2016 Summer Research Symposium

Friday, August 5, 2016
9:00am - 2:00pm
Altgeld Hall
At NIU, learning does not end with the posting of final grades for the spring semester.

In fact, many of our top students tackle some of their most rigorous academic work during the summer.

In programs such as the Summer Research Opportunities Program, the Latino Oral History Project, the Pick Museum of Anthropology Oral History Project, and the McKearn Fellows Program, students are mentored by top faculty and learn firsthand how world-class researchers create new knowledge. In fact, the students help create the new knowledge through their research and artistry.

This year, they learned in classrooms, in laboratories, and at conferences. Their quests took them from local historical sites to a major hospital. No matter where they were, they learned not only about their chosen fields, but also about how to work on teams, how to solve problems, and how to be leaders.

While the specifics were different for each student, the outcomes were the same. The things they learned, the skills they developed and the experiences they enjoyed prepared them for decades of success after graduation.

Today, I invite you to see and hear what those students have accomplished this summer by attending the Summer Research Symposium in Altgeld Hall on Friday, August 5th from 9:00am to 2:00pm. I encourage you to speak with them and their mentors. Ask them about their projects, their experiences and the relationships they have forged. Then I ask that you join me in finding ways to expand these opportunities and build them into the college experience of all NIU students. year-round.

Doug Baker
<table>
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<tr>
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<td>10:40am</td>
<td>Session III - Oral Presentations</td>
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<td>11:45am</td>
<td>Welcome - Dr. Todd Gilson, Director for University Honors</td>
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<td>12:00pm</td>
<td>Refreshments</td>
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<td>1:00pm</td>
<td>Session IV - Poster Presentations</td>
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</table>
Oral Presentations

Session I (9:00-9:45am)

9:00am Peyton Whiston – McKearn (Room 203)
  *Quantifying the Ecosystem Service Benefits of Dung Beetles in a Restored Prairie*

Nicole Hoffmann – McKearn (Room 125)
  *Kinetics of Nanoparticles Delivery to Pancreatic Cancer Cells*

9:25am Nicolette Riscossa – University Honors Program (Room 203)
  *Utilization of Auditors for the Success of Community Non-Profit Organizations*

Spencer Janis - SROP (Room 125)
  *The Power of Camp Power: The Effect of Community Sponsored Summer Camps on Police to Youth Interactions*

Session II (9:50-10:35am)

9:50am Annie Phillips (Room 203)
  *Economic Prosperity and Representation of Colorful Women*

Devon Boland – SROP (Room 125)
  *Engineering a pH-Dependent Molecular Switch for Anti-MTX VHH*

10:15am Daisy Campuzano – SROP (Room 203)
  *Understanding the Struggles of Latina Women in Higher Education*

Claudia Ochoa, Jasmine Pease, Ryan Potempa, Rodolfo Rosilies, Morgan Smith, Hanna Stoffel, Aaron Tse, & Rachel Turuc (Room 125)
  *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Oral Presentations

Session III (10:40-11:40AM)

10:40am Nicholas Casas, Alfredo Cervantes, & Laura Vivaldo Cholula - SROP/LOHP (Room 125)
Latinos Oral History Presentation
Poster Presentations

Session IV (1:00-2:00pm, Altgeld Auditorium)

Kristen Amstutz – SROP/PMOHP
Karen Cultural Oral History Summer Research Project

Nicholas Casas – SROP/LOHP
Examination of the Role and Practices of Immigration Activists in Illinois

Marilyn Chakkalamuri – SROP
Combined Therapies for T-Cell Lymphoma

Katharine Denius - Research Rookies
Identification of Biomarkers in Relation to Age-Related Macular Degeneration

Emily Fiala – McKearn
Engineering pH Dependent Antibodies

Nicole Hoffmann - McKearn
Kinetics of Nanoparticles Delivery to Pancreatic Cancer Cells

Sean Hicks – SEF
Using a Green Algae from Northern Illinois to Bio-Remediate Effluent and Produce Usable Lipids

Spencer Janis – SROP
The Power of Camp Power: The Effect of Community Sponsored Summer Camps on Police to Youth Interactions

Blessy Johnson – University Honors Program
Exercise Buffers Adverse Changes in Hormone Levels and Cardiac Activity Associated with Stress

Lucas Kuzmanic – SEF
Synthesis of Fluorescein-Tagged and Water-Soluble Carborane-Appended Compounds

Alexis Massman – SROP
Poster Presentations

Session IV cont.

