1 August 2012 – 31 July 2013

Y2 ANNUAL REPORT

IOWA ILLINOIS NEBRASKA
STEM Partnership for Innovation in Research & Education

LEAD EXECUTIVE TEAM

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*Principal Investigator*

Raynard Kington  
*Co-Principal Investigator*

Kim Linduska  
*Co-Principal Investigator*

Harry Martyn  
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Report Prepared By

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*Alliance Director*

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*Assistant Director/Evaluation Coordinator*

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*Program Manager*

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I. PARTICIPANTS

A. People

Alliance Lead Executives

David Holger
Principal Investigator
Associate Provost and Dean of the Graduate College
Iowa State University

Dr. Holger provides executive oversight and guidance to the IINSPIRE-LSAMP project. He serves as the primary contact for the lead executive team and facilitates collaboration with the governing board.

Alliance Co-Principal Investigators

The co-principal investigators provide executive input on the IINSPIRE-LSAMP project, collaborate with the lead executive team, and provide support to the alliance director and individual campus directors.

Raynard Kington
Co-Principal Investigator
President
Grinnell College

Kim Linduska
Co-Principal Investigator
Executive Vice President for Academic Affairs
Des Moines Area Community College

Harry Martyn
Co-Principal Investigator
Department Chair, Science
Little Priest Tribal College

Frederik Ohles
Co-Principal Investigator
President
Nebraska Wesleyan University

Alliance Leadership Team

Diane Rover
Alliance Director
Professor of Electrical and Computer Engineering
Iowa State University

Dr. Rover serves as the alliance director for the IINSPIRE-LSAMP project. She provides daily oversight of alliance level activities among all 16 institutions, ensures the PI team is informed of IINSPIRE-LSAMP activities, successes, and challenges, and communicates and implements PI team and governing board directives.

Jim Swartz
Inclusive Pedagogy Leader
Dack Professor of Chemistry
Director of the Center for Science in the Liberal Arts
Grinnell College

Dr. Swartz provides guidance to achieve the inclusive pedagogy objective. He works closely with the Science Education Resource Center (SERC) to implement and facilitate pedagogy
workshops and develop an intranet site for the IINSPIRE alliance to conduct pedagogy development activities.

Soko Starobin  
**Evaluation Director**  
*Professor, School of Education*  
Iowa State University  

Dr. Starobin directs assessment and evaluation for the IINSPIRE-LSAMP program. She oversees the design and implementation of a research and evaluation framework. She works in close collaboration with the External Evaluation Consultant.

Mary Darrow  
**Assistant Director and Evaluation Coordinator**  
*Graduate College* Iowa State University  

Dr. Darrow provides assistance to the program director and coordinates evaluation team. She assists with the implementation of program activities and developing the IINSPIRE-LSAMP evaluation framework.

Danielle Mitchell  
**Program Manager**  
*Graduate College* Iowa State University  

Ms. Mitchell provides support to all aspects of the IINSPIRE-LSAMP project. She assists in scheduling and providing agendas for meetings, maintaining the website, writing reports and memos, organizing program workshops and conferences, and provides faculty support.

Mariko Chang  
**External Evaluation Consultant**  

Dr. Chang is an experienced evaluator who consults with institutions around the country to evaluate programs for broadening the participation of underrepresented groups in STEM fields and to measure the broader impacts of research and education projects. She has developed the program’s formal evaluation plan, works with the Internal Assessment Evaluator and Evaluation Coordinator to implement this plan, and performed program evaluation for year 1 and 2 of the project.

J. Adin Mann III  
**Alliance External Partners Liaison**  
*Principal Engineer*  
Fisher Value Division, Emerson Process Management  

Dr. Mann developed the IINSPIRE-LSAMP proposal before leaving Iowa State University. He is currently employed at the Fisher Value Division of Emerson Process Management, which is an IINSPIRE-LSAMP external partner. Dr. Mann serves as the alliance external partners liaison to provide leadership among the alliance partners and between the partner community and the alliance.

Steering Council *(alphabetical by institution)*  

Campus directors provide oversight of IINSPIRE-LSAMP project activities on their respective campuses. They serve as the lead contact for faculty, staff, and students. Campus directors are responsible for developing STEM campus activities and increasing student recruitment and retention in STEM fields.

Lori Scott  
*Professor of Biology*  
Augustana College
Kari Hensen  
*Associate Dean of Arts and Sciences*  
Des Moines Area Community College

Christopher Wentworth  
*Professor of Physics*  
Doane College

Brian Ritter  
*Department Coordinator for Conservation Technology*  
Eastern Iowa Community College District

Jim Swartz  
*Dack Professor of Chemistry*  
*Director of the Center for Science in the Liberal Arts*  
Grinnell College

Cynthia Bottrell  
*Dean of Mathematics, Natural and Social Sciences*  
Hawkeye Community College

Derrick Rollins  
*Professor of Chemical and Biological Engineering, Professor of Statistics*  
Iowa State University

Linda Barnes  
*Associate Professor of Biology*  
Iowa Valley Community College District

Lori Woeste  
*Dean of Mathematics and Science*  
Kirkwood Community College

Andrea Vandall  
*Title III/TCUP Coordinator Interim*  
Little Priest Tribal College

Bradley Chamberlain  
*Associate Professor of Chemistry*  
Luther College

Candice Howell  
*Assistant to the Provost for Student Success and Diversity*  
Nebraska Wesleyan University

Richard Hichwa  
*Senior Associate Vice President for Research*  
University of Iowa

Douglas Mupasiri  
*Interim Head and Professor of Mathematics*  
University of Northern Iowa

Katherine McCarville  
*Associate Professor of Geosciences*  
Upper Iowa University
Joe Alanis  
*Student Representative*  
Upper Iowa University

LeAnn Faidley  
*Assistant Professor of Engineering*  
Wartburg College

**Alliance Graduate and Undergraduate Students** *(alphabetical by institution)*  
Graduate and undergraduate students assisted the IINSPIRE-LSAMP campus directors and staff with event planning and coordination, assisting the evaluation team, compiling resources, drafting written documents, and updating the website.

**Graduate Students**

- **Allison Olson**  
  PhD Candidate, School of Education  
  Iowa State University

- **Anne Howsare Boyen**  
  PhD Candidate, School of Education  
  Iowa State University

- **Korey Kollasch**  
  Masters Candidate, School of Education  
  Iowa State University

**Undergraduate Students**

- **Marie Rose Donnelly**  
  Senior, Biology  
  Doane College

- **Muijj Ghani**  
  Junior, Biology  
  Doane College

- **Alice Nadeau**  
  Senior, Mathematics  
  Grinnell College

- **Zoe Eagle**  
  Junior, Industrial Engineering  
  Iowa State University

- **Adrienne Fight**  
  Senior, Community and Regional Planning  
  Iowa State University

- **Kayla Greiner**  
  Junior, Agriculture and Life Science Education  
  Iowa State University

- **Steven Johnson**  
  Senior, Industrial Engineering  
  Iowa State University
Christina Ling
Senior, Management Information Systems
Iowa State University

Emy Marroquin
Sophomore, Industrial Technology
Iowa State University

Andrew Mushel
Sophomore, Technical Communication
Iowa State University

Marlie Quintero
Senior, Chemical Engineering
Iowa State University

Nyle Sutton
Senior, Computer Science
Iowa State University

Joe Alanis
Senior, Mathematics
Upper Iowa University

**Alliance Governing Board (alphabetical by institution)**
The governing board provides consultation on overall direction and critical issues facing the project.

Margaret Farrar
*Associate Dean of the College*
Augustana College

Kim Linduska
*Executive Vice President and Provost*
Des Moines Area Community College

John M. Burney
*Vice President for Academic Affairs*
Doane College

Ellen Kabat-Lensch
*Executive Director of Resource Development and Innovation*
*Executive Director of ATEEC*
Eastern Iowa Community College District

Jim Swartz
*Dack Professor of Chemistry*
*Director of the Center for Science in the Liberal Arts*
Grinnell College

Jane Bradley
*Vice President for Academic Affairs*
Hawkeye Community College

Jonathan Wickert
*Senior Vice President and Provost*
Iowa State University
Alliance Campus Team Members

Alliance campus team members work one-on-one with students participating in IINSPIDE-LSAMP activities or assist the campus director with administration and planning of LSAMP events at their respective institutions. Activities include recruiting and mentoring students, matching students with internships and/or summer research opportunities, family support activities, and developing bridge programs. Campus team members are listed in Appendix I.
B. Organizations

IINSPIRE-LSAMP Alliance Institutions

- Augustana College
- Des Moines Area Community College
- Doane College
- Eastern Iowa Community College District
- Grinnell College
- Hawkeye Community College
- Iowa State University
- Iowa Valley Community College District
- Kirkwood Community College
- Little Priest Tribal College
- Luther College
- Nebraska Wesleyan University
- Science Education Resource Center at Carleton College
- University of Iowa
- University of Northern Iowa
- Upper Iowa University
- Wartburg College

C. Collaborators

Alliance External Partners

Alliance partners from industry and government offer opportunities to impact state and regional policies, extend research and internship opportunities to IINSPIRE-LSAMP students, and provide additional program funding.

- U.S. Department of Energy Ames Laboratory
- Association of Universities for Research in Astronomy (AURA)
- Avenue Scholars Foundation
- Bethune-Cookman University
- Fisher Controls International
- HNI Corporation
- Iowa 4-H Youth Program
- Iowa Biotechnology Association
- Iowa Business Council
- Iowa Department of Economic Development
- Iowa Math and Science Education Partnership
- Iowa Space Grant Consortium (ISCG)
- Nebraska Academy of Sciences
- Novel Chemical Solutions
- Office of the Governor, State of Iowa
- Rockwell-Collins Corporation
- State Science and Technology Fair of Iowa (SSTFI)
- USDA-ARS Corn Insects and Crop Genetics Research Unit
- USDA-ARS National Laboratory for Agriculture and the Environment
- Winnebago Higher Education
- Winnebago Public School
- Winnebago Tribe of Nebraska

Other Partners within Alliance Institutions

The IINSPIRE-LSAMP project collaborates with several major programs to share information and programming. These programs are engaged in collaborative projects and meetings with IINSPIRE-LSAMP alliance institutions. Partner programs are described in Appendix II.
II. ACTIVITIES

A. Project Overview

The Iowa Illinois Nebraska STEM Partnership for Innovation in Research and Education (IINSPIRE) is an NSF LSAMP alliance among sixteen two-year and four-year colleges and universities working together to broaden the participation of underrepresented minorities in science, technology, engineering, and mathematics (STEM) education in the Midwest. The IINSPIRE Alliance colleges and universities collaborate to support students, increase their success, and provide students in the alliance with academic, research, training, and mentoring opportunities. The alliance consists of six two-year colleges, seven private bachelor’s degree-granting institutions, and three public state universities, listed alphabetically:

- Augustana College
- Des Moines Area Community College
- Doane College
- Eastern Iowa Community College District
- Grinnell College
- Hawkeye Community College
- Iowa State University
- Iowa Valley Community College District
- Kirkwood Community College
- Little Priest Tribal College
- Luther College
- Nebraska Wesleyan University
- University of Iowa
- University of Northern Iowa
- Upper Iowa University
- Wartburg College

The IINSPIRE Alliance goal is to double the number of underrepresented minority (URM) STEM graduates in the alliance within five years to 350 graduates and to build a foundation for greater increases in future years. Because students from populations historically underrepresented in STEM disciplines are a growing segment of the region’s population, there is statewide urgency to remove the barriers to progress in developing a diverse STEM workforce. IINSPIRE-LSAMP will serve as a model for Midwest colleges and universities. This will be accomplished through the following strategies:

- Grow the pool of college-ready, STEM-prepared URM high school students.
- Increase the number of URM students who choose STEM at each IINSPIRE Alliance institution.
- Improve retention at all IINSPIRE Alliance institutions.

The IINSPIRE Alliance has set forth the following objectives to guide alliance-wide activities in pursuit of the goal:

1. **Community-based and student recruiting:** Inform teachers, counselors, parents and students in Iowa, Illinois and Nebraska about IINSPIRE-LSAMP and increase their awareness about STEM careers. Engage current alliance students having interest and potential in STEM and increase their awareness about STEM majors and careers. Collaborate with community-based recruiting models within the alliance.

