

***12th ANNUAL UNDERGRADUATE
RESEARCH SYMPOSIUM IN THE
CHEMICAL AND BIOLOGICAL
SCIENCES***

Hosted by

**Department of Chemistry and Biochemistry
Department of Biological Sciences
University of Maryland, Baltimore County**

Saturday, October 10, 2009



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The National Institutes of Health
(NIGMS)***

**12th Annual Undergraduate Research Symposium
in the
Chemical and Biological Sciences**

Poster Session I (Morning Session)

(A) Chemical Sciences 1

1st Place COLLOIDAL PLATINUM NANOCATALYSTS AS A MEANS FOR
AQUEOUS-PHASE CHEMOSELECTIVE KETONE HYDROGENATION

Nathan E. Musselwhite, Oliver D. Lyons

Anderson L. Marsh

Department of Chemistry, Lebanon Valley College

101 N. College Avenue, Annville, PA 17003

2nd Place SYNTHESIS OF MEDIUM-RING NITROGEN HETEROCYCLES VIA
INTRAMOLECULAR HYDROACYLATION: EFFECT OF SOLVENT AND
CHAIN LENGTH

Kyle E. Ruhl

Dr. Holly D. Bendorf

Department of Chemistry, Lycoming College, 700 College Place, Williamsport,

Pa 17701

(B) Chemical Sciences 2

1st Place DETERMINING THE STRUCTURE OF HEPATITIS B VIRUS
NUCLEOCAPSID CORE IN COMPLEX WITH
HETEROARYLDIHYDROPYRIMIDINES

Richard Maduka

Dr. Adam Zlotnick

Department of Biochemistry/ Indiana University Bloomington

Simon Hall MSB, Room 003, 212 S. Hawthorne Dr. Bloomington, IN 47405-7000

2nd Place FURTHER STUDIES OF BIOLOGICAL LYSING OF ANIMAL BLOOD FOR
DETERMINATION OF IRON BY FERENE S/VISIBLE
SPECTROPHOTOMETRY: ACCURACY AND PRECISION ASSESSMENTS,
AND LONG-TERM STABILITY OF IRON(II)-FERENE S CALIBRATION
CURVES

Kimberly D. Roman, William E. Weller

Mark T. Stauffer

Chemistry Department, Division of Natural Sciences, Mathematics, and

Engineering, University of Pittsburgh at Greensburg, Greensburg, PA 15601

(C) Chemical Sciences 3

1st Place TRACE ELEMENTAL ANALYSIS IN FISH TISSUE BY LASER ABLATION ICP-MS

Jacob Smith

Daniel Downey

Department of Chemistry and Biochemistry

James Madison University, MSC 4501, Harrisonburg, VA 22807

2nd Place ISOLATION AND PURIFICATION OF ACTIN HOMOLOG MREB FROM *CAULOBACTER CRESCENTUS*

Rashalai Currington¹, Eric Klein, Ph.D.², and Zemer Gitai, Ph.D.²

¹*University of Maryland Eastern Shore, Princess Anne, MD, 21853*

²*Princeton University, Princeton, NJ, 08544*

(D) Chemical Sciences 4

1st Place HYDROTHERMAL SYNTHESIS OF LANTHANUM TITANATE NANOSHEETS: A PHOTOCATALYST FOR CONVERSION OF CO₂ TO CHEMICAL COMMODITIES

James R. Arndt, III, Fanke Meng, Mingjia Zhi

Nianqiang Wu

Department of Mechanical and Aerospace Engineering, West Virginia University,

Morgantown, WV 26506-6016

2nd Place SYNTHESIS OF POTENTIAL INHIBITORS OF THYMIDYLATE SYNTHASE BASED ON QUINAZOLINE STRUCTURAL SKELETON

Nicholas K. Pinkin, Ravi K. Ujjinamatada, William Motel

Ramachandra Hosmane

Laboratory for Drug Design & Synthesis, Department of Chemistry and

Biochemistry, University of Maryland, Baltimore County, 1000 Hilltop Circle,

Baltimore, Maryland 21250

(E) Chemical Sciences 5

1st Place ESTIMATION OF NUTRIENT AND SEDIMENT LOADING IN LAKE SHENANDOAH, ROCKINGHAM COUNTY, VIRGINIA: A CONTINUATION OF A 1996-97 STUDY

