrey Lodge, Rochester Institute of Tech., NY

*PREVENTION OF POSTHARVEST DISEASE OF ASIAN PEARS (PYRUS PYRIFOLIA) USING THE BACTERIAL BIOCONTROLS, PSEUDOMONAS FLUORESCENS AND PANTOEA VAGANS.*

Yaroslav Grynshyn\*, Ruairi McHugh\*, Morgan Pimm, Taylere Herrmann, Daniel Stein, Maryann Herman Ph.D.1 \*Co-first authors, St. John Fisher College

# Oral Session I... (Continued)

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## Cell Biology

## Building 12, Room 107 (3)

**Chair: Professor Maria Savka, Biology**

*MECHANISMS OF BISPHENOL A DISRUPTION OF LIPOLYSIS IN DROSPHILA MELANOGASTER.*

Maura Connorton, Edward Freeman PhD and Todd Camenisch PhD, St. John Fisher College, Wegmans School of Pharmacy

*EFFECTS OF SURFACE COMPOSITION ON DICTYOSTELIUM ADHESION AND MECHANOSENSATION.*

Michelle Urman, Yulia Artemenko, SUNY Oswego, NY

*GENETIC INTERACTION BETWEEN ADHESION REGULATORS RAP1 AND KINASE RESPONSIVE TO STRESS B IN DICTYOSTELIUM DISCOIDEUM.*

Gengle Niu, Bianca Fernandez, Yulia Artemenko, SUNY Oswego

*EFFECTS OF ENVIRONMENTAL MODIFICATIONS ON DICTYOSTELIUM ADHESION AND MECHANOSENSATION.*

Sara Fuller and Yulia Artemenko, SUNY Oswego

## Bioengineering

## Building 12, Room 109 (4)

**Chair: Professor Amanda Colosimo, Chemistry & Geosciences**

*GENETIC INVENTORY OF MICROBES PRESENT ON SPACECRAFT AND SPACECRAFT ASSOCIATED SURFACES.*

Paula Fogel, Cornell University, Lisa Guan and Parag Vaishampayan, California Institute of Technology

*GENERATING A PIPELINE TO CHARACTERIZE ALLOSTERY IN DHFR*

Juan Sepulveda, Cornell University

*ROLE OF DIFFERENCES IN CELL MECHANICAL PROPERTIES, VARYING CELL SIZE AND CELL SPEEDS IN SELF-ORGANIZATION OF BINARY CELL POPULATIONS.*

Peter Letendre, Rochester Institute of Tech.

*MODIFICATIONS TO THE HOUGHTON XRD.*

Sarah Olandt and Brandon Hoffman, Houghton College, NY

## Health

## Building 12, Room 111 (5)

**Chair: Margaret Kaminsky, Dean of STEM & Health**

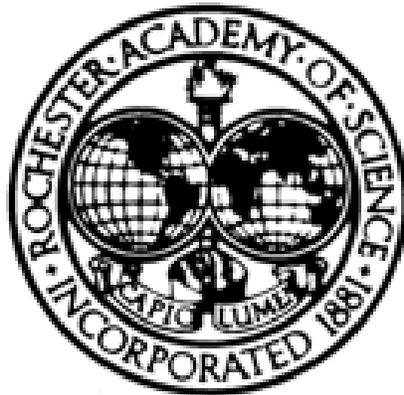
*A MULTI-PERSPECTIVE CONSIDERATION OF OBESITY.*

Edward Freeman and Cassandra LeClair, St. John Fisher College

*ISOLATION AND IDENTIFICATION OF TINEA PEDIS CAUSING DERMATOPHYTES FROM COLLEGIATE RUNNERS.*

Liga Astra Kalnina, Stephanie Guzelak, DPM, Maryann Herman Ph.D., St. John Fisher College, NY

**Break and Poster Set-Up**  
**10:30 AM – 10:45 AM**  
**R. Thomas Flynn Campus Center, Atrium & Terrace**



# RAS 2019 - Oral Session II

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**10:45 AM – 11:45 AM**

## **CHEMISTRY**

**Building 12, Room 103 (1)**

**Chair: Margaret Kaminsky, Dean of STEM & Health**

*ASYMMETRIC CYCLOPROPANATION OF ARYLDIAZOACETATES USING CHIRAL COMMERCIALY AVAILABLE N-HETEROCYCLIC CARBENE LIGANDS COMPLEXED TO GROUP 11 TRANSITION METALS.*

Peyton Kunselman, Nathan Johnson, Michael Coleman Ph. D., Rochester Institute of Tech., NY

*SURFACE MODIFICATION OF POLYBENZIMIDAZOLE (PBI) WITH UV PHOTO-OXIDATION FOR USE IN HIGH-TEMPERATURE PROTON EXCHANGE MEMBRANE FUEL CELLS (HT-PEMFCs).*

Devon Shedden, Kristen Atkinson, Ibrahim Cisse, and Dr. Gerald Takacs, Rochester Institute of Tech., NY

