ROCHESTER ACADEMY OF SCIENCE

40th Annual Fall Scientific Paper Session

Saturday, November 9, 2013

Hosted by Nazareth College
Rochester Academy of Science

Fall Scientific Paper Session

Saturday, November 9, 2013

Hosted by:

Nazareth College
Rochester, NY

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Schedule of the Day

8:00 – 9:00  Registration and Coffee  Peckham Hall Lobby
8:00 – 11:15  Poster Setup  Peckham Hall, Basement, 1st, 2nd floors
9:00 – 11:45  Oral Presentations  Peckham Hall, 3rd Floor

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11:45 – 12:45  Poster Session  Peckham Hall

Basement, 1st, and 2nd Floors

12:45 – 1:20  Lunch  Shults Center, Forum
1:30 – 2:30  Keynote Speaker  Shults Center, Forum

**Imaging technologies and the Impending New Golden Age in Manuscript Studies**

Dr. Roger Easton, Rochester Institute of Technology
Rochester Academy of Science
Fall Scientific Paper Session

Oral Presentations

Session I – Chemistry & Biochemistry
Room Peckham Hall - 313

9:00 – 9:15 a.m. CYTOTOXICITY OF FERROCENYLATED N-HETEROCYCLIC CARBENE SUPPORTED GOLD COMPLEXES
Kuppuswamy Arumugam, Jonathan Arambula, Jonathan Sessler and Christopher Bielawski

9:15 – 9:30 a.m. THE SYNTHESIS OF TARGETED MULTI-MODAL IMAGING AGENTS USING LINEAR AND CONVERGENT PEPTIDE METHODS.
Taylor Barrett, Lauren Heese, Chelsea Weidman, Dr. Hans Schmitthenner

9:30 – 9:45 a.m. STRUCTURE DETERMINATION OF UNKNOWN ORGANIC LIQUIDS USING NMR AND IR SPECTROSCOPY: A GENERAL CHEMISTRY LABORATORY.
Martha Bruch, John Pavel, Erin Hyde

9:45 – 10:00 a.m. FINDING AVOIDED CROSSINGS ANALYTICALLY IN THE STARK-ZEEMAN SPECTRUM OF OH.
Nathan Cawley, Zachary Howard, Michaela Kleinert, Mishkatul Bhattacharya

10:00 – 10:15 a.m. A STUDY OF SMALL MOLECULES AND THEIR CHELATING CAPABILITIES IN AN AQUEOUS SOLUTION.
Nicole Delello, Dr. Stephan Tajc

Session II – Cell Biology
Room Peckham Hall-302

9:00 – 9:15 a.m. ROLE OF MISMATCH IN MECHANICAL PROPERTIES IN CELL MIGRATION.
Julian Butcher, Moumita Das

9:15 – 9:30 a.m. SCREENING AMPHIBIAN POPULATIONS IN OSWEGO COUNTY, NY FOR INFECTIOUS RANAVIRUS.
Rachel Cary, Jennifer Ori, Sofia Windstam

9:30 – 9:45 a.m. MODELING THE DEFORMABILITY OF A CELL IN A MICROFLUIDIC ENVIRONMENT.
Jake Shechter, Kara Maki, Moumita Das
9:45 – 10:00 a.m.  DETECTING CHANGE OVER TIME IN TREE TISSUE CHEMISTRY.
                      Yang Yang

10:00 – 10:15    HORIZONTAL GENE TRANSFER IN BARTONELLA.
                      Qiyun Zhu\textsuperscript{1}, Michael Kosoy\textsuperscript{2}, Kevin Olival\textsuperscript{3}, Katharina Dittmar\textsuperscript{1,4}

10:15 – 10:30    ARE INHIBITION OF HOST TRANSCRIPTION AND SUPPRESSION OF THE
                      INTERFERON SYSTEM SEPARABLE FUNCTIONS IN VSV-INFECTED CELLS?
                      Kaitlin Marquis, Connie Rink, Maureen Ferran

Session III – Physics
Peckham Hall – 306                      Moderator: Michael Richmond

9:00 – 9:15 a.m.  STUDY OF CHAOTIC VIBRATION IN PUMPS.
                      Patricia A. Babowicz, Simon Bradshaw, David Skinner, and William Zuidema,
                      Prashanta Samanta

9:15 – 9:30 a.m.  WEAK CONTINUOUS QUANTUM MEASUREMENT.
                      Areeya Chantasri

