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

Sponsored in part through the generosity of 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 NANO CATALYSTS 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
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
¹University of Maryland Eastern Shore, Princess Anne, MD, 21853
²Princeton University, Princeton, NJ, 08544

(D) Chemical Sciences 4

1st Place  HYDROTHERMAL SYNTHESIS OF LANTHANUM TITANATE NANOSONDS: 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
¹University of Maryland Eastern Shore, Department of Natural Sciences, Princess
Anne, Maryland 21853, ²Dartmouth 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. Catapane¹
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

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. Yokoyama2  
1Department of Biological Sciences, University of Maryland Baltimore County, 1000 Hilltop Circle, Baltimore, Maryland 21250  
2Howard Hughes Medical Institute, and Division of Rheumatology, Dept of Internal Medicine, Washington University School of Medicine, St. Louis, Missouri 63110
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

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

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 T4Q 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. Callahan³
¹Department of Chemistry, Shepherd University, Shepherdstown WV 25443
²USDA-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 PAPILLOMA VIRUS (HPV)-ASSOCIATED HEAD AND NECK CANCER
Annie Wu, Sara I. Pai,
Chien-Fu Hung
Johns Hopkins University, Baltimore, MD
ENCAPSULATION WITHIN NANOFIBERS CONFERS STABILITY TO THE PROTECTIVE ANTIGEN PROTEIN IN A TRANSDERMAL ANTHRAX VACCINE
Kevin E. Knockenhauer
Katarzyna M. Sawicka, Sanford R. Simon
1Department of Biochemistry, 2Department of Biomedical Engineering, 3Department of Pathology. Stony Brook University, Stony Brook, NY 11794.

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

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

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

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. Catapan1 and Margaret A. Carroll1
1Departments of Biology, Medgar Evers College and 2Kingsborough 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

**1st Place**
DOUBLE AND TRIPLE FUSION PEPTIDOGLYCAN HYDROLASES AS NOVEL ANTIMICROBIALS
Homan Mohammadi¹, Stephen C. Becker²
David M. Donovan²
¹Department of Medical and Research Technology, University of Maryland, Baltimore, 100 Penn Street, Baltimore, MD 21201
²Animal 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 Brewster¹
¹Department of Biology, University of Maryland Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21207

**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*
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

1st Place

ENDOGENOUS CHOLECYSTOKININ (CCK) EXPRESSION IN HUMAN PANCREATIC
Christina Awad3, Christopher McGovern1, Gail Matters2
Jill P. Smith1
Departments of Medicine1 and Biochemistry and Molecular Biology2, Pennsylvania State University, Hershey, PA
Department of Biological Sciences3, Messiah College, Grantham, PA

2nd Place

BIOMARKER DISCOVERY IN A PEDIATRIC MOTOR NEURON DISORDER: SPINAL MUSCULAR ATROPHY
Steven Foltz1, Dosh Whye2
Wenlan Wang2,3
1University of Delaware, Newark, DE; 2Nemours Biomedical Research, A.I. DuPont Hospital for Children, Wilmington, DE; 3Department of Pediatrics, Thomas Jefferson University, Philadelphia, PA

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 DEVELOPMENTAL 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