*SOLVATION OF PHOSPHONIUM IONIC LIQUIDS IN SUPERCRITICAL CARBON DIOXIDE.*

Zackary C. Putney and Mark Heitz, The College at Brockport

*INTERFERENCE OF IONIC LIQUIDS ON THE BRADFORD ASSAY: A SPECTROSCOPIC STUDY.*

Tyler Johnston and Mark P. Heitz, The College at Brockport

## **BIOLOGY**

**Building 12, Room 105 (2)**

### **Evolution**

**Chair: Professor Rich Stevens, Biology**

*UNDERSTANDING THE GENETIC DIVERSITY OF SCAEVOLA ON PUERTO RICO.*

Abigail Wine and Susan Witherup PhD Department of Biology, Ithaca College

*THE CORVUS CORAX; RELATIONSHIPS WITHIN POPULATIONS.*

Catherine Lyke, Ithaca College

*PHYLOGENETIC ANALYSIS BY DNA BARCODING OF TWO CLOSELY SPECIES OF LONGHORN BETTLES FROM NY.*

Luciana Cursino, William Brown and Robert Salerno, Keuka College

*FINITE ELEMENT ANALYSIS OF FOSSORIAL PYGOPODID SKULLS (GEKKOTA).*

George Gurgis<sup>1</sup>, Jennifer Olori<sup>1</sup>, Juan Daza<sup>2</sup>, Ian Brennan<sup>3</sup>, Mark Hutchinson<sup>4</sup>, and Aaron Bauer<sup>5</sup> – 1 SUNY Oswego, NY, 2 Sam Houston State University, TX, 3 National University, Australia, 4 South Australian Museum, SA, 5 Villanova University, PA

# RAS 2019 - Oral Session II... (Continued)

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## **Gene Expression**

## **Building 12, Room 107 (3)**

**Chair: Professor Lisa Flick, Biology**

*DEVELOPMENT OF A MARKERLESS ALLELIC EXCHANGE METHOD FOR THE GENETIC MODIFICATION OF ACETOBACTER BACTERIA.*

Christopher Murphy and Peter Newell, SUNY Oswego

*EXPRESSION AND PURIFICATION OF APOLIPOPROTEIN E ISOFORMS.*

Brooke Morrisseau and Kestas Benidictas, Keuka College, NY, SUNY Oswego

*MCH-MEDIATED EXPRESSION OF CIRCADIAN RHYTHM GENES THROUGHOUT PRE-ADIPOCYTE DIFFERENTIATION.*

Shane Walters and Laurie B. Cook, The College at Brockport, NY

*TRANSCRIPTOMIC ANALYSIS AND NEURAL TRANSCRIPT IDENTIFICATION IN THE BRITTLE STAR OPHIOPLOCUS ESMARKI.*

Alexandria Shumway, Hyla Sweet, Rochester Institute of Tech., NY

## **GEOLOGY**

## **Building 12, Room 109 (4)**

**Chair: Professor Tim McDonnell, Chemistry and Geosciences**

*EVALUATING THE IMPACT OF ROADSIDE DITCHES ON IN-STREAM EROSION AND RELATED GEOMORPHOLOGICAL PROCESSES IN CENTRAL NEW YORK.*

Emma Payne, Rebecca Schneider, PhD, Kalena Bonnier-Cirone, Alexander Goddard, and Brian Rahm, PhD. Cornell University and the New York State Water Resources Institute, Ithaca NY

*SCALING DOWN WOOD CHIP BIOREACTORS FOR USE IN ROADSIDE DITCHES TO FILTER NITRATE FROM AGRICULTURAL RUNOFF.*

Steven Dunn and Rebecca Schneider, PhD, and Eric Chase, Cornell University, NY, PennState Center for Dirt and Gravel Roads

*A NEWLY DOCUMENTED GLACIAL ADVANCE NEAR THE YOUNGER DRYAS/BOLLING-ALLEROD CLIMATIC TRANSITION, OR GREENLAND INTERSTADIAL (GI-1b), IN WESTERN NY: POTENTIAL IMPLICATIONS FOR THE HISTORY OF GLACIAL LAKES IROQUOIS AND AGASSIZ.*

Young, Richard A., SUNY Geneseo

# RAS 2019 - Oral Session II... (Continued)

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## **BIOLOGY**

**Building 12, Room 111 (5)**

### **Zoology/Ecology**

**Chair: Professor Jennifer Markham, Biology**

*ARE MICROPLASTICS FOUND WITHIN LAKE ONTARIO SPAWNING SALMON?*

Ryan Bailine, Derek Kuhn, Casey Raymond, and C. Eric Hellquist, SUNY Oswego

*THE COMPARATIVE STUDY OF EGGSHELLS OF PASSERINE BIRDS.*

Muhammadzohir Hidoyatov, Daniel T. Baldassarre, Poongodi Geetha-Loganathan, SUNY Oswego

*BIODEGRADATION OF POLYCAPROLACTONE AND STARCH BLENDED POLYMERS.*

Abigail Rolston, Rochester Institute of Technology, NY

*DOES STAKEHOLDER ENGAGEMENT IMPROVE ECOSYSTEM RESTORATION OUTCOMES?*

Sydney VanWinkle and Christy Tyler, Rochester Institute of Tech.

