



THE UNIVERSITY
OF ARIZONA

▼▼▼ 22nd Annual ▼▼▼

STUDENT SHOWCASE

Innovative Research by UA Students



NOV. 7th



Alumni Plaza

*Between the Student Union &
Administration Building*

9A-5P

Award Ceremony starts at 4P.

GPSC.arizona.edu/student-showcase
GPSCEVENTS@email.arizona.edu

Sponsors

The Graduate & Professional Student Council (GPSC) created Student Showcase in 1993 to celebrate student research. GPSC would like to acknowledge the support of many dedicated Administrators, Deans, Faculty Members, Department Heads, Directors, and Staff at the University of Arizona. Without their support Student Showcase would not exist.

2014 Student Showcase Sponsors

Office of the President

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College of Education

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College of Humanities

Katheryne B. Willock

BIO5 Institute

The Southern Arizona Section of the American Chemical Society

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Schedule

Friday, November 7th, 2014

Judging Period	9:30 am
Student Showcase Opens to Public	9:30 am
Fine Arts Lecture-Performance 1	10:00 am
Lunches Served to Exhibitors at the Check-in Tables	12:00 pm
Judging Period	1:00 pm
Fine Arts Lecture-Performance 2	1:30 pm
Awards Ceremony	4:00 pm
Student Showcase Closes	5:00 pm

Exhibitors

Agriculture and Environmental Sciences

Graduate:

- | | | |
|--------------|---|--|
| Julia Sittig | 1 | Siting Utility-Scale Solar Energy Projects on Public Lands: Assessing the Environmental Concerns of Stakeholders |
| David Hogan | 2 | Biosurfactants as a tool for metal removal from waste effluents |

Undergraduate:

- | | | |
|--------------------|---|--|
| Alba Ramos | 3 | Impact of Copper Demands and Mining Operations on the Socio-Ecology of the San Pedro Bi-National Basin |
| Michaela Brumbaugh | 4 | The Backyard and Garden: A Modern Yerberia |
| Krystalle Diaz | 5 | To ID or Not to ID: Optimizing Microbial Community Protein Identification in Arctic Soil |

Architecture, Planning, and Landscape Architecture

Graduate:

- | | | |
|----------------------|----|--|
| Sandra Bernal | 6 | Assessment of Impacts of natural and mechanic ventilation on human health in the residential sector in Mexico City |
| Omar Youssef | 7 | Design Index for Therapeutic Architecture |
| Adriana Zuniga Teran | 92 | The Influence of the built environment on the use of greenspace and wellbeing |

Exhibitors cont.

Biological Sciences

Graduate:

- | | | |
|---------------|----|--|
| Molly Memel | 25 | Age-related changes in integration and segmentation processes – an investigation of contextual memory |
| Mark Thompson | 26 | Isolation of new eyespot mutants in <i>Chlamydomonas</i> |
| Sarah Richman | 27 | Spatiotemporal variation of a pollinator community in the Arizona Sky Islands |
| Aaron Havas | 28 | Targeting G1 Cell Cycle Arrest to Increase Histone Deacetylase Inhibitor-induced Cytotoxicity in Diffuse Large B-cell Lymphoma |
| Amy Kelly | 29 | Enhanced function and viability of islets supplemented with oxygen within an implantable bioartificial pancreas device |
| Fen Pei | 30 | Investigating inhibitory mechanism of dominant prion mutants upon different conformations |

Undergraduate:

- | | | |
|----------------------------|----|---|
| Jahaira Vera | 9 | Phthalates and Ovarian Hormones: an In-vitro Study |
| Ivan Aispuro
Ali Shihab | 10 | Effects of Glucagon-Like Peptide-1 on Proteins Secreted by Coronary Microvascular Endothelial Cells Under Diabetic Conditions |
| Rebecca Condes | 31 | Evaluation of Endothelial Cell Fates in the Context of Senescence |
| Robin Smith | 32 | Apolipoprotein e4, cognition, and behavior in youth with Down syndrome |

Exhibitors cont.