Anne C Battaglia

Daniel M. Downey

Department of Chemistry and Biochemistry, James Madison University, 800

South Main Street, Harrisonburg, Virginia 22807

2nd Place PHOTOLYTIC REACTIONS IN ICES RELEVANT TO TRITON
Heather R. Howard
Robert Hodyss, Paul Johnson, Isik Kanik
Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109-8099

(F) Biological Sciences 1

1st Place PURIFICATION OF RECOMBINANT HUMAN ACYL-COENZYME
A:CHOLESTEROL ACYLTRANSFERASE (ACAT-1) PROTEIN IN HEK 293
CELLS
Oneil Gardner¹, Catherine C.Y. Chang², and *Ta-Yuan Chang²*
¹*University of Maryland Eastern Shore, Department of Natural Sciences, Princess Anne, Maryland 21853,* ²*Dartmouth Medical School, Department of Biochemistry, Hanover, New Hampshire 03755*

2nd Place DISTRIBUTION OF NATIVE AND INVASIVE CRAYFISH IN THE
MONOCACY RIVER
Katelyn Horn
Eric R. Annis
Hood College, Department of Biology 401 Rosemont Ave, Frederick MD, 21701

(G) Biological Sciences 2

1st Place FUNCTION OF HISTONE DEACETYLASE Sir2 IN THE EMERGING
PATHOGEN CANDIDA LUSITANIAE
Kalyani Nambiar
Laura Rusche, Cara Froyd
Institute of Genome Sciences and Policy, Duke University, Durham, NC

2nd Place IDENTIFICATION OF RESPONSES IN DINOFLAGELLATES TO
CHANGING GROWTH TEMPERATURES
Letitia Cosbert
Charles F. Delwiche
Department of Cell Biology and Molecular Genetics, University of Maryland College Park
2106 Biosciences Research Building College Park MD 20742

(H) Biological Sciences 3

1st Place CORRELATION OF MEMBRANE POTENTIAL AND CILIARY ACTIVITY
OF THE LATERAL CILIATED CELLS OF GILL OF THE BIVALVE
MOLLUSC *CRASSOSTRA virginica* AND THE NEUROTOXIC EFFECTS OF
MANGANESE
Michael Nelson¹, Trevon Adams², Margaret A. Carroll¹ and *Edward J. Catapano¹*
Departments of Biology ¹Medgar Evers College, and ²Kingsborough Community College, Brooklyn, NY

2nd Place PROTEOGLYCANS AS EXTRACELLULAR MODULATORS OF
SIGNALING PATHWAYS AND IMPLICATIONS FOR HUMAN
CARTILAGE DISEASE
Rachel Randell, Richard Wittmeyer
Erica M. Selva
Department of Biological Sciences, University of Delaware, 347 Wolf Hall,
Newark DE 19717

(I) Biological Sciences 4

1st Place THE TOXIC EFFECTS OF MANGANESE ON MITOCHONDRIAL
CATALASE IN THE GILL OF THE BIVALVE *CRASSOSTREA virginica*
Kaydean Brown, Margaret A. Carroll and Edward J. Catapane
Department of Biology, Medgar Evers College, Brooklyn, NY, 11225

2nd Place GLUCOSE REGULATION OF MEIOSIS IN *S. CEREVISIAE* VIA PKA
Winifred Wolfe, Nidha Azam
Aikaterini Skokotas
Biology Department, Rosemont College, 1400 Montgomery Avenue, Rosemont,
PA 19010

(J) Biological Sciences 5

1st Place ANALYSIS OF PEROXIDASE LEVELS IN SOYBEAN PLANTS INFECTED
WITH THREE STRAINS OF SOYBEAN DWARF VIRUS
Colin J. Reitman
Oney P. Smith
Department of Biology, Hood College,
401 Rosemont Avenue, Frederick, Maryland 21701