# RAS 2019 - Poster Session

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**11:45 AM – 12:45 PM**  
**R. Thomas Flynn Campus Center, Atrium & Terrace**

## ***Chairs:***

**Professor Ryan Clemens, Chemistry and Geosciences**  
**Professor James Cronmiller, Biology**  
**Professor Claudio DiMarco, Mathematics**  
**Professor Azwana Sadique, Chemistry and Geosciences**

## **Biochemistry**

- 1. STUDENT LED FABRICATION OF MICROFLUIDIC PETL DEVICES.**  
Alex Martinez, Fabio Sacco and Fernando Ontiveros  
St. John Fisher College
- 2. PROTEIN SECONDARY STRUCTURE PREDICTION USING DEEP LEARNING.**  
Tom Mousso and Rongkun Shen  
SUNY Brockport

## **Biology-Botany**

- 3. INVESTIGATING VOC EMISSIONS AS A POTENTIAL MECHANISM OF POLLINATOR PREFERENCE IN SCAEVOLA SPP.**  
Mason J. Awe, Susan Swensen Witherup  
Ithaca College
- 4. THE NUTRITIONAL QUALITY OF NATIVE AND INVASIVE BERRIES FOR MIGRATORY BIRDS.**  
Jennifer Rosete, Victoria Kwasinski, Erica Delles, and Susan Smith Pagano  
Rochester Institute of Technology
- 5. INVASIVE AND NOXIOUS PLANT DENSITY IS NOT SIGNIFICANTLY CORRELATED WITH BEE ABUNDANCE IN NY ROADSIDE HABITATS.**  
Alyssa Schoenfeldt, Virginia Aswad, Shereef Ghoneim, Debmalya Ray Choudhuri, Kaitlin Stack  
Rochester Institute of Technology
- 6. EVALUATING OPTIMAL ENVIRONMENTAL CONDITIONS FOR MILE-A-MINUTE (PERSICARIA PERFOLIATA) GROWTH AND REPRODUCTION.**  
Hannah Schuler and Kathryn L. Amatangelo  
SUNY Brockport
- 7. VASCULAR PLANTS OF THE GLENNALLEN, AK AREA.**  
Vivian Chappell and James Wolfe  
Houghton College

# RAS 2019 - Poster Session... (Continued)

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## Biology-Cell Bio

- 8. ANOCTAMIN 1 AND MUCUS SECRETION IN ZEBRAFISH LARVAE.**  
Pason Ahmad and Adam Rich  
SUNY Bockport
- 9. IMPROVING VESICULAR STOMATITIS VIRUS AS A CANCER THERAPY: IMPACT OF MUTATIONS IN THE M PROTEIN ON NF- $\kappa$ B ACTIVATION IN VIRUS-RESISTANT PROSTATE CANCER CELLS.**  
Alaa Abdelmageed Ahmed, Amanda N. Weiss, and Maureen C. Ferran  
Rochester Institute of Technology
- 10. EXAMINATION OF CELL SIGNALING IN GEF-MUTANT ZEBRAFISH.**  
William Meyer, Rico Amato, Elena Kleinhenz, and Travis J. Bailey Ph.D.  
SUNY Geneseo
- 11. MOLECULAR CLONING OF DICTYOSTELIUM DISCOIDEUM  $\alpha$ -Actinin**  
Stephanie Arcello & Yulia  
SUNY Oswego
- 12. THE GENETIC MANIPULATION OF FULL-LENGTH AND TRUNCATED VAN GOGH GENE.**  
Jenna Baer and Huey Hing  
The College at Brockport
- 13. EXPRESSION AND FUNCTIONAL CHARACTERIZATION OF GALECTINS 1 AND 3 IN A SODIUM-TRANSPORTING MOUSE EPITHELIAL CELL LINE.**  
Kourtney Baker  
The College at Brockport
- 14. EFFECTS OF THIORIDAZINE ON CAPSULE FORMATION IN THE FUNGAL PATHOGEN CRYPTOCOCCUS NEOFORMANS.**  
Sean Carrigan, Virginia E. Glazier, PhD  
Niagara University
- 15. EFFECTS OF CARBON DIOXIDE ON DRUG SUSCEPTIBILITY IN CRYPTOCOCCUS NEOFORMANS AND CANDIDA ALBICANS.**  
Kristen N. Donovan, Virginia E. Glazier  
Niagara University
- 16. MUTATIONAL POSITIONING WITHIN THE N-TERMINAL DOMAIN OF B-ACTIN AS A CONTRIBUTING FACTOR IN DIFFUSE LARGE B-CELL LYMPHOMA (DLBCL) PATHOGENESIS.** Alexander Ille, Hannah Lamont, John Fischer  
D'Youville College
- 17. CHARACTERIZATION OF NOVEL STAPHYLOCOCCAL BACTERIOPHAGE.**  
Manpreet Singh, Christopher Clark, Rachel Wager, and Mark Gallo, PhD.  
Niagara University
- 18. ISOLATION OF BACTERIOPHAGE AGAINST STAPHYLOCOCCUS.**  
Hannah Fahs, Alexis Okun, and Mark Gallo, Ph.D.  
Niagara University