2. **Bridge programs and transitions:** Leverage and create initiatives that assist students in their transitions from high school to college and from community colleges to bachelor-granting institutions. Connect students with peer mentors.

3. **Faculty engagement and inclusive pedagogy:** Facilitate faculty collaboration and peer groups across the alliance to share inclusive pedagogy and mentoring practices that lead to greater student success.
4. **Student research opportunities, mentoring, and training:** Connect and support students with mentored research opportunities. Organize research training experiences for alliance students to earn a research certificate.

5. **Mentor training:** Provide training and resources for mentors who supervise undergraduate research projects.

6. **Project management, communication, and institutional integration:** Organize and manage IINSPIRE-LSAMP team members and activities to achieve project goals. Leverage institutional resources and partnerships, and use alliance and institutional data to implement effective programs based on institution-specific needs.

7. **Assessment and evaluation:** Track student participation and enrollment statistics. Assess alliance-wide and institutional outcomes and use evaluation results to inform and improve practices.

IINSPIRE-LSAMP activities draw upon available research and resources, focusing on the transitions from high school and community college to ensure that each student has rigorous academic preparation, social support, research preparation, and financial support to complete a STEM degree and continue onto graduate school. Work is being done to better understand these transitions and to increase the number of students on multiple pathways toward a STEM degree. The IINSPIRE-LSAMP student experience model is defined by key learning and training activities from entry through degree completion (see diagram at http://www.inspirelsamp.iastate.edu/img/Student Experience Model.pdf). Students participate in pre-matriculation and community college transfer bridge programs, internships, research experiences and certification, campus seminars, mentoring, and alliance meetings. The programming is coordinated by team members on each campus and involves existing and new activities at each campus, as well as joint activities by the alliance. A key activity essential to the student experience is access to individual counseling, academic advising, and professional development and career advising. Campus directors are connecting key student activities to existing programs at alliance institutions in order to leverage the resources and expertise.

IINSPIRE-LSAMP reaches out to and works with a number of industrial and governmental partners. Partners have a commitment to broadening participation in STEM and meeting state and national STEM workforce needs. Partners offer various types of opportunities and support to the program, including interfacing with state-level policies and activities, supporting K-12 outreach, and providing internships and other financial support.

The focus of the second year of the project was on student research opportunities and mentoring, bridge program development and pedagogy, logic model planning, institutional needs analysis and capacity building, and team building to achieve alliance objectives. The first IINSPIRE Alliance annual conference was held February 7-8, 2013. Activities and accomplishments for year two are highlighted in this report.

**B. Research and Education Activities**

**B.1 Activities Overview**

In this section, representative activities are highlighted for each objective. The focus of the second year of the project was on student research opportunities and mentoring, bridge program development and pedagogy, logic model planning, institutional needs analysis and capacity building, and team building to achieve alliance objectives. Thus, the activities reported below have an emphasis in these areas.

**Summary of Project Activities during Year 2**

The following two tables summarize the activities by alliance institutions during year two. Table 1 gives a snapshot of activities across the alliance at the end of the first two years. The matrix indicates which objectives were addressed at each institution through major activities or effort during year one with a green dot (●) and year two with a blue dot (●). Institutions reported their activities to varying extents. The type or level of activity varies by institution. Examples are given in Table 2 and later in this report. The matrix shows that each of the objectives is being addressed by multiple alliance
members and that activity associated with the objectives increased in year two (more blue than green dots). As the project continues to progress, it is expected that each institution will actively participate in most or all of the objectives.

TABLE 1. Objectives Addressed by Alliance Institution Activities during Years 1 and 2

<table>
<thead>
<tr>
<th>Key:</th>
<th>Year 1 (2011-12)</th>
<th>Year 2 (2012-13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Community Based and Student Recruiting</td>
<td>Bridge Programs and Transitions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institution</th>
<th>Augustana College</th>
<th>Doane College</th>
<th>Des Moines Area Community College</th>
<th>Eastern Iowa Community College District</th>
<th>Grinnell College</th>
<th>Hawkeye Community College</th>
<th>Iowa State University</th>
<th>Iowa Valley Community College District</th>
<th>Nebraska Wesleyan University</th>
<th>Little Priest Tribal College</th>
<th>Luther College</th>
<th>University of Iowa</th>
<th>University of Northern Iowa</th>
<th>Upper Iowa University</th>
<th>Wartburg College</th>
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<tbody>
<tr>
<td>Community Based and Student Recruiting</td>
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<td>Faculty Engagement and Inclusive Pedagogy</td>
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<td>Mentor Training</td>
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<tr>
<td>Project Management and Institutional Integration</td>
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<td>Assessment and Evaluation</td>
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</table>

Note: Kirkwood Community College is not included in the table due to retirement of the campus director and transition to new leadership, resulting in a gap in their participation.

Table 2 highlights several implemented and ongoing activities for each of the objectives by institution type. The activities are described in more detail in later sections of this report. The table reflects the variety of activities by alliance members that are contributing to the IINSPIRE-LSAMP student experience.
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Research &amp; Master's Degree Granting Universities</th>
<th>Bachelor's Degree-Granting Institutions</th>
<th>Associate's Degree-Granting Colleges</th>
</tr>
</thead>
</table>
| **Community Based and Student Recruiting**  
Inform teachers, counselors, parents and students in Iowa, Illinois and Nebraska about IINSPIRE-LSAMP and increase their awareness about STEM careers. Engage current alliance students having interest and potential in STEM and increase their awareness about STEM majors and careers. Collaborate with community-based recruiting models within the alliance. | • Collaborating with on-campus summer programs to introduce incoming students to STEM fields.  
• Partnering with the Iowa Governor’s STEM Advisory Council to engage K-12 students in STEM.  
• Partnered with existing summer undergraduate research programs to identify and recruit students into IINSPIRE-LSAMP. | • Offering career awareness activities for prospective students and their families.  
• Assisted with a summer science seminar for high school students.  
• Identified and recruited students into IINSPIRE-LSAMP.  
• Involving current IINSPIRE-LSAMP students in recruitment.  
• Developed summer pre-enrollment program to recruit students into IINSPIRE-LSAMP. | • Conducted pre-college activities, e.g., camps, career fairs, etc.  
• Partnering with the Iowa Governor’s STEM Advisory Council to engage K-12 students in STEM.  
• Developed a task force to assess and enhance student recruitment and retention.  
• Identified and recruited students to participate in IINSPIRE-LSAMP.  
• Hosted open house/recruiting events. |
| **Bridge Programs and Transitions**  
Leverage and create initiatives that assist students in their transitions from high school to college and from community colleges to bachelor-granting institutions. Connect students with peer mentors. | • Developed IINSPIRE-LSAMP orientation program.  
• Working with ISU APEX, APEX® and ISU HHMI to provide academic support to IINSPIRE-LSAMP students.  
• Providing academic support activities to IINSPIRE-LSAMP students. | • Developed annual orientation program.  
• Developed/developing summer bridge programs.  
• Offering one-on-one academic and transition advising to URM students.  
• Hosted activities to assist students with academic planning.  
• Developing student support services options for IINSPIRE-LSAMP students. | • Developed "Basic Program" course for pre-engineering students.  
• Created seminar course to help incoming students develop an academic plan and learn about student and technology services available on campus. |
| **Faculty Engagement and Inclusive Pedagogy**  
Facilitate faculty collaboration and peer groups across the alliance to share inclusive pedagogy and mentoring practices that lead to greater student success. | • Led by Grinnell College, launched web-based resources and networking for faculty development on pedagogy.  
• Participated in pedagogy workshop(s) for summer bridge programming.  
• Provided faculty with mentoring resources.  
• Participated in mentor training workshop. | • Developed and/or attended faculty workshops focusing on pedagogy and summer bridge programs. | • Attended pedagogy workshops on developing a summer bridge program. |
<table>
<thead>
<tr>
<th>Undergraduate Student Research and Training</th>
<th>Mentor Training</th>
<th>Institutional Commitments</th>
<th>Assessment and Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect and support students with mentored research opportunities. Organize research training experiences for alliance students to earn a research certificate.</td>
<td>Collaborating with on-campus REU programs to conduct mentor training for faculty and research group leaders.</td>
<td>Worked with companies to identify internships for IINSPIRE-LSAMP students. Worked with on-campus REU programs to coordinate programming address needs, and financially support IINSPIRE-LSAMP research interns.</td>
<td>Participated in WebAMP training and entered data in the system. Participated in logic model planning. Reviewed enrollment and graduation data to inform the development of program interventions for URM students.</td>
</tr>
<tr>
<td><strong>- Collaborating with established REU programs to provide mentoring and training for IINSPIRE-LSAMP research interns.</strong> <strong>- Forty-seven (47) IINSPIRE-LSAMP students participated in summer research and internship opportunities.</strong> <strong>- Developing student support services and resources.</strong></td>
<td><strong>- Developed peer mentoring programs.</strong> <strong>- Hosted mentor and cultural sensitivity training.</strong></td>
<td><strong>- Collaborated with on-campus departments and off-campus partners to co-sponsor student workshops.</strong> <strong>- Worked with on-campus programs to leverage resources across programs.</strong></td>
<td><strong>- Participated in WebAMP training and entered data in the system.</strong> <strong>- Participated in logic model planning.</strong> <strong>- Reviewed enrollment and graduation data to inform the development of program interventions for URM students.</strong></td>
</tr>
<tr>
<td><strong>- Collaborated with ISU HHMI program to provide research opportunities to CC students.</strong> <strong>- Identified research opportunities for students.</strong> <strong>- Recruited students to participate in undergraduate research experiences.</strong></td>
<td><strong>- Encouraged participation in a mentor training program.</strong></td>
<td><strong>- Collaborated with 4-year institutions within and outside the alliance to offer workshops or other transition programming.</strong> <strong>- Received support from local companies for workshops geared towards increasing student interest in STEM.</strong> <strong>- Worked with local school districts to implement summer programs for students interested in STEM.</strong></td>
<td><strong>- Participated in WebAMP training and entered data in the system.</strong> <strong>- Participated in logic model planning.</strong> <strong>- Reviewed enrollment and graduation data to inform the development of program interventions for URM students.</strong> <strong>- Formed a data group to develop guidelines for identifying STEM community college students for WebAMP.</strong></td>
</tr>
</tbody>
</table>
B.2 Community-Based and Student Recruiting Activities

During year 2, alliance members offered career awareness activities for prospective students and their families; hosted open house and recruiting events; assisted with pre-college activities such as camps, special events and summer programs to introduce STEM fields and careers; partnered with the Iowa Governor’s STEM Advisory Council to promote STEM; and identified and recruited students into IINSPIRE-LSAMP. Several activities are briefly described below.

Discover Engineering Day
Des Moines Area Community College (DMACC), Iowa State University, and area engineering firms sponsored a one-day event on April 2, 2013 targeting college-age students considering a career in engineering. Students learned about engineering careers, took part in hands-on interactive engineering activities, and met with engineering professionals and college students. Students received information about transferring into engineering degree programs. More information about this special event is available through a poster ([https://go.dmacc.edu/programs/pdp/Documents/DiscoverEngineeringDay-2013.pdf](https://go.dmacc.edu/programs/pdp/Documents/DiscoverEngineeringDay-2013.pdf)) and YouTube video with student interviews ([http://www.youtube.com/watch?v=XuEbaNMFscY](http://www.youtube.com/watch?v=XuEbaNMFscY)).

Iowa Governor’s STEM Advisory Council
Many of the IINSPIRE-LSAMP campus directors and Governing Board members are active with the Iowa Governor’s STEM Advisory Council, including serving on regional boards. Created in July 2011, the Governor’s STEM Advisory Council is a partnership of business, policy and education leaders from across the state convening to support STEM education and innovation. Priorities include student interest and achievements, STEM readiness for post-secondary education and career, and teacher recruitment and readiness. More information is available at [http://www.iowastem.gov/](http://www.iowastem.gov/).

LPTC Summer Science Camp
The Little Priest Tribal College Summer Science Camp, held May 28-June 14, 2013, is designed to strengthen student capabilities in STEM related subjects and also to prepare students for future college endeavors. The two-week camp for high school students focuses on topics from biology, entomology, ecology, physics, computer programming, robotics, and alternative energy. For example, an activity from last summer is described here: [http://www.fws.gov/fieldnotes/region.cfm?arskey=32308](http://www.fws.gov/fieldnotes/region.cfm?arskey=32308).

