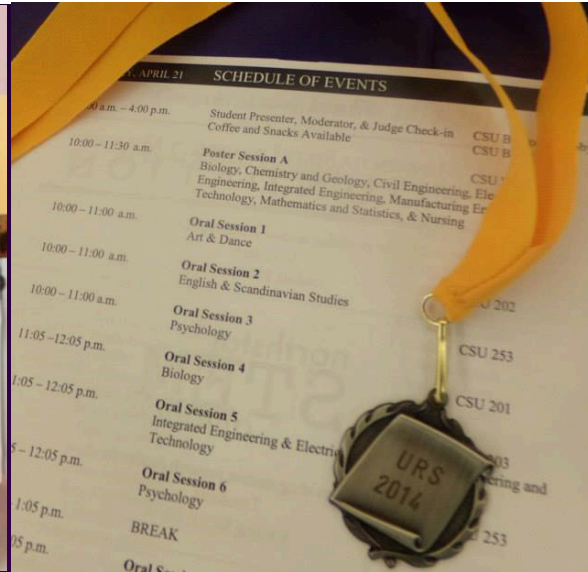




UNDERGRADUATE RESEARCH CENTER
MINNESOTA STATE UNIVERSITY, MANKATO



Undergraduate Research Center 2013-2014 Annual Report



UNDERGRADUATE RESEARCH CENTER
MINNESOTA STATE UNIVERSITY, MANKATO

2013 – 2014 Undergraduate Research Center Annual Report

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Executive Summary

During the academic year 2013-2014, The Undergraduate Research Council led the entire campus in mentoring and featuring undergraduate student research. The **Undergraduate Research Council** included staff, students, administration and faculty representatives from every college in guiding the Undergraduate Research Center. Dr. Marilyn Hart, founding Director of the Undergraduate Research Center, became Interim Associate Dean of the College of Science, Engineering, and Technology, at Minnesota State University, Mankato. Dr. Elizabeth Sandell was appointed as Interim Director in February. Dr. Karla Lassonde was appointed as Director effective July 1, 2014.

Faculty members became increasingly involved: 11 new faculty members joined the ranks of research mentors for undergraduate students who applied for grants through the URC programs.

The URC's **Fall Faculty Workshop** (November 8 and 9, 2013) featured Dr. Bethany Usher from George Mason University, who led 29 faculty members in redesigning courses and mapping curricula so that they could scaffold undergraduate student research skills.

This was the pilot year for the **Graduate Research Consultant** (GRC) Program. Fall faculty participants included Dr. Gretchen Perbix, Dr. Queen Booker, and Dr. Daniel Toma. During spring semester, Dr. John Krenz and Dr. Karla Lassonde implemented the program.

Dr. Moses Langley, Department of Psychology, was named the **Outstanding Undergraduate Faculty Mentor of the Year**.

The URC offered **fall and spring funding** for research, scholarly and creative activity conducted by undergraduate students to make original intellectual or creative contributions to their disciplines. In fall 2013, 85 applications were submitted. Grants were awarded to 65 projects for a total of \$64,170.69, including 24 Foundation grants, 36 URC grants, and 5 NorthStar STEM Alliance grants. In spring 2014, 11 applications were submitted. Grants were awarded to 9 projects for a total of \$11,731.43, including 7 Foundation grants.

The URC provided **training to undergraduate students** directly: 44 undergraduate students attended the Getting Started Workshops in September; 38 undergraduate students attended the Grant-Writing Workshops in September.

On April 21, 2014, the annual **Minnesota State University, Mankato Undergraduate Research Symposium** highlighted the work of 281 student presenters with 167 presentations: 48 oral presentations and 119 posters. The undergraduate projects were facilitated by 79 faculty mentors. Faculty judges selected 29 student projects to receive Outstanding Presentation Awards.

38 undergraduates from Minnesota State, Mankato presented research reports at the third annual **MnSCU Conference of Undergraduate Scholarly and Creative Activity**, at Minnesota State University – Moorhead, April 14, 2014. The first-ever **MnSCU Posters at St. Paul** poster presentations at the State Capitol took place on February 26, 2014. Six students from MNSU, Mankato displayed their research in poster format.

The annual **National Conference on Undergraduate Research** (NCUR) accepted 32 abstract applications from the 35 that were submitted by MNSU students. MNSU, Mankato sent 42 students from different disciplines who made a total of 29 presentations at the conference on April 3 – 5, 2014. These students were mentored by 25 faculty members.

This year was the third time a student has represented Minnesota State University, Mankato at **Posters on the Hill** in Washington, DC. April 28 – 29, 2014, Michael Doyle, a third-year Manufacturing Engineering Technology major, presented his research, “3D Printing of Stainless Steel for Engineering Applications.” Doyle’s faculty mentor was Kuldeep Agarwal.

Introduction

Mission and Goals

The mission of the URC is to actively engage faculty and students in mentoring relationships that enable students to participate directly in the research process from its inception through the dissemination of new knowledge so that students ultimately view themselves as participants in a community of scholars. The URC staff members and Council encourage all undergraduates to participate in research, scholarship or creative activities. Participation in undergraduate research transforms students' educational experience, builds confidence and strong faculty collaborations, increases engagement with other students, and alters their self-concept and world-view.

The goals of the URC are to:

1. Encourage students to become involved in an investigative or creative process.
2. Facilitate collaboration among undergraduates and faculty.
3. Promote undergraduate research to both internal and external audiences.
4. Provide funding for both faculty members and students engaged in undergraduate research.

The URC assists students in identifying faculty mentors, offers two grant cycles for undergraduates seeking funding for research (fall and spring), supports the Undergraduate Research Symposium, hosts an online peer reviewed journal, helps students identify internships, and encourages undergraduate presentations at local, regional, national and international meetings. In addition, the URC currently leads the system-wide Undergraduate Research Initiative.

Background

Our university has a rich history of promoting undergraduate research, scholarship and creative activity, which is highlighted each spring at the annual Undergraduate Research Symposium. Since 1999, the Symposium, a faculty driven grassroots effort, has been a venue to celebrate excellence in interdisciplinary scholarship on campus. Students present their research in various formats including oral presentations, poster sessions, performances, scholarly and creative work, and art displays.

In 2008, an advisory committee of faculty and administrators was formed to provide leadership for undergraduate research. The advisory group sought to improve the presence and quality of undergraduate-faculty collaborations across campus and consisted of representatives of faculty and administration with the common goal of helping the university achieve its mission of promoting learning by effectively integrating undergraduate teaching, scholarship and research. As a result of the advisory committee's efforts, the Undergraduate Research Center was established.

Location and Staff Members

The URC is a place for faculty members and student researchers to gather and explore possibilities. The URC is located in Morris Hall 265 and shares an office with the Honors Department. The student lounge in the URC has computers, tables, couches, and free printing for URC students. During 2013 – 2014, the Center was open from 8:00 am to 8:30 pm Monday through Thursday and 8:00 am to 4:30 pm Friday.

During 2013 – 2014, the URC was staffed by the following persons:

Marilyn Hart, Director	Elizabeth Sandell, Interim Director
Natasha Olson, Graduate Assistant	Cassandra Schreiber, Graduate Assistant
Titus Anderson, Graduate Assistant	Jennifer Enter, Work-study Undergraduate Student
Sadie Anderson, Administrative Assistant	

Leadership

Director

During the 2013 – 2014 academic year, there were several transitions in the leadership of the URC. Since 2009, Marilyn Hart, professor of biology, was the director of the Undergraduate Research Center at Minnesota State University, Mankato. Dr. Hart has been at Minnesota State Mankato since 2001. Her recent achievements included being elected as a Counsilar at Large for the Council of Undergraduate Research, organizing the first Minnesota State Colleges & Universities system-wide Undergraduate Conference of Scholarly and Creative Activity held in April 2012, and receiving funding from the National Science Foundation for the Mentored Academic Experience for Success in the STEM (Science, Technology, Engineer and Mathematics) Disciplines Scholar Program. In February, 2013, Dr. Hart left the URC to become Interim Associate Dean, College of Science, Engineering, and Technology, at MSU, Mankato.

Dr. Barry Ries appointed Dr. Elizabeth Sandell as Interim Director of the URC for the remainder of the academic year. Dr. Sandell, associate professor of educational studies, served on the Undergraduate Research Council for four years. Additionally, she mentored student researchers for the past five years, including several who received URC large and small grants, others who received Outstanding Presentation awards at Mankato's URS, and several who made presentations at the National Conference on Undergraduate Research. Dr. Sandell was also named Outstanding Undergraduate Mentor of the Year in 2012.

In March, a call was issued to invite qualified persons to indicate their interest in appointment as Director of the URC. (See Attachments.) A committee of the UR Council volunteered to screen applications and make a recommendation to Dean Ries. Kristel Seth, Dr. Heather Von Bank, and Dr. Gina Wenger served on this screening committee.

Council Members 2013 – 2014

Utilizing a nomination and selection process that occurs through shared governance; a UR Council that includes staff, students, administration and faculty representatives from every college steered the Undergraduate Research Center. The Council met monthly.

This year, members appointed by the IFO included:

Joe Holtermann (Library; term 2011 – 2014)
Marilyn Swan (Nursing) (Allied Health and Nursing term 2013 – 2016)
Mary Susan Johnston (English) (Arts and Humanities term 2011 – 2014)
Queen Booker (Management) (Business 2013 – 2016)
Steve Losh (Chemistry & Geology) (Science, Engineering, and Technology term 2011 – 2014)
Lori Piowski (Elementary & Early Childhood) (Education term 2013 – 2016)
Karla Lassonde (SBS, Psychology) (Social and Behavioral Sciences term 2012 – 2015)

The At-Large Faculty Representatives included: Fei Yuan (Geography) (term 2013 – 2016)

Carlos Panahon (Psychology) (term 2013 – 2016)
Heather Von Bank (Family Consumer Science) (term 2011 – 2014)
Kristin Scott (Marketing & International Business) (term 2011 – 2014)

Members who were Ex-officio included:

Marilyn Hart (URC, Director)
Elizabeth Sandell (URC, Interim Director)
Barry Ries (AVP & Dean, College of Graduate Studies)

Gina Wenger (Art) (URS, past chair)
 Dawn Albertson (Psychology) (URS, past chair)
 Cindra Kamphoff (Human Performance) (URS, past chair)
 Alexandra Panahon (Special Education) (URS, past chair)
 Christopher Corley (Honors Program)
 Kristel Seth (Director, RASP)
 Barb Bergman (Editor, JUR)
 Mark McCullough (Reference Librarian)

Council Committees

Each Council Member served on at least one committee:

Fall Grant Review

Queen Booker
 Marilyn Hart
 Steve Losh
 Chip Panahon
 Lori Piowlski

Spring Grant Review

Marilyn Hart
 Joe Holtermann
 Steve Losh
 Chip Panahon
 Kristel Seth
 Marilyn Swan
 Fei Yuan

National Conference on Undergraduate Research

Queen Booker
 Elizabeth Sandell

MnSCU Conference on Undergraduate Scholarly & Creative Activity

Marilyn Hart
 Elizabeth Sandell

Symposium Judging/Moderating

Kristel Seth
 Marilyn Swan
 Heather Von Camp
 Fei Yuan

Symposium Celebration Dinner

Queen Booker
 Karla Lassonde
 Elizabeth Sandell
 Heather Von Bank
 Gina Wenger

Symposium Creative Works Exhibits

Queen Booker
 Gina Wenger

Publicity/Marketing/ Symposium Registration

Barb Bergman
 Joe Holtermann
 Kristin Scott
 Heather Von Bank

Journal of Undergraduate Research

Barb Bergman

Symposium Proceedings

Elizabeth Sandell

Fall Faculty Workshop

Marilyn Hart
 Karla Lassonde

Winter Faculty Workshop

Marilyn Hart
 Joe Holtermann
 Karla Lassonde

Student Workshops

Queen Booker
 Marilyn Hart
 Karla Lassonde
 Gina Wenger
 Forrest Wilkerson

Posters at St. Paul Reviewers

Queen Booker
 Chip Panahon
 Fei Yuan
 Steven Losh

2013 – 2014 Important Dates

Fall 2013

Sept 3 Call for Posters on the Hill abstracts
Sept 4 Getting started workshop (CSU 253, 10 – 11am)
Sept 5 Getting started workshop (CSU 201, 2 – 3pm)
Sept 6 New faculty orientation (CSU 238, 2 – 5pm)
Sept 18 Grant-writing workshop (CSU 253, 10 – 11am)
Sept 19 Grant-writing workshop (CSU 201, 2 – 3pm)
Sept 30 Call for NCUR abstracts

Oct 11 Fall grant deadline (12 pm)
Oct 17 NCUR workshop (CSU 201, 4 – 5 pm)
Oct 21 Call for Posters at St. Paul
Oct 25 Grant review deadline
Oct 28 Grants to foundation

Nov 4 Posters on the Hill submission deadline
Nov 6 Foundation Fall grant review meeting (8 am)
Nov 8 Faculty workshop (AH 101, 3 – 6pm)
Nov 9 Faculty workshop (Heritage Room, 8 – 5pm)
Nov 15 Posters at St. Paul submission deadline

Dec 5 Drop-in Assistance with NCUR abstracts (URC, 9 am – 4 pm)
Dec 6 Drop-in Assistance with NCUR abstracts (URC, 9 am – 4 pm)
Dec 6 NCUR submission deadline

Spring 2014

Jan 8 Faculty Development Day – URC Faculty Workshop
Jan 14 NCUR decision notification
Jan 15 NCUR registration opens
Jan 22 Grant workshops

Feb 6 Drop-in Grant-Writing Assistance (URC, 11 am – 1 pm)
Feb 10 Spring grant deadline (12 pm)
Feb 14 NCUR early registration deadline
Feb 24 Grant review
Feb 26 Grants to Foundation
Feb 26 Posters at St. Paul

Mar 4 Abstract-Writing Workshop (CSU 203, 10 – 11 am)
Mar 5 Abstract-Writing Workshop (CSU 201, 4 – 5 pm)
Mar 6 Foundation Spring grant review meeting (8 am)
Mar 7 MN Conference submission deadline (5 pm)
Mar 7 URS submission deadline (5pm)
Mar 14 NCUR registration deadline

Apr 3 – 5 NCUR, Lexington, KY

Apr 8 Oral Presentation workshop (CSU 201, 10 – 11 am)
Apr 9 Poster presentation workshop (AH 013, 3 – 4 pm)
Apr 9 Oral presentation workshop (CSU 201, 4 – 5 pm)
Apr 10 Poster presentation workshop (CSU 201, 10 – 11 am)
Apr 10 Deadline for printing posters for MnSCU Conference
Apr 11 Creative works presentation workshop (CSU 202, 2 – 3 pm)
Apr 14 MnSCU Undergraduate Scholars Conference, Moorhead, MN
Apr 16 Deadline for printing posters for URS
Apr 21 Undergraduate Research Symposium, MSU, Mankato (9 am – 9 pm)
Apr 28 – 29 CUR Posters on the Hill, Washington, DC

May 2 Deadline for submitting URS presentations to the Symposium Proceedings
May 19 Deadline for submitting scholarly articles to The Journal of Undergraduate Research

Faculty Mentors

Faculty mentors oversee and direct undergraduate research. Some mentors have dedicated research teams of graduate and undergraduate which pursue existing projects. Some prefer to work with undergraduate students one-on-one. Having a faculty mentor is essential for many aspects of undergraduate research. Submitting a grant proposal, applying for IRB or IACUC approval, and use of certain facilities all require the undergraduate researcher to have a faculty mentor. This year, 11 faculty members joined the ranks of research mentors for undergraduate students who applied for grants through the URC programs.