2nd Place CHARACTERIZATION OF HYPER-REACTIVE LYMPHOCYTES IN
B10.RIII MICE
Nana K. Owusu-Boaitey¹
*Wayne M. Yokoyama*²
¹*Department of Biological Sciences, University of Maryland Baltimore County,*
1000 Hilltop Circle, Baltimore, Maryland 21250
²*Howard Hughes Medical Institute, and Division of Rheumatology, Dept of*
Internal Medicine, Washington University School of Medicine, St. Louis, Missouri
63110

(K) Biological Sciences 6

1st Place ELUCIDATING THE CELLULAR MARKERS IN THE EXTENDED AMYGDALA ASSOCIATED WITH ACUTE MORPHINE-INDUCED WITHDRAWAL
Michael K. Brown¹, Anna K. Radke²,
Robert L. Meisel², Jonathan C. Gewirtz²
¹Department of Natural Sciences, University of Maryland Eastern Shore, Princess Anne, MD, ²Departments of Psychology and Neuroscience University of Minnesota, Minneapolis, MN

2nd Place THE ROLE OF ETS1 IN CONGENITAL HEART DEFECTS
Sonia Metangmo
Demetri Spyropoulos, PhD
Summer Undergraduate Research Program
Medical University of South Carolina, Charleston SC

(L) Biological Sciences 7

1st Place IDENTIFICATION OF GLIAL COMPONENTS INVOLVED IN *DROSOPHILA* COURTSHIP BEHAVIOR
Stephanie C. Chan¹
Fanny Ng, Ph.D², F. Rob Jackson, Ph.D²
¹University of Maryland, Baltimore County, Baltimore, MD, USA,
²Department of Neuroscience, Tufts University School of Medicine, Boston, MA, USA

2nd Place CHARACTERIZATION OF PHIST DOMAIN PROTEIN LOCALIZATION AND INTERACTION IN *PLASMODIUM FALCIPARUM*
Nwamaka E. Dike
Cristina K. Moreira, Thomas J. Templeton
Department of Microbiology and Immunology, Weill Cornell Medical College,
1300 York Avenue Box 62, New York, NY 10065-4896

(M) Biochemistry and Molecular Biology 1

1st Place A COMPUTATIONAL STUDY TO DETERMINE THE STRUCTURAL DIFFERENCES BETWEEN THE WILD TYPE AND A MUTANT OF THE PROTEIN ARAC
David Gullotti
Mary Lowe
Department of Physics, Loyola University Maryland, 4501 North Charles Street,
Baltimore, MD 21210

2nd Place INVESTIGATION OF DOWNSTREAM DNA EFFECTS ON ELONGATIONAL PAUSING BY *E. COLI* RNA POLYMERASE
Chandana Lanka*, Reema Khanchandani*, Cassidy Crook*
Judith R. Levin#*
*Departments of *Biology and #Chemistry, Goucher College, 1021 Dulaney Valley RD., Baltimore, MD 21204*

(N) Biochemistry and Molecular Biology 2

1st Place DEVELOPMENT OF A PEPTIDE NUCLEIC ACID BASED siRNA DELIVERY SYSTEM
Tejal U. Naik, Abbygail A. A. Palmer, Peter G. Millili,
Millicent O. Sullivan
Chemical Engineering, University of Delaware, 5 W Main St, Newark, DE

2nd Place RAPID PURIFICATION OF *TAQ* DNA POLYMERASE IN THE UNDERGRADUATE LABORATORY
Ryan Protzko
Dr. Les Erickson
Department of Biology, Salisbury University
1101 Camden Ave., Salisbury, Maryland 21801

(O) Biochemistry and Molecular Biology 3

1st Place THE LOST PLUMS OF LUTHER BURBANK: DIFFERENTIATING STONELESS PLUMS WITH SIMPLE SEQUENCE REPEAT MARKERS (SSR)
Roderico Acevedo¹, Donna Lalli²
Ann M. Callahan²
¹*Department of Chemistry, Shepherd University, Shepherdstown WV 25443*
²*USDA-ARS, Appalachian Fruit Research Station, Kearneysville, WV 25430*