Luther Summer Science Seminars Program
Luther College conducted a six-day summer seminar program designed for high-performing URM high school students. The students spend four days in the laboratory with faculty from biology, chemistry, and physics. Students receive mentoring from current URM college students who have experienced success in STEM at the college level.

Nebraska Wesleyan University Math and Science Scholars
In April 2013, Nebraska Wesleyan University hosted its first future Math and Science Scholars event. Prospective URM STEM students and their families were invited to campus to learn how NWU prepares students for careers in STEM. Students were introduced to current IINSPIRE students, faculty, and staff and given science and math instruction through mini workshop opportunities.

Project Lead the Way (PLTW) Showcase
Hawkeye Community College hosted a PLTW Showcase on April 10, 2013, for local students participating in PLTW courses. Students prepared and presented projects. PLTW is a national program for precollege engineering education. Most IINSPIRE-LSAMP institutions are active with PLTW Iowa ([www.pltwiowa.org](http://www.pltwiowa.org)). For more information on HCC’s activities, see: [http://www.hawkeyecollege.edu/academics/high-school/project-lead-the-way.aspx](http://www.hawkeyecollege.edu/academics/high-school/project-lead-the-way.aspx), [http://www.ktiv.com/story/21935883/2013/04/10/students-innovate-at-engineering-competition](http://www.ktiv.com/story/21935883/2013/04/10/students-innovate-at-engineering-competition).
B.3 Bridge Programs and Transitions Activities

During year 2, alliance members offered orientation and other academic planning and support services for IINSPIRE-LSAMP students; offered individualized academic and transition advising to URM students; and created or expanded summer bridge programs. Several activities are briefly described below.

Academic Program for Excellence in Engineering (APEX®)
Iowa State University expanded its APEX academic summer program for incoming multicultural students to provide new programming for engineering and STEM students. APEX® was launched in summer 2013 via collaboration of Multicultural Student Affairs, the College of Engineering, and IINSPIRE-LSAMP. More information is available at http://www.dso.iastate.edu/msa/learningcommunities/apex-faq.

Bridge to Science and Mathematics Program
Doane College is hosting its first bridge program August 19-22, 2013, designed for IINSPIRE-LSAMP eligible first-year minority students interested in STEM and women interested in physics or engineering. See http://www.doane.edu/bridge-to-science-and-mathematics-program. Doane College also implemented a peer mentoring program, in which upper level science majors assist first-year IINSPIRE-LSAMP students.

Grinnell Science Project (GSP) First-Year Academic Planning
The Grinnell Science Project at Grinnell College hosted a new event for first-year students towards the end of spring semester 2013 to assist students with advising and academic planning. The event was held off-campus at CERA, a biological preserve, and is an extension of a pre-orientation program, http://www.grinnell.edu/academic/divisions/science/gsp/gsppo.

Pre-Orientiation Bridge Program
Wartburg College will host a three day pre-orientation bridge program, August 28-30, 2013, focused on campus and resource acclimation, community building, and faculty and peer mentor interaction. The program is being developed in conjunction with the Admissions Department, Student Affairs and Pathways. More information is available at http://www.wartburg.edu/about/lsamp.aspx.

Meet Every Two Weeks Lunch Program
Iowa Valley Community College District developed a program for students and faculty mentors to have lunch and discussions to assist with academic planning and community building.

B.4 Faculty Engagement and Inclusive Pedagogy Activities

During year 2, the alliance introduced web-based resources and networking for faculty, and offered workshops on summer bridge programs, pedagogy and mentoring. Alliance faculty and staff attended these workshops. Two workshops about summer bridge programs were held. One was facilitated at the annual conference on February 8, 2013, and a follow-on workshop was hosted by Grinnell College on July 15, 2013. These workshops are described at the SERC portal, http://serc.carleton.edu/lsamp/workshops/. More information is given in the Training and Professional Development section of this report.

B.5 Student Research Opportunities, Mentoring, and Training Activities

During year 2, alliance members recruited IINSPIRE-LSAMP students to participate in undergraduate research experiences; partnered with undergraduate research programs and faculty researchers to provide paid, mentored research opportunities for URM students, including community college students; and collaborated with established REU programs to offer training for IINSPIRE-LSAMP research interns. The 2012-13 IINSPIRE-LSAMP research interns are listed in the Results section of this report. REU program collaborators are listed in an appendix II. Several activities are briefly described below.
Alliance Research Opportunities

The alliance office worked with campus directors and other team members to identify and promote research opportunities. Opportunities within and outside of the alliance were collected and posted to a webpage at the IINSPIRE-LSAMP website. Campus directors worked through appropriate contacts to email information to prospective research interns. They shared information with other campus diversity programs and presented information at campus events. The annual conference included a research fair to inform students about upcoming summer research internships.

A single alliance-wide process was implemented for students to apply for IINSPIRE-LSAMP research funding. A web-based application form was available from the website. A collaborative procedure involving the alliance office, campus directors, and researchers was used, in which students separately applied to (and were accepted in) REU programs, contacted individual researchers, or were matched with interested researchers. IINSPIRE-LSAMP research interns and their faculty supervisors had/have the option to request funding for lab supplies and professional travel.

Association of Universities for Research in Astronomy (AURA)

In October 2012, IINSPIRE-LSAMP leaders met with representatives from the Association of Universities for Research in Astronomy (AURA), an external partner, to identify mutual interests and share information about IINSPIRE-LSAMP. AURA is interested in providing research internships for IINSPIRE students and involving their professional staff in mentor training. A plan was developed for recruiting students into undergraduate research experiences.

Iowa EPSCoR

Iowa EPSCoR, www.iowaepscor.com, focuses on research and education related to renewable energy and energy efficiency at Iowa’s three Regents institutions and across the state. The Regents institutions, Iowa State University, University of Iowa, and University of Northern Iowa, are IINSPIRE Alliance members. IINSPIRE-LSAMP and Iowa EPSCoR have collaborated to recruit, match, and place URM STEM students from the alliance into EPSCoR research labs. IINSPIRE-LSAMP contributes funding for research stipends. Stories about summer 2013 interns are given in the Dissemination to Communities of Interest section of this report.

ISU Howard Hughes Medical Institute (HHMI) Community College Program

The Iowa State University HHMI Project has developed a program for community college students to visit Iowa State to work in faculty research laboratories during the summer. The program serves URM students interested in science and engineering from Iowa Valley Community College District’s Marshalltown Campus. IINSPIRE-LSAMP partners with the program in various ways to provide support for the students, including research stipends. A flyer about the 2013 program is available at the project’s wiki site, http://wiki.its.iastate.edu/display/HHMI/Together+Energizing+Student+Science.

More information on the research experiences is given in the Training and Professional Development section of this report.

B.6 Mentor Training Activities

During year 2, alliance members compiled mentoring resources; reviewed, adapted, or developed research and peer mentor training programs on their campuses; collaborated with on-campus REU programs to conduct mentor training workshops for research group leaders (including faculty, postdocs, and graduate students); and hosted mentor training workshops. IINSPIRE-LSAMP research interns are expected to be assigned a mentor, and the mentor is expected to participate in training. A collection of mentoring resources is being compiled on the IINSPIRE-LSAMP intranet. Several activities are described in the Training and Professional Development section of this report.
B.7 Project Management and Institutional Integration Activities

During year 2, as in year 1, the project was led by an alliance director and program manager in concert with campus directors for each alliance institution. In addition, starting August 2012, an assistant director was hired at ISU using institutional funds. The assistant director also serves as an evaluation coordinator, assisting the faculty evaluator and external evaluation consultant with evaluation planning and activities. An external partner liaison from industry was also named during year 2. These management team members (or Steering Council) work in consultation with and are advised by the principal investigators and the governing board comprised of institutional executives. Each campus director has formed a local team of faculty, staff and students to support their own campus-specific IINSPIRE-LSAMP activities. The steering council is listed in the Participant section of this report, and other team members are listed in an appendix.

A new organizational structure was implemented during year 2 to focus on the objectives of the project. Teams of 3 campus directors were created to oversee strategies for each objective. There are so-called objective teams or O-teams for student recruiting, bridge programs, pedagogy, undergraduate research, and mentor training. The O-teams facilitate shared responsibility for activities and outcomes that fulfill project goals and meet the needs of alliance members. Much of the strategic work of the alliance in year 2 was done using O-teams. Each O-team developed and made progress on specific plans.

The core management team met at least weekly to review and discuss project activities. The faculty evaluator joined meetings twice monthly. Monthly conference calls were held with the external evaluation consultant. Financial management, aside from handling routine expenditures, included issuing subcontract awards and amendments for year 2, budgeting for the first annual conference, and developing procedures for paying research interns. Organizational management included scheduling and conducting various face-to-face and teleconferencing meetings. The steering council met once or twice a month by teleconference, or more frequently as needed. Face-to-face steering council meetings were held each semester. The steering council met October 3, 2012 at ISU; February 8, 2013 at ISU; and May 14, 2013 at DMACC. O-teams also met by teleconference.

Communication for/by/about the project focused on website and intranet development, marketing materials, and dissemination to various audiences. A new logo was designed to provide a visual identity across the alliance; the logo appears on an alliance brochure and other materials under development. The IINSPIRE-LSAMP website is being redesigned to use similar graphic design elements. Templates for materials are being developed for alliance members to customize as needed. A photo database is also under development. Information about dissemination is given in the Dissemination to Communities of Interest section of this report.

During year 2, campus directors initiated or continued collaborations to leverage established programs to achieve project objectives. These are evident in the project activities and outcomes described in this report.

III. FINDINGS

A. Participation and Assessment Results

A.1 Baseline Data and WebAMP Reporting

IINSPIRE Alliance members were trained and entered programmatic and institutional data in the WebAMP system during fall 2012. The 2011-12 WebAMP data establish a baseline; see Table 3 below. The IINSPIRE-LSAMP goal is to double the number of URM graduates in STEM in the alliance by 2016, and the baseline data provide a target of 350 graduates.
TABLE 3. Baseline Data: URM STEM Students at 4-Year Alliance Institutions from WebAMP, 2011-12

<table>
<thead>
<tr>
<th>Institution</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Not Reported/Unknown</th>
<th>Total</th>
<th>Bachelor Degrees Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augustana College</td>
<td>4</td>
<td>13</td>
<td>5</td>
<td>15</td>
<td></td>
<td>37</td>
<td>16</td>
</tr>
<tr>
<td>Doane College</td>
<td>*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>*</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td></td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Iowa State University</td>
<td>335</td>
<td>156</td>
<td>141</td>
<td>182</td>
<td></td>
<td>814</td>
<td>97</td>
</tr>
<tr>
<td>Luther College</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>11</td>
<td></td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Nebraska Wesleyan Univ.</td>
<td>*</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>University of Iowa</td>
<td>86</td>
<td>77</td>
<td>59</td>
<td>89</td>
<td>10</td>
<td>321</td>
<td>35</td>
</tr>
<tr>
<td>Univ. of Northern Iowa</td>
<td>20</td>
<td>14</td>
<td>13</td>
<td>22</td>
<td></td>
<td>69</td>
<td>7</td>
</tr>
<tr>
<td>Upper Iowa University</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td></td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Wartburg College</td>
<td>25</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td></td>
<td>69</td>
<td>5</td>
</tr>
<tr>
<td>**Total</td>
<td>476</td>
<td>284</td>
<td>243</td>
<td>337</td>
<td>10</td>
<td>1350</td>
<td>177</td>
</tr>
</tbody>
</table>

* Freshman do not declare a major

A community college data group has been formed to develop guidelines for identifying STEM community college students for the purpose of WebAMP reporting. This is also critical for focusing community college efforts and programming.

Alliance institutions are examining their enrollment and graduation data and are having conversations around these data that will lead to new program interventions for URM students on their campuses.

A.2 Student Participation in IINSPIRE-LSAMP

Alliance institutions increased the number of students participating in IINSPIRE-LSAMP during 2012-13. Various participation metrics are shown in below in Table 4. The number of research interns increased from 10 to 47, as shown in the table. The 2012-13 IINSPIRE-LSAMP research interns are listed in Table 5, sorted alphabetically by institution.