There are various ways to find a faculty mentor. The URC posts listings of available undergraduate research positions on the website. Students may talk with their academic advisor or other undergraduate researchers about mentoring. Getting involved with student organizations may also lead to research opportunities.

Faculty Mentor Resources in the URC Library

In collaboration with The Honors Program, the URC maintains a collection of materials related to undergraduate research activities. The list (see attachment) includes items that are related to research and references that were located in 265 Morris Hall this year.

Faculty Workshops about Undergraduate Student Research

Fall Faculty Workshops – November 8 – 9, 2013

The Undergraduate Research Center's Fall Faculty Workshop has traditionally been an opportunity for faculty enrichment and collaboration regarding undergraduate research, scholarly, and creative activities. Mentoring undergraduate students has been shown to increase faculty productivity and student retention and promote positive, long-lasting academic outcomes.

The 2013 Workshops, Discovery, Inquiry, and Creation, were held on Friday, November 8 and Saturday, November 9 and featured Dr. Bethany Usher of George Mason University, who directs the *Students as Scholars* initiative through the Office of Student Scholarship, Creative Activities, and Research (OSCAR), and serves as an Associate Director of the Center for Teaching and Faculty Excellence (CTFE). She is a Councilor for Undergraduate Research Program Division of the Council on Undergraduate Research, and is co-chair of the 2014 CUR National Meetings.

She has a long history of collaborating with undergraduate researchers. Prior to joining George Mason University in January 2010, she was a faculty at member the State University of New York at Potsdam, where she established the Center for Undergraduate Research and served as its Director. At SUNY Potsdam, she was an Associate Professor of Biological Anthropology and chair of the Anthropology Department. View her TEDxGeorgeMasonU talk entitled "Preparing Students for the World through Undergraduate Research".

Faculty participants included:

Deepa Oomen
In Jae Kim
Kristin Scott
Debra Topham
Walt Groteluschen
Heather Von Bank
Ginger Schmid
Lisa Fleck
Kuldeep Agarwal
Amy Sullivan

Jennifer Veltsos
Rachel Bergstrom
Queen Booker
Colleen Clark
Elizabeth Sandell
Margaretta Handke
Chelsea Mead
Bridgette Cooper
Mohammad Habibi
Kofi Danso

Aaron Dimock
Namyong Lee
Juan (Gloria) Meng
Amy Hedman
Sean Wachsmuth
Forrest Wilkerson
Angela Monson
Sungwon Kim
Julie Kerr-Berry

On a scale of 1 (strongly disagree) to 5 (strongly agree), faculty participants rated the workshops above 4.16 or above on these statements:

- I have an understanding of how to integrate research into my own course(s).
- This workshop introduced me to new concepts that I plan to use.
- The workshop presented new methods that will support research in my course(s).
- Curriculum mapping was helpful in designing or redesigning my course.

Details about faculty feedback on the 2013 Fall Faculty Workshops are included in the Attachments.

Scaffolding Research Skills for Undergraduates

Friday, November 8, 2013, Morris Hall 102, 3:00-4:00pm

Undergraduate students benefit by participating in research and creative projects, but many students don't have the skills to be independent scholars. In fact, the students for whom undergraduate research might be most beneficial are the ones least prepared to do it when they arrive at college. To address this, George Mason University has adopted a model of scaffolded skills for undergraduate students, to be used both in and beyond the classroom. **Discovery** experiences are those that introduce students to what it means to do research, and lets them find out how they can get involved. Students involved at the **Inquiry** level start to understand how scholarship works in their fields, and learn how to evaluate the others' research, and get the tools and knowledge to produce their own scholarship. Once students are at the **Creation** of Scholarship level, they can make significant contributions to authentic scholarly work in their fields. This talk was broadly applicable to faculty who work with students in the classroom and those who mentor them in independent projects, across all disciplines.

Creating Authentic Research Experiences in Courses

Saturday, November 9, 2013 Centennial Student Union Heritage Room, 9:00 am – 3:00 pm

9:00-9:30 Introductions & goals of the workshop

9:30-10:30 Scaffolded student learning goals, student learning outcome (SLO) exercises

10:30-11:30 Curriculum mapping of syllabus

11:30-1:00 Discussion of major research/creative focus of course using Designing for Inquiry-Based Learning Planner

1:00-2:30 Revision of course schedule and description incorporating the research activity including update curriculum map

2:30-3:00 Discussion of accomplishments and next steps

Courses that involve "real" research or creative experiences are more effective in teaching students disciplinary concepts and giving them skills that they will apply after their undergraduate career. For faculty, these courses can be valuable when they help the faculty member on a larger project, and are often much more fun to teach than traditional classes! The goal of this workshop was to design or re-design a course so students who take the course contribute to an authentic research or creative project and disseminate the results of that project. Faculty participants used a curriculum mapping approach to analyze a current or potential course. Using research experience and inquiry-based learning models, participants re-designed the course, integrating the research or creative project. The workshop was hands-on and interactive, and faculty members who co-teach classes were encouraged to attend as a team. At the end of the workshop, participants had a map and a plan for the re-designed course. This workshop was applicable to faculty who teach upper-division courses in any discipline. See Chapter 13 from John C Bean's (2011) *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom* (2nd edition).

Spring Faculty Workshop

(Mankato, MN) – January 8, 2014

The URC sponsored a session at the MSU Professional Development Day. The session was called “Scholarly Inquiry.” The presentation included information about the URC, the history of undergraduate research at Minnesota State, Mankato, and resources for undergraduate research and scholarship in the classroom. Session leaders included Marilyn Hart, Joe Holtermann, and Karla Lassonde. Ten people attended the workshop.

Faculty Spotlight

Outstanding faculty mentors are critical to undergraduate education and to creating a successful student experience. Faculty members who make exceptional contributions to a students’ education and experience are to be commended. This year, on its website, the URC featured a story about a faculty research mentor periodically on its website. These faculty members were featured:

Karla Lassonde, Department of Psychology, College of Social and Behavioral Sciences

Namyong Lee, Department of Mathematics and Statistics, College of Science, Engineering, and Technology

Theresa Salerno, Department of Chemistry, College of Science, Engineering, and Technology

2014 Outstanding Undergraduate Faculty Research Mentor

The Outstanding Undergraduate Faculty Mentor of the Year Award recognizes faculty with outstanding achievement in mentoring students. Each year since 2011, the URC has presented an award to an outstanding undergraduate research mentor. This Award serves the dual purposes of recognizing outstanding mentoring provided by individual faculty and of reminding the university community of the signal importance of mentoring to undergraduate studies. In 2014, the URC presented the Outstanding Undergraduate Research Mentor award to Moses M. Langley, Ph. D., Assistant Professor, Department of Psychology. Dr. Langley was nominated by Maria Almoite, Senior. The nomination letter is included in the Attachments.

Undergraduate Student Researchers

Research by undergraduate students has been shown to:

- Enhance student learning through mentoring relationships with faculty
- Increase retention
- Increase enrollment in graduate education and provide effective career preparation
- Develop critical thinking, creativity, problem solving and intellectual independence
- Develop an understanding of research methodology
- Promote an innovation-oriented culture

Grants for Undergraduate Student Researchers

The URC offered fall and spring funding for research, scholarly, and creative activity conducted by an undergraduate student to make an original intellectual or creative contribution to the discipline. Awards were available to provide financial support for students and purchase necessary supplies. The grant application process is an essential component of supporting undergraduate scholarly activity, providing students the opportunity to thoroughly consider their proposed project and providing necessary funding. The URC leadership hopes that these experiences will inspire students and create scholars. Students who received grants were required to make presentations at the Undergraduate Research Symposium.

There were three types of funding sources (outlined below). Students could apply for multiple types of grants; however, only one grant was awarded per project. To encourage early submissions, five flash drives were given to the first 5 proposals that were submitted. Because of budget limitations, travel grants were only awarded to students who presented at NCUR and at the MnSCU Undergraduate Scholars Conference.

During the 2013 – 2014 academic year, 74 grants were awarded for a total of \$75,902.12 in stipends and supplies to support student research and creative projects. A list of URC Grants awarded this year are included in the Attachments.

In fall 2013, 85 applications were submitted. Grants were awarded to 65 projects for a total of \$64,170.69, including 24 Foundation grants, 36 URC grants, and 5 NorthStar STEM Alliance grants. In spring 2014, 11 applications were submitted. Grants were awarded to 9 projects for a total of \$11,731.43, including 7 Foundation grants.

College	Fall Grants	Spring Grants	Total
Arts and Humanities	\$4,439.35	\$1,800.00	\$6,239.35
Allied Health and Nursing	\$665.76	\$0.00	\$665.76
Social and Behavioral Sciences	\$8,272.23	\$0.00	\$8,272.23
Science, Engineering, and Technology	\$47,064.99	\$5,747.71	\$52,812.70
Education	\$3,728.36	\$0.00	\$3,728.36
Business		\$1,100.00	\$1,100.00
Total	\$64,170.69	\$11,731.43	\$75,902.12

Minnesota State Foundation Student Research Grants

A Foundation grant included a \$1000 stipend and up to \$1000 for supplies. Stipends were issued once in the fall and once in the spring (\$500 each) contingent upon presentation at the Undergraduate Research Symposium. If awarded to a group, funds were divided equally among students.

Forty-five students received \$52,000.00 in grants funded by the MSU Foundation. Awardees were encouraged to report back to the Foundation upon completion of the project with a summary of the experience participating in the research process and the URC.

Lauren Bach
Randall Burns
Christopher Collins
Paula Fischbach
Areej Hassan
Nicholas Jobeun
Tyler Koonst
Sarah Lieske
Thomas Lutz
Emma Phelps
Christine Scheper
Nicole Snyder
Katie Sonnabend
Ramesh Timilsina
Blake Whittemore

Jeremy Balster
Laura Chopp
Katie Dose
Shelby Flegel
Travis Hensensky
Elliott Jorgensen
Adam Kronebusch
Sadie Leidall
Marc Monson
Neil Ranals
Tyler Schrandt
Sara Sobota
Emma Stong
Daniel Tollefson
Sean Willaert

Mitchell Beckman
Chelsea Conrad
Raechel Erdman
Jessa Gute
Danielle Hron
Kira Kirchberg
Garrett Luce
Samantha List
Philip Munkvold
Dulanjani Rajaguru
Jaekook Sim
Tatiana Soboleva
Shayna Tietje
Katie Westermayer
Natalie Young

NorthStar STEM Alliance Grants

A NorthStar STEM Alliance grant included a \$1000 stipend and up to \$300 for supplies. These awards were available to students from underrepresented ethnicities enrolled in specific STEM discipline majors. In order to be eligible for the NorthStar STEM Alliance Research Grant, students had to meet the following criteria:

- a) U.S. Citizen or permanent resident.
- b) Declared major in one of the following departments: Automotive & Manufacturing Engineering Technology, Electrical & Computer Engineering & Technology, Mechanical & Civil Engineering, Biology, Chemistry, Physics, Computer Information Science, or Mathematics.
- c) Member of one of the following ethnic groups: African/African-American, Hispanic/Latino, or Native-American.
- d) NorthStar STEM Alliance Research Grants were primarily intended for students doing individual research. Groups could apply, but ONLY group members that meet the above criteria could be eligible to receive the stipend.

This year, seven students received \$6,500.00 in grants awarded by the NorthStar STEM Alliance.

Henruka Abugre
Abdikadir Mohamed
Robera Yahya

Samuel Jordan
Ethan Nichols

Stella Menuba
Natacha Tasha

Undergraduate Research Center Grants

There were two types of URC grants awarded: URC Stipend & Supply and URC Supply. Because of budget limitations, URC-specific travel grants were only awarded to students who presented at NCUR and at the MnSCU Undergraduate Scholars Conference. (In past years, students could also apply for travel support to attend/present at other academic conferences.)

URC Stipend & Supply grants included a \$500 stipend and up to \$500 in supplies, (consumable items and other necessary materials that were unavailable at the University). Stipends were issued once in Fall and once in Spring (\$250 each) contingent upon presentation at the Undergraduate Research Symposium. If awarded to a group, the stipend was divided equally among students.

URC Supply grants could include up to \$500 in supplies, including consumable items and other necessary materials that are unavailable at the University.

College and Department Grants

While the URC does not specifically allocate College-related resources for undergraduate research, URC leaders do want to acknowledge that Colleges at MSU, Mankato have been very supportive of undergraduate student research through a variety of processes and resources at the College level. For example, the College of Social and Behavioral Sciences provides a process for undergraduate student researchers to request financial support for travel. This support may be for conference travel, research travel, and/or study abroad. Grants may be up to \$500.00 per academic year.

Furthermore, this year, funds for students' travel expenses were generously provided by academic departments, colleges, and the university. Every student's registration, hotel, and bus coach travel were fully funded. The response to the appeal to provide support for student attendance at NCUR was remarkable, a testimony to the incorporation of undergraduate research in our campus culture.

College of Arts & Humanities - \$650
College of Business - \$650
College of Education - \$2,600
College of Social and Behavioral Sciences - \$8,000
College of Science, Engineering, and Technology - \$13,650
Department of Psychology - \$1,650

Workshops for Undergraduate Students

Three types of workshops were held for undergraduate students to support their journey in research, scholarly, and creative activity.

Getting Started Workshops

The Getting Started Workshops were a helpful resource for students new to the research process. These one-hour workshops were held twice: September 4, 10:00 am in CSU 253/4/5 and September 5, 2:00 pm in CSU 201. A total of 44 students attended the Getting Started Workshops.

Grant-Writing Workshops

The Grant-Writing Workshops were provided to assist undergraduate students in preparing applications for the several funding sources. These one-hour workshops were held twice: September 18, 10:00 am in CSU 253/4/5 and September 19, 2:00 pm in CSU 201. A total of 38 students attended the Grant-Writing Workshops.

Presentation Workshops

The Presentation Workshops were held to assist students in designing and presenting their research in several venues. These one-hour workshops were held in April:

April 8	10:00 am	CSU 201	Oral Presentations	Elizabeth Sandell
April 9	3:00 pm	AH 013	Poster Presentations	Queen Booker
April 9	4:00 pm	CSU 201	Oral Presentations	Karla Lassonde
April 10	10:00 am	CSU 201	Poster Presentations	Forrest Wilkerson
April 11	2:00 pm	CSU 202	Creative Projects Presentations	Gina Wenger

Courses for Undergraduate Student Researchers

One of the best ways for students to learn about conducting research is to enroll in a course that involves research. At MSU, a number of academic programs offer courses that provide an overview of the research methods and processes utilized within a particular discipline. Enrolling in one of these courses provides the opportunity to determine if independent research interests you. The courses can also provide material for future research projects. In addition, there are a number of faculty members who incorporate a research experience within the course curriculum. Note that not all courses were offered each semester and permission from the instructor may be required to register. URC staff members also advise students to speak with their academic advisor and peers to identify specific courses that contain research experiences. Each credit hour equals 3 hours of research per week during a semester. Check with the related academic department for course availability and pre-requisites. Here is a list of some of the courses at MSU. (This list is not inclusive of all possible courses.)