2nd Place IDENTIFYING COMPONENTS OF THE AMPK PATHWAY IN *C. ELEGANS*
Anupama Divakaruni, Dr. Katherine Cunningham
Dr. Kaveh Ashrafi
Department of Physiology, University of California San Francisco
San Francisco, CA 94143

(P) Biochemistry and Molecular Biology 4

1st Place INNOVATIVE DNA VACCINE FOR HUMAN PAPILOMA VIRUS (HPV)-ASSOCIATED HEAD AND NECK CANCER
Annie Wu, Sara I. Pai,
Chien-Fu Hung
Johns Hopkins University, Baltimore, MD

2nd Place ENCAPSULATION WITHIN NANOFIBERS CONFERS STABILITY TO THE PROTECTIVE ANTIGEN PROTEIN IN A TRANSDERMAL ANTHRAX VACCINE
Kevin E. Knockenhauer¹
*Katarzyna M. Sawicka*², *Sanford R. Simon*^{1,3}
¹*Department of Biochemistry,* ²*Department of Biomedical Engineering,*
³*Department of Pathology. Stony Brook University, Stony Brook, NY 11794.*

(Q) Biochemistry and Molecular Biology 5

1st Place THE ROLE OF HUMAN ENDOGENOUS RETROVIRUSES (HERVS) IN THE PATHOGENESIS OF ACUTE ONSET SCHIZOPHRENIA
Melanie G. Wiley¹
*Erik P. Lillehoj*²
¹*Department of Chemistry and Biochemistry, University of Maryland Baltimore County,*
1000 Hilltop Circle, Baltimore, MD 21250
²*Department of Pediatrics, University of Maryland School of Medicine,*
655 W Baltimore Street, Baltimore, MD 21201

2nd Place THE EFFECTS OF ROLIPRAM ON TRAUMATIC BRAIN INJURY OUTCOMES
Olivia Nwankwo
Coleen Atkins
The Miami Project to Cure Paralysis
University of Miami Miller School of Medicine, Miami FL

Poster Session II (Afternoon)

(A) Chemical Sciences 1

1st Place INVESTIGATING THE EFFECTS OF ROAD SALTS ON TRACE ELEMENTS IN STORMWATER RETENTION PONDS
Richard Vreeland
Dr. Ryan Casey
Towson University, Department of Chemistry, 8000 York Road, Towson, Maryland 21252

2nd Place ANALYSIS OF THE TIME EVOLUTION OF STRUCTURES IN POSS-MA THIN FILMS DEPOSITED BY SPIN CASTING.
Matthew Bradley
*Brian Augustine, and Chris Hughes**
Department of Chemistry and Biochemistry, and Department of Physics,*
James Madison University, Harrisonburg, VA 22807

(B) Chemical Sciences 2

1st Place MODELING NITROXIDE SPIN LABEL CONFORMATIONS ON DNA SCAFFOLDS

Joselle McCracken

Donald Hirsh, Ph.D.