# RAS 2019 - Poster Session... (Continued)

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**19. SEARCHING FOR ENZYMES TO PRODUCE UNIVERSAL O TYPE BLOOD.**

Jesse Kozub, Jeff Sommerfield, Jiyeon Ryu, Molly Balbierz, Amanda Belmona, Pavel Kovtunov and Mark Gallo, Ph.D.  
Niagara University

**20. NOVEL LONG NON-CODING RNA DETECTION FROM RNA-SEQ DATA.**

Peter Giangrasso, Laurie Cook, and Rongkun Shen  
The College at Brockport

**21. MOLECULAR CLONING OF TRUNCATED FILAMIN CONSTRUCTS LACKING KEY REGULATORY DOMAINS.**

Colin Harrington and Yulia Artemenko  
SUNY Oswego

**22. IDH1 AS DNA DAMAGE RESPONSE REGULATOR IN HIGH CYCLIN E HIGH-GRADE SEROUS OVARIAN CANCER.**

Qingyuan Jia, Erika S. Dahl, Kelly E. Leon, and Katherine M. Aird  
University of Rochester and Penn State College of Medicine

**23. INVESTIGATION OF A COMPOUND TO POTENTATE TOPOISOMERASE 2 POISON ACTIVITY.**

Joseph Karboski, Deanna Berg, William DePasquale, Jonelle Mattiaccio, and Jonathan Millen  
St. John Fisher College

**24. GENETIC SCREENING FOR NOVEL PARTNERS OF AN ADHESION REGULATOR - KINASE RESPONSIVE TO STRESS B (KRSB).**

Ali Khan, Swin Ratnayake, Yulia Artemenko  
SUNY Oswego

**25. DETERMINING THE SIGNIFICANCE OF THE MICOS PROTEIN COMPLEX ON THE FREQUENCY OF SPONTANEOUS CELLULAR RESPIRATION LOSS IN SACCHAROMYCES CEREVISIAE.**

Skyler LaCoss and Rey Sia  
SUNY College at Brockport

**26. ACTINOMYCIN-D INDUCES APOPTOSIS IN HELA CERVICAL CANCER CELLS.**

Kalya Lilly, Anthony DiCecca, Logan Slother, Eric Benfey, and Dr. Robert Greene  
Niagara University

**27. DNA DAMAGE-SPECIFIC REGULATION OF CELL CYCLE CHECK POINT  $\gamma$ -H2AX**

Zhengfeng Liu and Xin Bi  
University of Rochester

**28. EFFECT OF THE FDA APPROVED DRUGS THIORIDAZINE AND TRIFLUOROPERAZINE ON VIRULENCE AND HOST TEMPERATURE ADAPTATION IN CRYPTOCOCCUS NEOFORMANS.**

Megan E. McGraw, Virginia E. Glazier, PhD  
Niagara University

**29. FECAL MAGNESIUM EXCRETION REMAINS STABLE UPON DSS INDUCTION OF ULCERATIVE COLITIS IN MAGNESIUM-DEPRIVED MICE.**

Emily Odell, Bernardo Ortega  
The College at Brockport

# RAS 2019 - Poster Session... (Continued)

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**30. EFFECTS OF SULOCTIDIL AND THIORIDAZINE ON BIOFILM FORMATION IN CANDIDA ALBICANS.**

Julia Rak and Virginia E. Glazier, PhD  
Niagara University

**31. ANOCTAMIN 1 EXPRESSION IN ADULT ZEBRAFISH RED BLOOD CELLS.**

Porshya Shani Kithsiri, Keri Furness, Skyler Lacoss, Jenna Baer, and Adam Rich  
The College at Brockport

**32. ANOCTAMIN 1 EXPRESSION IN ZEBRAFISH PRIMITIVE AND DEFINITIVE RED BLOOD CELLS.**

Cassandra Jackson, Kristen Sacchitella, Thzin Say, Mckenzie Tu, and Adam Rich  
The College at Brockport, SUNY

**33. EXPRESSION OF ANO1/TMEM16A IN ZEBRAFISH HEMATOPOIETIC CELLS.**

Solan Sooriakumar, Bohdan Smich, Mathew Borrelli, Cody Compton, Adam Rich  
The College at Brockport, SUNY