9:30 – 9:45 a.m.  RAY TRANSFER ANALYSIS OF THE SPIRAL PHASE PLATE.
                      Tyler Godat\textsuperscript{1}, Michael Eggleston\textsuperscript{1}, Eugene Munro\textsuperscript{2}, Miguel Alonso\textsuperscript{3}, Hao Shi\textsuperscript{1},
                      Mishkatul Bhattacharya\textsuperscript{1}

9:45 – 10:00 a.m. ENTANGLEMENT CHARACTERIZATION OF AN OPTOMECHANICAL
                      SYSTEM.
                      Okechukwu Igbokwe, Mishkatul Bhattacharya

10:00 – 10:15     CONNECTIONS IN PHYSIC BETWEEN GEORG OHM TO BRAD PITT
                      Arnab Kar, S.G. Rajeev

Session IV – Chemistry & Biochemistry
Zoology, Evolution & Paleontology
Room Peckham Hall - 313                      Moderator: Michael Grenier

10:15 – 10:30 a.m. ENHANCING THE BIOAVAILABILITY OF RAGE INHIBITORS:
                      TOWARDS NEW ANTI-ALZHEIMER’S THERAPEUTICS.
                      Moudi Hubieshy\textsuperscript{1}, Thomas Dwyer\textsuperscript{1}, and Benjamin Miller, \textsuperscript{2}

10:30 – 10:45 a.m. STUDIES TOWARDS THE TOTAL SYNTHESIS OF APLYDACTONE: A
                      MODEL STUDY. \textit{NOTE: this is a POSTER and is in the BASEMENT}
                      Austin T. Kelly, Katherine Valentine, and Dr. Tina Goudreau Collison

10:45 – 11:00 a.m. SYNTHESIZING DPA DERIVATIVES TO IDENTIFY EFFECTIVE
                      CATION SCAVENGERS.
                      Nick Polito
11:00 – 11:15 a.m.  
Yau¹, Margaret A. Goodman² CHIRAL TRIS(PYRAZOLYL)METHANE SCORPIONATE LIGANDS AND THEIR IRON(II) COMPLEXES.  
Margo E. Weber¹, M. Scott Goodman¹, Alexander Y. Nazarenko¹, Fat Cheong

11:15 – 11:30 a.m.  
QUANTITATIVE PALEOECOLOGY.  
John Handley

11:30 – 11:45 a.m.  
ONTGENY OR PHYLOGENY? CLADISTIC PLACEMENT OF A JUVENILE DROMAEOSAURID FROM THE LOWER CRETACEOUS OF MONTANA.  
Parsons, William L., and Parsons, Kristen M.,

Session V – Astronomy & Physics
Archaeology
Education & Pedagogy
Peckham Hall-302  Moderator: Beverly Brown

10:15 – 10:30 a.m.  
WHY THE HUBBLE-CONSTANT IS NOT A CONSTANT.  
Ingo H Leubner

10:30 – 10:45 a.m.  
A Study of Velocity Profiles of Corona Wind in Asymmetric Electrode Configurations  
Thomas Liguori, Gregory Donastor, Joseph Cesta, Justin D’Antonio, and Adrian Ieta

10:45 – 11:00 a.m.  
PAST LIVES AT A LOCAL LANDMARK: THE ARCHAEOLOGY OF THE SPRING HOUSE, PITTSFORD.  
Kyle Somerville

11:00 – 11:15 a.m.  
MYTHBUSTING INTEGRATES KNOWLEDGE AND SKILL IN SCIENCE AND MATHEMATICS.  
Martin G. Kelly, Benjamin (Trey) L. Randle III, Antwan K. Barlow

11:15 – 11:30 a.m.  
DO YOU HAVE THE RIGHT INTUITION TO LEARN MATH?  
Ramiro H. Lafuente-Rodriguez

Session VI- Life Sciences: Ecology
Peckham Hall-306  Moderator: Stephanie Zamule

10:15 – 10:30 a.m.  
A STUDY OF ROCHESTER’S CLIMATE TREND USING METEOROLOGICAL NORMALS.  
Frederick J. Bloom

10:30 – 10:45 a.m.  
THE IMPACT OF STORMWATER RETENTION PONDS AND SMALL WETLANDS ON THE EXPORT OF DISSOLVED ORGANIC MATTER.  
Michael Burkett*, A. Christy Tyler*, Muhammad Rubaiyat*, Todd Pagano*