<u>Department</u>	<u>Course number</u>	<u>Course name</u>
ANTH	431	Applied Cultural Research
CMST	485	Senior Seminar
EEC	240	Research
ENG	474	Research & Writing Technical Reports
ETHN	402	Research Methods
FCS	496	Topics – Research Methods
HLTH	495	Senior Seminar
HP	480	Senior Seminar
MATH	492	Capstone
MKTG	324	Research and Analysis
NURS	430	Research
PSYC	499	Independent Study
SOWK	469	Applied Social Work Research

Undergraduate Research Symposium (16th Annual)

The URC supports the Undergraduate Research Symposium each spring. Students who have participated in scholarly research or creative activity, and who have a MSU, Mankato faculty sponsor, may participate in the Symposium. On April 21, 2014, students presented their research in various formats including discipline specific oral presentations, poster sessions, performances, scholarly and creative work, and art displays. The 2014 MSU Symposium Schedule of Events is included in the Attachments.

The 2014 Undergraduate Research Symposium was truly a celebration of our undergraduate achievement and excellence, which reflects the passion and commitment of our administration, faculty members, and staff. Each student who participated at the Undergraduate Research Symposium was awarded a medallion in recognition of their scholarly achievement to be worn at the student's graduate ceremony. A solid gold ribbon was in recognition of participation at the Symposium.

The annual Symposium highlighted the work of 281 student presenters with 167 presentations: 48 oral presentations and 119 posters. The undergraduate projects were facilitated by 79 faculty mentors. Faculty judges selected 29 student projects to receive Outstanding Presentation Awards.

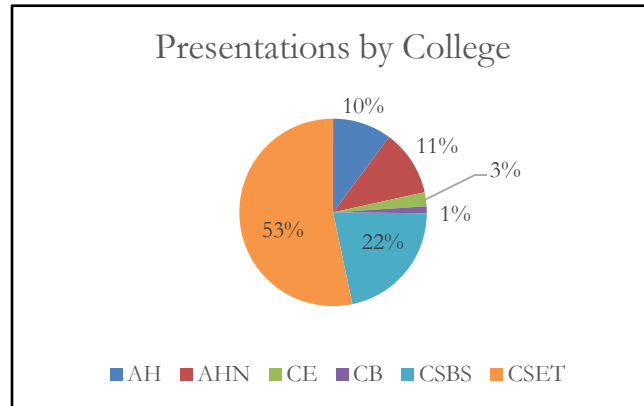
The 2013 Outstanding Undergraduate Research Mentor of the Year awardee, Dr. Karla Lassonde, was the keynote speaker at the celebration dinner. Additional highlights included the student-nominated award to the 2014 Outstanding Undergraduate Research Mentor of the Year and the third annual Creative Works Gallery opening that featured works by Minnesota State University, Mankato student artists and performers.

Presentations by College

Faculty members and students from every College participated in the Symposium.

Symposium Presentations by College

<u>College</u>	<u>Number</u>
Allied Health & Nursing	17
Arts & Humanities	19
Business	4
Education	2
Science, Engineering & Technology	36
Social & Behavioral Sciences	89
Total	167



Creative Works Gallery

Designing a Logo for the First Step Mental Health App, **Mackenzie Lopez, Joshua Martin, & James Faraday**, Rebecca Bates, Faculty Mentor (Department of Integrated Engineering)

Interdisciplinary Experimentation, **Ashton Bird & Dustin Swiers**, Liz Miller, Faculty Mentor (Department of Art) and Mika Laidlaw, Faculty Mentor (Department of Art)

Nudity on Display, **Amanda Holst**, Gina Wenger, Faculty Mentor (Department of Art)

Process, Progress, **Tyler Schrandt**, Mika Laidlaw, Faculty Mentor (Department of Art) and Liz Miller, Faculty Mentor (Department of Art)

Researching the Differences and Commonalities of the Minnesotan Collegiate and Professional Dancer: a Documentary Exploring Individual Philosophies as the Dancer, **Sydney Burch**, Daniel Stark, Faculty Mentor (Department of Theatre & Dance)

Rural Reverie, **Weston Zarecky**, Brian Frink, Faculty Mentor (Department of Art)

Session Moderators and Judges

Students' presentations were reviewed by 48 faculty and graduate student judges and were judged according to standard rubrics. The reviews were made available for students at the conclusion of the event to provide discipline-specific feedback for future presentations. Each oral session was moderated by a faculty member who introduced student presentations and maintained the time limitations. Here is a list of faculty members and graduate students who assisted in these roles:

Adriana Gordillo	Alexandra Panahon	Andrea Lassiter	Andrew Ahrendt
Anne Dahlman	Becky Bates	Brian Wasserman	Carlos Panahon
Chelsea Mead	Kristin Scott	David Bissonnette	David Georgina
Chris Corley	David Beimers	Dawn Albertson	Deepa Oommen
Elizabeth Harsma	Evan Bibbee	Fei Yuan	Gary Mead
Ginny Walters	Heather Von Bank	John Krenz	Johnna Horton
Karla Lassonde	Kellian Clink	Kimberly Contag	Kristie Campana
Kathy Bertsch	Lori Piowski	Kristin Cvancara	Dan Moen
Laurie Grad	Lora Strey	Mary Visser	Nadja Kramer
Patricia Young	Penny Rosenthal	Queen Booker	RaeLynn Lamminen
Rick Auger	Rosemary Krawczyk	Sean Wachsmuth	Steven Losh
Teri Wallace	Trent Vorlicek	Victor Esenabhalu	Shannon Fisher

2014 MSU Symposium Outstanding Presentations Recognition

The judges selected Outstanding Presentations that were recognized with certificates presented to 29 student projects. The award-winning student presenters are listed in the Attachments.

MSU students who participated in the Symposium were most likely juniors or seniors. Survey respondents were 50 female and 68% white. In general, they felt prepared prior to participating in the Symposium. On a scale of 1 (poor) to 4 (effective), survey respondents rated the level of communication and support from the URC at 3.19, from their department at 3.19, and from their mentor at 3.69. On a scale of 1 (low) to 4 (high), survey respondents rated judging at 2.73, celebration dinner at 2.93, oral sessions at 3.07, poster sessions at 3.13, abstract book at 3.40, and URS overall at 3.50. Here are some of their comments:

I had really really great experience. Hope this goes on for long time. Before, I did not know any other lab skills other than laboratory classes, but now I know more.

I have made friends with fellow students. I got the opportunity to dive into a specific area that I was interested in.

Because of research, I have improved my writing skills, time management skills, and leadership skills.

It greatly improves writing, thinking, and creativity.

It has enhanced my undergraduate experience immensely. Participating in the URS really encouraged me to reach beyond my full potential. I made valuable relationships with fellow researchers, mentors, and library staff.

The process has strengthened my belief that research is a passion of mine and something I want to continue to do and learn from. It is a lot of work, but it is absolutely worth it.

It has substantially benefited my undergraduate experience. I was able to apply course materials to actual research and gained experience in collecting and analyzing data, something that cannot be learned in a classroom.

The process of thinking about one thing or a small set of things for a long time teaches me about detail, revision, and the importance of sharing new ideas.

Without this opportunity I would not feel my degree is as worthwhile as it is with the dedication I had toward my projects.

My own oral presentation based on a literature review was tedious, time consuming, and often times very frustrating, however I feel more prepared than ever for a future in graduate school and academia.

Responses to specific questions on the feedback survey are included in the Attachments.

Symposium Proceedings

Since 2007, students who presented at the Undergraduate Research Symposium had the opportunity to submit their presentation to the online archive called the *URS Proceedings*. The session abstract and its presentation materials, e.g., images, slides, video, audio, and posters, could be submitted to the *URS Proceedings*. These materials by themselves did not fit the rigor required of submissions to the Journal of Undergraduate Research. (Specifically, research presented as a poster or oral presentation at the Conference needed to be written as research paper in order to be submitted to the JUR.) In contrast, PowerPoints or other files may be submitted to the Proceedings. Submissions to the *URS Proceedings* are usually due within 2 weeks of the conference date. This year's due date was May 2, 2014. Submissions are sent to urc@mnsu.edu and assembled by the URC graduate assistant. <http://www.mnsu.edu/urc/proceedings/ursproceedings.html>

The Journal of Undergraduate Research (Volume 14)

The Journal of Undergraduate Research (JUR) is an interdisciplinary peer-review online journal published annually since 2002. The JUR (edited by Barb Bergman) accepts submissions that meet the standard of excellence for students in diverse fields of study including authors from other colleges and universities. Although most submissions are made by students participating in Minnesota State University, Mankato's Undergraduate Research Center, submissions from any undergraduate student will be considered for publication. Undergraduates from other universities may submit articles. Articles must be approved by the student author's faculty mentor.

Articles for JUR may be in the format of traditional research papers, presentations, professional reports, or creative reports with strong textual or graphic supporting materials. A formal research article format might include the following: abstract, introduction, literature review, materials and methods, results, discussion, and references, in the citation style appropriate to the academic discipline.

A report for a profit or non-profit organization might include a summary, discussion, and recommendations. Because organizational reports are interwoven with the organization's culture and the reason for the report, students should submit a brief description which contextualizes their submission.

Creative reports could include performance clips or be graphic-based in the sense that artwork or design materials comprise a major part of the submission. The creative submissions should contain sufficient material, either paper or web-developed format, to contextualize the performances and/or graphics. Viewers should be able to place the presentation within a specific scope of scholarship and should be able to understand the relevance of the work to the performance or graphics..

Submissions are due 4 weeks after the conference. This year's due date was May 19, 2014. Submissions are sent to the JUR editor. Articles are sent to faculty volunteers for review. The goal is for each article to receive 2 critiques. Comments are sent to the student authors who are then asked to make changes and submit a final version of the paper for publication. If significant changes are suggested, the faculty mentor is contacted in addition to the student author. Publication is usually the first week of September.

For the past years, the JUR editor has sent final versions as PDFs to urc@mnsu.edu for posting by the URC graduate assistant. Starting this year, the Journal will be published within Cornerstone, the institutional repository managed by the Library. Previous volumes are being moved into a JUR template within Cornerstone.

Graduate Research Consultant Program

The URC supports faculty who want to transform their course projects and assignments into research projects. This was the pilot year for the Graduate Research Consultant (GRC) Program. The GRC was developed to increase research opportunities for undergraduates in courses. The GRC encourages and supports instructors who want to transform course projects or assignments into research projects. By research projects, we mean opportunities in which students use the methods of the discipline to pose questions, apply those methods in investigation, and communicate formally their findings to others. Since an important aspect of performing authentic research is disseminating the results, the course in which a GRC works should include a mechanism for students to communicate their findings publicly; for example, via a class presentation, a poster session, a website, etc. So that faculty can develop, guide, and evaluate the research component, we compensate advanced graduate students (Graduate Research Consultants) to work with the instructor and the students during the concentrated period of the course when the students are planning, carrying out and communicating their research. This concept encourages vertical research teams that involve undergraduate and graduate students, along with the faculty mentors.

The role of the GRCs is to work with the instructor to help plan, carry out, and communicate their research. GRCs are meant to coach and to advise undergraduate students, rather than grade or evaluate student work. These GRCs are expected to work a minimum of 30 hours over the course of the semester (i.e., 2 hours per week) and are compensated for their work (up to \$450 supported by the College of Graduate Studies and Research) through the URC. There are several ways in which a GRC is different from a TA. The major difference is that a GRC "coaches" students, but does not grade their work. The GRC has extended knowledge in research methodology. Additionally, a GRC does not attend all of the class sessions. Instead, GRCs can be available for individual or group consultation outside of class hours or they might attend selected classes. It is important for the graduate mentor to understand the requirements and the undergraduate to understand them also.

To receive URC support for a GRC course, faculty members could submit an application and course syllabus. Three faculty members participated in the GRC program in Fall 2013. Dr. Queen Booker, Dr. Gretchen Perbix, and Dr. Daniel Toma implemented the initial semester of the GRC program. Three faculty members submitted applications for GRCs implemented in Spring 2014. If the proposal was accepted, the URC funded a graduate student selected by the faculty member to be the GRC for the course. In the absence of a graduate student, the URC will help identify and select a graduate student for the course. The URC staff members sought to match the interested graduate student with faculty teaching GRC courses who contact us for GRC recommendations. Two faculty members utilized the program: Dr. John Krenz and Dr. Karla Lassonde.

Celebration of Excellence in Research

(Mankato, MN) – April 2, 2014

The College of Graduate Studies and Research held the annual Celebration of Excellence in Research was held from 5:00 to 7:00 pm on April 2, 2014 in the CSU Ballroom. This event honors the commitment of faculty members and students to research and creative works. The evening included introduction of Distinguished Faculty Scholars for 2014 and the Research and Sponsored Program Awards.

Samantha Tupy, graduate student in Clinical Psychology, made one of the speeches. As a member of an undergraduate research team for several years, she had received several URC grants and presented at several local and national conferences. Ms. Tupy's presentation is included in the Attachments.

Minnesota Undergraduate Scholars Consortium

MSU, Mankato continued to participate in the Minnesota Undergraduate Scholars consortium. This is a group of publicly-supported post-secondary education institutions that supports the research, scholarly works and creative activity of undergraduates by providing avenues for funding, presentation resources and opportunities for undergraduates to present their work. We are committed to engaging undergraduate students throughout the Minnesota State Colleges and Universities system in scholarly activities that will enrich their collegiate experience, open doors to career opportunities and lead to a life-long love of learning.

The institutional members of the Consortium included: Anoka-Ramsey Community College, Bemidji State University, Inver Hills Community College, Minneapolis Community and Technical College, Metropolitan State University, Minnesota State University, Mankato, Minnesota State University, Moorhead, North Hennepin Community College, Rochester Community and Technical College, St. Cloud State University, Southwest Minnesota State University, and Winona State University.

MnSCU Conference of Undergraduate Scholarly and Creative Activity (3rd Annual)

(Moorhead, MN) – April 14, 2014

This year, campus coordinators from MnSCU universities organized the third annual MnSCU Conference of Undergraduate Scholarly and Creative Activity held at the campus of Minnesota State University – Moorhead. The conference featured presentations from a wide variety of disciplines by students from Minnesota State University-Mankato, Minnesota State University-Moorhead, Winona State University, Southwest Minnesota State University, St. Cloud State University, Bemidji State University and Metropolitan State University. In addition, Inver Hills Community College participated.

The purpose of the conference was to provide undergraduate students the opportunity to present their research, scholarly, and creative projects through poster presentations, oral presentations, displays, and performance art. Highlights included a pre-event pizza social, concurrent morning and afternoon oral presentations, two poster sessions, and a keynote address by MnSCU Vice Chancellor John O'Brien. The conference also included a graduate school fair and a workshop for local high school students led by current undergraduate students from all campuses.