**34. THE ROLE OF ARF6 IN MCH MEDIATED ACTIN REARRANGEMENTS IN 3T3-L1 PRE-ADIPOCYTES**

Bohdan Smich and Laurie B. Cook  
The College at Brockport, SUNY

**35. DETERMINING EFFECTS OF MELANIN-CONCENTRATING HORMONE ON INSULIN-SIGNALING PATHWAY COMPONENTS.**

Dayanara Torres and Laurie B. Cook  
The College at Brockport, SUNY

**36. EFFECTS OF VITAMIN-D TREATMENT ON MCF-7 LUMINAL BREAST CANCER CELLS.**

Amanda Ventrella, Audrey Dunn, Eric Benfey, Dr. Robert Greene  
Niagara University

## **Biology-Ecology**

**37. TROPHIC CASCADES AND AERATION IN LAKES: EFFECTS ON WATER QUALITY AND ZOOPLANKTON COMMUNITY STRUCTURE.**

Katelyn Brown, Dan Beers, Isidro Bosch, and Michael Chislock.  
SUNY Brockport

**38. FIVE NEW PARASITOIDS AND COMMENSALS OF THE OAK TWIG PRUNER BEETLE, ANELAPHUS PARALLELUS.**

Jesse Freeling Brundage, William Brown, and Luciana Cursino  
Keuka College

**39. ASSESSING THE TOXICITY AND BURIAL OF MICROPLASTICS IN FRESHWATER LAKE SEDIMENTS.**

Kristina Chomiak, Matthew Hoffman, Nathan Eddingsaas, and Christy Tyler  
Rochester Institute of Technology

**40. USE OF FILAMENTOUS BACTERIAL GROWTH ON STREAM MACROINVERTEBRATES AS AN INDICATOR OF NUTRIENT ENRICHMENT.**

Madelynn Edwards  
The College at Brockport

# RAS 2019 - Poster Session... (Continued)

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**41. METHANE EMISSIONS FROM STORMWATER PONDS**

Brianna Pollard, Carmody McCalley  
Rochester Institute of Technology

**42. ABUNDANCE OF MICROPLASTICS IN THE SOUTHERN TRIBUTARIES SEDIMENTS OF LAKE ONTARIO.**

Cameron Snell, Tammy Bleier, and Michael Chislock  
SUNY Brockport

**43. THE INFLUENCE OF HERBIVORY ON SUBMERGED MACROPHYTES AND NITROGEN RETENTION IN CREATED WETLANDS.**

Evan N. Squier, Kimberly A. Lodge, Delanie Spangler, Christy Tyler, Carrie McCalley, and Nathan Eddingsaas  
Rochester Institute of Technology

**44. THE IMPACT OF HERBIVORE EXCLUSION ON METHANE EMISSIONS IN WETLANDS.**

Briana Stringer, Carmody McCalley, Christy Tyler, Delanie Spangler, Kimberly Lodge, Ben Hamilton, Evan Squier  
Rochester Institute of Technology

## **Biology-Microbiology**

**45. OPTIMIZING GROWTH CONDITIONS FOR BIOMASS AND LIPID ACCUMULATION IN C. REINHARDTII.**

Natalie Guzelak and Noveera Ahmed  
St. John Fisher College

**46. RV1700 ADP-RIBOSE HYDROLASE FROM MYCOBACTERIUM TUBERCULOSIS.**

Nana Aikins, Thomas Hynes, Cassi Martin, Kevin O'Donovan and Suzanne F. O'Handley  
Rochester Institute of Technology

**47. TYPE OF HOST PLANT DOES NOT INFLUENCE HORIZONTAL TRANSFER OF Wolbachia sp. TO OAK TWIG PRUNER LARVAE**

Sarah Bresette, William Brown and Luciana Cursino  
Keuka College

**48. COMPARATIVE BIOFILM ANALYSIS OF OTITIS MEDIA OTOPATHOGENS BETWEEN PH 7.0-8.0.**

Andreia Cadar, Vincent Darmohray, Diksha Thakkar and Robert Osgood  
Rochester Institute of Technology

**49. THE QUEST TO COMBAT ANTIBIOTIC RESISTANCE: ISOLATION, SEQUENCING, AND ABRIBACTERIAL PROPERTIES OF RIT452.**

Nicole Cavanaugh, Anutthaman Parthasarathy, Narayan Wong, KayLee Steiner, Megan Hallenbeck, and Andre O. Hudson  
Rochester Institute of Technology