TABLE 4. 2012-13 IINSPIRE-LSAMP Student Participation

<table>
<thead>
<tr>
<th>Institution</th>
<th>Research Interns</th>
<th>Research Mentors Trained</th>
<th>Bridge/Transition Participants</th>
<th>Bridge/Transition Mentors</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Augustana College</td>
<td>12</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Des Moines Area CC</td>
<td>1</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Doane College</td>
<td>3</td>
<td>**</td>
<td>**</td>
<td>2</td>
</tr>
<tr>
<td>Eastern Iowa CCD</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>3</td>
<td>11*</td>
<td>11*</td>
<td>1</td>
</tr>
<tr>
<td>Hawkeye CC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa State University</td>
<td>12</td>
<td>65</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Iowa Valley CCD</td>
<td>3</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Kirkwood CC</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little Priest Tribal College</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luther College</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska Wesleyan Univ.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Iowa</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Northern Iowa</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Iowa University</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wartburg College</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>**Total</td>
<td>47</td>
<td>65</td>
<td>59</td>
<td>49</td>
</tr>
</tbody>
</table>

* Summer 2012

** Data to be collected for 2012-13 WebAMP reporting
<table>
<thead>
<tr>
<th>Name</th>
<th>College/University</th>
<th>Academic Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esdras Murillo</td>
<td>Des Moines Area CC</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Gary Batres</td>
<td>Doane College</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Maria Juarez</td>
<td>Doane College</td>
<td>Biology</td>
</tr>
<tr>
<td>Nathan Little</td>
<td>Doane College</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Bradley Ryan</td>
<td>Eastern Iowa CCD</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Jaelin Smith</td>
<td>Eastern Iowa CCD</td>
<td>Pre-Engineering</td>
</tr>
<tr>
<td>Jacob Veal</td>
<td>Eastern Iowa CCD</td>
<td>Pre-Engineering</td>
</tr>
<tr>
<td>Queenster Nartey</td>
<td>Grinnell College</td>
<td>Biological Chemistry</td>
</tr>
<tr>
<td>Daniel Torres</td>
<td>Grinnell College</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Lorena Ulloa</td>
<td>Grinnell College</td>
<td>Biology</td>
</tr>
<tr>
<td>Stanley Barbel</td>
<td>Iowa State University</td>
<td>Aerospace Engineering/Computer Science</td>
</tr>
<tr>
<td>Jordan Becquer</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Avril Carter</td>
<td>Iowa State University</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Kemdirin Chukwuebuka</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Edgardo Diaz</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Hyaquinio Hyacinthe</td>
<td>Iowa State University</td>
<td>Aerospace Engineering/Economics</td>
</tr>
<tr>
<td>Courtnee Jackson</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Crystal Jones</td>
<td>Iowa State University</td>
<td>Genetics</td>
</tr>
<tr>
<td>Jan Michael Lopez</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Eduardo Lorenzana</td>
<td>Iowa State University</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>Jolene O’Gorman</td>
<td>Iowa State University</td>
<td>Pre-Diet and Exercise</td>
</tr>
<tr>
<td>Chrisofer Sheafe</td>
<td>Iowa State University</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Jacob Grant</td>
<td>Kirkwood CC</td>
<td>Molecular and Cell Biology</td>
</tr>
<tr>
<td>Sandra Cardenas</td>
<td>Luther College</td>
<td>Nursing</td>
</tr>
<tr>
<td>Andrew Gomez</td>
<td>Luther College</td>
<td>Biology</td>
</tr>
<tr>
<td>Fidencio Balderas</td>
<td>Iowa Valley CCD</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td>Norma Granados Raya</td>
<td>Iowa Valley CCD</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Eva Garcia Puentes</td>
<td>Iowa Valley CCD</td>
<td>Pre-medicine</td>
</tr>
<tr>
<td>Michelle Munoz</td>
<td>Nebr. Wesleyan University</td>
<td>Biology/Pre-Med</td>
</tr>
<tr>
<td>Martin Aguilera</td>
<td>University of Iowa</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Mariah Bankert</td>
<td>University of Iowa</td>
<td>Biochemical Engineering</td>
</tr>
<tr>
<td>Sarah Bannon</td>
<td>University of Iowa</td>
<td>Pre-STEM</td>
</tr>
<tr>
<td>Jacqueline Bannon</td>
<td>University of Iowa</td>
<td>Nursing (interest)</td>
</tr>
<tr>
<td>Steven Dominguez</td>
<td>University of Iowa</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Michael Dominguez</td>
<td>University of Iowa</td>
<td>Physics</td>
</tr>
<tr>
<td>Wade Hutson</td>
<td>University of Iowa</td>
<td>Health and Human Physiology</td>
</tr>
<tr>
<td>Gabriel Jardim</td>
<td>University of Iowa</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>Alvin LeGall</td>
<td>University of Iowa</td>
<td>Biology and Chemistry</td>
</tr>
<tr>
<td>Tomas Lira</td>
<td>University of Iowa</td>
<td>Chemical Engineering</td>
</tr>
</tbody>
</table>
New bridge and transition (first year/learning community) programs have been developed and/or implemented at 8 alliance institutions in 2012-13 as shown in Table 6. Several of these are enrolling students for the first time in the summer/fall of 2013.

### TABLE 6. New Bridge/Transition Programs by Institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program Name</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augustana College</td>
<td>First Year Learning Community</td>
<td>12 (2 students of color)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Summer 2012)</td>
</tr>
<tr>
<td>Des Moines Area CC</td>
<td>STEM Learning Community – monthly lunch seminars</td>
<td>22</td>
</tr>
<tr>
<td>Doane College</td>
<td>2 day pre-orientation bridge</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>Grinnell Science Project – 1 week bridge</td>
<td>11 (Summer 2012)</td>
</tr>
<tr>
<td>Iowa State University</td>
<td>APEXE – 8 week summer bridge</td>
<td>24 (Summer 2013)</td>
</tr>
<tr>
<td>Iowa Valley CCD</td>
<td>MINT in STEM – monthly lunch meetings</td>
<td>5</td>
</tr>
<tr>
<td>Nebraska Wesleyan Univ.</td>
<td>Pre-orientation bridge</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Wartburg College</td>
<td>Pre-orientation bridge</td>
<td>Fall 2013</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>74</strong></td>
</tr>
</tbody>
</table>

### A.3 Assessment and Evaluation Activities and Results

A formal evaluation plan, including data management, has been developed and guides assessment and evaluation activities for the alliance and individual institutions. An evaluation team is led by the internal evaluators. External evaluation consultant, Dr. Mariko Chang, began working on project evaluation at the start of year 2. She works directly with the management and evaluation teams to facilitate the project’s logic model processes and to conduct and document evaluation activities.

Evaluation results for several activities during year 2 are tabulated in following tables. An online survey was sent to participants of the October 3, 2012, Steering Council meeting. Overall, as shown in Table 7, respondents reported that the goals to increase their understanding of the resources within the Alliance and increase their understanding of and engagement with logic model planning were accomplished most successfully, as indicated by the combination of mean response and level of agreement. Responses to open-ended questions revealed the value of face-to-face interaction.
TABLE 7. Evaluation of Steering Committee Meeting Objectives (N=8)

<table>
<thead>
<tr>
<th>Meeting Objectives</th>
<th>Mean</th>
<th>% Agreement*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increased my understanding of the various institutional and individual resources that exist within the IINSPIRE-LSAMP Alliance</td>
<td>3.25</td>
<td>75%</td>
</tr>
<tr>
<td>2. Introduced and discussed inclusive pedagogy as it related to our project goals and target population</td>
<td>2.63</td>
<td>50%</td>
</tr>
<tr>
<td>3. Increased my understanding of an engagement in IINSPIRE-LSAMP logic model planning as a project organizational structure</td>
<td>3.25</td>
<td>75%</td>
</tr>
<tr>
<td>4. Introduced and discussed the WebAMP annual survey guidelines as a means to establish consistent NSF reporting across the alliance</td>
<td>2.88</td>
<td>75%</td>
</tr>
</tbody>
</table>

*Note: % Agreement indicates that respondents reported “Somewhat agree” or “Strongly agree”

Tables 8 and 9 summarize the evaluation of the annual conference sessions by participants. A total of 116 people attended the conference, including 55 students and 61 faculty, staff, and other professionals. Table 2 presents the mean student response by session and question. Students gave the Leadership Dialogue session the highest collective evaluations overall. Students also reported that they made new friends/mentors/contacts. Students were least likely to report that they had a better idea of what was expected in a summer research program application, although most reported that they had a better understanding of the research opportunities that exist within the alliance. Overall, faculty/staff provided positive evaluations of the workshops, most notably reporting that the speakers for the Pedagogy Workshop were well prepared and well informed. Participants were also likely to report that the goals of the sessions were met, especially the Alliance Activities and Priorities for 2012-2013 workshop.
TABLE 8. Evaluation of Annual Conference Workshops and Sessions for Students

<table>
<thead>
<tr>
<th>Session/Question</th>
<th>N</th>
<th>Mean</th>
<th>% Agreement*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poster Session</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The goal of this session was met</td>
<td>10</td>
<td>4.5</td>
<td>90%</td>
</tr>
<tr>
<td>I have been inspired to present a research poster in the future</td>
<td>10</td>
<td>4.1</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Leadership Dialogue</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The goal of this workshop was met</td>
<td>10</td>
<td>4.8</td>
<td>90%</td>
</tr>
<tr>
<td>The discussion helped me see that other students share similar challenges as me</td>
<td>10</td>
<td>4.7</td>
<td>90%</td>
</tr>
<tr>
<td>I have a better understanding of the issues that I might face or are facing</td>
<td>10</td>
<td>4.7</td>
<td>90%</td>
</tr>
<tr>
<td>as a student of color in STEM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student Career Development Session</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After this session/conference:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a better understanding of how to develop professional skills in STEM</td>
<td>10</td>
<td>4.0</td>
<td>70%</td>
</tr>
<tr>
<td>I have some ideas for finding and approaching a mentor in STEM</td>
<td>10</td>
<td>4.2</td>
<td>70%</td>
</tr>
<tr>
<td>I have made new friends/mentors/contacts that I will contact in the future</td>
<td>10</td>
<td>4.8</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Research Fair</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After this session/conference:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a better understanding of the research opportunities that exist within</td>
<td>9</td>
<td>4.6</td>
<td>89%</td>
</tr>
<tr>
<td>the Alliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a better idea of what is expected in a summer research opportunity</td>
<td>9</td>
<td>3.8</td>
<td>67%</td>
</tr>
<tr>
<td>application</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Note: % Agreement indicates that respondents gave a rating of “4” or “5” on the scale, where 1 represented “No,” 3 represented “So-So,” and 5 represented “Yes.”

TABLE 9. Evaluation of Annual Conference Workshops for Faculty, Staff, and Other Professionals

<table>
<thead>
<tr>
<th>Workshop/Question</th>
<th>N</th>
<th>Mean</th>
<th>% Agreement*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pedagogy Workshop</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The goal of this workshop was met</td>
<td>30</td>
<td>3.97</td>
<td>73%</td>
</tr>
<tr>
<td>The speakers were well prepared and well informed</td>
<td>29</td>
<td>4.62</td>
<td>93%</td>
</tr>
<tr>
<td>There was adequate and equitable interaction in this session</td>
<td>29</td>
<td>3.97</td>
<td>72%</td>
</tr>
<tr>
<td><strong>Data Driven Planning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The goal of this workshop was met</td>
<td>26</td>
<td>4.04</td>
<td>77%</td>
</tr>
<tr>
<td>The speakers were well prepared and well informed</td>
<td>26</td>
<td>4.31</td>
<td>88%</td>
</tr>
<tr>
<td>There was adequate and equitable interaction in this session</td>
<td>26</td>
<td>3.92</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Alliance Activities and Priorities for 2012-2013</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The goal of this workshop was met</td>
<td>20</td>
<td>4.15</td>
<td>80%</td>
</tr>
<tr>
<td>The speakers were well prepared and well informed</td>
<td>19</td>
<td>4.32</td>
<td>84%</td>
</tr>
<tr>
<td>There was adequate and equitable interaction in this session</td>
<td>19</td>
<td>4.32</td>
<td>84%</td>
</tr>
</tbody>
</table>

*Note: % Agreement indicates that respondents gave a rating of “4” or “5” on the scale, where 1 represented “No,” 3 represented “So-So,” and 5 represented “Yes.”
The external evaluation consultant conducted a two-day site visit during the annual conference, February 7-8, 2013. She made observations and conducted interviews with team members resulting in an external evaluation report. Results of this review are summarized in the next section, and recommendations are given in the section on Plans for Year 3. Interviews with campus directors during this review pointed to the importance of the fall Steering Committee meeting for establishing relationships between institutions and jump-starting activities. As one campus director mentioned, “the fall meeting was pivotal in getting things rolling; in the last six months things have really come together.”