The attachments include a list of the 38 undergraduates from MSU, Mankato who presented at the third annual MnSCU Conference of Undergraduate Scholarly and Creative Activity. The attachments also include the full results of a survey to get student participants' feedback on this event.

MSU students who participated in the MnSCU Conference were juniors or seniors. Survey respondents were 78% female and 89% white. In general, they felt prepared prior to attending MnSCU. On a scale of 1 (poor) to 5 (excellent), students rated the presentation experience 3.33, the overall conference experience 4.00, the travel by coach bus as 4.00, and the hotel 4.75. All students said they would attend again if they had the opportunity. And all students said they would recommend participation to other students. Here are some of their comments:

Helped me gain experience in presenting research

By becoming a more informed student committed to research in the field and better prepared for professional positions that require public speaking and knowledge.

I enjoyed traveling and learning about undergraduate research projects from different universities.

Great opportunity to travel outside your university community and share your hard-work and research with other MnSCU students, also can be good networking opportunity.

It looks good on resumes

Even though not many people stopped at our poster, getting out there and presenting the study you've worked hard on for a year or more is a great experience.

Schedule of Events

Sunday, April 13, 2014

6:00 – 8:00 pm	Check-in	CMU Recreation Room
6:00 – 8:00 pm	Evening Social and Pizza	CMU Recreation Room

Monday, April 14, 2014

8:00 – 9:30 am	Breakfast	CMU Ballrooms
8:15 – 8:30 am	Welcome	CMU Ballrooms
8:30 – 10:30 am	Poster Session I	CMU Hallways
9:00 – 10:00 am	Oral Session I	CMU 203, 205, 207, 208, 214, 216
10:15 – 11:15 am	Oral Session II	CMU 203, 205, 207, 208, 214, 216
11:30 am – 12:40 pm	Lunch	CMU Ballrooms
	Keynote Speaker	John O'Brien
12:50 – 2:50 pm	Poster Session II	CMU Hallways
12:50 – 1:50 pm	Oral Session III	CMU 203, 205, 207, 208, 214, 216
2:00 – 3:00 pm	Oral Session IV	CMU 203, 205, 207, 208, 214, 216

Posters at St. Paul

(St. Paul, MN) – February 26, 2014

The first-ever MnSCU poster presentations at the State Capitol in St. Paul took place on Wednesday, February 26, 2014. 48 Minnesota Undergraduate Scholars displayed, in poster format, the work of 31 exceptional undergraduate projects from 7 MnSCU Universities and 5 Community Colleges at the State Capitol in St. Paul. There were 35 faculty mentors involved with these projects.

This event drew attention to the exciting work being done on the MnSCU campuses around the state and provided another opportunity to elevate the system's reputation as a leader in undergraduate research and creative works. The abstract book included a photo and a biosketch of each student presenter. All student presenters received padfolios embossed with the MN Undergraduate Scholars logo and certificates of participation.

This gathering allowed undergraduate students to share the results of their work with legislators and other leaders in state government. Students were encouraged to make individual appointments with their state legislators. Students from MSU, Mankato made phone calls to initiate the contacts, but their legislators were very busy during the legislative session and did not make individual appointments. However, several lawmakers came to the rotunda to visit with the students. Representative Clark Johnson, Sen. Kathy Sheran, and Representative Kathy Brynaert came to meet students and learn about their research projects.

There was terrific press coverage of this event and about the MnSCU Consortium. Dr. Marilyn Hart, URC Director, was interviewed by Mankato Free Press, KSTP-TV, and the StarTribune online newspaper.

Campus contact persons helped publicize the event at on their campus and coordinated student selection for participation. Participating campuses included: MSU; Metropolitan State University; Minnesota State University, Moorhead; St. Cloud State University; Southwest Minnesota State University; Bemidji State University; Winona State University; Rochester Community and Technical College; Anoka-Ramsey Community College; Inver Hills Community College; Minneapolis Community and Technical College; and North Hennepin Community College.

Schedule of Events

9:00–10:00am	Student Meetings with Legislators
10:00–11:00am	Poster setup in Rotunda
11:00am–1:00pm	Poster Session in Rotunda

1:00–2:00pm

Celebration Lunch

Presentations by MSU Students

The application process was competitive. Undergraduate student presenters were selected at each campus. At MSU, Mankato, a committee of Chip Panahon, Fei Yuan, and Queen Booker reviewed applications from students who received Outstanding Presentation Awards at the 2013 Undergraduate Research Symposium. Steve Losh worked with students presenters to create meaningful research posters. Elizabeth Sandell drove the MSU van and attended the event with the MSU students.

The six participating MSU students include Hilary Deragisch (Lyudmyla Stackpool, faculty mentor), Amber Hindt (Jeffrey Buchanan, faculty mentor), Angela Graske and Jake Johnson (Emily Stark, faculty mentor), Kali Trukki (Michael Bentley, faculty mentor) and Elizabeth Lohrenz (Elizabeth Sandell, faculty mentor). Detailed information on all projects, including student bios, is available online at http://www.mnsu.edu/urc/posters_stpaul/abstractbook_2014.pdf.

Comparison of Inter-Cultural Competency between American and Russian University Students, **Elizabeth Lohrenz**, Elizabeth Sandell, Faculty Mentor (Department of Educational Studies)

Effects of Strontium in the Bone Density of Mice, **Kali Trukki, Ashley Ledding, & Breanna Ganther**, Michael Bentley, Faculty Mentor (Department of Biological Sciences)

Influences of Student Mindset and Motivation on Study Habits and Learning Skills, **Angela Graske & Jake Johnson**, Emily Stark, Faculty Mentor (Department of Psychology)

Substitution of Calcium by Lanthanum (III) in Synthetic Calcium Vanadate Apatite, **Hilary Deragisch**, Lyudmyla Stackpool, Faculty Mentor (Department of Chemistry)

The Effects of Montessori-Based Activity on Affect and Engagement in Persons with Dementia, **Amber Hindt**, Jeffrey Buchanan, Faculty Mentor (Department of Psychology)

Council on Undergraduate Research (CUR)

The Council on Undergraduate Research, founded in 1978, is a national organization of individual and institutional members representing over 900 colleges and universities. The mission of the Council on Undergraduate Research (CUR) is to support and promote high-quality undergraduate student-faculty collaborative research and scholarship. CUR defines undergraduate research as an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline.

CUR believes that faculty members enhance their teaching and contribution to society by remaining active in research and by involving undergraduates in research. CUR's leadership works with agencies and foundations to enhance research opportunities for faculty and students. CUR provides support for faculty development. Our primary advocacy is in support of faculty and undergraduate students engaged in research. CUR achieves its vision through efforts of its membership as organized in a divisional structure that includes arts and humanities, biology, chemistry, engineering, geosciences, health sciences, mathematics and computer science, physics and astronomy, psychology, social sciences, an at-large division that serves administrators and other disciplines, and a division for directors of undergraduate research programs.

National Conference of Undergraduate Research (NCUR) (28th Annual)

(Lexington, KY) – April 3 – 4, 2014

NCUR promotes undergraduate research, scholarship, and creative activity in all fields of study by sponsoring an annual conference for students. NCUR is a wonderful opportunity for students to meet peers and faculty from around the country working in similar research fields, learn about how research and scholarship is conducted in different fields, learn about graduate school and employment opportunities, and of course, to develop presentation skills through oral or poster presentations. Over 3,000 students present at NCUR each year. The attachments include a list of students from MSU, Mankato who made presentations at NCUR.

This year, the prestigious National Conference on Undergraduate Research (NCUR) was held at University of Kentucky - Lexington. NCUR planners accepted 32 abstract applications from the 35 that were submitted by MSU students. MSU, Mankato sent 42 students from different disciplines who made a total of 29 presentations. These students were mentored by 25 faculty members. In 2011, 22 students from MSU, Mankato attended; in 2012, 41 MSU students attended; in 2013, 52 MSU students attended. By participating in this nationally-recognized conference, MSU, Mankato has distinguished itself as a leader in undergraduate research, scholarship and creative activity in the MnSCU system and nation.

Financial Support for MNSU Students

Funds for students' travel expenses were generously provided by academic departments, colleges, and the university. Every student's registration, hotel, and bus coach travel were fully funded. The response to the appeal to provide support for student attendance at NCUR was remarkable, a testimony to the incorporation of undergraduate research in our campus culture.

Presentations by MNSU Students

NCUR planners accepted 32 abstract applications from the 35 that were submitted by MNSU students. Minnesota State Mankato sent 42 students from different disciplines who made a total of 29 presentations. The attachments include a list of students from Minnesota Stat Mankato who made presentations at NCUR. These students were mentored by 25 faculty members. In 2011, 22 students from Minnesota State Mankato attended; in 2012, 41 students attended; in 2013, 52 students attended. By participating in this nationally-recognized conference, Minnesota State University, Mankato has distinguished itself as a leader in undergraduate research, scholarship, and creative activity in both the MnSCU system as well as nationwide.

MNSU students who participated in NCUR were juniors or seniors. Survey respondents were 64% female and 64% white. In general, they felt prepared prior to attending NCUR. On a scale of 1 (poor) to 5 (excellent), students rated the travel by coach bus as 2.36, the hotel 4.73, the overall conference experience 4.73, and the presentation experience 4.82. All students said they would attend NCUR again if they had the opportunity. And all students said they would recommend participation in NCUR to other students. Here are some of their comments:

I am usually a nervous presenter, but because I knew my study I did not get very nervous, in fact I was pretty excited to present. I think this will help me feel confident in my presenting abilities for the remainder of the semester.

I really enjoyed traveling to Kentucky, meeting other students, and having the opportunity to present research at the national level.

It has strengthened my desire to work in a research lab.

It changed my mind to attend Graduate school in future.

It has cemented my decision to pursue a PhD and pursue a research career.

I will be attending graduate school next fall. I know I will have to take a research course, and NCUR will help with this because it was the full process of research. This trip was the first time I ever presented research and I think it helped give me confidence in my abilities. This is going to be a great thing to have as I move forward with my education.

Participation at NCUR solidified my plan to pursue research at the graduate level

Grad school panel was helpful in giving out information.

It was a wonderful experience getting to see what other students from around the US are working on.

An attachment also includes the full results of the survey of student participants to get their feedback on this event.

Posters on the Hill (POH)

(Washington, DC) – April 28 – 29, 2014

Each Spring, the Council on Undergraduate Research (CUR) hosts an annual undergraduate poster session on Capitol Hill in Washington, DC. This event helps members of Congress understand the importance of undergraduate research by talking directly with the students whom these programs impact. This is the third time a student has represented Minnesota State University, Mankato at Posters on the Hill. This year, Michael Doyle, a third year Manufacturing Engineering Technology major at Minnesota State University, Mankato, presented his research, “3D Printing of Stainless Steel for Engineering Applications.” Doyle’s faculty mentor was Kuldeep Agarwal.

Schedule of Events

Monday, April 28, 2014

11:30am-2pm Optional Field Trips

5:30 p.m.to 7:30 p.m.: Orientation and Advocacy Training – Light Dinner will be served.

Tuesday, April 29, 2014

7:30 a.m. to 8:30 a.m.: Continental Breakfast and Hill session –

8:40 a.m. to 11:00 a.m.: White House Office of Science and Technology Policy Young Professional Panel

11:30 a.m. to 3:00 p.m.: Congressional Appointments

3:50 p.m. to 4:30 p.m.: Poster Setup

4:30 p.m. to 5:00 p.m.: Student Review of Posters

5:30 p.m. to 7:30 p.m.: Poster Session, Reception, and Awards Ceremony

Poster by MSU Student

Michael Doyle, a third year Manufacturing Engineering Technology major at MSU, Mankato, presented his research, “3D Printing of Stainless Steel for Engineering Applications.” Doyle’s faculty mentor was Kuldeep Agarwal. Out of the more than 600 applicants, only 60 were chosen for this event. Doyle’s travel and attendance is fully funded by the MSU Foundation.

3-D metal printing has the potential to solve problems in the medical, prototyping, automotive, aerospace, defense, and other engineering industries. To reach the potential of any manufacturing process, the final product's material characteristics and how the process affects those characteristics must be understood to meet the demands of industrial applications. There is a gap in standard testing information regarding metal based 3-D metal printing processes. The purpose of this research is to fill that gap of valuable information for this manufacturing process, so that its principles can be used to design better products. Fundamental tensile and compression tests were executed using American Society for Testing and Materials standard methods on printed parts whose process variables were adjusted independently. Heater power temperature per metal powder layer, layer thickness, and printing orientation of the part were changed to understand how varying the process affects the strength when elongated or compressed. These tests and factors were setup using a design of experiments method to reduce the fundamental research's complexity and waste while retaining quality statistical results. Research shows a strong interaction between the process variables and the resulting mechanical properties. This data can be utilized to design better quality parts.

Since his early years, Doyle has explored science, mechanics, arts, mathematics, and inventions. By the time he was in grade six, he was involved in nanotechnology. While in college prep school at Minnehaha Academy, he attended the University of Minnesota through PSEO. Next, he attended Dakota County Technical College for a Nanoscience Technology AAS through an articulation agreement with the University of Minnesota. He currently attends Minnesota State University, Mankato and is pursuing a bachelor's degree and a master's degree in Manufacturing Engineering Technology. He has advocated for students in higher education at the state and national levels, taken gold and silver medals at SkillsUSA Minnesota and national competitions, and is independently researching many of his own prototypes, including a fluid pump design that he innovated. He has an internship, many mentors, a part-time job with the Star Tribune, as well as his own business. He aspires to become a well-known research and development director for implementing innovative and inventive solutions to society's problems.

Honorary CUR Fellows Award

Each year during the poster session on Capitol Hill, CUR presents an honorary Fellows award to a member of Congress in recognition of their work for and support of undergraduate research and higher education. In 2014, Senator Amy Klobuchar (Minnesota) received the award at this year's Posters on the Hill.

As the POH student who is both from Minnesota and attending a Minnesota school, Michael Doyle introduced Senator Klobuchar on Tuesday night.

Attachment A. Call for Applications: Director of the Undergraduate Research Center (URC)

The URC Director is a faculty member on 3/4-time reassignment (with 10 additional paid duty days) who will be responsible for advancing and assessing the mission of the URC which is to actively engage faculty and students in mentoring relationships that enable students to participate directly in the research process from its inception through the dissemination of new knowledge so that students ultimately view themselves as participants in a community of scholars. The position reports directly to the Associate Vice President of Research and Dean of Graduate Studies. The term is for three years (Fall 2014 - Spring 2017).