Eduardo Villegas 33 Differences in brain activation between young and older adults as a function of task type and difficulty

Business, Public Administration, and Economics

Graduate:

Ivan Rudik 34 Selecting Climate Policy When Facing Unknown Damages

Undergraduate:

Dejana Nikolic 35 The Influence of High-Technology Occupations on All Occupations' Wages

Kristen Lane 36 Green Think: Let Us Help You Decide

Education

Graduate:

Jill Augustine A pretest-posttest assessment of Concept learning in a pharmacy research methods course

Dennis Rosemartin The institutionalization of environmental education in pre-service teacher preparation programs

Mariia Khorosheva* A Comparative Study of Two Writing classes: Teaching Approaches and Influence on Students' Writing Development

Undergraduate:

Lorena Aceves The Long Term Significance of Family on Underrepresented Students in Medicine

** denotes that the exhibitor will not be present but submitted a poster

Exhibitors cont.

Engineering

Graduate:

- | | | |
|---|----|---|
| Huimin Leung | 11 | Multispectral Imaging of Breast Cancer Xenografts in a Mouse Mammary Window Chamber Model |
| Jefferson Lee | 41 | Graphene Oxide-Copper Nanocomposite |
| Guangbin Li
David Vilcherrez | 42 | A novel strategy to attenuate the inhibitory effects of nitrite on the anaerobic ammonium oxidation (anammox) process |
| Sera Mirchandani
Vishnu Ravisankar | 43 | Solar-driven Hollow-fiber Membrane Distillation Pilot Project in the Navajo Nation |
| Jordan Carbary | 44 | Quantum dots targeted to VEGFR2 for the detection of colorectal cancer using OCT/LIF in vivo imaging |
| Adriana Ramos-Ruiz
Jeannie Wilkening | 45 | Microbial Recovery of Teo Nanoparticles from Tellurate (TeO ₄ ²⁻) |

Undergraduate:

- | | | |
|-----------------------------------|----|--|
| Samuel Hickcox | 12 | Enhancing Milling Process model |
| Kira Rundel | 46 | Exploring the Effect of Donor Polymer Molecular Weight in Bulk Heterojunction All-Polymer Solar Cells |
| Andrea Acuna | 47 | Towards the development of a non-synthetic tissue engineered vascular graft based on electrospun biopolymers |
| Aaron Velazquez
Adrian Caldera | 48 | Robotic Arm |

Exhibitors cont.

Health Sciences

Graduate:

- | | | |
|--|----|--|
| Karthik Srinivasan | 13 | Anonymization of user data in social network graphs |
| Nicole Henry
Sarah Huynh
Jinjie Huang
Mayra Guzman
Brittney Dewey
Vidhi Gupta | 49 | The Development of Inter-Professional Clinics at a Low Income Assisted Living Facility to Achieve Quality Person-Centered Care |
| Adam Watson | 50 | From the persistence of memory, to the persistence of cancer |
| Anika Dzierlenga | 51 | Mechanistic Basis of Altered Morphine Disposition in Nonalcoholic Steatohepatitis |
| Queeny Ip | 52 | Bayesian Analysis of Malformation Outcome in Selective Serotonin Reuptake Inhibitor (SSRI) Use During Pregnancy |
| Alejandra Aguilar | 53 | Aerobic exercise and its effects on HbA1c and BMI in patients with type 2 diabetes mellitus: a meta-analysis |
| Michael Valdez | 54 | Enhanced Drug Delivery to the Brain with Ultrasound, MRI, and SPECT |
| Cecile Chaix | 55 | Design and fabrication of a pre-clinical adaptive SPECT imaging system: AdaptiSPECT |

Undergraduate:

- | | | |
|-----------------|----|--|
| Andrea Casillas | 56 | DNA damage response in normal vs. cancer cells |
|-----------------|----|--|

Exhibitors cont.

- | | | |
|-------------------|----|---|
| Rachel Hayes | 57 | Stability of Acoustic Reflex Measures Using Wideband Power Reflectance |
| Ashton Conner | 58 | PDGFR-B Inhibitor as an Inflammation Reduction Agent in Acute Lung Injury |
| Elisa Rodriguez | 59 | Sex differences in associations between executive functions and brain volumes in regions correlated with body fat |
| Alexandria Meyer | 60 | Relationships between body fat, white matter volume, and inhibition in older adults |
| Nageena Khalid | 61 | The Effects of Hypertension on Associative Memory in Middle Age Adults |
| Michelle Heusser | 62 | Upper Extremity Frailty Assessment in Trauma Patients Using Wearable Sensor Technology |
| Michael Hernandez | 63 | Association between resistance exercise volume and future bone mineral density in postmenopausal women |