**50. OPTIMIZING GROWTH CONDITIONS FOR BIOMASS AND LIPID ACCUMULATION IN C. REINHARDTII.**

Natalie Guzelak and Noveera Ahmed  
St. John Fisher College

# RAS 2019 - Poster Session... (Continued)

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- 51. ISOLATION, SEQUENCING, AND ANTIBACTERIAL PROPERTIES OF PARACLOSTRIDIUM SP. ISOLATED FROM SOIL.**  
Megan Hallenbeck, Jonathan Chu, Narayan Wong, Anutthaman Parthasarathy and Andre O. Hudson  
Rochester Institute of Technology
- 52. PHENOTYPES OF NUDIX HYDROLASES**  
Nicolette Kulakowski, Sakinah Abdul-Khaliq, Cara Jones, Luiza Bianco, Thomas Hynes, Colleen Kane, and Suzanne F. O'Handley  
Rochester Institute of Technology
- 53. ISOLATION, WHOLE- GENOME SEQUENCING AND CHARACTERIZATION OF QUORUM-SENSING SIGNAL PRODUCTION IN A POISON IVY BACTERIAL ENDOPHYTE.**  
Trevor S. Penix, Peter C. Wengert, Narayan H. Wong, and Michael A. Savka  
Rochester Institute of Technology
- 54. FISH GUT MICROBES: PHYLOGENY & MORPHOLOGY OF EPULOPISCIUM SPP. C AND J MORPHOTYPES.**  
Alejandro B Schmieder, Esther R Angert  
Cornell University
- 55. IDENTIFICATION OF AN RNA MODIFICATION ENZYME IN TRYPANOSOMA BRUCEI.**  
William C. Schultz, Xiane L. Smith, Cassandra C. Taber, and Kevin T. Militello  
SUNY Geneseo
- 56. INVESTIGATING THE LOCALIZATION OF PSEUDOMONAS AERUGINOSA NARG AND NARH USING FUSION PROTEINS.**  
Jaya Manjunath, Jordan McDonald, Melina Recarey, and Johanna Schwingel, PhD  
St. Bonaventure University
- 57. ISOLATION, WHOLE-GENOME SEQUENCING AND ANTIBIOTIC ACTIVITY OF PSEUDOMONAS SP. RIT 623.**  
KayLee K. Steiner, Anutthaman Parthasarathy, Narayan H. Wong, Nicole T. Cavanaugh, Jonathan Chu, Megan C. Hallenbeck, Andre O. Hudson  
Rochester Institute of Technology
- 58. THE GENETIC ALTERATION OF THIOMICROSPIRA PELOPHILA AS A SOLUTION TO REDUCE CARBON EMISSIONS IN INDUSTRY.**  
Jordan Stewart, Samantha Williams, and Malikiya Hayes, Dr. Kathleen Scott, Sarah Schmid, and Juliana Leonard  
Cornell University, University of South Florida, Florida A&M University
- 59. BACTERIAL EXPRESSION OF CHIMERIC ESCHERICHIA COLI AND TRYPANOSOMA BRUCEI DNA METHYLTRANSFERASES.**  
Cassandra C. Taber and Kevin T. Militello  
SUNY Geneseo
- 60. WHOLE GENOME SEQUENCING AND CHARACTERIZATION OF BACTERIA ISOLATED FROM AN UNTOUCHED CAVE ENVIRONMENT.**

# RAS 2019 - Poster Session... (Continued)

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## Biology Zoology

**61. FINITE ELEMENT ANALYSIS OF A FULLY LIMBED SKINK.**

Isaac Annal and Jennifer Olori  
SUNY Oswego

**62. SEX OF OAK TWIG PRUNER BEETLES CAN BE DETERMINED WITH TWO MEASUREMENTS.**

William P. Brown, Marion E. Zuefle, and Jesse F. Brundage  
Keuka College, Cornell University, NYS IPM, Geneva

**63. COMPARING THE INFLUENCE OF TWO SAMPLING METHODS ON THE STABILITY TRENDS IN LONG TERM DEER TICK POPULATION DATASETS.**

Sofie Christie, Kaitlin Stack Whitney  
Rochester Institute of Technology

**64. PHYSIOLOGICAL CONDITION OF THRUSHES DURING MIGRATION STOPOVER NEAR LAKE ONTARIO.**

Erica Delles, Gretchen Horst, Carter Moleski, Kate Hensel, and Susan Smith Pagano  
Rochester Institute of Technology

**65. INTERACTION BETWEEN DIETARY THIAMINE AND LIPID ON JUVENILE STEELHEAD TROUT.**

Lillian Denecke and Jacques Rinchar  
SUNY Brockport

**66. NO DIFFERENCE IN MALE NORTHERN CARDINAL PLUMAGE COLOR BETWEEN RURAL AND URBAN ENVIRONMENTS.**

Kristie M. Drzewiecki and Daniel T. Baldassarre  
SUNY Oswego

**67. THE DEVELOPMENT OF THE COELOMIC CAVITIES AT THE VITELLARIA STAGE.**

Nasreen Jaff, Guy Azriel, and Hyla Sweet.  
Rochester Institute of Technology

**68. TIMING IS EVERYTHING: VARIATION IN BROWN ANOLE (ANOLIS SAGREI) EGG CHARACTERISTICS OVER A BREEDING SEASON.**

Caitlin Lawrence, Gabrielle Sawyer, and Christina Schmidt  
Wells College

**69. A TEMPORAL SURVEY OF BAT SPECIES AT SUNY GENESEO.**

Stephen Loce  
SUNY Geneseo

**70. DETERMINING PHYLOGENETIC RELATIONSHIPS OF CORVUS CORAX IN MEXICO AND CENTRAL AMERICA THROUGH MITOCHONDRIAL DNA SEQUENCING.**