10:45 – 11:00 a.m.  
DO FOLIAR NUTRIENTS INDICATE SOIL NITROGEN MINERALIZATION IN NORTHERN HARDWOOD FOREST?  
Yi Dong
11:00 – 11:15 a.m. INVESTIGATING ENVIRONMENTAL FACTORS AND THEIR IMPACTS ON THE BULK PHENOLIC CONTENT OF TYPHA SPP: A POTENTIAL LINK TO INVASION SUCCESS.
Melissa Maurer

11:15 – 11:30 a.m. THIAMINE CONCENTRATION IN LAKE TROUT EGGS FROM THE GREAT LAKES AND CAYUGA LAKE.
Logan Stratton*, Jacques Rinchardb, Stephen Rileyb

11:30 – 11:45 a.m. PROJECT SWEETER SAP: DO SOIL NUTRIENTS MAKE MAPLE SAP SWEETER?
Adam Wild

Poster Presentations

Chemistry & Biochemistry

1. NEW METHODS FOR THE SYNTHESIS OF TARGETED GD CONTRAST AGENTS FOR MRI.
Stephanie Beach, Kevin Kirk, Dr. Hans Schmitthenner

2. THE SYNTHESIS OF PEPTIDE BASED TARGETED MOLECULAR IMAGING AGENTS.
Lauren Heese, Taylor Barrett, Dr. Hans Schmitthenner

3. METALLOPHTHALOCYANINE CATALYZED WITTIG OLEFINATION.
Brandon M. Belz, Scott J. Heller, Dominic L. Ventura*

4. METALLOPHTHALOCYANINE CATALYZED CARBENOID REACTIONS.
Robert W. Kubiak II, Dominic L. Ventura*

5. SOLVENT – DEPENDENT AND TEMPERATURE – DEPENDENT PROTEIN AGGREGATION TO GOLD COLLOIDS INVESTIGATED UNDER TEM.
Christina Berti

John Bettinger1, Emily Newman1, Anthony Mangan1, Michael Pichichero2, Lea Vacca Michel1

7. REVERSIBLE SELF-ASSEMBLY OF Aβ1-40 AND Aβ1-42 OVER NITRO-DIBEZYLOXY DISULFIDE FUNCTIONALIZED GOLD COLLOID.
Christa D. Catalfamo, E. Sophia Hwangbo, Amy L. Tran, Kazushige Yokoyama

8. SOLUBILITY OF MINERAL SALTS IN NONIONIC SURFACTANT-WATER BINARY SOLVENTS.
Daniel S. Clark, Markus M. Hoffmann, Ph. D

9. STUDY OF CARBOXYLIC ACIDS ENOLIZATION ON METAL OXIDE CATALYSTS THROUGH D/H EXCHANGE RATES.
Joe DeRaddo, Vince Marino, Alexey Ignatchenko
10. ELECTROCHEMICAL CONTROL OF RING SIZE OF CYCLIC POLYESTERS.
Gregory Faughnan, Renjith Maracheril, Kuppuswamy Arumugam

11. GENOMIC ANALYSIS OF STAPHYLOCOCCUS BACTERIOPHAGE
James P. Lioi, Dr. Mark A. Gallo Ph.D.

12. SYNTHESIS OF OPTIMIZED RAGE INHIBITORS TO REDUCE AMYLOID BETA-MEDIATED ALZHEIMER'S DISEASE.
Moudi Hubieshy¹, Thomas Dwyer¹, and Benjamin Miller ²*

13. DEVELOPMENT OF A SPECTROSCOPIC METHOD FOR DETECTION OF ATMSPERHIIC GASES.
Breanna Jewell, Emily Thurnherr, Nathan C. Eddingsaas

14. SYNTHESIS OF MALEAMIC ACID AMIDINOHYDROLASE (NicF) SUBSTRATE ANALOGS.
Rory Jones¹, Mark Snider*, David Hilmey³

15. SEQUENCE OF HISTONE ASSEMBLY INFLUENCES HISTONE RESTRICTION ENZYMATIC CUTTING OF pUC19 IN THE PRESENCE OF MARCROMOLECULAR CROWDING AGENTS.
Lauren Kapus, Dr. Robert Greene

16. THE SYNTHESIS OF A SOLUBLE DIRHENIUM(III,III) PADDLEWHEEL COMPLEX FOR THE STUDY OF LIGAND EXCHANGE AND THE EXPLORATION OF PHOTOPHYSICAL AND ELECTRONIC PROPERTIES.
Thomas Maderer, Carly R. Reed