The Center assists students in identifying faculty mentors, offers two grant cycles for undergraduates seeking funding for research (fall and spring), supports the Undergraduate Research Symposium, hosts an on-line peer reviewed journal, helps students identify internships, and encourages undergraduate presentations at local, regional, national and international meetings. Anticipated activities and initiatives include the following:

1. Work with an advisory council of faculty representing diverse disciplines (and the six academic colleges) to develop programs and services that support a wide range of research and scholarly activities.
2. Provide oversight for the Undergraduate Research Symposium. Activities usually include poster and oral presentations, evaluation rubric for presentations, a celebration dinner, a key note speaker, best student presentations, art exhibit opening, and Best Faculty Mentor award.
3. Continued collaboration with the system wide MN Undergraduate Scholars initiative that includes campus coordinators from all universities and multiple colleges. The committee was formed with the goal of providing intercampus engagement for faculty and students and building pipelines between campuses in support of research and scholarly activities. The director will support the MN Undergraduate Scholars Conference.
4. Oversight of the National Conference of Undergraduate Research applications, registration, presentation preparation and travel.
5. Promote scholarly and creative achievement through the website, recognition events, and other mechanisms designed to showcase student and faculty scholarly activities.
6. Work with the Director of Research and Sponsored Programs and the Director of the Center for Excellence in Scholarship and Research to showcase faculty and student research and creative achievement.
7. Organize and coordinate the awarding of travel grants, URC grants and Foundations grants in support of research and scholarly activities, as well as conference presentations.
8. Work in collaboration with MnSCU campus coordinators to plan and market the MN Undergraduates Scholars Posters at St. Paul.
9. Collaborate with the Director of the Honors Program as well as the Assistant Director of Honors and University Fellowship Coordinator.
10. Hire and supervise Graduate Assistants who provide support for all URC activities.

Applicants were to encouraged to *submit a cover letter, resume/curriculum vitae, and contact information for three references electronically to Barry J. Ries, PhD, Associate Vice President of Research and Dean of Graduate Studies at barry.ries@mnsu.edu, with a copy to Heather Von-Bank, Undergraduate Research Center Council member at heather.von-bank@mnsu.edu, by 4:30 p.m., Wednesday, April 2, 2014.*

Attachment B. List of Faculty Resources in the URC

A Student's Guide to Presentations: Making your Presentation Count Chivers, Barbara and Michael Shoolbred

American Sociological Association Style Guide (4th Edition) American Sociological Association

Applications of Case Study Research (3rd Edition) Yin, Robert K.

Broadening Participation in Undergraduate Research: Fostering Excellence an Boyd, Mary K. and Jodi L. Wesemann

Case Study Research: Design and Methods (4th Edition) Yin, Robert K.

Conducting and Reading Research Baumgartner, Ted A. and Larry D. Hensley

Designing and Conducting Mixed Methods Research Creswell, John W. and Vicki L. Plano Clark

Developing & Sustaining a Research-Supportive Curriculum: A Compendium Karukstis, Kerry K. and Timothy E. Elgren

Educational Research: Planning, Conducting, and Evaluating Quantitative and Creswell, John W.

Essentials of Research Methods in Health, Physical Education, Exercise Science Berg, Kris. E and Richard W. Latin

Ethnography: Step-by-Step (3rd Edition) Fetterman, David M.

Form & Style: Research Papers, Reports, Theses (13th Edition) Slade, Carole and Robert Perrin

Lab Math: A Handbook of Measurements, Calculations, and Other Quantitative Adams, Dany Spencer

McGraw-Hill Concise Encyclopedia of Science and Technology (6th Edition Volume 1)

McGraw-Hill Concise Encyclopedia of Science and Technology (6th Edition Volume 2)

Merriam Webster's Collegiate Dictionary (11th Edition)

Methods for Social Work (2nd Edition) Dudley, James R.

Methods: A Framework for Evidence-Based Clinical Practice Hurley, Wendy L., Craig R. Denegar, Jay Hertel

MLA Handbook for Writers of Research Papers (7th Edition) The Modern Language Association of America

New Oxford American Dictionary (3rd Edition) Stevenson, Angus and Christine A. Lindberg

Political Science Research Methods (7th Edition) Johnson, Janet Buttolph and H.T. Reynolds

Qualitative Inquiry and Research Design: Choosing Among Five Approaches Creswell, John W.

Research and Evaluation in Education and Psychology (3rd Edition) Mertens, Donna M.

Research Design: Qualitative, Quantitative, and Mixed Methods Approaches Creswell, John W.

Research In Psychology: Methods and Design (6th Edition) Goodwin, C. James

Research Methods and Statistics in Psychology Coolican, Hugh

Researching Real-World Problems: A Guide to Methods of Inquiry O'Leary, Zina

Scientific English: A Guide for Scientists and Other Professionals Day, Robert A. and Nancy Sakaduski

Small Business Succession Planning in Southern Minnesota Mozey, Alexander, Tatiana Soboleva, Nicholas Laxen, and Rega

Southern Minnesota Initiative Foundation: Parent Aware Statistical Analysis Bach, Lauren, Marin Beck, Kristen Paulsen, and Katie Westermeyer

Statistics at the Bench: A Step-by-Step Handbook for Biologists Bremer, M. and R.W. Doerge

Survey Research Methods Fowler, Floyd J Jr.

The Chicago Manual of Style (16th Edition)

The Craft of Research Booth, Wayne C., Gregory G. Colomb, and Joseph M. Williams

The Craft of Scientific Writing (3rd Edition) Alley, Michael

The Essential Guide to Doing Your Research Project O'Leary, Zina

The Mixed Methods Reader Clark, Vicki L. Plano and John W. Creswell

The Non-Designer's Presentation Book: Principles for Effective Presentation Williams, Robin

The SAGE Handbook for Research in Education (2nd Edition) Conrad, Clifton F. and Ronald C. Serlin

The SAGE Handbook of Applied Social Research Methods Bickman, Leonard and Debra J. Rog

The Student's Guide to Research Ethics (2nd Edition) Oliver, Paul

Understanding Research: A Consumer's Guide Clark, Vicki L. Plano and John W. Creswell

Writing Research Papers: A Complete Guide Lester, James D. and James D. Lester, Jr.

Attachment C. 2013 Fall Faculty Workshops Survey Results

1. What course did you work on today?

AIS 210W Oral Tradition	NURS 482 Providing Care II	GEOG 217 Weather
BIOL 320 Cell Biology	MRKT 316 Consumer Behavior	HIST 495 Senior Seminar
EEC 240 Research	GEOG 450 Geography of Europe	DANC 225 Worlds of Dance ???
HONR 401 Public Communication Strategies	NURS 420 Quality, Safety & Informatics in Nursing Practice	MATH 492 Mathematics Capstone
MDSM 601 Intro to Modeling & Simulation	ENG 474 Researching & Writing Tech Reports	HP 403 Measurement and Evaluation
HLTH 361 Health Communication	MGMT 330 Principles of Management	COMM ??? Methods of Teaching Speech

2. Have you advised/mentored undergraduate research in the past?

15 Yes = 75%

5 No = 25%

If yes, please describe your mentoring experience:

I have been advising dozens of students from many different disciplines/backgrounds	I have mentored 3 undergrads but it has all been outside the course. This is the first time I am doing a class mentorship.
Numerous URC projects, 2 were 50% funded	3 students who did a poster presentation at the URS
Individual based independent studies, McNair scholars	Some work with other faculty in designing URC grant applications and also individual study topics
Working with undergraduate students and published papers in professional journals.	Since 2008, about 20 students (undergrads) for credit and non-credit
I helped guide & develop individual projects, submit to conference & prepare presentations. Developed courses that use & cater to undergrad research.	Oversaw several research projects in a 300 level course. Currently advising multiple students on projects.
Advised a research project for the URS	Capstone course resulting in URS presentations.

3. Why did you seek out this workshop opportunity?

I have always gleaned new ideas from these workshops. It's useful to see it from others perspectives.	As a teacher of writing intensive classes, I wanted to learn how to combine writing intensive classes with research.
To learn how to teach research related skills to undergrads.	I would like to incorporate more student research into courses rather than just individual projects.
To redesign my current course and other courses in the future.	To learn best practices in mentoring undergraduate research projects.
Learn about university resources and about structuring research oriented courses.	I wanted some help overhauling an existing course that I have taught 4 times.
In order to increase the course productivity and effectiveness. Also like to compare how other people do design, plan and access the course which is research based.	course focus is on writing a concise description of how a student is going to collect data, implementation of the plan, analyze the data at the descriptive level, and prepare a well-written report on

	the process, analysis, results and conclusion of the process.
Because I want to ensure students get the best learning experience possible and felt this class would help me achieve that.	Explore inquiry concept; understand how current content/activities could be expanded to scholarly inquiry level.
Realized the needs to incorporate research components in my class.	I have a bench research project that the students are completing from proposal to presentation.
This course is a priority of mine.	To better understand backwards design
Department needs.	Improve my research assignments in class
To enhance classes.	Focus!

4. Please rate each of the following statements on a scale:

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

4.16	After this workshop I have an understanding of how to integrate research into my course(s).
4.37	This workshop has introduced me to new concepts that I plan to use.
4.16	The workshop presented new methods that will support research in my course(s).
4.37	Curriculum mapping was helpful in designing or redesigning my course.

5. What aspects of this workshop did you find the most useful?

Dividing the course object, plan and goals in detail and make sure they are supporting/incorporating each other. Great way to see the overall balance perspective.	The book was really great and the worksheets were helpful. The pyramid was something I would have liked to learn more about. I hope her powerpoints are shared with everyone.
Generation of new ideas. Discussing pedagogical issues, problems, and possible solutions.	Sharing projects and courses, scaffolding concept, networking, and interdisciplinary aspect.
Thinking through my syllabus.	Time to interact with my fellow faculty.
Our work and collaborating with others.	Talking with the other faculty to get ideas.
Opportunity to think further about my practices in mentoring undergrad research projects and advance the practice with what I learned from the workshop.	Discussion with peers and what they do and preparing specific students for undergraduate research in my own course.
The opportunity to spend 6 hours focusing on one course rather than trying to cram it in between current responsibilities or over break.	Circular tables & grouped by discipline led to lots of brainstorming, sharing experiences, and new ideas.
Encouraged me to think of URC in my class and find a way to start it.	Time to work on course. Colleague discussions/sharing.
Ability to work on a course that I will be teaching next semester and get a head start on it.	The discussions & examples provided by the instructor.
Course mapping.	Curriculum mapping.

6. What additional support can the URC provide should you decide to implement research into your course(s)? Please describe.

Meetings each semester to review & focus.	Expand the GRC program
Opportunity to discuss co-teaching courses on research.	Annual URC/GRC is a great opportunity for my students.
also like an online course module on the general	It would be great if they had IRB info sessions for

research process	students to attend in general discipline areas.
refresher online course for statistics and method selection appropriate for undergraduates.	Faculty workshops are always helpful and a big encouragement.

7. Would you like to communicate with other faculty about integrating research in the classroom?

16 Yes 1 = No

8. Please suggest a topic for a future faculty workshop.

Program assessment.	Build an interdisciplinary research course.
A “From Here to There” to help faculty understand how student research fits with job skills and potential faculty research.	Something similar to this workshop or brown bag discussions.
Project based research designs.	How to plan online based research course.

9. Would you like to be contacted regarding the GRC program? If yes, please provide your name.

Jennifer Veltsos	Beth Sandell
Ginger Schmid	Chelsea Mead
Forrest Wilkerson	

10. Additional Comments:

Thank you for organizing this wonderful workshop.
Really helpful. It may be great to get more ideas specific to writing intensive classes and purple designators.
This workshop was a valuable opportunity to do hands on design of research courses. Many activities on campus are lecture or discussion. I like getting worksheets, having time to think & brainstorm, design the course, and get/offer advice. I have something tangible to take with me.
A discussion at our table: research methods (discovering of scholarship) as part of the gen ed curriculum would allow us to focus on scholarly inquiry and creation of scholarship within the major – it would resemble something like writing intensive.
After all, methods are the same across disciplines. How the methods are used within disciplines and what the conversations are needs more time.

Attachment D. Nomination for 2014 Faculty Mentor of the Year: Dr. Moses Langley

April, 2014

Re: Nomination for Outstanding Faculty Mentor of the Year

Dr. Moses Langley is not only an excellent researcher and scientist, but he is also an outstanding educator who has the knowledge and vision for science and learning. I am very fortunate to have the opportunity to be involved in Dr. Langley's Vision Recognition Object and Memory (VROM) lab where we gain extensive hands-on research experience on experimental design, methodology, collecting data, statistical analysis, and gain experience on professional research presentations. Moses' lab is one of the biggest labs in the Psychology department with 15 students active in several research projects. Moses establishes about 5-6 projects and assigns the 15 of us on a corresponding project that meet our interest. The best part about this set-up is that each one of us gains extensive hands-on experience beyond data collection and running participants. He makes sure that we are involved in every part of the research process. Moreover, in each of these projects, Moses also invite other professors to collaborate in one of the projects both from MNSU-Mankato (Dr. Paul Fuglestead) and other universities such as University of Wisconsin-Parkside (Dr. Sara Beyer). It is so impressive that Moses is able to establish several solid projects that provides undergrads an opportunity to gain research experience, and actively seeks out other professors to collaborate with.

Moses is very proactive, well-versed in his field and others, resourceful, and dynamic. Additionally, Moses actively seeks out opportunities for us to present our research in professional conferences in addition to research conferences for undergraduates (URC, MNSCU, & NCUR). For instance, this November 2013, Moses and two students participated in an international professional research conference—"Object Perception, Attention, and Memory Conference" in Toronto, Canada. Furthermore, ten students (i.e., 5 research projects) in our lab got accepted to present at the 26th Annual Convention for the Association for Psychological Science this May 22-25, 2014 at San Francisco, California. Moses provided us excellent mentorship and research instruction that allowed us to successfully learn and share and present our data to renowned scientists and researchers in the field of Psychology. During this process, Moses also taught us how to successfully write and apply for travel grants. In fact, all ten of us that applied for the \$500 travel grant, successfully received the grant—totaling to \$5,000 travel grant to help for our San Francisco Research Conference trip.

In addition to my research laboratory involvement with Moses, I also have the opportunity to be a teaching assistant for his PSYC 211: Research Methods & Design class for both Fall 2013 & Spring 2014. His teaching philosophy aims to integrate the latest cognitive principles in classroom instruction. One of Moses signature in classroom teaching is his extensive use of technology in classrooms—from i-clickers (response system), tablet, and so much more. For example, as his PowerPoint is playing on the screen, he consistently walks around the classroom with a Tablet. This tablet allows him to navigate the slides being shown. The nature of Moses class is very welcoming. He makes tough materials look "fun" by his interactive approach. Another cool thing is the clicker response system. Students use this device to answer questions in-class as their "quiz." He has written peer-reviewed studies on the efficacy of i-clickers and its potential capacity in classrooms. He is such a great addition to Minnesota State University, Mankato, and most importantly, the department of psychology. Moses is an excellent educator, who is also an innovative thinker, and constantly finding ways to make things: convenient, accessible, challenging, yet fun environment. He really focuses on the student's ultimate growth in class. He is also always willing to hear suggestions and ways he can improve his teaching and so much more. His creativity and resourcefulness adds a unique dimension in classroom instruction.

Moses ensures that he utilizes technology even beyond its intended use. He manages to incorporate technology in an efficient, productive, interactive, and dynamic manner. For example, whenever he presents a peer-review article for the class to discuss, he utilizes the computer in the classrooms (ML 109) to show the "highlighted" parts on the article he wants the students to focus on and simply discuss it.

