The 8th Annual
Undergraduate Research & Scholarship Symposium
Duquesne University

Award Winners
Effects of Macromolecular Crowding on Ferredoxin and Ferredoxin-NADP+ Reductase Enzyme Kinetics
Danielle Bautista
Junior | Chemistry | Bayer School of Natural and Environmental Sciences | Abstract Number: 39
Faculty Advisor: David Seybert, Ph.D.

Separating Complex DNA Mixtures Containing Related Individuals Using TrueAllele® Mixture Interpretation Software
Olivia Goodwin
Senior | Forensic Science and Law | Bayer School of Natural and Environmental Sciences | Abstract Number: 83
Faculty Advisor: Lisa Ludvico, Ph.D.

Asymmetric catalysis of aqueous Mukaiyama aldol reactions by dinuclear zinc semi-crown ligands
Ayan Ahmed
Junior | Biochemistry | Bayer School of Natural and Environmental Sciences | Abstract Number: 15
Faculty Advisor: Jeffrey Evanseck, Ph.D.

DNA Barcoding of Stomach Contents Reveals Trophic Competition among Three Species of Trout
Brandon Hoenig
Senior | Biology | Bayer School of Natural and Environmental Sciences | Abstract Number: 34
Faculty Advisor: Brady Porter, Ph.D. and Brian Trevelline

Modeling chronic bladder pain in male and female mice: Exploring the chronicity of repeated cyclophosphamide injections
Abigail Cox
Sophomore | Biology | Bayer School of Natural and Environmental Sciences | Abstract Number: 65
Faculty Advisor: Benedict Kolber, Ph.D. Graduate Student Mentor: Katleyn Sadler

Structural and Electrochemical Investigation of [CuII(Me6TREN)Cl][Cl] Complex in the Presence of Weak Nitrogen Containing Bases
Megan Wasson, Gabrielle Pros
Junior | Chemistry | Bayer School of Natural and Environmental Sciences | Abstract Number: 86
Faculty Advisor: Tomislav Pintauer, Ph.D.

Say Yes to the Dress Goes to Church: A Feminist Theological Analysis of Catholic Marriage Preparation in the Mid-Atlantic Region
Maggie Ballantyne
Senior | Public Relations | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 82
Faculty Advisor: Elisabeth Vasko, Ph.D.

Critical Perspectives on Occupational Therapy Practice in Resource-Scarce African Contexts
Molly Edwards, Chase Ratliff
Senior | Occupational Therapy | Rangos School of Health Sciences | Abstract Number: 29
Center for Teaching Excellence
Award for Undergraduate Research: $250

**Representation Matters: How Representation in Children’s Literature Influences Children of Different Ethnicities**
Taylor Cavalovitch
Senior | Early Childhood Education | School of Education | Abstract Number: 80
Faculty Advisor: Sandra Quiñones, Ph.D.

Counselor Education Program
Award for Undergraduate Research: $250

**Combatting Human Trafficking Using Mathematics**
Alfred Vogt
Senior | Mathematics | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 26
Faculty Advisor: Rachael Miller Neilan, Ph.D.

Department of History
The Clio Award for Undergraduate Research in History
First Place: $200

**The Redevelopment of Brownsville**
Tiffany Kent
Senior | History | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 100
Faculty Advisor: Andrew Simpson, Ph.D.

Second Place: $100

**Education as a Tool of an Empire: American Indian Education**
Margaret Long
Senior | History & Secondary Education - Social Studies | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 36
Faculty Advisor: Andrew Simpson, Ph.D.

Third Place: $50

**Undercover Heroes? The Culper Ring and the Value of Espionage in the Revolutionary War**
Michael Romero Moore
Senior | History | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 106
Faculty Advisor: Andrew Simpson, Ph.D.

Gumberg Library
Gumberg Library Award for Undergraduate Research: $250

**The Effects of High Intensity Warmups on Athletes with Diagnosed Exercise Induced Asthma: A CRITICALLY APPRAISED TOPIC**
Emily Nelson, Alyse DePaola
Junior | Athletic Training | Rangos School of Health Sciences | Abstract Number: 97
Faculty Advisor: Sarah Manspeaker, PhD, ATC

Honors College
Outstanding Poster: $250

**The Western Sahara Conflict: Colonialism, Ethnicity, and the Bonds of Nationhood**
Mitchell Oeler
Mary Pappert School of Music
Mary Pappert School of Music Undergraduate Award: $250
Reevaluating Perceptions of Tchaikovsky’s Pathétique Symphony
Jacob Leonowitz
Senior | Music Education | Mary Pappert School of Music| Abstract Number: 77
Faculty Advisor: Benjamin Binder, Ph.D.