Humanities, Literature, and Languages

Graduate:

- | | | |
|-------------------|----|---|
| Stefano Maranzana | 14 | Using YouTube to Enhance L2 Listening Skills: Animated Cartoons in the Italian Classroom |
| Hannah Collins | 15 | Una revolución escrita: el caso de la antología chicana |
| Kayo Shintaku | 16 | Use of a Japanese Game for Learners of Japanese as a Foreign Language in Higher Education |

Exhibitors cont.

- | | | |
|-------------|----|--|
| Sharla Ruiz | 17 | Overt Pronoun Selection in Mandarin Conversational Discourse |
| Emily Lyons | 18 | Alice Under Glass: Science, Victorian Visual Culture, and Lewis Carroll's Alice |
| Maya Kapoor | 64 | The Tracks we Lay: Researching Urban Ecology and Epidemiology in Creative Nonfiction Writing |

Undergraduate:

- | | | |
|---------------------|----|--|
| Kassandra Diaz | 19 | Different Faces, Different Voices: Contextual and Individual Power Imbalance in Gender-Dominated Societies |
| Kristian Stoberlein | 65 | Kazakhstan in the Modern World: 23 years of Modernization, Peace and Prosperity |

Physical Sciences, Mathematics, Computer Engineering and Computer Science

Graduate:

- | | | |
|--------------------|----|---|
| Wessam Afifi Ahmed | 20 | Improving Spectrum Sensing and Efficiency in Cognitive Wireless Systems |
| Chen-Ting Liao | 66 | Laser-Atom Interactions: Ultrafast Spectral Lineshape Brought to Light |
| David Carlson | 67 | Frequency Combs for Precision Spectroscopy in the Extreme Ultraviolet |
| Stacy Heslop | 68 | Cleaning and Etching of Silicon-Germanium Surfaces |

Undergraduate:

- | | | |
|-------------|----|---|
| Alex Warren | 69 | Parallel Computation of Cosmological Statistics |
|-------------|----|---|

Exhibitors cont.

Public Health

Graduate:

- | | | |
|-----------------|----|---|
| Rustin Reed | 21 | Occupational Exposures to Diesel and Alternative Fuel Emissions in an Underground Mine – A Simulated Pilot Stud |
| Krysta Myers | 22 | Evaluation of Personal Cooling Gear for Occupational Settings |
| Steven Hadeed | 70 | Obesity & Trauma Mortality: Sizing Up the Risks in Motor Vehicle Crashes |
| Deanna Lewis | 71 | A Learner-Centered Approach for Community-Based Researchers to Conduct a Formative Assessment for Reproductive Health Education |
| Chinagozi Ugwu | 72 | Feasibility Of Using Standard Verbal Autopsy Instrument To Assess Causes Of Infant Death In Enugu Nigeria |
| Yoshira Ornelas | 73 | Microbial, Inorganic, and Organic Contaminants in Private Wells along the Santa Cruz River, Arizona |
| Ashley Bird | 74 | Pre-Hospital Opioid Administration in Arizona Patients with Severe Pain |
| Weston DuBose | 75 | Evaluation of Active Noise Cancelling Headsets during Jackleg Drilling in an Underground Mine |

Undergraduate:

- | | | |
|---------------|----|---|
| DeRay Chatter | 76 | Together On Diabetes (TOD) Program Assessment |
|---------------|----|---|

Exhibitors cont.

Social Sciences and Law

Graduate:

- | | | |
|-------------------------|----|---|
| Natalie Bryant | 77 | Are teens jetlagged? Variations in salivary cortisol as a function of week to weekend sleep habits in adolescents |
| Nazli Akcabozan | 78 | Appreciation of Intimate Sacrifices and Depressive Symptoms for Cohabiters |
| Brunella Santarelli | 79 | Technological Analysis of Pueblo I Lead Glazed Ceramics from the Upper San Juan Basin, Colorado (ca.700-850 CE) |
| Ryan Davidson | 80 | Emotional Distress of Parental Separation/Divorce in College Students |
| Sacha Brown | 81 | A duty to describe: Better the devil you know than the devil you don't |
| Jennie Duchscher | 82 | Incorporating Children's Views into Contested Family Matters: □Bringing Practical Considerations and Research Findings Together |
| Maria del Carmen Moreno | 83 | Patients Petitioned for Involuntary Civil Commitment |

Undergraduate:

- | | | |
|------------------------|----|--|
| Cindy Chavarria Minera | 84 | Do Slower Life History Strategies Reduce Sociodemographic Sex Differences? |
| JoAnna Addy | 85 | Impact of family history of cardiovascular risk factors on executive functions in younger adults |

Exhibitors cont.