17. ANALYSIS OF THE KINETICS FOR THE ESTERIFICATION OF ACETIC ACID CATALYZED BY TIN (II) BROMIDE
Richard Hartmann, Ph.D., Nandini Singh (ysingh2@mail.naz.edu), Nicole Bayona, Jaissy Sekhon

18. SYNTHESIS OF ISOTOPICALLY LABELED IONIC LIQUIDS.
Eric Sylvester¹, Ralf Giernoth², Markus M. Hoffmann¹

19. NOVEL POROUS QCM GAS SENSOR COATINGS; A HIGH SENSITIVITY WATER SENSOR BASED ON PMMA-POLY(D,L-LACTIDE).
Ho Yeon Yoo, Stanley Bruckenstein

20. USING MICROPROCESSOR BASED LABORATORY TOOLS IN CHEMISTRY LECTURE.
David P. Schuster

21. DEVELOPMENT OF A GUIDED INQUIRY LABORATORY TO INTRODUCE THE CONCEPT OF NEUTRALIZATION USING ANTACIDS TO PRE-CLINICAL NURSING STUDENTS.
Astronomy, Physics

22. STUDY OF CHAOTIC VIBRATION IN PUMPS.
Patricia A. Babowicz, Simon Bradshaw, David Skinner, and William Zuidema, Prashanta Samanta,

23. LASER VISUALIZATION OF ELECTROHYDRODYNAMIC THRUSTER FLOW PROFILES
Gregory Donastor, Thomas Liguori, Joseph Cesta, Justin D’Antonio, and Adrian Ieta

24. PHOTOMETRY OF THE CATACLYSMIC VARIABLE STAR V1084 HER.
Laura Maher¹, Michael Richmond², Billy Vazquez³

25. DEVELOPING HOLOGRAMS VIA TRANSMISSION AND REFLECTION TECHNIQUES.
Maxim Irving, Daniel Choe, Ileana Dumitriu, and Peter Spacher

26. ANALYZING THE WATER VAPORS IN THE ATMOSPHERE USING A ‘HOME-BUILT’ SOLAR SPECTROGRAPH.
Daniel Choe, Peter Spacher, Ileana Dumitriu

27. INNER-SHELL PHOTODETACHMENT OF C N SMALL CLUSTERS.
Joshua Moss¹, Candace Carducci¹, Ileana Dumitriu¹, Rene Bilodeau², Alex Aguilar², Dan Gibson³, Wes Walter³

Life Sciences: Cell Biology & Genetics

28. INVESTIGATING FLAGELLAR DEFECTS IN CHLAMYDOMONAS REINHARDTII.
Stephanie Antonio and Noveera Ahmed

29. THE ROLE OF Rad52p ISOFORMS IN NUCLEAR AND MITOCHONDRIAL HOMOLOGOUS RECOMBINATION EVENTS.
Hugo Avalos, Matthew Luther, Emily Whiteside, and Rey A. Sia.

30. PRODUCTION OF LIPID-BASED NANOPARTICLES LABELED WITH QUANTUM DOTS
Alexandria Argentieri & Fernando Ontiveros, Ph.D.

31. DUAL ORIENTATION OF VACCINE CANDIDATE P6 IN HH13 STRAIN OF NONTYPABLE HAEMOPHILUS INFLUENZAE.
David Barnard¹, John Bettinger¹, Juliana Shaw¹, Qingfu Xu², Michael Pichichero², and Lea Vacca Michel¹

32. HA-PSEUDOTYPED SINGLE-CYCLE INFECTIOUS INFLUENZA A VIRUS TO EVALUATE NEUTRALIZING ANTIBODY RESPONSES.
Michael Breen, Steven Baker, Luis Martinez-Sobrido, Ph. D
33. GLYCOLYSIS AS A MECHANISM FOR MAINTAINING CANCER ENVIRONMENT IN A REDUCED STATE.  
Caralee Cecala¹, Jolanta Skalska²

34. INDUCTION OF APOPTOSIS IN HeLa CELLS USING PHOTODYNAMIC AGENTS.  
Alexandra House, Dr. Robert Greene

35. DETECTION OF GRAPEVINE LEAFROLL ASSOCIATED VIRUSES IN VITUS VINIFERA GRAPEVINE SAMPLES OF WESTERN NEW YORK USING THE MACROARRAY PLATFORM.  
Robert D Marek(1), Rachel L McClatchey(1), Jeremy R Thompson(2), Keith L Perry(2), and Jamie L Potter(1).