Richard T. Marino III  
Ithaca College

**71. USING ELECTRORETINOGRAPHY TO STUDY SEIZURE ACTIVITY IN DROSOPHILA MELANOGASTER MUTANT**

Charles Morgan and David Deitcher  
Cornell University

# RAS 2019 - Poster Session... (Continued)

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**72. THE EFFECTS OF DISTURBANCE ON THE SUCCESS OF CAVITY-NESTING BIRDS.**

Kevin Nash and Andie Graham  
The College at Brockport

**73. TESTING THE ROLE OF MATERNAL HAPLOID IN A DROSOPHILA HYBRID CROSS.**

Sahana Natesan, Daniel A. Barbash, and Dean M. Castillo  
Cornell University

**74. DEGREE OF CAT SOCIALIZATION EFFECTS LENGTH OF STAY FOR SHELTER CATS.**

Valerie Stephan and Bill Brown  
Keuka College

**75. PROTEIN, CARBOHYDRATE AND ASH CONTENT OF SELECT ORGANS OF THE VIRILE CRAYFISH - ORCONECTES VIRILIS.**

Kylie Robben, Lauren Williamson, and Autumn Bell - Brian W. Witz, Ph.D.  
Nazareth College

**76. CALORIC VALUE OF SELECT ORGANS OF THE VIRILE CRAYFISH ORCONECTES VIRILIS COLLECTED FROM 3 STREAM SITES ALONG THE HONEOYE CREEK.**

Erich D'Eredita, Rachael Moyles, and Bethany Shaw, Brian Witz, PhD.  
Nazareth College

## Chemistry

**77. BIOCHEMICAL ANALYSIS OF BROWNING ACTIVITIES IN APPLES.**

Christian DiBiase, Nathaniel Stahl and Poongodi Geetha-Loganathan  
SUNY Oswego

**78. ENZYME FUNCTION PREDICTION, DISCOVERY, AND CHARACTERIZATION IN UNDERGRADUATE BIOCHEMISTRY TEACHING AND RESEARCH LABS.**

Kevin DiMagno, Elizabeth Lucas, Nana Aikins, Katherine Wilson, Minh Le, Kevin O'Donovan, Spencer Richman, Paul Craig, Jeffrey Mills, and Suzanne O'Handley  
Rochester Institute of Technology

**79. USE OF METHYLENE AS A FOOTPRINTING REAGENT FOR THE STUDY OF PEPTIDES.**

Ellirose Edwards, Hyeok Kim, Gavin Lucky, and Dr. Paul Martino  
Houghton College

**80. SYNTHESIS OF 8-QUINOLINETHIOL N-OXIDE, A NOVEL CHELATING LIGAND.**

Nathan J. Halsteter and Bradly M. Kraft  
St. John Fisher College

**81. ADSORPTION AND SURFACE COVERAGE OF MERCAPTOHEXADECANOIC ACID ON SNO<sub>2</sub> THIN FILMS.**

Elizabeth R. Hinterberger and Gregory R. Soja  
D'Youville College

**82. CARBENE LABELING MASS SPECTROMETRY - A CONTINUATION IN DEVELOPMENT OF A NEW TOOL FOR BIOPHYSICAL INFORMATION.**

Paul Martino, Hyeok Kim, Ellirose Edwards, Gavin Luckey  
Houghton College

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- 83. PEPTIDE STRUCTURE BY CARBENE LABELING AND MASS SPECTROMETRY.**  
Gavin Luckey, Ellirose Edwards, Hyeok Kim, and Dr. Paul Martino  
Houghton College
- 84. UNDERSTANDING THE TRIALS AND TRIBULATIONS OF DISCOVERING A DIELS-ALDER REACTION SUITABLE FOR AN UNDERGRADUATE CHEMISTRY LAB.**  
Molly McMahon and Jeremy Cody  
Rochester Institute of Technology
- 85. ANALYSIS OF COPPER NITRATE IN PEG400 SOLUTIONS BY UV VIS SPECTROSCOPY.**  
Jaclyn M. Neubauer and Markus M. Hoffmann  
The College at Brockport, SUNY
- 86. HIGHER ORDER CORRELATIONS IN A LEVITATED NANOPARTICLE PHONON LASER.**  
Long Nguyen, Kewen Xiao, Robert Pettit, Nick Vamivakas, and M. Bhattacharya  
Rochester Institute of Technology
- 87. MOLECULAR SOLVATION IN PHOSPHONIUM IONIC LIQUIDS.**  
Rachel I. Riga and Mark P. Heitz  
The College at Brockport, SUNY
- 88. TARGETED MOLECULAR IMAGING AGENTS FOR PHOTOACOUSTIC IMAGING OF PROSTATE CANCER.**  
Alexis Rudesil  
Rochester Institute of Technology
- 89. VISCOSITY-CONTROLLED ELECTRON TRANSFER IN WATER SPLITTING.**  
Justin M. Scheg, David McCamant and Mark P. Heitz  
The College at Brockport, University of Rochester
- 90. POLYMERIZATION OF ANILINE AT GRAPHENE QUANTUM DOTS ELECTRODE.**  
Reeba Thomas, Zaheer Coovadia and K.S.V. Santhanam  
Rochester Institute of Technology
- 91. BREAKDOWN OF THE STOKES-EINSTEIN EQUATION IN REVERSE MICELLAR SOLUTIONS.**  
Matthew D. Too and Markus M. Hoffmann  
The College at Brockport
- 92. VARIOUS DRYING TECHNIQUES FOR DRYING PEG POLYETHYLENE GLYCOL AND SIMILAR SURFACTANTS.**  
Alex Verrelli and Markus M Hoffmann  
SUNY Brockport
- 93. SYNTHESIS AND CHARACTERIZATION OF TiO<sub>2</sub>.**  
Jordan Walker, Zili Wu, Zhenghong Bao, Aditya Savara, and Alexey Ignatchenko  
St. John Fisher College
- 94. INTRODUCTION OF PIPERAZINE RING INTO CHLOROQUINE ANALOGS FOR EVALUATION IN BREAST CANCER CELLS.**  
Devan R. Warner, Catherine C. Lincourt, Dhvani Patel, Peter Cao, Yasser Heakal, Dominic L. Ventura  
D'Youville College