- | | | |
|------------------|----|---|
| Eliza Lopez | 86 | Correlations between Neighborhood Disadvantage and Romantic Relationship Quality to Behaviors that Lead to Child Maltreatment |
| Yvonne Gonzalez | 87 | A glance into Americans' implicit associations of sexual orientation: Are all self-affirmations created equal? |
| Roxanna Martinez | 88 | High Conflict Families: Potential Buffering Effects of Sibling Relationships on Young Adult Functioning |
| Charles Cannon | 89 | The effects of stress on perceived performance |
| Andrew Martinez | 90 | An Analysis of the Impact of Code of Ethics in Tribal Governance in Indian Country |
| John Huerta | 91 | New Conquest History on Mayan Religious Syncretism |

Exhibitors cont.

Visual and Performing Arts

Graduate:

Danielle Sheather	23*	Theoretics Into Practice: Dance Documentation and Preservation
Mirela Roza	24*	Dry Lands
Melissa Erdman	8	Walking Bird

Undergraduate:

Gabriela Rincon	93	El Sistema in the United States: Achieving Social Change Through Music
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* denotes that the exhibitor will be presenting a lecture-performance for their project

Fine Arts Performance Program

Student Showcase Fine Arts Lecture Performances 10:00am and 1:30pm

10:00am—10:20am
1:30pm-1:50pm

**Theoretics Into Practice: Dance
Documentation and Preservation**
Danielle Sheather

10:25am—10:45am
1:55pm-2:15pm

Dry Lands
Mirela Roza

Awards

GPSC Category Awards

There are a total of 12 categories in Student Showcase. Judges will examine and evaluate students' research based on four dimensions: quality of presentation; academic merit; value to the community; and overall impression. Prizes will be given for both graduate and undergraduate research. Each first place winner is awarded \$250 and second place winner is awarded \$125.

Katheryne B. Willock Library Research Award

The Katheryne B. Willock Library Research Award recognizes University of Arizona students who have made extensive and innovative use of the UA Libraries' information resources and services in support of their coursework. Up to three undergraduate and three graduate prizes will be awarded each year. For each category, \$1,000 will be awarded per prize.

American Chemical Society Women's Chemist Group

The Women's Chemists Group of the Southern Arizona section of the American Chemical Society is promoting the role of chemistry in society. This award will recognize one or more female graduate students, who present outstanding research in chemistry or a related field. First place winner receives \$200 and second place \$100.

BIO5 Innovator Award

The BIO5 Innovator Award recognizes one graduate and one undergraduate student exhibitor whose work best represents the goals of BIO5 in one of the following areas: multidisciplinary bioscience research; innovation in education; or entrepreneurship (technology transfer, new ideas for public/private partnerships, etc.). These awards are provided by the BIO5 Institute at The University of Arizona. Each winner is

Awards cont.

Best Honors Interdisciplinary Research Award

This award is for an Honors student whose research project best embodies the principles of interdisciplinarity: demonstrating the contributions of different disciplines to the question addressed, showing breadth and depth in addressing the question, and highlighting the researcher's ability to think holistically, synthetically, and comparatively.

Award for Best Research Project by an Honors Student (across all disciplines)

This award is for an Honors student whose research project makes the most important contribution in terms of its rigor, depth, and overall quality (including the presentation itself).

President's Award

The President's Award is designed to acknowledge graduate and undergraduate students who exemplify outstanding academic research and community service. The award is sponsored by the UA President's Office and is awarded to one graduate and undergraduate exhibitor who demonstrates the above criteria. Each winner is awarded \$1,000 and a plaque.