An Evaluation and Reporting Retreat was held on May 14, 2013, on the DMACC campus and was attended by Steering Council members. The main objectives of the retreat were to 1) continue work on logic model planning at alliance and institutional levels; 2) review requirements for year-end reporting; and 3) create connections among like institutions through small-group discussion.

The Survey of Undergraduate Research Experiences (SURE) III Survey is being administered to all summer 2013 IINSPIRE-LSAMP research interns. This has been administered as a pre-post survey utilizing the “Preflection” and “SURE III” Surveys to examine learning gains and impact of the IINSPIRE-LSAMP summer research experiences. Results will be reported next year. For more information about the SURE Survey: http://www.grinnell.edu/academic/csla/assessment/sure

The STEM Student Success Literacy (SSSL) Survey is being piloted as a pre-post survey with summer 2013 bridge students in Iowa State’s APEX Program to measure gains in student self-efficacy, college readiness, and student perceptions. Focus groups and interviews are also being conducted with program students and staff. Results will be reported next year. For more information about the SSSL Survey: http://www.cclp.hs.iastate.edu/research/briefs

B. External Evaluation Results

The year 2 external evaluation report summarizes progress as follows: The second year of the grant was extremely productive with respect to helping to establish relationships and communication across Alliance institutions. The groundwork was laid for successfully implementing grant activities and fostering the partnerships critical for the long-term success of the grant. The stakeholders are excited about the Alliance and the opportunity to work toward the common goal of doubling the numbers of under-represented minority students graduating with STEM degrees. The IINSPIRE Alliance has the potential to have a meaningful and lasting impact on the development of the nation’s STEM workforce.

The report identifies themes that emerged for year 2 based on data from evaluation forms, observation of the annual conference, and interviews with campus directors and other key stakeholders, categorized below as strengths and challenges.

Strengths:

1. **Successful Transition in Leadership**: A major accomplishment has been the successful transition in leadership from the original proposal. Leadership changes across Alliance campuses have also occurred smoothly overall. While it is common for such leadership changes to delay the implementation of grants, the team has responded to these challenges and is building momentum and working together.

2. **Personnel**: The Alliance is comprised of dedicated, enthusiastic, and very knowledgeable people working together toward common goals. Those interviewed routinely expressed respect for the Director, Program Manager and the Leadership Team generally, the Campus Directors, and other stakeholders engaged in supporting the work of the grant.

3. **Opportunities for Collaboration and Cooperation Across Institutions**: Stakeholders were very excited about the potential for collaboration and cooperation across institutions. Many saw evidence of cooperation already, noting for example that ties between some of the community colleges and 4-year institutions were becoming stronger. Representatives from community colleges are working together to devise a common method for identifying STEM students.
4. **Internal Evaluation and Use of Formative Feedback:** The Internal Evaluation Team is exceptionally strong and is working with the Campus Directors to embed evaluation within their activities. With their guidance, the O-Teams are completing logic models and establishing metrics to track progress. The Internal Evaluators are also using the formative feedback to help guide activities.

5. **Annual Meeting:** Stakeholders reported the Annual Meeting achieved several key objectives, including providing the face-to-face contact critical for building relationships, opportunities for O-Teams to work together successfully, best practices and sharing information, and helping to reinforce institutional commitment. For example, one stakeholder said, “the Alliance did a great job of talking to the Board members at the Annual Meeting and getting them to see the importance of the grant.”

### Challenges:

1. **Structure of Grant Funding:** The nature of the LSAMP program requires that institutions and key stakeholders are asked to do a lot without much additional funding. Finding ways to leverage resources within their own institutions and across the Alliance has been a challenge for many institutions. Moreover, key stakeholders often struggle to balance the work of the Alliance on top of already demanding job responsibilities without additional resources.

2. **Data Collection/Reporting:** The reporting of data into WebAMP was a challenge for many institutions in terms of learning how to use the system, finding the right person to compile the data, and understanding (and using) the reporting categories. For instance, some institutions were using old definitions of race and ethnicity. Community colleges faced an additional difficulty of identifying and categorizing STEM students since students don’t have majors.

3. **Geographic Dispersion:** The geographic dispersion of the institutions poses a challenge for those who must travel long distances for meetings. It can also enhance feelings of isolation from other Alliance campuses.

4. **Specific Challenges for Smaller Institutions:** Some stakeholders were concerned that many of the program goals are designed with large institutions in mind and that the specific issues facing smaller institutions had the potential to be overlooked. For example, one interviewee explained, “Their [larger institutions] way of thinking is often different from us and they can’t always relate to our particular needs and concerns.”

5. **Diversity of Institutional Infrastructure, Capabilities, Support, and Needs:** Institutional resources, commitment, and infrastructure vary dramatically. Some Campus Directors felt they were operating with a sufficient amount of institutional infrastructure and support while others felt they were the only one on campus committed to or working towards the Alliance goals. Diversity of institutional infrastructure and capabilities sometimes resulted in institutions desiring different solutions to the same challenge. For example, bridge programs were a priority activity for many Alliance institutions, but for those less able to create their own bridge programs, their desired solutions differed. For example, some community colleges were looking for other institutions to host their students in a bridge program while many of the smaller institutions did not have enough students to host their own program (yet), but wanted students to bond with their own campus and faculty rather than attending programs on other campuses.

6. **Uneven Engagement Across Alliance Institutions:** Efforts are underway to engage all institutions and support their participation as full partners.

7. **Diversity of Under-Represented Minority Students’ Academic Preparation, Resources, and Demographic Characteristics:** Under-represented minority STEM students are not uniform with respect to their academic preparation, access to financial resources, knowledge of higher education, the level of support received from friends and family, and their family and workplace responsibilities. This diversity creates challenges for crafting Alliance-wide strategies for attracting them to STEM and keeping them in STEM. Multiple approaches need to be developed. For example, one Campus Director explained, “while other students can travel for opportunities, my students want local research opportunities because many don’t have reliable transportation or have to stay closer to home due to family or job responsibilities.”

8. **Recruitment:** Several stakeholders, especially those at smaller institutions, mentioned that their biggest challenge was recruiting under-represented minority students to their campus.
9. **Communication:** Some Campus Directors did not think Sharepoint was effective for sharing information and resources. Campus Directors expressed the desire to know more about what was happening on the other O-Teams. Some Campus Directors felt unsure of what was expected of them and wanted more direction from the Leadership team. Some stakeholders felt the big picture of the grant’s mission was sometimes lost when one is engaging in details such as WebAMP reporting. Some interviewees wanted more emphasis on a charismatic message that people can hold on to, noting the broader impacts (short-term and long-term) to working towards goals that go beyond doubling the numbers of under-represented minority students receiving STEM degrees. While appreciating the need for conference calls (especially given the size and geographic dispersion of the Alliance), Campus Directors also wished for more opportunities to meet face-to-face.

**IV. TRAINING AND PROFESSIONAL DEVELOPMENT**

In general, faculty, staff, and students involved with the project have increased their understanding of effective practices for URM STEM student success, their knowledge of the NSF LSAMP program, and their awareness about programs at institutions in the alliance. This has resulted from networking and information sharing activities with alliance members and other collaborators and professionals. For example, the assistant director and evaluation coordinator for the alliance (funded with ISU funds as a postdoctoral research associate) has engaged in various professional development throughout the year, including attending the American Education Association Conference in Minneapolis, MN, where she received advanced training on logic model evaluation methods with a focus on multi-level and multi-institutional strategies. A small group of team members from ISU and DMACC also met with NSF LSAMP director A. James Hicks on March 13, 2013, to learn more about national LSAMP priorities and discuss IINSPIRE opportunities.

**A. Faculty and Staff**

A half-day workshop on pedagogy for summer bridge programs was held at the IINSPIRE-LSAMP 2012-13 Annual Conference, *Crossing the Bridge to Student Success in STEM*, on February 8, 2013. Faculty and staff from fourteen of the sixteen alliance institutions participated. Attendees learned about program features and discussed implementing programs on their own campuses. SERC presenters introduced a web portal for collaborative development and sharing of materials, [http://serc.carleton.edu/lsamp/](http://serc.carleton.edu/lsamp/). Presentations are listed in the Products section of this report.

This workshop and a second workshop hosted at Grinnell College are described at the SERC portal, [http://serc.carleton.edu/lsamp/workshops/](http://serc.carleton.edu/lsamp/workshops/). The second workshop on July 15, 2013, focused on summer bridge programs that increase persistence and success in science among individuals from groups underrepresented in science and mathematics. The workshop explored various program profiles, [http://serc.carleton.edu/lsamp/bridging.html](http://serc.carleton.edu/lsamp/bridging.html). Attendees included several IINSPIRE-LSAMP members planning or improving programs at their institutions.

**Augustana College** offered a blended learning workshop on May 20-21, 2013, attended by several alliance team members.


**B. Students**

A student track at the annual conference provided several sessions for training and professional development for students. Dr. Adina Sterling, Washington University Olin Business School, provided the keynote address, “The Art of Choosing.” A career development workshop addressed the need for students to take advantage of everyday opportunities and to use these to continually develop professional skills. In addition, a student panel provided a supportive dialogue to explore various student experiences in alliance programs. The discussion topics included diversity in STEM fields, cross-cultural student
interactions, and student-faculty interactions. The conference also included a poster session and research fair. Students presented posters, and best-poster awards were given. Exhibitors from research programs and companies provided information about upcoming summer internship opportunities.

During summer 2013, IINSPIRE-LSAMP Research Interns participated in training activities consisting of practical field work, group research with the assistance of mentors, and individual study. During their internships, students participated in workshops or attended seminars about: communicating effectively with professors and/or mentors; designing and funding a research project; and communicating research results, including via posters. Students also visited local and regional industries to learn about STEM career opportunities. Research symposia were scheduled by several alliance institutions for students to present their posters.

These training activities were conducted by IINSPIRE-LSAMP, REU programs, research groups, and partner programs such as Iowa NSF EPSCOR and HHMI projects at Iowa State University and Grinnell College; refer to the list of collaborators in an appendix.

**Iowa NSF EPSCOR**

Iowa NSF EPSCoR provided internship opportunities for undergraduate students in renewable energy research. Fourteen interns spent summer 2013 working with faculty in labs around the state developing technical skills, building new scientific perspectives, and sparking their future career and educational interests (http://iowaepscor.org/news/profiles/researchinterns2013). IINSPIRE-LSAMP and Iowa EPSCoR collaborated to recruit, match, and place URM STEM students from the alliance into EPSCoR research labs. Four of the interns were partially supported by IINSPIRE-LSAMP. Stories about these interns are given in an appendix.

**ISU Howard Hughes Medical Institute (HHMI) Community College Program**

The Iowa State University HHMI Project has developed a program for community college students to visit Iowa State to work in faculty research laboratories during the summer. The eight-week program invited seven URM students from Iowa Valley Community College District’s Marshalltown Campus. These students have indicated an interest in pursuing a science or engineering B.S. degree. Students participated in daily math workshops and weekly biology or physics workshops, and visited local industries. In addition, students were advised on careers, resume writing, university study skills, laboratory report writing, community service, and leadership. IINSPIRE-LSAMP partnered with the HHMI Project to provide staff support and administrative assistance in the development and implementation of program elements. In addition, three of the seven students were partially supported as IINSPIRE-LSAMP research interns.

Training for students was also provided through summer bridge program experiences at alliance institutions as listed in the section on Bridge Programs and Transitions.