Another example is that students receive a “unique code” to remember throughout class instead of the student’s name. Moses acknowledges that bias may occur consciously and unconsciously, so to eliminate that he wants to make sure students are using their unique id code. This also allows Moses to increase dynamic interaction between students by having them “peer-review” each other’s work. This peer-review process promotes a more objective feedback from their peers as well as allowing the students to think critically and grow as analytical thinkers. Finally, all the graded rubrics are ALL scanned for every assignment and students can then find their own grades without feeling ashamed of feedback or lower score. But this also allows them to see other people’s work and perhaps how others may have gotten a higher grade or vice versa. This transparency helps students feel like they can grow and confide to their instructor. This systematic procedure that Moses implemented allow students to gain hands-on experience with research from SPSS, to literature review, and peer-review work—all of which are valuable skills for a researcher to have.

I assert that Dr. Moses Langley is the best candidate for this year’s Outstanding Research Mentor Award for 2014. He has demonstrated excellent research, teaching, mentorship, and leadership skills throughout the time he’s been a part of MNSU. His work is impeccable and recognized not only by our school but also nationally. I cannot think of anyone else more deserving for this award than Moses.

Sincerely,

Maria Almoite

Attachment E. 2013 - 2014 URC Grants Awarded According to College and Department = 75,902.12

College of Arts and Humanities					
Department	First Name	Last Name	Additional Students	Faculty Mentor(s)	Award
Art	Amanda	Holst		Gina Wenger	URC Stipend & Supply
Art	Tyler	Schrandt		Mika Laidlaw, Liz Miller	Foundation
Art	Ashton	Bird	Dustin Swiers	Mika Laidlaw, Liz Miller	Supply
Art	Weston	Zarecky		Brian Frink, Rachel James	Supply
Theater & Dance	Sydney	Burch		Daniel Stark	Supply
Art	Shayna	Tietje			Foundation
			AH	6 Grants Totaling	\$ 6,239.35

College of Allied Health and Nursing					
Department	First Name	Last Name	Additional Students	Faculty Mentor(s)	Award
Family & Consumer Science	Naomi	Greenblat		Heather VonBank	Supply
Human Performance	Hannah	Walsh	Jade Williams	Ida Clark, Robert Pettitt	Supply
			AHN	2 Grants Totaling	\$ 665.76

College of Education					
Department	First Name	Last Name	Additional Students	Faculty Mentor	Award
EEC	Sadie	Leidall		Elizabeth Sandell	Foundation
EEC	Michelle	Burke	Gretchen Hinrichs	Lori Piowski	Supply
EEC	Kwame Opoku	Akyeampong		Elizabeth Sandell	Supply
Special Education	Raechel	Erdman		Alexandra Panahon	Foundation
			Education	4 Grants Totaling	\$ 3,728.36

College of Business					
Department	First Name	Last Name	Additional Students	Faculty Mentor(s)	Award
Management	Areej	Hassan		Queen Booker	Foundation
			Business	1 Grant Totaling	\$ 1,100.00

College of Science, Engineering, and Technology

Department	First Name	Last Name	Additional Students	Faculty Mentor(s)	Award
Auto Engineering	Kyle	Peterson	Tim Nelson	Gary Mead	Supply
Auto Engineering	Tomi	Lutz	Luce, Jorgensen	Gary Mead	Foundation
Auto Engineering	Luke	Larson	LeNeave, Dunlay, Allen	Bruce Jones	Supply
Auto Engineering	Mitchell	Beckman	Monson, Timilsina, Whittemore	Bruce Jones	Foundation
Auto Engineering	Michael	Doyle		Kuldeep Agarwal	Supply
Auto Engineering	Kyle	Peterson			Foundation
Biological Sciences	Jeremy	Balster		Dorothy Wrigley	Foundation
Biological Sciences	Adam	Kronebusch		Marilyn Hart	Foundation
Biological Sciences	Abrar	Zawed		David Sharlin	Supply
Biological Sciences	Lina	Wang		Fisher, Mercurio	Supply
Biological Sciences	Stella	Menuba		Christopher Conlin	STEM
Biological Sciences	Nicole	Snyder		Timothy Secott	Foundation
Biological Sciences	Jaekook	Sim		Marilyn Hart	Foundation
Biological Sciences	Karenzha	Huwae		Dorothy Wrigley	Supply
Biological Sciences	Laura	Chopp		Kelly Grussendorf	Foundation
Biological Sciences	Quinn	Hofmann	Nakamura, Sobota	Steven Mercurio	Supply
Biological Sciences	Cari	Graber	Nicholson	David Sharlin	Supply
Biological Sciences	Kali	Trukki	Ledding,Ledding	Michael Bentley	Supply
Biological Sciences	Seth	Hintze	Mensink, Sim	Michael Bentley	Supply
Biological Sciences	Drew	Kampmeyer		Kelly Grussendorf	Supply
Biological Sciences	Randall	Burns	Katie Dose	Shannon Fisher	Foundation
Biological Sciences	Natacha	Tasha	Nichols, Abugre	Michael Bentley	STEM
Biological Sciences	Ethan	Nichols		Michael Bentley	URC Stipend
Biological Sciences	Rachael	Swedberg	Nakamura	Robert Sorensen	Supply
Biological Sciences	Laura Layne	Boon	Soboleva	Dan Toma	Supply
Biological Sciences	Bisola	Asaolu	Vue	Victor Esenabhali	Supply
Biological Sciences	Katie	Sonnabend		Michael Bentley	Foundation
Biological Sciences	Jessa	Gute			Foundation
Biological Sciences	Tyler	Koonst		Marilyn Hart	Foundation
Chemistry	Tatiana	Sobolova		Rebecca Moen	Foundation
Chemistry	Neil	Ranals		Mary Hadley	Foundation

Chemistry	Emma	Stong		Trent Vorlicek	Foundation
Chemistry	Christopher	Collins	List, Kirchberg	Penny Knoblich, Mary Hadley	Foundation
Chemistry	Natalie	Young		Theresa Salerno	Foundation
Chemistry	Jenna	Bowman		Mary Hadley	Supply
Chemistry	Dulanjani	Rajaguru		James Rife	Foundation
Chemistry	Abdikadir	Mohamed		John Thoemke	STEM
Chemistry	Sara	Sobota		Theresa Salerno	Foundation
Chemistry	Brittany	Leeder		Mary Hadley	Supply
Chemistry	Robera	Yahya		James Rife	STEM
Chemistry	Jacob	Ball		Theresa Salerno	Supply
Chemistry	Daniel	Tollefson		John Thoemke	Foundation
Chemistry	Emma	Phelps		James Rife	Foundation
Chemistry	Danielle	Hron			Foundation
Civil Engineering	Andrew	Pfeffer	Nguyen	Stephen Druschel	Supply
Elec & Comp Eng	Mohamad	Abdalla		Xuanhui Wu	Supply
Elec & Comp Eng	Sarzana	Shabab		Nannan He	Supply
Math & Statistics	Sobyuk	Son		Namyong Lee	Supply
Mech & Civil Eng	Samuel	Jordan		Sungwon Kim	STEM
CSET				49 Grants Totaling	\$52,512.70

College of Social and Behavioral Sciences

Department	First Name	Last Name	Additional Students	Faculty Mentor(s)	Award
Geography	Robin	Sanford	Darin Peterson	Wilkerson, Schmid	Supply
Psychology	Paula	Fischbach		Kevin Filter	Foundation
Psychology	Emilee	Shaw		Dawn Albertson	Supply
Psychology	Karley	Weir		Carlos Panahon	Supply
Psychology	Shelby	Flegel	Bach, Westermayer	Emily Stark	Foundation
Psychology	Carter	Person		Emily Stark	Supply
Psychology	Christine	Scheper		Carlos Panahon	Foundation
Psychology	Kristen	Paulsen	Westermayer	Carlos Panahon	Supply
Psychology	Nicole	Nohelty		Carlos Panahon	Supply
Psychology	Chelsea	Conrad		Kathy Bertsch	Foundation
Psychology	Sergio	Aguilar		Carlos Panahon	Supply
Psychology	Travis	Hensersky		Moses Langley	Foundation
				12 Grants Totaling	\$ 8,272.23

Attachment F. 2014 MSU Symposium Schedule of Events

9:00 a.m. – 4:00 p.m. Student Presenter, Moderator, & Judge Check-in CSU Ballroom Lobby

10:00 – 11:30 a.m. Poster Session A CSU Ballroom: Biology, Chemistry and Geology, Civil Engineering, Electrical Engineering, Integrated Engineering, Manufacturing Engineering Technology, Mathematics and Statistics, & Nursing

10:00 – 11:00 a.m. Oral Session 1 CSU 201: Art & Dance

10:00 – 11:00 a.m. Oral Session 2 CSU 202: English & Scandinavian Studies

10:00 – 11:00 a.m. Oral Session 3 CSU 253: Psychology

11:05 – 12:05 p.m. Oral Session 4 CSU 201: Biology

11:05 – 12:05 p.m. Oral Session 5 CSU 203: Integrated Engineering & Electrical and Computer Engineering and Technology

11:05 – 12:05 p.m. Oral Session 6 CSU 253: Psychology

12:05 – 1:05 p.m. BREAK

1:05 – 2:05 p.m. Oral Session 7 CSU 204: Automotive Engineering Technology

1:05 – 2:05 p.m. Oral Session 8 CSU 254: Anthropology, Family Consumer Science, & Health Science

1:05 – 2:05 p.m. Oral Session 9 CSU 255: Gender and Women's Studies

2:00 – 3:30 p.m. Poster Session B CSU Ballroom: Anthropology, Art, Communication Disorders, Construction Management, Elementary and Early Childhood, Ethnic Studies, Family Consumer Science, Government, Human Performance, Management, Nursing, Psychology, & World Languages and Cultures

2:10 – 3:10 p.m. Oral Session 10 CSU 202: History & Political Science

2:10 – 3:10 p.m. Oral Session 11 CSU 203: Integrated Engineering & Mechanical Engineering

2:10 – 3:10 p.m. Oral Session 12 CSU 204: Mathematics and Statistics & Automotive Engineering Technology

3:15 – 4:15 p.m. Oral Session 13 CSU 204: Automotive Engineering Technology

3:15 – 4:15 p.m. Oral Session 14 CSU 254: Elementary and Early Childhood Education & Special Education

3:15 – 4:15 p.m. Oral Session 15 CSU 255: Gender and Women's Studies

5:00 p.m. Celebration Dinner CSU Ballroom

7:00 – 9:00 p.m. Creative Works Exhibit CSU Gallery

Attachment G. 2014 MSU Symposium Outstanding Presentations Recognition

The judges selected Outstanding Presentations that were recognized with certificates presented to student projects. The names in **bold** font identify the student presenters.

3D Printing of Stainless Steel for Engineering Applications, **Michael Doyle**, Kuldeep Agarwal, Faculty Mentor (Department of Manufacturing Engineering Technology)

A Behavioral Analysis of Fathead Minnow "Pimephales promelas" Breeding Patterns When Exposed to Anastrozole and Bisphenol-A, **Lina Wang**, Shannon Fisher, Faculty Mentor (Department of Biology), Steven Mercurio, Faculty Mentor (Department of Biology)

A Critical Analysis of Media Images Depicting the New Athletic Body Ideal and One Woman's Experience with Them, **Kelsey Mischke**, Amy Sullivan, Faculty Mentor (Department of Gender and Women's Studies)

A Cylindrical Antenna Array for MIMO radar applications, **Mohammad Abdalla**, Xuanhui Wu (Department of Electrical and Computer Engineering and Technology)

Arc-Flash Study of a Manufacturing Facility in Northern Minnesota, **Daniel Schmitz & Michael Rudi**, Mohammad Habibi, Faculty Mentor (Department of Integrated Engineering)

Designing a Logo for the First Step Mental Health App, **Mackenzie Lopez, Joshua Martin, & James Faraday**, Rebecca Bates, Faculty Mentor (Department of Integrated Engineering)

Effects of Strontium in the Bone Density of Mice, **Kali Trukki, Ashley Ledding, & Rachel Ledding**, Michael Bentley, Faculty Mentor (Department of Biology)

Formula SAE Chassis Design & Materials, **Kyle Peterson & Tom Nelson**, Gary Mead, Faculty Mentor (Department of Automotive Engineering Technology)

FSAE Fuel System, **Bradley Tupa & Garrett Graff**, Gary Mead, Faculty Mentor (Department of Automotive Engineering Technology)

Gender and Women's Studies by Degrees: What Are MSU-Mankato GWS Alumni Doing Now? **Laura Fry, Erin Zimmerman, & Katarina Barrett**, Amy Sullivan, Faculty Mentor (Department of Gender and Women's Studies)

Glass Inspection System, **Nicholas St. Aubin, Mark Dickey, Cody Meschke, & Subham K.C.**, Sungwon Kim, Faculty Mentor (Department of Mechanical Engineering)

Heroism and Gender Roles: Influence of Publicity, Risk, and Familiarity on Heroism, **Shelby Flegel, Lauren Bach, & Katie Westermayer**, Emily Stark, Faculty Mentor (Department of Psychology)

Interdisciplinary Experimentation , **Ashton Bird & Dustin Swiers** , Liz Miller, Faculty Mentor (Department of Art), Mika Laidlaw, Faculty Mentor (Department of Art)

Janteloven and Social Conformity in Thorbørn Egner's Literature, **Ellen Ahlness**, Rennesa Jessup, Faculty Mentor (Department of Scandinavian Studies)

Optimization of the Presence of an Actin Capping Protein Transgene in Genetically Modified Mice, **Tyler Koonst**, Marilyn Hart, Mentor (Interim Associate Dean of Science, Engineering & Technology)

Oxidative Effects on Muscle Protein Function, **Tatiana Soboleva**, Rebecca Moen, Faculty Mentor (Department of Chemistry)

Quantifying Hydroxyl Radical in Natural Waters: Role of Dissolved Organic Matter in Determining Production Rates, **Andria Sellner**, John Thoemke, Faculty Mentor (Department of Chemistry)

Researching the Differences and Commonalities of the Minnesotan Collegiate and Professional Dancer: a Documentary Exploring Individual Philosophies as the Dancer, **Sydney Burch**, Daniel Stark, Faculty Mentor (Department of Theatre & Dance)

Residential Redevelopment, Improving Urban Areas, **Roger Kleese & Christopher Franks**, Matthew Durand, Faculty Mentor (Department of Construction Management)

Role of the ApeE Esterase in the Growth of Salmonella on Phospholipids as Phosphate Sources, **Stella Menuba**, Christopher Conlin, Faculty Mentor (Department of Biology)

Selective Language Skills of Individuals with Hearing Loss, **Katelyn Gehling**, Bonnie Berg, Faculty Mentor (Department of Communication Disorders)

Sexual Education and Attitudes Towards Masturbation, **Jannine Ray**, Eric Sprankle, Faculty Mentor (Department of Psychology), Shelby Afflerbach, Graduate Student Mentor (Department of Psychology)

Stock Recovery after Negative Press, **Gregory Reimer**, Queen Booker, Faculty Mentor (Department of Management)

The Benefits of Exposure to Animals for Persons with Dementia: A Literature Review, **Stephanie Bennett**, Jeffrey Buchanan, Faculty Mentor (Department of Psychology)

The Effect of Artificial Sweeteners on Overeating and Weight Gain, **Christopher Collins, Samantha List, Ivy Hakala, & Shelby Johnson**, David Bissonnette, Faculty Mentor (Department of Family Consumer Science), Penny Knoblich, Faculty Mentor (Department of Biology)

The Relationship Between Temperament and Changes in Cultural Competency Among Undergraduate Students, **Kwame Opoku Akyeampong, Olufolajimi Onadipe, & Laura Donley**, Elizabeth Sandell, Faculty Mentor (Department of Educational Studies)

The Toxic Effects on the Liver and Kidney of Administering an Analgesic (Acetaminophen) and a Drug to Treat Obesity-Related Diabetes (Metformin) to Dietary-Induced Obese Male Mice (C57BL/6J), Quinn Hofmann, **Yuko Nakamura, & Sara Sobota**, Steven Mercurio, Faculty Mentor (Department of Biology)

Top Reasons Construction Companies Fail, **Reid Roemhildt & Derek Grams**, Matthew Durand, Faculty Mentor (Department of Construction Management)

Premarital Sexuality among Young People in Eighteenth-Century France, **Tatiana Soboleva**, Christopher Corley, Faculty Mentor (Department of History)

Attachment H. 2014 Symposium Feedback from Student Presenters

There were 16 responses to the survey that solicited feedback from student presenters.