Awards Ceremony

Introduction	Jared Young Events Director, Graduate and Professional Student Council
Welcome	Kendal Washington White Assistant Vice President for Student Affairs & Dean of Students
Keynote Speaker	Dr. Kimberly Andrews Espy Senior Vice President for Research
Graduate Awards	Dr. Kimberly Andrews Espy
Undergraduate Awards	Dr. Kimberly Andrews Espy
BIO5 Innovator Award	Lisa Romero Senior Director, Communications & Public Affairs, BIO5 Institute
ACS Women's Chemist Group Award	Dr. Anne Padias Representative of the ACS Women's Chemist Group
Katheryne B. Willock Library Research Award	Ms. Karen Williams Dean, The University of Arizona Libraries Ms. Katheryne B. Willock The University of Arizona Libraries
Honors College Awards	Dr. Karna Walter Assistant Dean for Recruitment, The Honors College

Awards Ceremony cont.

President's Award	Dr. Andrew Comrie Senior Vice President for Academic Affairs and Provost
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Closing Remarks	Dr. Andrew Comrie Alan Kohler Vice President, Graduate & Professional Student Council
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Judges & Committees

The Graduate & Professional Student Council and the Exhibitors would like to thank the following judges and committees for participating in Student Showcase 2014. We appreciate your time and commitment to excellence in

Judges

Agricultural and Environmental Sciences	Steven Chong Rob Root Randy Ryan
Architecture, Planning, & Landscape Architecture	Nader Chalfoun Felicia Farrante
Biological Sciences	Robb Bagge Erik Hanschen Brandon Smith

Judges cont.

Business, Public Administration, and Economics	Cindy Hintze Audrey Mattson
Education	Rachel Fisher Cary Jordan
Engineering	Abdullah Al-Hussein Anita Bell Michael Tso Jen Watson
Health Sciences	Nick Ahrendt Lorraine Glazer Rick Robertson
Humanities, Literature & Languages	Dalila Ayoun Damián Baca Albrecht Classen
Physical Sciences, Mathematics, Computer Engineering & Computer Science	Ladd Keith Yu C Moy
Public Health	Joni Dean Alesia Jung Jessica Stahl
Social Sciences & Law	Elizabeth Cordova Andrew Huerta Carla Stoffle Goffredina Spano
Visual & Performing Arts	Becky Black Gladys Garcia Mary Hansen Morgan Wells

Judges cont.

President's Awards	Janet Sturman Chrissy Lieberman Sheila McGinnis Ryan Gyure
Kathryne B. Willock Library Research Award	Maurita Baldock Cheryl Cuillier Jason Dewland Cindy Elliott Jim Martin Jill Newby
Honors College Awards	Daisy Pitkin Karna Walter Tom Wilson
BIO5 Innovator Award	Heather Ingram Monica Schmidt Amy Randall Yurika Isoe
ACS Women's Chemist Group Award	Anne Padias

Acknowledgements

It is an honor to continue the 22 year tradition of the Student Showcase. The event continues to highlight the best, most innovative parts of this University: our student research. Thank you to all that participated in any part of the planning process from applications to awards. We would not have been able to do it without you!

Bear Down,
Jared Young
Events Director, Graduate & Professional Student Council

Special Thanks

President Ann Weaver Hart

Dr. Kim Espy

Dr. Andrew Comrie

Dr. Melissa Vito

Dr. Andrew Carnie

Dr. Maria Teresa Velez

Dr. Dianne Horgan

Dr. Janet Sturman

Dorian Voorhees

Kendal Washington White

Cody Nicholls

Audrey Mattson

Cindy Hintze

Cheryl Plummer

Charlene James

Dean Karen Williams

Ping Situ

Katheryne B. Willock

Heather Ingram

Dr. Karna Walter

Dr. Anne Padias

Kathi Hart and the UA Facilities Management Team

Lisa Valentine

AZ Party Rental

Shepard Expo

Deyanira Nevárez Martínez

GPSC Advisory Council

GPSC Representatives

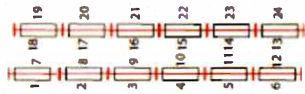
All the judges and student volunteers who donated their time

All the exhibitors for their hard work and dedication

GPSC Student Showcase

November 7, 2014
University of Arizona

Student
Union



Fountains

Concrete Pad with
Electrical Boxes