Department of Chemistry, The College of New Jersey,

2000 Pennington Road, Ewing, NJ 08628.

2nd Place

DEVELOPING A SYNTHETIC PCA/PCR MODEL TO ACCOUNT FOR TEMPERATURE VARIATIONS IN UV-VIS SPECTRA

Patrick C. Riley, Christopher M. Simms

Robert D. Luttrell

Department of Chemistry, Salisbury University,

1101 Camden Avenue, Salisbury, Maryland 21801

(C) Chemical Sciences 3

1st Place LEAVING GROUP EFFECTS IN ACYL IMINIUM CHEMISTRY: OPPORTUNITIES FOR NOVEL REACTIVITY

Nicholas C. Boaz, Nathaniel C. Bair

Timothy J. Peelen

Department of Chemistry, Lebanon Valley College

101 N. College Ave., Annville, PA 17003

2nd Place P2 RECEPTORS AND ATP ENHANCE THE MIGRATION OF PROSTATE CANCER CELLS

Wachen Peters

Christine Maguire, Randall L. Duncan, PhD, Robert A. Sikes, PhD

Department of Biology, Lincoln University, 1570 Baltimore Pike, Lincoln

University, PA 19352

(D) Chemical Sciences 4

1st Place COMPLEXATION AND SELECTIVITY STUDIES OF MULTI-RECEPTOR BIPYRIDINE OLIGOMERIC HOST SYSTEMS AND THEIR METALLATED CU(II), AG(I), PT(II), AND RU(II) ANALOGUES BY LIQUID-LIQUID EXTRACTION, MASS SPECTROMETRY, AND SPECTROSCOPIC ANALYSES

Allix Sanders, Matthew Yeager

Marc Harris

Department of Chemistry, Lebanon Valley College,

101 N College Ave, Annville, PA 17003

2nd Place SYNTHESIS AND CHARACTERIZATION OF NEW CERAMIC OXYGEN CONDUCTORS
James L. White
Joshua L. Hertz
*Department of Chemistry and Biochemistry, University of Delaware,
167 Academy Street, Newark, Delaware 19716*

(E) Biological Sciences 1

1st Place APONTIC, A NOVEL REGULATOR OF JAK/STAT PATHWAY IN DROSOPHILA TESTIS
Archana Murali
Michelle Starz-Gaiano
*Department of Biology, University of Maryland Baltimore County,
1000 Hilltop Circle, Baltimore, Maryland 21250*

2nd Place THE GENETIC ARCHITECTURE OF LARVAL DEFENSES AGAINST PARASITOID WASPS IN *DROSOPHILA MELANOGASTER*
Kimia Sohrabi, Mara Laslo, Theresa Delaney
Jeff Leips
*Department of Biological Sciences, University of Maryland Baltimore County,
1000 Hilltop Circle, Baltimore, MD 21250*

(F) Biological Sciences 2

1st Place MASSIVE PARALLEL EVOLUTION IN THE BACTERIUM *PSEUDOMONAS FLUORESCENS*
Claudia Valenzuela, Fernando Racimo, Wook Kim, Ph.D
Kevin Foster, Ph.D
*FAS Center for Systems Biology, Harvard University, Cambridge, MA 02138,
USA*

2nd Place HISTOIMMUNOFLUORESCENCE DEMONSTRATION OF DOPAMINE D2 RECEPTORS IN THE LATERAL CILIATED CELLS OF THE GILL OF THE BIVALVE MOLLUSC *CRASSOSTRA VIRGINICA*
Samuel Anador¹, Renee Fleming¹, Norelia Cilli², Edward J. Catapane¹ and Margaret A. Carroll¹
¹*Departments of Biology, Medgar Evers College and*
²*Kingsborough Community College, Brooklyn, NY 11225*

(G) Biological Sciences 3

1st Place BIMETALLIC RUTHENIUM-BASED COMPOUNDS AS PHOTO-DYNAMIC CHEMOTHERAPEUTIC AGENTS
Robin K Bagley^{*} and Wei Dong[†]
Jeffry I Fasick, Ph.D.[†] and Matthew Mongelli Ph.D.[‡]
^{*}*New Jersey Center for Science, Technology, and Mathematics Education,*
[†]*Department of Biology,* [‡]*Department of Chemistry*
Kean University, 1000 Morris Avenue, Union, NJ 07083

2nd Place TEMPORAL CHARACTERIZATION OF PROGESTERONE RECEPTOR
EXPRESSION IN THE EMBRYONIC RAT LOWER RHOMBIC LIP
Tayyaba Toseef
Princy Quadros Mennella, PhD
Department of Biology, Delaware State University
1200 N. Dupont Highway, Dover, DE 19901