Question 1: What type of presentation did you have?

Oral session	37.50%
Poster session	62.50%
Performance	0.00%

Question 2: What is your field of study?

Biomedical Sciences (4), Chemistry, Biology, Medical Lab Science, English Literature, Psychology (4), Child Development and Family Studies, Sociology, French, Cognitive Science, Integrated Engineering

Question 3: What is your academic year in school?

Freshman	0.00%
Sophomore	0.00%
Junior	18.75%
Senior	81.25%

Question 4: Are you male or female?

Gender	Percent
Male	37.50%
Female	50.00%
Prefer not to answer	12.50%

Question 5: What is your ethnicity?

Black or African American	6.25%
White	68.75%
Prefer not to answer	25.00%

Question 6: How would you rate the level of communication and support from:

	None	Somewhat Effective	Effective	Extremely Effective	Average Rating
Your mentor	0.00%	6.25%	18.75%	75.00%	3.69
Your department	12.50%	6.25%	31.25%	50.00%	3.19
The URC	0.00%	12.50%	56.25%	31.25%	3.19

Question 7: What are your thoughts about removing the judging process and awards, and replacing it with feedback only?

I believe the use of awards gives students a true goal in addition to their research--The idea of an award at the end makes the process much more sweet.

I would highly recommend keeping the judging and awards component.

I don't think that is a good idea, because removing the judging process and awards will create lack of seriousness on the parts of presenters during any urs

I like that students with outstanding work being recognized.

I like the idea of competitive nature among researchers.

I prefer the judging process and awards. It would look good on a resume and encourages students to do their best.

I think it is fine, our professors do a good job of giving positive feedback. A cranky judge could ruin someone's experience, however.

I think judging and awards is good way to encourage students to work harder. URC should not just be a participation thing, but pursuit of high goal achieving.

I think that judging is important to recognize the achievement that some earned with an "outstanding" presentation

I think that would be a good idea because the judging was poorly executed with my project only having a single judge stop by.

I think the fact that our presentations are judged adds to the drive to produce excellent work. I am 100% in favor of retaining the judging and awards process. It is so nice to be recognized for our work in research and preparing for present.

I would be okay with that, since there was little information about the judging process in general.

I would like that. Students work really hard on their project all year and some expect to get an award. They get disappointing when they don't receive an award, but not everyone can get an award.

Indifferent

Keep the awards. Some people do a lot of work and should be recognized.

Keep them, competition is true to the real world.

Question 8: What suggestions do you have for the planners of the 2014 Undergraduate Research Symposium?

Award people with a certain point level on their judging sheets, not just the highest point level in each session.

Better dinner. Steak!

Better planning with judges. Many people only had one judge and some seemed rushed because they had so many.

Don't plan sessions with only two presentations. I wanted to present to a larger audience, but I still learned a lot.

Fix the awards system. I believe I would have won an award, but I was only judged by one person. The requirement that two judges must determine if an award is won is ineffective. The judging system needs to take into account a possible lack of judges that may result in posters only getting judged by a single person. I feel that the rooms for the oral presenters need work. The lighting in some of the rooms (255 specifically) was not appropriate for the images and color in the powerpoints. Also, while I support memorizing your presentation script, a podium or a music stand would be helpful for those who needed a few cues from their notes.

I liked the format

I think it's important to make deadlines and announcements more clear!

I would suggest a more open layout.

If you keep the judges, there needs to be a better organization to it.

Inclusion of prospective mentor names, and their field of research

Make expectations and judging criteria more transparent and available to students.

none, continue what was done before

Perhaps have different sessions for each category. i.e., Have some of the chemistry projects present at the early session, then another group of chemistry projects at the second session and so on. This would allow us to go see other peoples poster from our field of study.

The organization or registration and viewing presentations (oral and poster sessions) was done very well-- Change little (if anything).

Question 9: How has participation in research, scholarly, and/or creative activity actively influenced your undergraduate experience?

I had really really great experience. Hope this goes on for long time. Before, I did not know any other lab skills other than laboratory classes, but now I know more.

I have made friends with fellow students. I got the opportunity to dive into a specific area that I was interested in.

Because of research, I have improved my writing skills, time management skills, and leadership skills.

It greatly improves writing, thinking, and creativity.

It has allowed me to create something that I am really proud of and given me a leg up for research in graduate school

it has enhanced it.

It has enhanced my undergraduate experience immensely. Participating in the URS really encouraged me to reach beyond my full potential. I made valuable relationships with fellow researchers, mentors, and library staff.

It opened up the opportunity for me to pursue a great interest, question, and passion of mine with the incentive of making a difference through my research.

The process has strengthened my belief that research is a passion of mine and something I want to continue to do and learn from. It is a lot of work, but it is absolutely worth it.

It has given me confirmation that I would like to pursue a doctorate in my field.

It has introduced me to the rigors of quality research and all the work that goes on behind the scenes.

It has made me a more well-rounded individual and more prepared for graduate school!

It has substantially benefited my undergraduate experience. I was able to apply course materials to actual research and gained experience in collecting and analyzing data, something that cannot be learned in a classroom.

It was a wonderful experience.

Kept me motivated.

positively

Prepared me better for graduate study

The process of thinking about one thing or a small set of things for a long time teaches me about detail, revision, and the importance of sharing new ideas.

Without this opportunity I would not feel my degree is as worthwhile as it is with the dedication I had toward my projects.

My own oral presentation based on a literature review was tedious, time consuming, and often times very frustration, however I feel more prepared than ever for a future in graduate school and academia.

Question 10 How would you rate the following components of the URS?

	Low			High	Average
Oral Sessions	0%	0%	93.33%	6.67%	3.07
Poster Sessions	0%	12.50%	62.50%	25.00%	3.13
Abstract Book	0%	6.67%	46.67%	46.67%	3.40
Judging	13.33%	26.67%	33.33%	26.67%	2.73
Celebration Dinner	0.00%	20.00%	66.67%	13.33%	2.93
URS Overall	0.0%	6.25%	37.50%	56.25%	3.50

Additional Comments:

Excellent job well done for the urs 2014, and a special thanks to all the board members, mentor, volunteers, and staffs who contributed to its success. God bless you all!

Great job! Thank you for all of your hard work.

I believe the awards were unfairly given out because a majority of the people I talked with only had a single judge in the first poster session.

I liked the way the abstract book and schedule was organized; it made it very easy to find a presentation.

If possible, please extend additional thanks to the band that provided music. We enjoyed them greatly and the songs they picked were excellent!

Attachment I. Celebration of Excellence in Research speech: “The Value of MSU’s Student Research Programs”

My name is Samantha Tupy, I am a second-year student in the clinical psychology graduate program here at MSU. I completed my Bachelor of Science degree in psychology, with a minor in biology, at MSU as well. I originally came to MSU as a transfer student, who was transitioning from a nursing major to a psychology major, which I knew was the better fit. I remember meeting with Dr. Barry Ries in his office in Armstrong Hall to discuss an undergraduate’s focus to become the best candidate for a graduate program. Of course, Barry mentioned research projects. He then assigned Dr. Jeff Buchanan as my undergraduate academic advisor. Jeff made the same recommendations --- the importance of research activity.

So, I looked at the URC web pages to see which faculty members were mentoring undergraduate research projects. And during my first year at MSU, I started to work with Dr. Elizabeth Sandell on a project I am still proud of today. With a team of undergraduate research assistants, I investigated the success of a course aimed at improving students’ multicultural competency based on a pre- and post-test using the Intercultural Development Inventory. We presented at National Conference on Undergraduate Research (NCUR) in Ithaca, New York and the Undergraduate Research Symposium (URS) here in Mankato. We published an article in the Undergraduate Journal of Research, Volume 11, which to me was a huge accomplishment. [BTW, we found no statistically significant differences in the pre- and post-instruction scores. Beth did not let our team panic, though. She was using the results as the basis for revising the teaching methods for the course.]

The following year, I continued to work with Beth’s research team. This time, the course had been revised based on the previous year’s research findings. On Beth’s team, we again reviewed students’ progress in the course; and this time, we did find statistically significant differences in the pre- and post-instruction scores. We presented our research results at NCUR in Ogden, Utah, as well as at the URS and the Minnesota Conference of Undergraduate Scholarly & Creativity Activity, which were both here on campus. During my two years on Beth’s research team, we received research and travel grants for each year from the MSU Foundation. We achieved a URS Best Presentation Award each year. Only oral presentations – without notecards -- for us!

As an undergraduate, I also joined another research team with Barry. On Barry’s team, I was involved in collecting data for two graduate students’ thesis projects. This gave me great exposure to what research at the graduate level may look like. I also had the opportunity to become friends with several of the graduate students. I have remained close friends with one student in particular. I will be joining him in Idaho in the fall to complete my doctorate in clinical psychology.

These undergraduate experiences introduced me to research and also allowed me to continue my journey to become a licensed clinical psychologist. This research gave me the confidence in my capabilities as a student, as a researcher, as a writer, as a team member, and as a public speaker. If it were not for Barry, Jeff, and Beth, I would not be where I am at today. Dr. Sarah Sifers and Dr. Dan Houlihan also made significant impacts on my life as a graduate student and have worked to shape my research and writing skills to best prepare me for doctoral level education. Their guidance, as well as the support of the Undergraduate Research Center and now the College of Graduate Studies and Research, have shaped me into a “real” researcher today.

I remember struggling through the basics of the research process, especially the statistics, as I attempted to understand the why and the how. Now, I have completed multiple projects in my graduate program. Research is literally a part of my life every day. Research has become a piece of my identity, and I look forward to contributing to the science of psychology in the future.

Without the Undergraduate Research Center and its faculty mentors and the Symposium, I would not have learned the process of research and its importance in the world. The projects I completed during my

undergraduate program were part of the conversation during my doctoral interview process. This further supported the importance the URC has on a student's life in the long run. The URC was one of my very early steps toward my professional goals. It has prepared me for the educational journey I have decided to pursue. I want to thank the URC and the CGSR, as well as each individual I have mentioned tonight. I would also like to thank Marilyn Hart, Dawn Albertson, Eric Sprankle, and Chip Panahon for their support and guidance in my research endeavors. Thank you so much.

Attachment J. 2014 MnSCU Undergraduate Scholars Conference Presentations by MSU Students

Student names in **bold** font were able to attend the conference.

Presentation Title	Student	Dept	Mentor
Expanding Art's Audience	Tony Connors	ART	Germundson
Determination of Protein Interactions in the Formation of Tubular Structures Using the Model Organism <i>C. Elegans</i>	Laura Chopp	BIOL	Grussendorf
Effects of Strontium in the Bone Density of Mice	Kali Trukki & Ashley Ledding	BIOL	Bentley
Effects of Ultraviolet Radiation on the Brown Midrib Mutation in Sorghum Bicolor and Zea	Maegan Eatwell	BIOL	Ruhland
Mechanical Removal of Juniper and its Effects on Plant Diversity	Kyle Van Vleet	BIOL	Krenz, Ruhland
Mapping the Spatial and Temporal Expression Pattern of Chst15 mRNA in the Cochlea of Euthyroid Mice Throughout Development	Cari Graber	BIOL	Sharlin
Examination of Human Embryonic Kidney Cells and Cardiomyocytes Using Glass Microcarrier Beads and Scanning Electron Microscopy	Jaekook Sim	BIOL	Hart, Goellner, Bentley
Biofilm Formation by <i>Escherichia coli</i> csgA and fimA mutants	Nicole Snyder & Sean Willaert	BIOL	Secott
Regulation of an Earthworm <i>Eisenia fetida</i> and the Regulation of its Nephridial Bacteria	Jeremy Balster	BIOL	Wrigley
Morphological and Molecular Barcode Characteristics of Parasites from Family Strigeidae Collected from Lake Winnibigoshish	Rachael Yates Swedberg & Yuko Nakamura	BIOL	Sorensen
Establishment of Primary Neuronal Cultures for the Investigation of Neuronal Survival In Vitro	Taylor Hanson & Paul Creger	BIOL	Bergstrom
The Effect of Artificial Sweeteners on the Expression of microRNAs in Rat Kidneys	Natalie Young	CHEM	Salerno
Structural Factors Affecting the Rate of the Reaction Between Singlet Oxygen and Proteins	Danielle Hron	CHEM	Thoemke
Calcium Hydroxovanadate Synthesis	Tigist Hunde	CHEM	Stackpool
Comparison of Protein Expression in Soy Bean by Two-Dimensional Electrophoresis	Emma Phelps	CHEM	Rife
Soft Communication Skills	Abdullahi Abdulle	CONST	Durand
Implementing Culturally Responsive Teaching in the Elementary Classroom	Michelle Burke & Gretchen Hinrichs	ELED	Piowlski
Discourse as a Solution to Problems of Self-Definition and Self-Expression in <i>Invisible Man</i>	Benly Larson	ENG	Casella
Organizing for Justice: The Critical Constructivist Approach to Reproductive Justice	Ommolayo Ogunnowo, Elaine Lossing, KariAnn Uecker & Natasha Theissen	GWS	Harrison
Sexual Assault on College Campuses	Kelsey Goeman	GWS	Sullivan
An Oral History and Auto-ethnography of Sexuality Privilege and Gender Inequity in LGBTQ Hmong America	Chong Vang	GWS	Sullivan

Stock Recovery after Negative Press	Gregory Reimer	MGMT	Booker
3D Printing of Stainless Steel for Engineering Applications	Michael Doyle	MET	Agarwal
Nationalism and International Sport: German Soccer and the Reluctance to Show Pride	Anthony Reffke	POL SCI	Kunkel
Improving Students' Self-Efficacy in a Psychology Research Methods Course: An Enactive Mastery Experiences Approach	Maria Almoite, Zoe Martin, Monica Gee Jannine Ray	PSYCH	Langley
Sexual Education and Attitudes Towards Masturbation	Travis Hensersky	PSYCH	Sprankle
The Effects of Various Video Game Genres on Cognition and Brainwaves	Travis Hensersky	PSYCH	Langley
Tracking the Development of Students' Academic Self-Efficacy in a Psychology Research Methods Course: Statistical and Methodological Design Skills	Kathryn Humphrey, Benjamin Ardner & Jared Goelz	PSYCH	Langley
Is Sustained Attention Important for the Testing Effect?	Maria Almoite & Jessica Kay	PSYCH	Lassonde
Functional Analysis and Paired Choice Assessments: Comparison and Behavior Intervention Planning	Jennifer Nelson	PSYCH	Bertsch
High School Students Tell All: Analyzing Facebook Confession Sites	Chelsea Conrad	PSYCH	Bertsch
Can Perceptually Demanding Encoding Tasks Help Dissociate Recollection-based and Familiarity-based Recognition Memory?	Travis Hensersky	PSYCH	Langley

Attachment K. 2014 MnSCU Undergraduate Scholars Conference MSU Student Survey Results

There were 9 responses to the survey that solicited feedback from student presenters.