# RAS 2019 - Poster Session... (Continued)

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**95. USING A LOW-FREQUENCY EPR MOBILE UNIVERSAL SURFACE EXPLORER TO NON-DESTRUCTIVELY ANALYZE MIXTURES OF PAINT ON CANVAS.**

Elizabeth Bogart, Matina Chanthavongsay, Akul Gupta, Haley Wiskoski, Joseph P. Hornak Rochester Institute of Technology

## Ecology

**96. ALGAE BLOOM DETECTION THROUGH THE USE OF CONSUMER DRONES IN THE FINGER LAKES.**

Joshua Andrews, William White, Ileana Dumitriu, Ph.D., Peter Spacher, Ph.D., and John Halfman, Ph.D.  
Hobart and William Smith College

**97. REMOTE SENSING TO MONITOR HARMFUL ALGAL BLOOMS.**

William White, Elizabeth Moore, Ileana Dumitru, Ph.D., Peter Spacher, Ph.D., John Halfman, Ph.D, Lisa Cleckner, Ph.D.  
Hobart and William Smith Colleges

## Health

**98. INVESTIGATING WALKING GAIT AND STANCE INTERVENTIONS IN THE ELDERLY TO IMPROVE MOBILITY, BALANCE, AND REDUCE FALL RISK.**

Alison Pomerleau, and Dr. Jonathan Millen, PhD  
St. John Fisher College

## Geology

**99. INVESTIGATION OF THE NEOGENE DEPOSITIONAL ENVIRONMENT OF THE EASTERN HIMALAYAN SIWALIK DEPOSITS THROUGH MULTIPROXY ORGANIC ANALYSIS.**

Andre Brunette, Nandini Kar, Richard W. Smith, Suchana Taral, and Tapan Chakraborty  
SUNY Brockport College

**100. EARLY DEVONIAN MANLIUS GROUP: EURYPTERIDS, CRINOIDS, OLNEY LIMESTONE AND A DRONE.**

Samuel J. Ciorca, Jr., Joseph LaRussa  
Peabody Museum of Natural History

**101. VERTICAL FRACTURES IN THE CHAUMONT LIMESTONE IN THE WATERTOWN VICINITY, NY: GLACIAL ORIGIN OR TECTONIC ORIGIN?**

Michael Delaney and Daisuke Kobayashi  
SUNY Brockport

**102. APATITE AS A HALOGEN TRACER IN THE MIGMATITE-GRANITE COMPLEX OF SOUTHERN MAINE.**  
**Sarah Rappleye and Paul Tomascak**

SUNY Oswego, Syracuse University

**103. FROST TOWN ARCHAEOLOGY: PRELIMINARY RESULTS FROM THE 2019 FIELD SEASON.**

Emily Russell, Emily Yahn  
SUNY Brockport

# RAS 2019 - Poster Session... (Continued)

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## Engineering

### 104. ROCKSAT-C: DESIGNING AND BUILDING A PAYLOAD TO LAUNCH INTO SPACE.

Shreeya Desai, William Elliman, Victoria Loshusan, James Truley, Ileana Dumitru, Ph.D., Peter Spacher, Ph.D.  
Hobart and William Smith Colleges

**~ PRE-ORDERED LUNCH ~**  
**WARSHOF CONFERENCE CENTER, MONROE A & B**  
**12:45 PM – 1:00 PM**

**KEYNOTE ADDRESS ~ Dr. WARREN D. ALLMON**  
**WARSHOF CONFERENCE CENTER, MONROE A&B**  
**1:00 PM – 2:00 PM**

Moderator – Professor Lisa Flick, Biology

**Congratulations RAS '19 Presenters!**



**Monroe Community College**

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# RAS

Forty-Sixth Annual  
Rochester Academy of Science  
Fall Paper Session  
Saturday, November 9, 2019



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