C. Mentors

At Iowa State University, IINSPIRE-LSAMP collaborated with the Honors Program, HHMI, and Iowa NSF EPSCoR to conduct a mentor training workshop on May 21, 2013, in advance of summer undergraduate research programs. 69 faculty, staff, and graduate students attended the workshop. The workshop included panel discussions and case studies. In the panels, professors described successes and challenges they faced while hosting undergraduate students in their research labs. Workshop participants were given three case studies to review and discuss in small groups. The cases were taken from “Entering Mentoring” developed by Handelsman and others for the University of Wisconsin HHMI Professors Program. Craig Ogilvie, Professor of Physics and Astronomy, and PI of ISU’s HHMI Project, provided opening remarks. IINSPIRE-LSAMP staff supported the event, arranged a video recording for future use by alliance members, and provided evaluation services. The event was co-sponsored by ISU’s provost and vice president for research offices. The workshop speakers were:

- Raj Raman, Agricultural and Biosystems Engineering
- Monica Lamm, Chemical & Biological Engineering
- Brian Hornbuckle, Agronomy
Laurie Law, Honors Program

**Nebraska Wesleyan University** hosted a mentor training program for current upper level IINSPIRE students in July 2013. The training was offered in conjunction with summer bridge activities.

**Wartburg College** provided stipends to upper level URM students in STEM, who served as peer mentors to lower level IINSPIRE-LSAMP students, helped organize activities, and worked to create a community of URM STEM students at Wartburg. Peer mentors assisted the campus director in planning and running events.

V. DISSEMINATION TO COMMUNITIES OF INTEREST

To achieve the overall goal of increasing the number of URM students entering into and graduating from STEM fields, IINSPIRE-LSAMP campus directors and team members have been providing information to various audiences, including faculty, staff, and students on alliance campuses; local organizations and companies; teachers and families; and educators and STEM professionals. Many of the directors have shared informational and recruitment materials at local and statewide events.

The publications, presentations, and websites listed in the Products section of this report are examples of dissemination to various audiences. For example, the IINSPIRE-LSAMP assistant director attended the Council for the Study of Community Colleges Conference in San Francisco on April 18-20, 2013. She made two presentations: Broadening STEM Participation and Degree Completion among Latino/a Students; and Engineering Transfer Students: Voices from the Sidelines of the Engineering Playing Field.

The following stories about Iowa EPSCoR – IINSPIRE-LSAMP summer 2013 research interns were posted to the Iowa EPSCoR website on July 25, 2013, and made available to a statewide audience (http://iowaepscor.org/news/profiles/researchinterns2013):

**Avril Carter Story**
Avril Carter will graduate this fall with an undergraduate degree in environmental science from Iowa State University. As a student interested in the waste water management side of environmental science, her Iowa NSF EPSCoR internship is in David Laird’s lab researching how biochar can be used as a soil amendment to reduce nutrient leaching. "I like learning the soil side of water quality, because it gives me a good background to build on for the graduate work I want to do in environmental resource management," Carter said. Carter is interested in continuing her education in the northeastern United States, where she can study the impact of Marcellus Shale natural gas drilling on water quality. Carter has grown up all over the United States, and travels often to see family and vacation. As a student at Iowa State, she was involved in the Biological Sciences Club and a member of the National Society of Leadership and Success. Carter’s research experience is also funded by the Louis Stokes Alliance for Minority Participation (LSAMP) Iowa Illinois Nebraska STEM Partnership for Innovation in Research and Education (IINSPIRE) program.

**Chukwuebuka Kemdirim Story**
Chukwuebuka Kemdirim, also known as Junior, is a soon-to-be junior at Iowa State University studying aerospace engineering. With Iowa NSF EPSCoR, Kemdirim works at the University of Iowa in James Buchholz’s wind turbine research lab. "We work to understand the wind flow around an airfoil because it will help us understand the wind turbine’s ability to produce energy," Kemdirim said. Kemdirim hopes to continue his education in engineering with a master's degree in mechanical engineering, and then have a career in aerodynamics. He is originally from Des Moines, Iowa. Kemdirim’s summer research is funded in part by the LSAMP IINSPIRE program.

**Esdras Murillo Story**
Esdras Murillo is completing his associate's degree at Des Moines Area Community College with plans to earn an electrical engineering degree at Iowa State University starting next spring. With Iowa NSF EPSCoR Murillo is working with Ulrike Passe to study energy utilization data at the net-zero Interlock
House. "It’s cool to take the energy generation and consumption data from the house and make it into something meaningful like graphs and charts that can result in methods for energy efficiency that others can learn about," he said. Murillo’s research experience is also funded by the LSAMP IINSPIRE program. Murillo immigrated to Iowa from Honduras in September 2010. He hopes to take the education and experience he gains in the US back to Honduras to develop a solar energy program for low-income families. “It’s just a dream right now, but I will have a great knowledge that I should share with others,” he said. In his free time, Murillo enjoys spending time with his wife, fixing computers, and gardening.

Queenster Nartey Story
Queenster Nartey will begin her sophomore year at Grinnell College this fall. With Iowa NSF EPSCoR she is researching the impacts of plant-microbe interactions on nitrogen retention in Kirsten Hofmockel’s Iowa State University lab. “So far I have learned a ton of good basic skills for research like collecting soil samples, counting roots, making gels for gel electrophoresis,” Nartey said. “I get really excited when I can get a hang of the little things in research.” Nartey plans to study biochemistry, and her experience with Iowa NSF EPSCoR will help her consider a research focus in renewable energy. Nartey’s summer research is funded in part by the LSAMP IINSPIRE program. Nartey is from Ghana, Africa and moved to Chicago when she was eight. At Grinnell she sings in the choir, is a member of the African Students Union, and helps with multicultural admissions. “I love being a part of the African Students Union because it helps me tap back in and embrace my culture,” she said.

Several examples of community-oriented dissemination by alliance and team members are described below.

The DMACC/ISU Discover Engineering Day, described earlier in this report under Recruiting Activities, was covered by local media and business organizations as shown with these links:

- Discover Engineering Day to be Held April 2 - Raccoon Valley Radio, http://raccoonvalleyradio.com/2013/04/discover-engineering-day-to-be-held-april-2/

Upper Iowa University was an exhibitor at the Northeast Iowa Family STEM Festival on March 14, 2013. This event, part of a series of iExploreSTEM festivals in Iowa, attracted over 500 attendees, primarily K-12 students and their families. The campus director raised awareness about IINSPIRE and LSAMP goals. Examples of event and media links:

- iExploreSTEM series and Northeast webpage: http://iexplorestem.org/regions/northeast;

The University of Northern Iowa published an article written by campus director Doug Mupasiri appearing in the University of Northern Iowa Academic Affairs Spring 2013 Report, a newsletter published by the UNI Office of the Vice President and Provost. The article publicizes IINSPIRE-LSAMP goals and UNI’s initiatives to the larger UNI community. It is available at the following link: http://www.uni.edu/provost/sites/default/files/pdf_files/uni_acaf_news_s13_final_hqp_3.pdf (see p. 16).

VI. PLANS FOR YEAR 3

Planning for year 3 is underway and is guided by project objectives, the logic model, O-team input, institution-specific needs, and evaluation results and recommendations.

Recommendations from the year 2 external evaluation report, received May 2013, are excerpted below. This report is used for reflection on year 2 activities and planning for year 3. The recommendations are
intended to build on the accomplishments to date, support the continued implementation of program activities, and ensure that effective metrics are in place to measure the impact of program activities.

The team should continue to build on the many achievements of the second year by: working to leverage resources, including engaging with external partners and identifying sources of funding to build and sustain programs; increasing opportunities for face-to-face meetings with the director, Campus Directors, and stakeholders across institutions (to strengthen relationships, enhance institutional buy-in, and communicate the sharing of information); ramping up recruitment activities; ensuring all institutions are equal partners; using baseline data to strategically guide programming; and providing continued attention to evaluation efforts and priorities.

**Institutionalization: Leveraging Resources and Developing Partnerships**

- **Help Enhance Buy-In at Individual Institutions.** Some Campus Directors thought it would be extremely valuable for the Director and possibly other key members of the IINSPiRE Leadership to come to their campus and meet with stakeholders to talk about the grant, explain the benefits of the Alliance, learn about each institution’s needs and strengths, and emphasize the critical role being played by that particular institution. Stakeholders felt that more face-to-face meetings were essential for relationship building.

  Another Campus Director provided a suggestion for a different way that the Alliance can help increase institutional buy-in: "... photos from the Annual Meeting featuring members of my team… (my institution) can write a press release or a newsletter featuring our team to show that we are an important partner. … for little guys like us it matters."

- **Leadership Team, Governing Board, and Institutions Should Continue to Find Ways to Leverage Resources and Identify Funding Sources.** A central premise of the LSAMP program is that institutions will leverage resources and work to identify funding sources to support activities and sustain efforts. External partners should be engaged to help build institutional capacity. The Governing Board and Leadership Team are especially critical for helping to establish key relationships that can guide fundraising (such as identifying or creating established protocols for soliciting funding from external partners) and enhance long-term engagement, sustainability, and institutionalization of Alliance programs and goals.

- **Continue to Develop Alliance-Wide Resources.** Many interviewees noted that a primary benefit of being in the Alliance is the leveraging of resources across the Alliance. Campus Directors were especially interested in a centralized source for student research opportunities and internships, access to mentors in industry, media templates, and a unified marketing strategy (for example, brochures). The O-Teams should continue to identify relevant research studies and expertise on their campuses that support their efforts and can guide the implementation of programming. These resources should be shared across the Alliance.

**Communication and Team-Building**

- **Continue to Provide Opportunities for Face-to-Face Meetings with Campus Directors and Leadership Team.** Campus Directors expressed the desire for continued face-to-face meetings with other Campus Directors and with the Leadership Team. A couple of Campus Directors thought having the Leadership Team meet with each O-Team individually to provide direction and help them map out goals would also be extremely useful.

- **Redistribute Some Responsibilities to Relieve the Heavy Workload of the Alliance Office and Campus Directors.** Engage more campus professionals in the planning and implementation of the work across the Alliance. Leveraging resources and prioritizing goals will also help reduce the heavy workload.

- **Provide Additional Opportunities for Campus Directors to Learn What All O-Teams are doing.** Campus Directors desired more information about what other O-Teams are doing. This was especially important for Campus Directors who are working on initiatives but are not on the corresponding O-Team.
• **Ensure Smaller and More Geographically Isolated Institutions are Equal Partners and Provide Opportunities for Similar Institutions to Meet as Subgroups, as Desired.** Some suggestions from Campus Directors included: rotating the location of meetings when appropriate, recognizing the diversity of needs across institutions, and providing opportunities for institutions of similar size and/or structure (for example, community colleges, smaller institutions, etc.) to meet as a group to share challenges, best practices, and strategies.

**Programming**

• **Increase Attention to Student-Based and Community Recruitment.** Recruitment was mentioned as one of the biggest challenges and is also essential for sufficiently increasing the number of students in the pipeline to meet the program goal of doubling the number of students earning STEM degrees. It will take time for students to move through the pipeline, thus emphasizing the need for recruitment activities to be ramped to full speed as quickly as possible. Given that institutions are understandably proprietary about their recruiting methods, the Alliance should focus on the types of recruiting efforts that are broad in scope and that encourage under-represented minority students to consider STEM fields and to enter IINSPRE institutions as a collective (noting the benefits of being a student at an Alliance institution).

• **Encourage Each Institution to Use the Baseline Data to Strategically Guide their Programming Efforts.** Institutions should use the baseline data to gauge which programming and activities will best meet their particular challenges and opportunities for increasing the recruitment, retention, and graduation of under-represented minority STEM students. For example, data may suggest that recruitment is a bigger challenge than retention or vice versa and programs can use this information to assess which activities are likely to be most effective. Additional institution-level data may also need to be collected.

**Evaluation**

• **Facilitate the Completion of the O-Team Logic Models/Forms.** The Objective Teams have made progress towards the completion of their Logic Models and some have worked toward completing the O-Team form (recently distributed to prepare Campus Directors for an upcoming Assessment and Evaluation meeting in April). These should be finalized as soon as possible to allow Campus Directors to align efforts with the models.

• **Continued Attention to Evaluation Efforts, Including Periodically Reviewing Evaluation Priorities.** Evaluation priorities for the upcoming grant year should be established and metrics identified. Evaluators should continue to work with each other and with the Alliance Leadership Team to review priority evaluation tasks, assess ongoing evaluation, and periodically re-assess evaluation goals, metrics, and priorities.

### VII. IMPACTS

#### A. Impact on STEM Disciplines

As described in the activities and results sections, the STEM pathway through different types of institutions is being influenced through IINSPRE-LSAMP recruiting, bridge programs, pedagogy development, research training, faculty networking, and workforce development. Awareness of and participation in IINSPRE-LSAMP is beginning to influence each campus community in a more meaningful way. Faculty and staff are gaining a greater appreciation of what IINSPRE-LSAMP has to offer and the benefits to broaden participation of groups that we have not traditionally served.