Question 1: What type of presentation did you have?

Oral session	11.11%
Poster session	88.89%
Performance	0.00%

Question 2: What is your field of study?

Biology (3), Psychology (5), Gender & Women's Studies

Question 3: What is your academic year in school?

Freshman	0.00%
Sophomore	0.00%
Junior	22.22%
Senior	77.78%

Question 4: Are you male or female?

Gender	Percent
Male	22.22%
Female	77.78%
Prefer not to answer	0.00%

Question 5: What is your ethnicity?

Asian American	11.11%
White	88.89%
Prefer not to answer	0.00%

Question 6: On a scale of 1 to 4, how prepared did you feel prior to attending the conference?

1	0.00%
2	22.22%
3	33.33%
4	44.44%

Having a campus map.

Know what type of questions were going to be asked and knowing that we were going to get graded.

There was a lack of information provided about the conference and what to expect.

Question 7: How would you rate the following?

	Poor		Fair		Excellent	Average
Travel	0%	0.00%	22.22%	44.44%	22.22%	4.00
Hotel	0%	0.00%	0.00%	22.22%	66.67%	4.75
Presentation Experience	0%	11.11%	0.00%	66.67%	22.22%	4.00
Conference Experience	0%	22.22%	33.33%	33.33%	72.73%	3.33

I did not like having to get up at 8 when I had to present later in the day. I feel like it should be the choice of the student if they want to go and view the other people's posters

My presentation partner left 3 times during the presentation. Although I knew the material, I thought it was unprofessional for her to leave like that. She then sat on the floor or stood behind our poster and messed around on her phone. Other than this, the conference was not anything spectacular.

There did not seem to be many people there. It did not take that long to walk and see the presentations that we wanted to. I think the poster presentations for 2 hours were far too long!

Seemed a bit unorganized.

There was not many people to visit our poster presentation. We arrived at hotel late night and left in early morning so I was very tired and my brain did not work properly when I was presenting. I wish we could leave school earlier

Would have liked to see more of an audience as well as people within my area of study.

Question 8: If given the opportunity, would you attend the MnSCU Undergraduate Scholars Conference again?

Yes 100%

Question 9: How has participation the MnSCU Undergraduate Scholars Conference influenced your undergraduate experience?

Helped me gain experience in presenting research

It gave me good practice experience for presenting research.

It was great opportunity to have the experience but there were few people to visit our poster. So I dont know if the conference somehow influenced my future presentation technique or not.

It's very exciting to present information, I think it has enhanced my undergrad experience.

It made me more confident and prepared to present at the URS the following week.

By becoming a more informed student committed to research in the field and better prepared for professional positions that require public speaking and knowledge.

Participation at the MnSCU Undergraduate Scholars Conference has enhanced my undergraduate experience.

I enjoyed traveling and learning about undergraduate research projects from different universities.

Made me feel like I did something important

It provided more presentation experiences.

Question 10: Based on your experience, would you encourage other students to attend and/or to present?

Yes 100%

if you can but the conference held in second week of April which we are almost done with semester so It was very busy time for studying exam. I saw many students who studies for their exam on the week. So Yes, attend the conference if you have time.

Great opportunity to travel outside your university community and share your hard-work and research with other MnSCU students, also can be good networking opportunity.

It looks good on resumes

Even though not many people stopped at our poster, getting out there and presenting the study you've worked hard on for a year or more is a great experience.

Additional Comments:

It was hard to quickly find a presentation during a certain time. I wanted to attend the oral presentations for my discipline, but didn't get to go to most because they were during my poster presentation time.

Tell students it is not as bad as it sounds, I was honestly really worrying about it and it was not bad at all

Attachment L. 2014 NCUR Presentations by MSU Students

Student names in **bold** font were present at NCUR.

3D Printing of Stainless Steel for Engineering Applications, Presenter: **Michael Doyle**, Kuldeep Agarwal (Faculty Mentor)

A Bibliometric Analysis of School Psychology International: What is the Prevalence of International Affairs in the Field of School Psychology?, Presenter: Kristen Paulsen, **Katie Westermayer**, Carlos Panahon (Faculty Mentor)

A is for App: Surveying Teachers About the Use of iPads/Tablets in the Classroom, Presenter: **Christine Scheper**, Carlos Panahon (Faculty Mentor)

A Mathematical Modeling and Simulation of Bone Remodeling Control Mechanism, Presenters: **Sobyuk Son, Sangil Yi, Jooyoung Lee, Youna Lee, and Anna Kang**, Namyong Lee (Faculty Mentor)

Addressing Social Media Conduct at Fortune 100 Companies: A Study of Codes of Conduct, Presenters: Melissa Hrabe, Parker Riegelman, Queen Booker (Faculty Mentor)

Anti-icing Effectiveness on Pavements Research, Presenters: **Andrew Pfeffer, Thu Hoang Anh Nguyen**, Stephen Druschel (Faculty Mentor)

Assessing Military Stereotypes, Presenters: Felicia VandeNest, **Sladjana Todorovic**, Karla Lassonde (Faculty Mentor)

Cultivating Cultural Competence in Teacher Candidates, Presenters: Michelle Burke, Gretchen Hinrichs, Lori Piowski (Faculty Mentor)

Determination of Interaction of Proteins Involved in Tubulogenesis in the Model Organism *Caenorhabditis elegans*, Presenter: Laura Chopp, Kelly A. Grussendorf (Faculty Mentor)

Determination of the Presence of an Actin Capping Protein Transgene in Genetically Modified Mice, Presenter: **Tyler Koonst**, Marilyn Hart (Faculty Mentor)

Development Of A Cochlear Specific Cre Recombinase Expression Vector For Targeted Gene Inactivation, Presenter: **Abrar Zawed**, David Sharlin (Faculty Mentor)

Do Brands Targeting Women Use "Instamarketing" Differently: A Content Analysis, Presenter: **Areej Hassan**, Queen Booker (Faculty Mentor)

Effect of Artificial Sweeteners on the Renin-Angiotensin System in Rats, Presenter: **Jacob Ball**, Theresa Salerno (Faculty Mentor)

Evaluating the relationship between religious beliefs and attitudes toward science in an American college population, Presenter: **Emilee Shaw**, Dawn Albertson (Faculty Mentor)

Experimental determination of fused deposition ABSplus moduli with regards to print orientation, Presenter: **Timothy Anderson**, Jacob Swanson (Faculty Mentor)

Functional Analysis and Concurrent Operant Assessments: Comparison and Behavior Intervention Planning, Presenters: **Jennifer Nelson**, Jenna Miller, Kathy Bertsch (Faculty Mentor)

Heroism and Gender Roles: Influence of Publicity, Risk, and Familiarity On Heroism, Presenters: **Shelby Flegel**, Lauren Bach, **Katie Westermayer**, Emily Stark (Faculty Mentor)

Inhibitory effects of 0.6mg Colchicine on the presence of activated neutrophils, Presenters: Brian Robley, **Omolayo Ogunnowo**, Nanis Elkaramany, Timothy Akhalu, Rachel Bergstrom (Faculty Mentor)

Investigating the Effects of Choice on Writing with Students Receiving Extended School Year Services, Presenter: **Raechel Erdman**, Carlos Panahon (Faculty Mentor)

Is Sustained Attention Important for the Testing Effect?, Presenters: **Maria Almoite, Jessica Kay**, Karla Lassonde (Faculty Mentor)

Janteloven and Social Conformity in Thorbørn Egnér's Literature, Presenter: **Ellen Ahlness**, Rennesa Jessup (Faculty Mentor)

Localization and Expression Level of Vascular Endothelial Growth Factor after Partial Hepatectomy of WKY Rats, Presenters: **Adam Kronebusch**, Connor Griggs, Joel Robertson, Marilyn Hart (Faculty Mentor)

Morphological Analysis of Chemical Elements in Fish Scales, Presenters: **Ethan Nichols, Henruka Abugre**, Natacha J. Tasha, Michael Bentley, Shannon Fisher (Faculty Mentors)

Oxidative effects on muscle protein function, Presenter: **Tatiana Soboleva**, Rebecca Moen (Faculty Mentor)

Quorum Sensing Molecules for Unicellular Organisms: Spectroscopic and Computational Study of Conformational Behavior, Presenter: **Dan Tollefson**, John Thoemke (Faculty Mentor)

Reproductive and Sexual Health Disparities Among US College-aged Black Women: An Examination of Perceptions and Consequences, Presenter: **Omolayo Ogunnowo**, Shannon Miller (Faculty Mentor)

Rubidium s Substitute for Potassium in Rat Cardiac Tissue, Presenters: **Bisola Asaolu, Mai Ta Vue**, Victor Esenabhalu (Faculty Mentor)

Segmental overlay of the algorithms of the brain: A computational model of the visual system, Presenter: **Scott Boyd**, Dawn Albertson, Rebecca Bates (Faculty Mentors)

The Adherence of Escherichia coli 0157:H7 on Lettuce Leaves over Time and Removal Technique using Chlorinated water, Presenter: **Karenzha Huwae**, Dorothy Wrigley (Faculty Mentor)

The Effect of BPA on the Expression of Aromatase B, Presenter: **Sara Sobota**, Theresa Salerno (Faculty Mentor)

The Relationship between Temperament and Changes in Cultural Competency among Undergraduate Students, Presenters: **Kwame Opoku Akyeampong, Olufolajimi Temitope Onadipe**, Elizabeth Sandell (Faculty Mentor)

The toxic effects on the liver and kidney of administering an analgesic (acetaminophen) and a drug to treat obesity-related diabetes (metformin) to dietary-induced obese male mice (C57BL/6J), Presenters: **Quinn Hofmann, Yuko Nakamura, Sara Sobota**, Steve Mercurio (Faculty Mentor)

Using Choice as a Writing Intervention to Investigate Gender Differences, Presenter: **Nicole Nohelty**, Carlos Panahon (Faculty Mentor)

What Constitutes a Welcoming Community? Mankato Leaders Go Beyond the 'Welcome Wagon' for New Immigrants, Presenters: **Sarah Lieske**, Elizabeth Sandell (Faculty Mentor)

Attachment M. 2014 NCUR Feedback by MSU Student Presenters

There were 11 responses to the survey that solicited feedback from student presenters.

Question 1: What type of presentation did you have?

Oral session	36.36%
Poster session	72.73%
Performance	0.00%

Question 2: What is your field of study?

Chemistry, Biology, Cell Biology (2), Psychology (4), Biochemistry, Gender & Women's Studies, Spanish.

Question 3: What is your academic year in school?

Freshman	0.00%
Sophomore	0.00%
Junior	18.18%
Senior	81.82%

Question 4: Are you male or female?

Gender	Percent
Male	27.27%
Female	63.64%
Prefer not to answer	9.09%

Question 5: What is your ethnicity?

Asian American	9.09%
Black or African American	9.09%
White	63.64%
Prefer not to answer	18.18%

Question 6: On a scale of 1 to 4, how prepared did you feel prior to attending the conference?

1	0.00%
2	27.27%
3	45.45%
4	27.27%

It would have been nice to have an idea of how to put together a poster and to have been advised that the copy shop could not print a poster in the size the conference suggested.

more practice, complete PowerPoint

My research just finished a week before NCUR so I felt that I did not have enough time to prepare for poster presentation since this is my first time to attend any conferences.

Notification that the MNSU copy shop is unable to print specific paper sizes as they were unable to print the proper NCUR dimensions.

Question 7: How would you rate the following?

	Poor		Fair		Excellent	Average
Travel	36.36%	9.09%	36.36%	18.18%	0.00%	2.36
Hotel	0%	0.00%	9.09%	9.09%	81.82%	4.73
Presentation Experience	0%	0.00%	0.00%	18.18%	81.82%	4.82
Conference Experience	0%	0.00%	0.00%	27.27%	72.73%	4.73

Sitting 16 Hrs in bus was just nightmare. I preferred to flight even I had to pay ticket by myself. The bus trip was miserable. It was too long and we took far too many stops on the way there! It also would have been nice to be able to go to some of the events they planned on Saturday instead of being rushed to get out and get home.

Question 8: If given the opportunity, would you attend NCUR again?

Yes 100%

Question 9: How has participation at NCUR influenced your undergraduate experience?

Excellent experience.

I am usually a nervous presenter, but because I knew my study I did not get very nervous, in fact I was pretty excited to present. I think this will help me feel confident in my presenting abilities for the remainder of the semester.

I had idea of presenting to other. Met students who were doing interesting research topic. I have some idea for next research topic.

I really enjoyed traveling to Kentucky, meeting other students, and having the opportunity to present research at the national level.

It has opened my eyes to the possibilities of research.

It has strengthened it.

It was good experience for me to see outstanding works of other students from the nation.

Made contacts

More experiences

The conference gave me a chance branch out of MNSU and make connections elsewhere.

The participation at NCUR rekindled the research fire in me. It was an enlightening experience that makes research exciting to approach.

Question 10: How has participation at NCUR influenced your plans for the future?

It has strengthened my desire to work in a research lab.

It changed my mind to attend Graduate school in future.

It has cemented my decision to pursue a PhD and pursue a research career.

It has encouraged me to continue research but make some changes to our presentation for the next conference.

Influenced acceptance to graduate school.

I will be attending graduate school next fall. I know I will have to take a research course, and NCUR will help with this because it was the full process of research. This trip was the first time I ever presented research and I think it helped give me confidence in my abilities. This is going to be a great thing to have as I move forward with my education.

Participation at NCUR solidified my plan to pursue research at the graduate level
Grad school panel was helpful in giving out information.
It has made me wish I wasn't graduating early, but it has also encouraged me to continue presenting and conducting research.

Question 11: Based on your experience, would you encourage other students to attend and/or to present?

Yes 100%

Great experience and opportunity

Great networking opportunity

I am shy. Very very shy so I was very afraid to present at the conference, especially I don't have any those experiences before. Also, I was not exactly sure if I can finish my research in time. After attended NCUR, It was very easy to present at Moorhead and URC because the experience at NCUR gave me a confidence to present in front of people.

It was a wonderful experience getting to see what other students from around the US are working on. NCUR was a fantastic event. I really enjoyed it and feel others can as well.

Question 12: Additional comments about your experience.

It would be nice for students to fly rather than taking a bus.

If we have to take a bus, the bus should include amenities such as electric outlets, wifi, and decent toilets.