

[My Desktop](#)
[Prepare & Submit Proposals](#)
[Prepare and Submit Proposals](#)
[\(Limited proposal types\)](#)
[Demo Site: Prepare Proposals](#)
[Prepare Proposals in FastLane](#)
[Proposal Status](#)
[Awards & Reporting](#)
[Notifications & Requests](#)
[Project Reports](#)
[Award Functions](#)
[Manage Financials](#)
[Program Income Reporting](#)
[Grantee Cash Management Section Contacts](#)
[Administration](#)
[Look Up NSF ID](#)

Preview of Award 1618408 - Annual Project Report

[Cover](#) |
[Accomplishments](#) |
[Products](#) |
[Participants/Organizations](#) |
[Impacts](#) |
[Changes/Problems](#)

Cover

Federal Agency and Organization Element to Which Report is Submitted:	4900
Federal Grant or Other Identifying Number Assigned by Agency:	1618408
Project Title:	Indiana STEM LSAMP
PD/PI Name:	Nasser M Paydar, Principal Investigator Stephen P Hundley, Co-Principal Investigator Patricia L Lang, Co-Principal Investigator Kim S Nguyen, Co-Principal Investigator
Recipient Organization:	Indiana University
Project/Grant Period:	12/15/2016 - 09/30/2023
Reporting Period:	12/01/2020 - 11/30/2021
Submitting Official (if other than PD\PI):	N/A
Submission Date:	N/A
Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions)	N/A

Accomplishments

What are the major goals of the project?

IN LSAMP had a successful year following the COVID outbreak. Across the alliance, there was an increase in underrepresented STEM student enrollment from 2537 to 2883, about 13.5% increase compared to last reporting period. Additionally, there was an increase in the number of STEM degrees earned, 385 from 361 (about 7% increase). Our direct number of participants increased as well to 145 from 124. This is truly an indication of the culmination of our undergraduate research experience, peer mentoring efforts, successful coaching, community building, and professional development activities.

Goals identified to achieve this target:

Implement high-impact practices (HIPs) to increase the first-year, full-time URM retention rate by 2% per year and to strengthen disciplinary engagement. Identified HIPs: mathematical placement and online review support, summer bridge programs, freshman learning communities, peer mentoring programs, degree mapping, faculty-mentored research, and annual research conferences.

Facilitate seamless transitions into STEM undergraduate and graduate degree programs through increased program activities for community college transfers, and improving undergraduate disciplinary connections and preparation for STEM graduate programs.

Institute mechanisms for project communication and information dissemination through: 1) interactive website for communication, information dissemination, online resources, and project impact tracking, 2) quarterly alliance wide professional development opportunities for project participants, faculty, administrators, and staff, and 3) dissemination of results through presentations at the annual Assessment Institute in Indianapolis and other STEM education conferences during the award period.

* What was accomplished under these goals and objectives (you must provide information for at least one of the 4 categories below)?

Major Activities: IN LSAMP has hosted 68 activities across the six campuses and through the Alliance office during the reporting period as of October 15, 2021. These different activities have focused on High Impact Practices (HIPs) identified in the award: Faculty-mentored undergraduate research (13 activities), peer mentoring (7), success coaching (11), community building (5), professional development (24), transfer student support (1), and collaborative infrastructure (7). Additional events, including recruitment events and transfer events co-hosted by the ITCC LSAMP staff and IUPUI Center for Transfer and Adult Services are being planned for fall 2021.

Goal 1: Implement High-Impact Practices

Mathematical placement/Online review support

The One Stop STEM tutoring at IUN has been transitioned to online since March 25, 2020 due to COVID-19 pandemic and remains online through Fall 2021. Approximately 50 students have been supported by the grant as STEM students in the reporting period.

Ball State held its Power into Math Program this summer and financially supported 2 underrepresented STEM students in the program to improve their math placement scores.

Summer Bridge Program

Ball State supported 3 underrepresented STEM students to the bridge program, EXCEL, a program aimed to give social support and orient underrepresented and disadvantaged students to campus resources.