36. INTERACTIONS OF CORE PROTEINS WITHIN THE EXON JUNCTION COMPLEX OF ARABIDOPSIS THALIANA.  
Zachary Mazanek, Meera Babu, Xiao-Ning Zhang, PhD

37. GENOMIC COMPARISON OF STAPHYLOCOCCI ISOLATED FROM CATTLE ON AN ORGANIC DAIRY FARM.  
Kyle Nugent and Mark A. Gallo, Ph.D.

38. ULTRASOUND-ENHANCED TRANSDERMAL DELIVERY OF NANOPARTICLES.  
Fernando Ontiveros Ph.D.*, Jessica Saxum*, Brooke Saffren* & Maria Helguera Ph.D*.

39. THE ROLE OF DNM1 IN MITOCHONDRIAL GENOME STABILITY IN BUDDING YEAST.  
Christopher Prevost, Deanna Pedeville, and Rey Antonio L. Sia.

40. PROPERTIES OF CX31 AND INTERACTING JUNCTIONAL PROTEINS EXPRESSED IN XENOPUS OOCYTES.  
S. Rarick and I.M. Skerrett

41. DISCOVERY OF NOVEL ARENAVIRUS NP-HOST FACTOR INTERACTIONS VIA THE YEAST-TWO HYBRID SYSTEM.  
Patrick Schupp*, Luis Martínez-Sobrido*

42. DESENSITIZATION OF MCH-MEDIATED ERK SIGNALING IN THE ABSENCE OF RECEPTOR INTERNALIZATION – A NEW ROLE FOR G PROTEIN-COUPLED RECEPTOR KINASES 5 AND 6.  
Chris Tomeny, Andrew Goodspeed, Laurie B. Cook.

43. TESTS FOR WOLBACHIA AND SEX-LINKED GENES IN THE TERRESTRIAL ISOPOD TRACHELIPUS RATHKEI.  
YaDong Wang, Christopher Chandler

44. USING A549 LUNG CANCER CELLS TO TEST TARGETED MOLECULAR IMAGING AGENTS THAT BIND TO αvβ3 INTEGRINS ON CANCER CELLS.  
Sarah Wang¹, Sean Aronow¹, Hans Schmitthenner², Irene M. Evans¹
45. PHYLOGENETIC CHARACTERIZATION OF BACTERIAL BIOFILMS FROM THE NIAGARA RIVER.
Andrew Mrzygut, Dr. Mark Gallo

46. EGG LAYING DEFECTS OF MICROTUBULE-ASSOCIATED PROTEIN EPB-2 KNOCKOUT IN C. ELEGANS.
Jennifer Plotzker, Daryl Hurd

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<td>47. BLACK-CAPPED CHICKADEES (POECILE ATRICAPILLUS) ALTER THEIR SEED CACHING BEHAVIOR IN RESPONSE TO SEASONAL CHANGES.</td>
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<td>Jennifer Plotzker, Michael Carroll, Aaron Spacher</td>
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48. HUNGRY, HUNGRY EARTHWORMS: HOW INVASIONS AFFECT DECOMPOSITIONAL ENZYME ACTIVITY
Lauren V. Alteio, Rebecca L. Walling, Thomas R. Horton

49. BIODEGRADATION OF IMIDACLOPRID BY PSEUDOMONAS AERUGINOSA, PSEUDOMONAS PUTIDA, AND ESCHERICHIA COLI.
Grete Bader and Stephanie Zamule, Ph.D.

50. MORPHOLOGICAL FACTORS ASSOCIATED WITH ANTPREDATOR BEHAVIORS OF JEFFERSON-COMPLEX SALAMANDERS.
Jordan Bailey, Sharmini Baskaran, Jennifer Buckley, Zoe Carnes-Douglas, Dawn Fitch, Kairee Glantz, Jeffrey Hess, Duncan Lindberg, Katelyn M. Meier, Sofiah Nor Wira, Melissa Santonocito, A. Mario Tarasco, Taylor Williams, Paul Shipman

51. AN INVESTIGATION OF THE EFFECT OF SOIL DISKING ON GEWÜRZTRAMINER (Vitis vinifera cultivar) GRAPE MATURATION IN THE FINGER LAKES REGION OF NEW YORK.
Molly Baillargeon¹, Thom Bechtold², Niamh O’ Leary³