Adam McNeela – University Honors Program
Making Sense of the Senseless: Evaluating Sex Differences of ASO Gene Therapy in Mice with Usher Syndrome

Joseph Morrow – Student Engagement Fund
The Dissemination of Imidacloprid-based Granular Bait in Dairy Cattle Manure and Its Effect on Parasitization by a Filth Fly Pupal Parasitoid, Spalangia endius (Hymenoptera: Pteromalidae)

Tu Nguyen – SROP
Synthesis of Lithium-Intercalated Boron Nitride Nanotubes

Jeremy Perrotta – SROP
Extrinsic Motivations for Volunteers

Tyechia Price – Research Rookies
The Aloha Kingdom: Hawaiʻi Before and After Western Contact

Zohra Sattar – McKearn
Synthesis of IspF Enzyme Inhibitors

Sarah Shapley – McKearn
Purifying Biogenic Silica Diatoms for Isotope Analysis
Summer Research Programs

Summer Research Opportunities Program (SROP)
The Summer Research Opportunities Program (SROP) was created to promote access to undergraduate research during the summer months for students at NIU. Participating in SROP allows students to connect with faculty mentors and build their resume. Students learn what research looks like in their field of study, learn how to write a formal research proposal, attend professional and academic enrichment activities, and gain experience working alongside talented NIU faculty.

This is the fourth year of SROP at NIU, which features eleven students representing eleven majors and three colleges (CEET, CLAS, & COE). These students conducted extensive research in their fields while also engaging in a series of workshops and excursions. Excursions included tours of KishHealth System and Argonne National Laboratory, which helped to demonstrate real-world applications of their research.

Latino Oral History Project (SROP/LOHP)
 NIU’s Latino Oral History Project, a subprogram of SROP, is a long-term student and faculty research initiative designed to produce a collection of local interviews and archival documents on the Latino experience in Chicago and rural Illinois. Faculty and students are working together with people from DeKalb/Sycamore, Chicago, and the northern-Illinois region to identify historical conditions and events that have shaped the twentieth- and twenty-first-century Latino experience. This takes place in the classroom, the archives, and in the field. Students learn interviewing and ethnographic methods from professors in the classroom. They interview Latino subjects in the field, then mp3 files of their interviews are deposited in the Regional History Center Archive at NIU. The purpose of the project is to develop an archival collection of the state's Latino history and to bring faculty and students in discussion with Latinos in the Northern Illinois community.

Pick Museum of Anthropology Oral History Project (SROP/PMOHP)
The NIU Pick Museum of Anthropology’s Karen Refugee Oral History and Exhibit Project is a two-year initiative in partnership with the Center for Burma Studies and Center for Southeast Asian Studies to document and share the history and resettlement experiences of Burmese Karen refugees living in northern Illinois. Together with Karen community members, NIU faculty, museum staff and students are undertaking original research, conducting oral history interviews and developing a community co-curated exhibition. Visitor to this exhibit will be immersed in the objects, words, and images representing Karen culture and hear firsthand accounts about life in Burma, in Thailand refugee camps, and since resettling to America. This exhibit will also engage visitors in a critical dialogue about the factors impacting displacement and resettlement, and how people can advocate for local refugee communities.
Summer Research Programs

McKearn Fellows Program
The McKearn Fellows Program centers on three modules: (1) research/artistry design and effective writing skills; (2) leadership development; (3) civic, social, and global engagement. Engaged learning opportunities are prominently featured through the program and include field trips, networking events, and meetings with successful professionals in a variety of fields. In addition, each fellow completed a faculty-mentored summer project focused on one of the areas described above.

Due to the generosity of John and Cassandra McKearn, NIU has developed and sustained the McKearn Fellows Program, a signature academic enrichment and professional development program for high-achieving undergraduates that spans from their freshman to senior year. The McKearns are longtime supporters of the university and have committed to a program that promises a greatly enriched learning experience for some of NIU’s most promising students.

University Honors Scholars Program
The Honors Scholars Program is designed for junior or senior University Honors students who are working on their Honors Capstone project. Through the program, a select number of academically distinguished students will be given time, financial support, and faculty mentoring to pursue their research or artistry to create a solid foundation for the Honors Capstone. Students in the program will pursue in-depth research or artistry in the summer between their junior and senior years or during their senior year. Scholars hold the prestigious title “University Honors Scholar” during their senior year.