Freshman Learning Communities

IUB supported research learning community for 14 INLSAMP research scholars this summer. A new STEM dorm opened at Ball State University, and the INLSAMP coordinators have made connections with resident hall administrators to see how they can utilize both their URM peer mentors and tutors.

Peer Mentoring

Peer mentoring is defined somewhat differently at each of the institutions in the alliance. At BSU, five URM STEM peer mentors worked with 20 first-year URM STEM students in the Career Pathways Program (CPP), an INLSAMP program which aims to connect freshmen with experienced STEM URMs. The peer mentoring was overseen by two graduate assistants in the chemistry master's program as well as the faculty coordinators. A wide variety of seminars and workshops were conducted with topics ranging from how to make a daily habit out of archiving your data to a Lego-based workshop on strength assessment and team-building.

In fall 2021, IUSB plans to hire five tutors; one in biology, two in chemistry, and two in math. In addition, a peer mentor is being sought. IUSB LSAMP is partnering with their institution's Academic Center for Excellence to train LSAMP scholars who are hired as tutors to be effective while they provide tutoring services to URM students in the courses they are tutoring. Ball State is partnering with their Learning Center to financially support 4 tutors who will provide services near the science classrooms. Tutors keep a record of the number of URM contacts. Using the collected data, the campuses plan to find ways to encourage more URM students to seek help should the number of URM student attendance at the tutoring sessions be lower than expected.

Also in fall 2021, IUPUI LSAMP will be supporting STEM tutoring in the subjects of math, chemistry, biology, and computer science in a residence hall with a STEM residential based learning community.

The LSAMP program at ITCC provides financial support to undergraduate learning assistants who work under ITCC faculty mentors. Learning Assistants serve as tutors and course or laboratory technician assistants for introductory courses that are offered at two different ITCC campuses. During this reporting period, ITCC learning assistant scholars served in General Biology, Introduction to Biotechnology, Introduction to Engineering and as laboratory technicians preparing lab cultures prior to science courses.

The objective of the IUN LSAMP STEM tutoring center is to offer free tutoring in 100 level STEM courses. Offering free tutoring to students helps them become familiar with the university and its settings, as well as allows students to make contacts within the STEM departments. In spring 2021, 11 IUN LSAMP students provided online tutoring via zoom in Chemistry, Biology, Physics, Computer Information Systems, and Geology. As of August 2021, approximately 50 students have benefited from tutoring during this period. This fall there are currently 6 tutors in this program.

Degree Mapping

Our alliance institutions, as well as all Indiana institutions of higher education, have required degree mapping. Our alliance coordinators reach out to scholars to ensure they are meeting with their advisor for course scheduling to remain on track. In spring 2021, all ITCC LSAMP scholars received one-on-one advising from LSAMP Program Director, Dr. Pappas. Also in spring 2021, Ball State held an advising night for their freshmen and mentors in the Career Pathways Program.

Faculty Mentored Research

In summer 2021, 52 research scholars (BSU-15, IUB-14, IUN-2, IUPUI-13, IUSB-8) were mentored by 40 faculty mentors. All but one of the faculty mentors were higher education institution faculty. Two of the IUPUI research scholars were ITCC students who completed research at the IUPUI campus in robotics and engineering. The summer research experience lasted 8-10 weeks and varied among the campuses, with summer orientations being conducted virtually. Each of the 2021 scholars will be submitting a poster proposal for the LSMRCE conference that is to be held virtually October 22-24, 2021. Campus specific summer research virtual symposia were also offered at BSU, IUB and IUPUI which yielded 27 presentations. IUSB offered an undergraduate research poster presentation event in October 2021 which yielded 7 presentations from summer 2021 IUSB LSAMP research scholars.

Some of the campuses reported that their scholars will continue to work with their faculty mentor during the academic year. At IUPUI for example, it is anticipated that these students will apply and receive funding to continue research from the Center for Research and Learning. One IUB student deferred summer research placement and will begin working in the lab fall 2021. Ball state will continue supporting 9 scholars in the fall 2021, and IUSB will continue with 5.