52. HIERARCHICAL STEEPNESS, COUNTERAGGRESSION, AND MACAQUE SOCIAL STYLE SCALE.
Balasubramaniam, K. N.¹, Dittmar, K.¹,² & Berman, C. M.¹,³

53. DO ROAD SALTS HAVE PERSISTENT IMPACTS ON SOILS MONTHS AFTER DEPOSITION?
Paul Canaski, Thomas Carone II, Kirsten Mahalick

54. THE EFFECT OF WETLAND CONFIGURATION ON ANURAN ROAD MORTALITY.
Jocelyn Coleman, Lauren Jonaitis, Gina Racculia, Adrianna Rozell, C. Eric Hellquist.
55. RED-SHOULDERED HAWK EGG MORPHOLOGY BEFORE AND AFTER THE INTRODUCTION OF DDT.
Amber De Jong, Bill Brown

56. CLIMATE CHANGE PROMPTS UPWARD MIGRATION OF ANT HYBRID ZONE.
Victoria De Stefano, Robert Warren, Bernice Demarco

57. BIOMECHANICAL PROPERTIES OF FRESHWATER PLANT LIFE: AN ANALYSIS OF PODOSTEMUM CERATOPHYLLUM VIA CYCLIC LOADING/UNLOADING TESTS
Alexander Dean and Michael Boller

58. USING REGRESSION ANALYSIS TO ACCURATELY ESTIMATE LEAF AREA FROM MEASURED LENGTH AND WIDTH.
Paige L. Hamilton, Nailah Leftwich, Martin G. Kelly

59. DOES GRAZING CONTROL THE SPREAD OF INVASIVE WETLAND PLANTS?
Lisa Kratzer*, A. Christy Tyler*

60. CHARACTERIZATION OF BIOLUMINESCENT BACTERIA OF THE NIAGARA RIVER.
Matthew Lanning, Phillip Crane, Mark Gallo

61. LINKING WILD FRUIT QUALITY AND PHYSIOLOGICAL CONDITION OF SONGBIRDS DURING FALL MIGRATION AT BRADDOCK BAY, LAKE ONTARIO.
April E. Meier, Charmaine R. Merchant, Cassie J. Gould, and Susan S. Pagano

62. THE IMPACT OF EXURBAN HOUSING DEVELOPMENT ON THE PHYSIOLOGICAL CONDITION OF BREEDING OVENBIRDS IN THE ADIRONDACKS.
Cassie J. Gould, Chad Seewagen, Susan Smith Pagano

63. LIMITING INVASIVE SPECIES USING NATIVE SHRUB GROWTH.
Kaitlyn Moranz, Dr. Christy Tyler

64. THE ABUNDANCE AND DISTRIBUTION OF DEER TICKS WITHIN AND OUTSIDE DEER EXCLOSURES AT RICE CREEK FIELD STATION, OSWEGO COUNTY, NY.
Stephenie Przepiora, Daniel Haller, Kathleen Clifford, Jennifer Buckley

65. THE ABUNDANCE OF IXODES SCAPULARIS AND THE LYME DISEASE BACTERIUM, BORRELIA BURGDORFERI IN CENTRAL NEW YORK.
Zuzi E. Salais, Carolanne J. Smith, C. Eric Hellquist, Timothy F. Braun

66. DO ALGAL COMMUNITIES VARY BETWEEN VERNAL POOLS AT RICE CREEK FIELD STATION, OSWEGO, NY?
Amber Snyder, and Dr. Cynthia Tant

67. PATTERNS OF PLANT BIOMASS PRODUCTION IN THREE YEAR GRAZING EXCLOSURES IN YELLOWSTONE NATIONAL PARK.
Hayley Stanbro, C. Eric Hellquist
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81. ADVANTAGES AND LIMITATIONS OF USING OPTOGENETIC REPORTERS FOR MONITORING NEURONAL EXCITABILITY.
Angeline Pham, Kelly O’Sullivan, Nicholas Mitchell Ph.D.