(H) Biological Sciences 4

1st Place DOUBLE AND TRIPLE FUSION PEPTIDOGLYCAN HYDROLASES AS
NOVEL ANTIMICROBIALS
Homan Mohammadi¹, Stephen C. Becker²
*David M. Donovan*²
¹*Department of Medical and Research Technology, University of Maryland,*
Baltimore, 100 Penn Street, Baltimore, MD 21201
²*Animal Biosciences and Biotechnology Laboratory, Animal and Natural*
Resources Institute, BARC, ARS, USDA, 10300 Baltimore Ave, Beltsville, MD
20705-2350

2nd Place INVESTIGATION OF MIGRATING NEURAL CELLS DURING
NEURULATION IN ZEBRAFISH
Yohance Allette¹, Pradeepa Jaychandran¹
*Rachel Brewster*¹
¹*Department of Biology, University of Maryland Baltimore County, 1000 Hilltop*
Circle, Baltimore, MD 21207

(I) Biological Sciences 5

1st Place DETERMINING FUNCTIONAL REGION OF *SUP3* PROTEIN IN
ARABIDOPSIS THALIANA
Stephanie Battle, Gouying Wang
Dr. Hua Lu
Department of Biological Sciences, University of Maryland – Baltimore County
1000 Hilltop Circle, Baltimore, MD 21250

2nd Place MOLECULAR BASIS OF CALCITRIOL: VITAMIN D'S PROTECTIVE
EFFECTS AGAINST CANCER
Rachael Latshaw, Rachel Schaffer, Anja Nohe
Biological Sciences, University of Delaware, Newark, DE 19716

(J) Biological Sciences 6

1st Place LOCALIZATION OF HUMAN SPERM PMCA4B WHICH IS REQUIRED FOR NORMAL MOTILITY IN MOUSE SPERM
Katharine E. Shelly, Rolands G. Aravindan
Patricia A. Martin-DeLeon
Department of Biological Sciences, University of Delaware, Newark, DE 19716

2nd Place PRESENCE OF OCTOPAMINE IN HEMOLYMPH AND TISSUES OF *CRASSOSTREA virginica* AND ITS POSSIBLE ROLE AS A CARDIO-REGULATORY HORMONE
Kerri Pryce, Dahniel Samuel, Mathilde Myrthil, Margaret A. Carroll and *Edward J. Catapane*, *Department of Biology, Medgar Evers College, Brooklyn, NY 11225*

(K) Biological Sciences 7

1st Place ROLE OF JUNCTIONAL ADHESION MOLECULE-A (JAM-A) IN THE PROGRESSION OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)
Megan E. Kissig
Ulhas P. Naik
Department of Biological Sciences, University of Delaware, 118 Wolf Hall, Newark, DE 19716

2nd Place THE USE OF THE BACTERIUM BELLOVIBRO BACTERIOVORUS TO CONTROL INFECTION IN CAERNORHABDITIS ELEGANS
Katherine Pflaum
Dr. Elizabeth Emmert
Department of Biological Sciences, Salisbury University
1101 Camden Ave, Salisbury MD 21801

(L) Biochemistry and Molecular Biology 1

1st Place THE MIMIVIRUS L375 PROTEIN POSSESSES INTRINSIC MRNA DECAPPING ACTIVITY
Grace Kago
Susan Parrish
Biology Department, McDaniel College, 2 College Hill, Westminster, MD 21157

2nd Place MODIFICATION OF GLUCOKINASE AND GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE BY NITROGEN OXIDES AND THEIR EFFECTS IN CARDIOVASCULAR DISEASES
Carlos Meheux
Elsa Garcin
Department of Chemistry and Biochemistry, University of Maryland Baltimore County, 1000 Hilltop Circle, Baltimore, Maryland 21250