Mylan School of Pharmacy
Award for Undergraduate Research: $250
Development of Design Space for Fluidized Bed Multiparticulates Coating Process
Kiana Motto, Hanzhou Feng
Senior | Pharmacy | Mylan School of Pharmacy| Abstract Number: 33
Faculty Advisor: Carl Anderson, Ph.D.

Office of the Provost
Outstanding Scholarship Award: $250
Modeling chronic bladder pain in male and female mice: Exploring the chronicity of repeated cyclophosphamide injections
Abigail Cox
Sophomore | Biology | Bayer School of Natural and Environmental Sciences| Abstract Number: 65
Faculty Advisor: Benedict Kolber, Ph.D. Graduate Student Mentor: Katelyn Sadler
1 for Honorable Mention: $125
Business of Athletics: Dynamics Between Collegiate Athletic Organizations and the Business World
Malcolm Guya
Senior | Psychology | McAnulty College and Graduate School of Liberal Arts| Abstract Number: 20
Faculty Advisor: Elizabeth Brown, MA
1 for Best Formal Presentation: $125
Blood Brain Barrier Integrity in a Murine Model of BCR-ABL Induced Acute Lymphoblastic Leukemia
Julia Marn
Junior | Physician Assistant | Rangos School of Health Sciences| Abstract Number: 17
Faculty Advisor: Bridget Calhoun, PhD

Office of Multicultural Affairs
Outstanding Undergraduate Research: $250
Systemic Solutions to Systemic Problems of Injustice: Exploring Empathy and Self-Awareness in Preservice Teacher Training and the Preschool to Fourth Grade Classroom
Christina McElwee  
Sophomore | Early Childhood Education | School of Education | Abstract Number: 142  
Faculty Advisor: Patricia Sheahan, Ph.D.

**Phi Kappa Phi, National Honors Society**

Outstanding Research: $500

**Rioting Gender in Post-Soviet Russia: The Implications of Political and Doctrinal Rhetoric on Human Rights**  
Kaitlyn Clem  
Junior | English | McAnulty College and Graduate School of Liberal Arts | Abstract Number: 81  
Faculty Advisor: Elisabeth Vasko, Ph.D.

2 for Honorable Mention: $250

**Detection of Lead in Drinking Water using Homemade and Inexpensive LED-based Fluorometer**  
Gage Tiber  
Junior | Physics | Bayer School of Natural and Environmental Sciences | Abstract Number: 31  
Faculty Advisor: Theodore Corcovilos, Ph.D.

**Evaluation of appropriateness of vaccination procedures of the 13-valent pneumococcal conjugate vaccine and the 23-valent pneumococcal polysaccharide vaccine in a hospital setting.**  
Sabina Vaichys, Paige Coleman, Matthew Sears, Branden Nemecek, Anthony Guarascio  
Senior | Pharmacy | Mylan School of Pharmacy | Abstract Number: 44  
Faculty Advisor: Branden Nemecek, PharmD

**Rangos School of Health Sciences**

2 for Rangos School of Health Sciences Award for Undergraduate Research: $250

**Blood Brain Barrier Integrity in a Murine Model of BCR-ABL Induced Acute Lymphoblastic Leukemia**  
Julia Marn  
Junior | Physician Assistant | Rangos School of Health Sciences | Abstract Number: 17  
Faculty Advisor: Bridget Calhoun, PhD

Rachel Sweetnich  
Senior | Physical Therapy | Rangos School of Health Sciences | Abstract Number: 79  
Faculty Advisor: Matthew Kostek, Ph.D.

**School of Nursing**

School of Nursing Undergraduate Research Award: $250

**Is Universal Healthcare Universally Better?**  
Heather Konstanzer  
Junior | Nursing | School of Nursing | Abstract Number: 60  
Faculty Advisor: Cherith Simmer, MS, RN

**University Academic Sustainability Committee**

Excellence in Sustainability & the Environment: $250

**Detection of Lead in Drinking Water using Homemade and Inexpensive LED-based Fluorometer**  
Gage Tiber  
Junior | Physics | Bayer School of Natural and Environmental Sciences | Abstract Number: 31  
Faculty Advisor: Theodore Corcovilos, Ph.D.