#### B. Impact on Other Disciplines

There is extensive collaboration between STEM and education communities on this project. IINSPRE-LSAMP activities such as bridge programs and mentor training often involve both STEM and non-STEM
participants. Focused programming for STEM participants may improve the training of non-STEM participants.

C. Impact on Human Resources Development

Development of human resources is at the heart of IINSPIRE-LSAMP, as with all NSF LSAMP programs. The IINSPIRE-LSAMP objectives are focused on increasing the success of URM STEM students, which will ultimately grow and strengthen the STEM workforce. The Training and Professional Development section of the report summarizes the impact on various groups.

Two PhD students in the School of Education are supporting the evaluation team through their capstone projects. Allison Olsen's capstone project is addressing community college data management. Anne Howsare Boyen, Associate Provost at DMACC Urban Campus, is implementing APEX-E evaluation. Through their work, they are not only contributing to the project but also advancing their knowledge and expertise towards their degree completion.

D. Impact on Institutional Resources that Form Infrastructure

The synergistic partnerships within institutions, across the alliance, and with external partners will advance institutional level efforts in support of project goals.

Through collaboration with IINSPIRE-LSAMP, established programs including staff and institutional resources are building infrastructure and capacity to increase the number of URM graduates in STEM. Recruitment and retention programs on alliance campuses are expected to be strengthened. Examples of program collaboration are evident in the project activities and outcomes described in this report.

E. Impact on Information Resources that Form Infrastructure

The program materials, assessment tools and aggregated data assessment and analysis across the alliance will serve as powerful information resources to support faculty, students, and evidence-based practices.

Institutions whose students do not designate STEM majors are implementing appropriate coding and tracking mechanisms to identify potential URM STEM students and support WebAMP reporting.

F. Impact on Society beyond Science and Technology

Given the regional concentration of the alliance and demographic trends, the longer term outcomes of IINSPIRE-LSAMP are expected to positively impact workforce quality, communities, and the economy in the region.

Just as teams achieve greater results than individuals, the alliance of sixteen institutions across three states and involving diverse types of institutions brings together people, resource and capabilities with the potential to tackle new and complex projects. New proposals, research and innovations may result from the relationships within the alliance.

VIII. PRODUCTS

A. Publications


The text appears to be a continuation of the previous content, discussing various presentations, websites, and publications related to the IINSPIRE-LSAMP program. It includes details about presentations at conferences, workshops, and other events. The text is formatted in a structured manner, with headings and paragraphs, making it easy to follow and understand. It appears to be a continuation of the content from the previous page, discussing various presentations, websites, and publications related to the IINSPIRE-LSAMP program. The text is formatted in a structured manner, with headings and paragraphs, making it easy to follow and understand. It appears to be a continuation of the content from the previous page.
DMACC Science, Technology, Engineering, and Math (STEM) Changing the World:  
https://go.dmacc.edu/stem/Pages/welcome.aspx

Wartburg College IINSPIRE @Wartburg website:  
http://www.wartburg.edu/about/lsamp.aspx

D. Online Communities

IINSPIRE-LSAMP Facebook  
https://www.facebook.com/groups/125384004338213/

IINSPIRE-LSAMP @ IINSPIRE _LSAMP Twitter  
https://twitter.com/IINSPIRE_LSAMP

IINSPIRE-LSAMP Sharepoint  
https://www.cypoint.iastate.edu/group/IINSPIRE-LSAMP/SitePages/Home.aspx

SERC at Carelton College IINSPIRE-LSAMP Collaborative Network  
http://serc.carleton.edu/lsamp/index.html
# APPENDIX I: Alliance Campus Team Members

<table>
<thead>
<tr>
<th>Institution</th>
<th>Governing Board Member</th>
<th>Campus Team Members</th>
<th>Student Assistants</th>
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<tbody>
<tr>
<td>Augustana College</td>
<td></td>
<td>Margaret Farrar, Associate Dean of the College</td>
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<tr>
<td><strong>Campus Director, Lori Scott</strong></td>
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<td>Sue Standley, Director of Financial Assistance</td>
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<td></td>
<td></td>
<td>Patrick Crawford, Professor of Chemistry</td>
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<td>Kevin Geedey, Professor of Biology</td>
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<td>Dane Rowley, Director of Admissions</td>
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<td>Michael Schroeder, Professor of Education</td>
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<td>Pam Trotter, Professor of Chemistry</td>
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<td>Des Moines Area Community College</td>
<td>Kim Linduska, Vice President and Provost</td>
<td>Deb Koua, Director of Grants</td>
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<td><strong>Campus Director, Karl Hensen</strong></td>
<td></td>
<td>Des Moines Area Community College</td>
<td>Nancy Woods, Instructor, Physics and Mathematics</td>
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<td>Doane College</td>
<td>John M. Burney, Vice President for Academic Affairs</td>
<td>Tessa Durham Brooks, Bridge Program Volunteer/Assistant Professor of Biology</td>
<td>Marie Rose Donnelly, Senior, Biology</td>
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<td><strong>Campus Director, Chris Wentworth</strong></td>
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<td>Peggy Hart, Advisory Panel/Associate Professor of Mathematics</td>
<td>Muizj Ghani, Junior, Biology</td>
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<td>Andrea Holmes, Faculty Mentor/Associate Professor of Chemistry</td>
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<td>Wilma Jackson, Director of Multicultural Support Services</td>
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<tr>
<td>Eastern Iowa Community College District</td>
<td>Ellen Kabat Lensch, Executive Director of Resource Development and Innovation, Executive Director of ATEEC</td>
<td>Angela Ghrist, Biology Instructor</td>
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<tr>
<td>Campus Director, Brian Ritter</td>
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<td>Victoria Green, LSAMP Research Coordinator</td>
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<td>Mik Holgersson, Research Consultant/Advisor</td>
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<tr>
<td>Grinnell College</td>
<td>Jim Swartz, Dack Professor of Chemistry, Director of the Center for Science in the Liberal Arts</td>
<td>Alice Nadeau, Grinnell Science Project/Intern</td>
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<td>Campus Director, Jim Swartz</td>
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<td>Hawkeye Community College</td>
<td>Jane Bradley, Vice President for Academic Affairs</td>
<td>Keanna Levy, Admissions Recruiter</td>
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<td>Campus Director, Cynthia Bottrell</td>
<td></td>
<td>Cynthia Boyd, Instructor of Natural Science</td>
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<td>David Mercer, Instructor of Natural Science</td>
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<td></td>
<td></td>
<td>Karen Ernst Hawkeye, Instructor of Natural Science</td>
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Iowa State University
Campus Director,
Derrick Rollins

Jonathan Wickert,
Senior Vice President and Provost

Lequetia Ancar,
Assistant Director of Student Services
Multicultural Liaison Officer for the
College of Engineering

Krishna Athreya,
Program Coordinator for the Center for
Biorenewable Chemicals

Laura Centeno Diaz, Program
Coordinator for Chemical and
Biological Engineering (fmr.)

Theresa Cooper, Assistant Dean for
Diversity of the College of Agriculture
and Life Sciences

Aurelio Curbelo,
Multicultural Liaison Officer for the
College of Agriculture and Life Sciences

Luiza Dreasher,
Multicultural Liaison Officer for the
College of Liberal Arts and Sciences

Mary Jo Gonzales, Associate Dean of
Students (fmr.)

Thelma Harding,
Program Coordinator for the Graduate
College

Connie Hargrave, Associate Professor of
Curriculum and Instruction

Leslie Hogben,
Professor of Mathematics

Japannah Kellogg, Director of Student
Support Services

Michael Lazere,
Program Coordinator for Iowa NSF-
EPSCoR Flare Institute (fmr.)

Patricia Leigh, Associate Professor of
Curriculum and Instruction

Korey Kollasch,
Master's Candidate, School of Education

Allison Olsen,
PhD Candidate
School of Education

Anne Howsare Boyen,
PhD Candidate
School of Education

Zoe Eagle,
Senior, Mathematics

Adrienne Fight,
Senior, Community and Regional
Planning

Kayla Greiner,
Junior, Agriculture and Life Science
Education

Steven Johnson,
Senior, Industrial Engineering

Christina Ling,
Senior, Management Information
Systems

Emy Marroquin,
Sophomore, Industrial Technology

Andrew Mushel,
Sophomore, Technical Communication

Marlie Quintero,
Senior, Chemical Engineering

Nyle Sutton,
Senior, Computer Science
<table>
<thead>
<tr>
<th>Iowa Valley Community College District</th>
<th>Christopher Russell, Dean of Students and Academic Affairs</th>
<th>Matthew Bandstra, Anatomy, Physiology and Biology Faculty</th>
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<tr>
<td>Campus Director, Linda Barnes</td>
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<td>Jason Poock, Chemistry Faculty</td>
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<td>Sally Wilson, Biology Faculty</td>
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<tr>
<td>Kirkwood Community College</td>
<td>Bill Lamb, Vice President for Academic Affairs</td>
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| Little Priest Tribal College | Brigid Quinn, *Academic Dean* | Jessie Antonellis, *Developmental Math Instructor*  
|                            |                             | Terri Greenleaf, *Science Camp Instructor, Walthill Public School*  
|                            |                             | Paula Low, *Science Camp Instructor, Walthill Public School*  
|                            |                             | Deanne Urbanec, *Teacher Assistant, Special Education*  
|                            |                             | Janyce Woodard, *Environmental Science Instructor*  
| Luther College             | Kevin Kraus, *Vice President for Academic Affairs* | Scott Carlson, *Associate Professor of Biology*  
|                            |                             | Mark Eichinger, *Associate Professor of Biology*  
|                            |                             | Derek Hartl, *Director of Admissions*  
|                            |                             | Michael Johnson, *Assistant Professor of Mathematics*  
|                            |                             | Keith Lesmeister, *Coordinator of Diversity Recruitment*  
|                            |                             | James Perez, *Associate Professor of Physics*  
|                            |                             | Olga Rinco, *Associate Professor of Chemistry*  
|                            |                             | Terry Sparkes, *Associate Dean, Director of Curriculum Development and College Honors, Associate Professor of Religion*  
|                            |                             | Jeffrey Wilkerson, *Associate Dean, Director of Faculty Development, Professor of Physics*  

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<tr>
<th>Nebraska Wesleyan University</th>
<th>Judy Muyskens, Chief Academic Officer and Provost</th>
<th>Melissa Edrmann, Associate Professor of Mathematics and Computer Science</th>
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<tbody>
<tr>
<td>Campus Director, Candice Howell</td>
<td>Nathanael Fackler, Associate Professor of Chemistry and Chair of Department</td>
<td>Gary W. Gerald II, Assistant Professor of Biology</td>
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<td></td>
<td>Angela McKinney, Associate Professor of Biology</td>
<td>Lisette Torres, Adjunct Professor of Biology, LSAMP Intern</td>
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<td>Lisette Torres, Adjunct Professor of Biology</td>
<td>Nancy Wehrbein, Director of Sponsored Programs</td>
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<tr>
<th>University of Iowa</th>
<th>P. Barry Butler, Executive Vice President and Provost</th>
<th>Lori Adams, Adjunct Assistant Professor for Biology, Co-Director of Iowa Biosciences Advantage Program</th>
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</thead>
<tbody>
<tr>
<td>Campus Director, Richard Hichwa</td>
<td>Raul Curto, Professor of Mathematics, Director of Diversity for College of Liberal Arts and Sciences</td>
<td>Andrew Freeman, Center for Diversity and Enrichment, Outreach/Assessment Specialist</td>
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<td></td>
<td>Marta Gomez, Research Support Manager</td>
<td>Robert Kirby, Director of the Iowa Center for Research by Undergraduates</td>
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<td></td>
<td>Tonya Peeples, Professor of Chemical and Biochemical Engineering, Director of the Ethnic Inclusion Effort for Iowa Engineering</td>
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<tr>
<td>University of Northern Iowa</td>
<td>Gloria Gibson, Executive Vice President and Provost</td>
<td>Kavita Dhanwada, Associate Dean of the College of Humanities, Arts and Science, Associate Professor of Biology</td>
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<td>Campus Director, Doug Mupasiri</td>
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<td>James Hewitt, Instructor of Natural Sciences</td>
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<td>Latricia Hylton, Math Coordinator of the Academic Learning Center</td>
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<td>Wilfred Johnson, Director of UNI Classic Upward Bound</td>
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<td>Christie Kangas, Director of Admissions</td>
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<td>Syed Kirmani, Professor of Mathematics</td>
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<td></td>
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<td>Inez Murtha, Director of the Academic Learning Center</td>
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<td>Kristin Woods, Coordinator of New Student Programs</td>
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<tr>
<td>Upper Iowa University</td>
<td>Rich Patrick, Acting President</td>
<td>Adriel Hilton, Assistant to the President</td>
</tr>
<tr>
<td>Campus Director, Kata McCarville</td>
<td>B.J. Whitesell, Interim Dean of Faculty</td>
<td>Jennifer Stoffel, Assistant Professor of Biology</td>
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<td></td>
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<td>Joe Alanis, Senior, Mathematics</td>
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<tr>
<td>Wartburg College</td>
<td>Mark Biermann, Vice President for Academic Affairs</td>
<td>Joy Becker, Associate Professor of Mathematics</td>
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<td>Campus Director, LeAnn Faidley</td>
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<td>Mariah Birgen, Professor of Mathematics</td>
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<td>Samatha Larimer Bousquet, Assistant Professor of Biology</td>
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<td>Vicki Edelnant, Pathways Center Director</td>
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<td>Christopher Knudson, Director of Creative Strategy, Marketing and Communication</td>
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<td>Krystal Madlock, Director of Student Diversity Programs</td>
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<td>J. Keith McClung, Professor of Biology</td>
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<td>Eric Merten, Assistant Professor of Biology</td>
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<td>Jennifer Pothast, Assistant Professor of Mathematics</td>
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<td>Abbie Raum, Student Employment Coordinator</td>
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<tr>
<td>Chealsey Sensor, Administrative Assistant, Enrollment Management</td>
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### APPENDIX II: Other Partners within Alliance Institutions