(M) Biochemistry and Molecular Biology 2

- 1st Place** ACTIVE CASPASE-3 EXPRESSION IN ACCUMULATION OF MYELOID-DERIVED SUPPRESSOR CELLS (MDSC) IN BREAST CANCER
Lydia Grmai, Olesya Chornoguz
Suzanne Ostrand-Rosenberg
Department of Biological Sciences, University of Maryland, Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21250
- 2nd Place** THE WRAIR CHOLINESTERASE ASSAY AND ITS UTILIZATION IN A MULTI-DRUG STUDY TO PROTECT AGAINST CHEMICAL WARFARE AGENTS (CWA, ORGANOPHOSPHATE) CHOLINESTERASE INHIBITION
Saul Krosnick[†]
Richard K. Gordon[‡]
[†]*Department of Chemistry and Biochemistry, The University of Maryland – College Park, College Park, MD 20742*
[‡]*Division of Regulated Activities, Department of Regulated Laboratories, WRAIR 503 Robert Grant Avenue, Silver Spring, MD 20910*

(N) Biochemistry and Molecular Biology 3

- 1st Place** ENDOGENOUS CHOLECYSTOKININ (CCK) EXPRESSION IN HUMAN PANCREATIC
Christina Awad³, Christopher McGovern¹, Gail Matters²
*Jill P. Smith*¹
*Departments of Medicine*¹ *and Biochemistry and Molecular Biology*², *Pennsylvania State University, Hershey, PA*
*Department of Biological Sciences*³, *Messiah College, Grantham, PA*
- 2nd Place** BIOMARKER DISCOVERY IN A PEDIATRIC MOTOR NEURON DISORDER: SPINAL MUSCULAR ATROPHY
Steven Foltz¹, Dosh Whye²
Wenlan Wang^{2,3}
¹*University of Delaware, Newark, DE;* ²*Nemours Biomedical Research, A.I. DuPont Hospital for Children, Wilmington, DE;* ³*Department of Pediatrics, Thomas Jefferson University, Philadelphia, PA*

(O) Biochemistry and Molecular Biology 4

- 1st Place** ANTIMICROBIAL CHEMICAL DEFENSE: IDENTIFICATION AND APPLICATION OF ANTIFUNGAL METABOLITES FROM *Janthinobacterium lividum* AND *Pedobacter cryoconitis*
Patrick Wiggins, Christian R. Schwantes, Reid N. Harris
Kevin P. C. Minbiole
Department of Chemistry and Biochemistry James Madison University, MSC 4501, Harrisonburg VA 22801
Department of Biology James Madison University, MSC 7801, Harrisonburg VA 22801

2nd Place **ARABIDOPSIS THALIANA P80 PROTEIN EXPRESSION IN MUTANT LINES
CORRELATES WITH STRESS SIGNAL TRANSDUCTION
DEVELOPEMENTAL PHENOTYPES**

James L. Bowden III

F. Les Erickson

*Department of Biological Sciences, Salisbury University,
1101 Camden Avenue, Salisbury, Maryland 21804*

(P) Biochemistry and Molecular Biology 5

1st Place **UNIQUE BIOCHEMICAL CHARACTERISTICS GOVERN
FUNCTIONALITY OF BIOTIN PROTEIN**

Kyle G. Daniels

Dr. Dorothy Beckett

*Department of Chemistry and Biochemistry, University of Maryland, College
Park, MD 20742*

2nd Place **A DUAL APPROACH TO ASSESSING DOMAIN INTERACTIONS
IN A DIMERIC BI-FUNCTIONAL PROTEIN**

Richard Carr, Gary Lam, and Greg Wier

Walter A. Patton

*Department of Chemistry & Program in Biochemistry and Molecular Biology
Lebanon Valley College, Annville, PA 17003*

(Q) Biochemistry and Molecular Biology 6

1st Place **CONFORMATIONAL CHANGES OF TRIALANINE THROUGH SOLVENT
DEPENDENCE**

Omid Amidi

Reinhard Schweitzer-Stenner

*Department of Chemistry, Drexel University,
3141 Chestnut Street, Philadelphia, PA 19104*

2nd Place **STRUCTURAL INSIGHTS INTO DNA POLYMERASE X FROM AFRICAN
SWINE FEVER VIRUS IN THE PRESENCE OF OXOG LESIONS**

Jasmina Bogdanovic

Benedetta A. Sampoli Benitez

*Department of Natural Sciences and Mathematics, Marymount Manhattan
College,
221 East 71st Street, New York, New York 10021*