In anticipation of the BSU biology and chemistry departments moving to a new science building in summer 2021 (and consequently, fewer research hours available to students), BSU extended financial support to 18 part-time scholars in the spring 2021. IUPUI also had 2 research scholars working in the spring.

Annual Research Conference

IN LSAMP will collaborate with the Louis Stokes Midwest Regional Center of Excellence (LSMRCE) to offer the students and faculty the experiences of attending a national research conference in October 2021. Because of our unique partnership with LSMRCE and the shared interest associated with the LSAMP's 30th anniversary celebration, IN LSAMP will not offer our separate annual conference this year. Planning for the 2022 IN LSAMP conference will begin this fall.

Each of the IN LSAMP summer research scholars are required to submit an abstract for the poster session at LSMRCE 2021 conference October 22-24. Additionally, two campuses, IUPUI and IUB require their scholars to present research posters at institutional specific research symposia in accordance with their student contracts.

High School Ambassadors

IUSB hired two summer scholars to serve as high school ambassadors during the fall and spring semesters. High school student ambassadors visit local high schools to share their college experiences with students and answer any questions about the institution.

Due to the pandemic, the IUN LSAMP High School STEM camp was postponed until summer 2022. The objective of this camp is to bring URM juniors and seniors from local high schools to campus to conduct STEM related experiments. LSAMP scholars serve as workshop assistants during the event.

Specific Objectives:

Goal 2: Facilitate Seamless Transitions into STEM

Within the ITCC curriculum, a capstone course is required for eligible STEM majors. This course was designed to improve connections between undergraduates and guide the preparation for STEM graduate programs. Three of the ten scholars supported in 2020-2021 graduated from ITCC with their associates degrees and are now enrolled at IUPUI as transfer students majoring in STEM fields (Biomedical engineering, mechanical engineering, information security/cybersecurity). Among the nine scholars who were hired as Learning Assistants in 2020-21, one transferred to Purdue University in order to enter the chemical engineering program at this institution. In addition, one ITCC student secured employment with Eli Lilly in a position related to the scholar's academic area of interest in information technology.

This fall, ITCC LSAMP, in collaboration with the IUPUI Center for Transfer and Adult Students, will offer transfer workshops and other programming opportunities to support students in their transition to the four-year institution. The ITCC LSAMP director, in collaboration with his IUPUI counterpart, continues to provide student support services for IN LSAMP students as they transition to IUPUI.

Goal 3: Institute Mechanisms for project communication and information dissemination

The IN LSAMP website <https://inlsamp.org/> continues to provide current and prospective students as well as key stakeholders with IN LSAMP related reports, opportunities, trainings, and more.

At the campus level, ITCC LSAMP, for example, is promoted through the college's marketing department. The main campus website now contains links to the external LSAMP webpage and the program promotion was dissemination to campus faculty and staff in monthly email letters. The ITCC coordinator utilized his placement on the following ITCC councils to promote LSAMP:

- Black Faculty and Staff Council - recruit mentors for the LSAMP program.
- Central Indiana Staff Council - provide more exposure about the LSAMP program to key leaders at the college.
- African American Latinx Leadership Institute - market and promote the LSAMP program.

The campus director also presented to the following groups regarding LSAMP:

- McKenzie Center for Innovation and Technology (high school).
- Hendricks County Virtual College and Career Fair.
- High school students who attended the during the Annual ITCC Virtual Technology Day.

The ITCC coordinator continues to seek opportunities to work with schools to establish a pipeline of students entering ITCC and the LSAMP program. In that effort, LSAMP staff have partnered with the K12 (Robert King) and ITCC Admissions office to develop campus visits to ITCC, proposals for new agreements, dual credits, teacher on loan programs, and advice on curriculum design.

While the current IN LSAMP websites allow LinkedIn and e-portfolio hyperlinks to all alumni and scholar biographies that are presented on all campus websites, beginning June 2021, the Alliance has begun working with a contracted partner to re-design and uplift the six campus LSAMP websites to provide uniformity across the alliance, where possible. Main components of this re-design include reframing opportunities available to current and prospective students, restructuring the faculty mentor page to include student travel forms and faculty mentor profiles, and adding additional content to the student pages such as LinkedIn and CN ePortfolio links. The project is expected to conclude December 2021, with additional maintenance support from the partner provided through the end of the fiscal year. See attachment titled "Year 5 LinkedIn_eportfolio" for student CN ePortfolio links.