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Type of Program</th>
<th>Program Leader(s)</th>
<th>Alliance Institution</th>
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<tbody>
<tr>
<td>APEX</td>
<td>Bridge</td>
<td>Ebony Williams, Program Coordinator</td>
<td>Iowa State University</td>
</tr>
<tr>
<td><strong>The Academic Program for EXcellence (APEX)</strong> is an eight-week academic summer program designed for incoming multicultural freshmen. APEX helps 40-50 multicultural students transition to Iowa State University during the summer prior to their first semester. The IINSPIRE-LSAMP Alliance collaborated with APEX to provide common programming to students through workshops and industry visits. <a href="http://www.dso.iastate.edu/msa/learningcommunities/apex-faq.html">www.dso.iastate.edu/msa/learningcommunities/apex-faq.html</a></td>
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<tr>
<td>APEX E</td>
<td>Bridge</td>
<td>Lequetia Ancar, Program Coordinator</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>**APEX E is a unique opportunity within APEX for freshmen multicultural students interested in pursuing a degree in engineering. As a part of the APEX eight-week summer program, APEX E provided participants with additional academic, professional, and social development experiences to aid in their preparation in becoming an engineering student. The IINSPIRE-LSAMP Alliance collaborated with APEX E to provide common programming to students through workshops and industry visits. <a href="http://www.dso.iastate.edu/msa/learningcommunities/apex-faq.html">www.dso.iastate.edu/msa/learningcommunities/apex-faq.html</a></td>
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<tr>
<td>Howard Hughes Medical Institute (HHMI) Project at Grinnell College</td>
<td>REU</td>
<td>Leslie Gregg-Jolly, Program Director</td>
<td>Grinnell College</td>
</tr>
<tr>
<td><strong>Grinnell College is currently a HHMI grantee, and that grant has some clear synergy with LSAMP. The HHMI grant supports about 10 summer research students, and includes substantial curricular and pedagogical development support. Previous HHMI support has focused upon improving introductory and interdisciplinary courses. Current support is focused upon the second year of courses, which appear to be somewhat of a barrier to students, particularly domestic students of color.</strong></td>
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<tr>
<td>Howard Hughes Medical Institute (HHMI) Project at Iowa State University</td>
<td>REU</td>
<td>Craig Ogilvie, HHMI-ISU Director</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>**The goal of Iowa State’s HHMI Project initiatives is to attract, retain and help students succeed in science. Students in their first two years in college will experience the excitement of discovery, the joy of asking questions about how the universe works, and the satisfaction that they can use their scientific skills to help make a difference in this world. Through one of its initiatives, the HHMI Project is developing a pathway for community college students to visit Iowa State and work in faculty research labs during the summer following their freshman year. HHMI partnered with IINSPIRE-LSAMP community colleges to identify a cohort of students to participate in the 2013 summer program. More information: <a href="http://pws2.ait.iastate.edu/wiki/display/HHMI/Together+Energizing+Student+Science">http://pws2.ait.iastate.edu/wiki/display/HHMI/Together+Energizing+Student+Science</a>, <a href="http://www.spisu.iastate.edu/programs/view/listname/Undergraduate/id/30">http://www.spisu.iastate.edu/programs/view/listname/Undergraduate/id/30</a></td>
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<tr>
<td>Iowa Experimental Program to Stimulate Competitive Research (Iowa EPSCoR)</td>
<td>REU</td>
<td>Chitra Rajan, Co-Project Director of Iowa EPSCoR</td>
<td>Iowa State University</td>
</tr>
<tr>
<td><strong>In order to achieve its mission, Iowa EPSCoR focuses on increasing active participation of underrepresented undergraduate students in research related to renewable energy and energy efficiency across all three of Iowa’s Regents institutions. The IINSPIRE-LSAMP Alliance is collaborating with Iowa EPSCoR to engage URM STEM students in research opportunities and community colleges in developing the workforce to advance renewable energy technologies. More information: <a href="http://www.iowaepskor.com/">www.iowaepskor.com/</a></strong></td>
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| Biological Materials and Processes Research Experience for Undergraduates (BioMAP) | REU | Monica Lamm  
Associate Professor, Chemical and Biological Engineering | Iowa State University |
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<tr>
<td>The program creates novel research experiences for undergraduate students from around the country in the areas of biological materials and processes. Students are active members of interdisciplinary groups and interact with faculty, post-doctoral researchers, graduate students and industry. The IINSPIRE-LSAMP Alliance collaborates with the BioMAP to identify and implement common programming and assist with student recruitment through leveraging resources between programs. More information: <a href="http://www.cbe.iastate.edu/research/undergraduate-research/">http://www.cbe.iastate.edu/research/undergraduate-research/</a></td>
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| ISU Math Research Experience for Undergraduates (ISU Math REU) | REU | Leslie Hogben  
Professor, Mathematics | Iowa State University |
| The ISU Math REU provides students with experience working on research projects in a variety of mathematical areas, such as linear algebra, dynamical systems, graph theory, numerical analysis, and mathematical biology. The IINSPIRE-LSAMP Alliance collaborates with the BioMAP to identify and implement common programming and assist with student recruitment through leveraging resources between programs. More information: [http://orion.math.iastate.edu/reu/homepage.html](http://orion.math.iastate.edu/reu/homepage.html) | |
| Microscale Sensing Actuation and Imaging Program (MosAIc) | REU | Sriram Sundararajan  
Associate Professor  
Director of Undergraduate Education for the Department of Mechanical Engineering | Iowa State University |
| MosAIc is a summer research experience for undergraduate program that creates novel research experiences for undergraduate students in the areas of design and manufacturing of micro/nanoscale sensors, actuators, and smart materials, as well as advanced imaging and diagnostic systems. Students are active members of interdisciplinary groups that interact with faculty, post-docs, graduate students, and industry. The students will participate in cohort experiences such as short courses, joint seminars/meetings, workshops, tours of research facilities, and field trips. The IINSPIRE-LSAMP Alliance collaborates with the BioMAP to identify and implement common programming and assist with student recruitment through leveraging resources between programs. More information: [http://www.me.iastate.edu/mosaic/](http://www.me.iastate.edu/mosaic/) | |
| Nahant Marsh Education Center | REU | Brian Ritter  
Facilitator and Program Director | Eastern Iowa Community College District |
| The mission of Nahant Marsh Education Center is to preserve and enhance the ecological integrity of the marsh and to foster wonder, appreciation, interaction, and stewardship of the natural world through education. Nahant Marsh Education Center through Eastern Iowa Community Colleges, offers a wide variety of environmental education programming for school groups, scout groups, homeschools, early learners, church groups, colleges, and senior groups. | |
APPENDIX III: IINSPIRE-LSAMP Stakeholders Brochure

The Iowa Illinois Nebraska STEM Partnership for Innovation in Research and Education (IINSPIRE) is an NSF LSAMP alliance among sixteen two-year and four-year colleges and universities working together to broaden the participation of underrepresented minorities in science, technology, engineering, and mathematics (STEM) education in the Midwest. The IINSPIRE Alliance colleges and universities collaborate to support students, increase their success, and provide students in the alliance with academic, research, training and networking opportunities.

What is LSAMP?
The Louis Stokes Alliance for Minority Participation (LSAMP) Program is a National Science Foundation program designed to substantially increase the quantity and quality of students, especially minorities, in science, technology, engineering and mathematics (STEM). The NSF-LSAMP program has a long-term goal of increasing the number of underrepresented students who complete baccalaureate degrees in STEM fields and enter STEM professions.

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Equal Opportunity/Affirmative Action Employer. Information is also available in alternate formats. For assistance, contact the Office of Equal Opportunity and Affirmative Action at 515-294-8567.

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INSPIRE Mission

The INSPIRE LSAMP mission is to develop a model for Midwest colleges and universities to attract the states’ growing understudied and underrepresented minority (URM) population into STEM fields and attract students from other regions to STEM education opportunities in Iowa, Illinois, and Nebraska. This will be accomplished through the following strategies:

- Grow the pool of college-ready, STEM-prepared URM high school students.
- Increase the number of URM students who choose STEM at each INSPIRE Alliance institution.
- Improve retention at all INSPIRE Alliance institutions.

INSPIRE LSAMP Benefits for Students

The program is open to undergraduate students who are enrolled or accepted for enrollment at any of the INSPIRE LSAMP Alliance institutions and who meet the following requirements:

- United States citizen or permanent resident.
- Enrolled in a college GPA of 2.5 or a high school GPA of 3.7.
- Major in a science, technology, engineering, or mathematics (STEM) discipline.

Students benefit by being a member of the INSPIRE student network, as they participate by:

- Joining a community of peers, mentors, faculty, and administrators who will help them excel at their institution and throughout the alliance.
- Making connections with some of the alliance’s most respected faculty.
- Participating in special academic success programs at STEM areas.
- Participating in research opportunities with faculty at any of the alliance institutions.
- Receiving information about upcoming events and summer and academic year research opportunities.
- Gaining access to student services, such as mentoring, career development, etc.
- Preventing research at the site of conference poster competition.

More information about participation is available at the program website, www.inspirelsamp.iastate.edu, or by contacting the INSPIRE LSAMP office.

INSPIRE Alliance Objectives

- Inform, reengage, and retain students in STEM, mathematics, and engineering among BIPOC and rural students.
- Increase their awareness about STEM career opportunities.
- Engage current alliance students having interest and potential in STEM and increase their awareness about future STEM majors and careers.
- Collaborate with community-based recruiting models within the alliance.
- Leverage and create initiatives that assist students in their transition from high school to college and from community colleges to bachelor granting institutions.
- Facilitate faculty collaboration across the alliance to share inclusive pedagogy and mentoring practices that lead to greater student success.
- Connect and support students with mentorship opportunities.

INSPIRE Alliance Institutions

- A: Augustana College
- B: Des Moines Area Community College
- C: Drake University
- D: Eastern Iowa Community College District
- E: General College
- F: Hawkeye Community College
- G: Iowa State University
- H: Iowa Western Community College District
- I: Kirkwood Community College
- J: Lakeshore Technical College
- K: Luther College
- L: Nebraska Wesleyan University
- M: University of Iowa
- N: University of Northern Iowa
- O: Upper Iowa University
- P: Wartburg College

How to get involved

To learn more about becoming involved with the INSPIRE LSAMP alliance, visit our website, www.inspirelsamp.iastate.edu, contact the Alliance Office at (515) 294-6151 or email us at inspire@iastate.edu.