Student Engagement Fund (SEF) & Undergraduate Special Opportunities in Artistry and Research (USOAR)
Both the Student Engagement Fund and Undergraduate Special Opportunities in Artistry and Research are programs out of the Office of Student Engagement and Experiential Learning. The Student Engagement Fund is a collaborative effort with the College of Liberal Arts and Sciences to provide funding for students working on faculty-mentored research projects and to support undergraduate student engagement projects. Requests can be made to cover compensation for undergraduate students and/or for student expenses associated with engaged learning projects, or a combination thereof.

Undergraduate Special Opportunities in Artistry and Research funds student-generated research projects, whether the study is conducted on campus, somewhere else in the United States, or overseas. Students of all backgrounds are encouraged to apply.
Student Participants

Kristen Amstutz
Hometown: Warrenville, Illinois
Major: Anthropology
Mentor: Judy Ledgerwood & Rachel Drochter
Project Title: Karen Cultural Oral History Summer Research Project
Program: SROP/PMOHP

Devon Boland
Hometown: Peoria, Illinois
Major: Biochemistry
Mentor: James Horn
Project Title: Engineering a pH-Dependent Molecular Switch for Anti-MTX VHH
Program: SROP

Daisy Campuzano
Hometown: Chicago, Illinois
Major: Sociology
Mentor: Simon Weffer
Project Title: Understanding the Struggles of Latina Women in Higher Education
Program: SROP

Nicholas Casas
Hometown: Bartlett, Illinois
Major: Political Science and Community Leadership and Civic Engagement
Mentor: Kristin Huffine
Project Title: Examination of the Role and Practices of Immigration Activists in Illinois
Program: SROP/LOHP
**STUDENT PARTICIPANTS**

**ALFREDO CERVANTES**
- Hometown: Blue Island, IL
- Major: Athletic Training
- Mentor: Kristin Huffine
- Project Title: *Undocumented Latinos in Higher Education Perspectives*
- Program: SROP/LOH

**MARILYN CHAKKALAMURI**
- Hometown: Woodstock, Illinois
- Major: Biological Sciences
- Mentor: Sherine Elsawa
- Project Title: *Combined Therapies for T-Cell Lymphoma*
- Program: SROP

**KATHERINE DENIUS**
- Hometown: Sycamore, Illinois
- Major: Biological Sciences
- Mentor: Elizabeth Gaillard
- Project Title: *Identification of Biomarkers in Relation to Age-Related Macular Degeneration*
- Program: Research Rookies

**EMILY FIALA**
- Hometown: Franklin Park, Illinois
- Major: Biochemistry
- Mentor: James Horn
- Project Title: *Engineering pH Dependent Antibodies*
- Program: McKearn
<table>
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<tr>
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<td><strong>Sean Hicks</strong></td>
<td>DeKalb, Illinois</td>
<td>Biological Sciences</td>
<td>Gabe Holbrook</td>
<td><em>Using a Green Algae from Northern Illinois to Bio-Remediate Effluent and Produce Usable Lipids</em></td>
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<td>Antioch, Illinois</td>
<td>Electrical Engineering</td>
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<td>Psychology</td>
<td>Jack King &amp; Carol Walther</td>
<td><em>The Power of Camp Power: The Effects of Community Summer Camps on Police to Youth Interactions</em></td>
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**Student Participants**

**Lucas Kuzmanic**
Hometown: St. Charles, Illinois  
Major: Chemistry  
Mentor: Narayan Hosmane  
Project Title: *Synthesis of Fluorescein-Tagged and Water-Soluble Carborane-Appended Compounds*  
Program: SEF

**Alexis Massman**
Hometown: Lake Villa, Illinois  
Major: Electrical Engineering  
Mentor: Martin Kocanda  
Program: SROP

**Adam McNeela**
Hometown: DeKalb, Illinois  
Major: Psychology  
Mentor: Douglas Wallace  
Project Title: *Making Sense of the Senseless: Evaluating Sex Differences of ASO Gene Therapy in Mice with Usher Syndrome*  
Program: University Honors Program

**Joseph Morrow**
Hometown: Streamwood, Illinois  
Major: Biological Sciences  
Mentor: Bethia King  
Project Title: *The Dissemination of Imidacloprid-based Granular Bait in Dairy Cattle Manure and Its Effect on Parasitization by a Filth Fly Pupal Parasitoid, Spalangia endius (Hymenoptera: Pteromalidae)*  
Program: SEF
Student Participants