82. THE COMPARATIVE ANALYSIS OF FIBRIN SPECIFIC AND FIBRIN NON-SPECIFIC DRUGS IN THE TREATMENT OF HIGH RISK PULMONARY EMBOLISM.
Caitlin Scheeler

83. PHOTOBIOSTIMULATION IN C. ELEGANS AS A MODEL FOR LIGHT THERAPY.
Michael Spoto, Dr. Daryl Hurd, Dr. Max Rempel

84. GENETIC ANALYSIS OF ENZYME CLUSTERING IN YEAST AND ITS APPLICATION TO LESCH-NYHAN SYNDROME
Ryan M. Thomas, Amanda S. Baker and Eric M. Cooper

85. ISOLATION OF CANDIDA SPECIES FROM TOOTHBRUSHES AND POSSIBLE DISINFECTION METHODS FOR BETTER ORAL HYGIENE.
Annie H. Vu, Maryann A.B. Herman

Archaeology

86. THE POTENTIAL OF LOW FREQUENCY ELECTRON PARAMAGNETIC RESONANCE FOR THE ANALYSIS OF CULTURAL HERITAGE ARTIFACTS.
M. Terwilliger¹,², A. Cannella¹, W.J. Ryan², N. Zumbulyadis³, J.P. Hornak²

Zoology, Evolution, Paleontology

87. IDENTIFICATION AND IMPACT OF GASTROINTESTINAL BACTERIA IN THE ZEBRAFISH.
Michael Carroll, Edward Freeman

88. EURYPTERUS PITTSFORDENSIS FAUNA: NEW LOCALITIES FOR THE BARGE CANAL MEMBER, LOWER VERNON FORMATION, SALINA GROUP (ERIE CANAL AT FAIRPORT AND PITTSFORD, NEW YORK).
Samuel J. Ciurca, Jr.

89. LONGITUDINAL PROSPECTIVE STUDY TO FOLLOW AND CHARACTERIZE THE ESTABLISHMENT OF THE AEROBIC CULTIVABLE FRACTION OF THE GUT MICROBIOTA OF PRETERM AND VERY PRETERM INFANTS.
Felix De Clercq

90. PRESENCE OF PATHOGENIC MICROBES IN RED-EARED SLIDER TURTLES.
Morgan Devaney, Dr. Maryann Herman

91. DIETARY TRANSFER OF FATTY ACIDS IN JUVENILE YELLOW PERCH.
Colleen Kolb¹, Jacques Rinchard², Sergiusz Czesny³, Austin Happel⁴

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92. WHO’S YOUR DADDY? A PARENTAGE ANALYSIS OF BUFFALO ZOO HELLBENDERS.
John Lang and Amy McMillan

93. STUDIES TOWARDS THE TOTAL SYNTHESIS OF TROCHELIOPHOROLIDE A.
Christine Yeo, Anthony Carestia, Jennifer Swartzenberg, Stephanie Dorn, Jessica Smith, Moni Augusto, William Spencer, and Dr. Christina Collison*

Chemistry

94. SURFACE MODIFICATION OF POLYSTYRENE TREATED WITH OZONE.
Entesar Al Abdulal, a Ameya Khot, a Alla Bailey, a Michael Mehan, b Thomas Debies, b Gerald A.Takacs a

95. NITROGEN INCORPORATION IN GRAPHENE OXIDE AND GRAPHENE NANOCOMPOSITE COATINGS FOR CORROSION PROTECTION OF LOW-ALLOY STEELS.
Jeffrey P. Aldinger, a Brian J. Schultz, a Robert V. Dennis, a Cherno Jaye, b Daniel A. Fischer, b and Sarbajit Banerjee a

96. SYNTHESIS OF DIARYL PRECURSORS FOR THE BOTTOM-UP FABRICATION OF GRAPHENE NANORIBBONS.
Umar Asif, * Kelly Morrison, Sarbajit Banerjee, † David Hilmy*

97. PHYSICAL BEHAVIORS OF IONIC LIQUIDS IN LOW POLARITY SOLVENTS.
Elise Cade, Markus M. Hoffmann

98. RHEOLOGICAL PROPERTIES OF PHOSPHONIUM IONIC LIQUID/METHANOL SOLUTIONS.
Zachery McAtee, Mark Heitz

99. REFINING A TRANSESTERIFICATION PROCESS: EXAMINING VARIOUS PROTOCOLS FOR CONVERTING WASTE VEGETABLE OIL INTO BIODIESEL.
Niamh O’Leary1, Colin P. Evans2

100. SYNTHESIS OF SMALL MOLECULE RECEPTORS FOR BINDING CATIONS.
Allison O’Neil, Jacob H. Murray, Jacob D. Murray, Steven Lewis, Dr. Stephen Tajc