Tu Nguyen
Hometown: Aurora, Illinois  
Major: Chemistry  
Mentor: Narayan Hosmane  
Project Title: Synthesis of Lithium-Intercalated Boron Nitride Nanotubes  
Program: SROP

Claudia Ochoa
Hometown: Wheeling, Illinois  
Major: Family Social Services  
Mentor: Scott Sibley  
Project Title: We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood  
Program: Independent Study

Jasmine Pease
Hometown: Byron, Illinois  
Major: Family Social Services  
Mentor: Scott Sibley  
Project Title: We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood  
Program: Independent Study

Jeremy Perotta
Hometown: Maple Park, Illinois  
Major: Community Leadership & Civic Engagement  
Mentor: Alicia Schatteman  
Project Title: Extrinsic Motivations for Volunteers  
Program: SROP
**Student Participants**

**Annie Phillips**

Hometown: Chicago, Illinois  
Major: French  
Mentor: Ursula Sullivan  
Project Title: *Economic Prosperity and Representation of Colorful Women*  
Program: Independent Study

**Ryan Potempa**

Hometown: DeKalb, Illinois  
Major: Family and Child Studies  
Mentor: Scott Sibley  
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*  
Program: Independent Study

**Tyechia Price**

Hometown: Rockford, Illinois  
Major: History  
Mentor: Trude Jacobsen  
Project Title: *The Aloha Kingdom: Hawai‘i Before and After Western Contact*  
Program: Research Rookies

**Nicolette Roscossa**

Hometown: Carol Stream, Illinois  
Major: Accountancy  
Mentor: Tammy Waymire  
Project Title: *Utilization of Auditors for the Success of Community Non-Profit Organizations*  
Program: University Honors Program
RODOLFO ROSILIES
Hometown: Waukegan, IL
Major: Family and Child Studies
Mentor: Scott Sibley
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Program: Independent Study

ZOHRA SATTAR
Hometown: West Chicago, Illinois
Major: Chemistry
Mentor: Timothy Hagen
Project Title: *Synthesis of IspF Enzyme Inhibitors*
Program: McKearn

SARAH SHAPLEY
Hometown: Naperville, Illinois
Major: Geology & Environmental Geosciences
Mentor: Justin Dodd
Project Title: *Purifying Biogenic Silica Diatoms for Isotope Analysis*
Program: McKearn

MORGAN SMITH
Hometown: 
Major: Family and Child Studies
Mentor: Scott Sibley
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Program: Independent Study
HANNA STOFFEL
Hometown: Batavia, IL
Major: Family Social Services
Mentor: Scott Sibley
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Program: Independent Study

AARON TSE
Hometown: Westmont, IL
Major: Family and Child Studies
Mentor: Scott Sibley
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Program: Independent Study

RACHEL TURUC
Hometown: Schaumburg, Illinois
Major: Family Social Services
Mentor: Scott Sibley
Project Title: *We’re Just Talking: An Exploration of Relationship Formation in Emerging Adulthood*
Program: Independent Study

LAURA VIVALDO CHOLULA
Hometown: DeKalb, Illinois
Major: Political Science
Mentor: Kristin Huffine
Project Title: *Immigrant Activism in the Chicagoland Area in a Post-DACA Era*
Program: SROP/LOHP
Peyton Whiston
Hometown: Washington, Illinois
Major: Biological Sciences
Mentor: Holly Jones
Project Title: Quantifying the Ecosystem Service Benefits of Dung Beetles in a Restored Prairie
Program: McKearn
Special Thanks To:

Northern Illinois University

Summer Program Staff:
Summer Research Opportunities Program: Ashley Kyle, Destiny McDonald, & Renique Kersh
Latino Oral History Project: Kristin Huffine & Simon Weffer
Karen Oral History and Exhibit Project: Judy Ledgerwood & Rachel Drochter
McKearn Fellows Program: Anne Birberick, Todd Gilson, Jason Goode, Destiny McDonald, Joel Stafstrom, & Brittany Warner

Workshop Facilitators & Excursion Hosts:
Argonne National Laboratory, Doug Baker, Greg Barker, Anne Birberick, Jerry Blazey, Liz Bockman, Karinne Bredberg, Rena Cotsones, Cindy Ditzler, Lisa Freeman, Tony Guzzaldo, Pettee Guerrero, Wendell Johnson, KishHealth System, Marilyn Lorch, Brian Pillsbury, Nancy Prange, Anna Quider, Dana Stover, Shannon Wapole

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