Significant Results:

Improved Project Management Produces Positive Program Impacts

Goodman Research Group, Inc. conducted three IN LSAMP impact surveys during the reporting period. A survey of Summer 2021 Research Scholars, an alumni survey, and a faculty mentor survey. In the Executive Summary of the IN LSAMP Year 5 Annual Evaluation Report, prepared by Colleen F. Manning, dated September 7, 2021, and attached as a Supporting File, Ms. Manning noted that IN LSAMP is having a positive impact on participating students. The senior graduation rate of direct participants continued to increase over the last reporting period and remained notably higher than the national LSAMP rate. The outcomes of the IN LSAMP alumni survey provide further evidence of the benefits of participation for students. A majority of IN LSAMP alums felt that the program had helped them earn their bachelor's degree in STEM, attend graduate school, and attain a post-college STEM related job. The faculty mentor survey revealed that the program is also having a positive impact on participating faculty and the institutions as the number of URM STEM degrees awarded across the Alliance has continued to trend upward.

Increased Participant Graduation and Graduate or Professional School Attendance

To date, 37 LSAMP scholars have graduated from IUB with 4 scholars in review to graduate Summer 2021. See the "Fall 2021 Graduate Program Acceptances" section below for details on graduate program acceptances across the alliance.

At BSU, six of the 14 undergraduate students who graduated during the reporting period (13 with STEM degrees) were admitted to a graduate or professional program at the time of graduation with two having been admitted into a BSU – Eli Lilly Cooperative Research Internship program. In addition, one Graduate Assistant graduated with a master's in chemistry during the reporting period.

One student from IUPUI LSAMP entered a MD/PhD program at the University of Rochester and two recent graduates are enrolled in master's programs during this reporting period. In 2019-20, 152 URM students received STEM degrees. Comparing to the baseline of 111 degrees in 2015-16, this reflects an increase of almost 40%. One IUPUI LSAMP scholar was listed as an author of a journal publication currently in the review process.

Four IUSB LSAMP students graduated this reporting period (one in fall and three in spring). Two of the alumni are attending graduate school, one is currently working in a science field, and the other is taking a gap year and planning to attend medical school next year.

IUN has seen a significant benefit of transitioning their tutoring opportunities into an online format. Students are still obtaining free tutoring online and have someone to speak to during these times of uncertainty tied to the pandemic. IUN also offers monthly LSAMP meetings which has increased awareness of LSAMP funding and research opportunities on campus.

During the reporting period, the number of ITCC students in 2020-2021 increased from eight to ten full-time URM students. The campus supported two summer research interns at IUPUI and one learning assistant in the biotechnology lab. Nine scholars attended a meeting with the IUPUI Center for Transfer and Adult Students to learn about the transfer process to the four-year university.

Fall 2021 Graduate Program Acceptances

IUB, 2021 BS Intelligent Systems Engineering, Jesus Badillo, admitted to the Intelligent Systems Engineering Accelerated MS program at IUB to start Fall 2021.

IUB, 2021 BS Neuroscience, Michael Lopez, admitted to the Epidemiology MPH program at IUB to start Fall 2021.

IUB, 2021 BS Intelligent Systems Engineering, Xandria McDowell, admitted to the Intelligent Systems Engineering Accelerated MS program at IUB to start Fall 2021.

IUB, 2021 BS Biology, Aumonique Page, admitted to the Biology MS program at IUPUI Spring 2021.

IUSB, 2021 BA Chemistry, Brianna Jones accepted to the **NSF Bridge to Doctorate** program at the University of South Florida to pursue a PhD in Chemistry.

IUSB, 2020 BS Chemistry, Humberto Chavarria, accepted to the Geological Sciences PhD program at University of Arizona.

IUPUI, 2021 BS Neuroscience and BS Chemistry, Laura Morales, Doctor of Osteopathic Medicine Marian University Indianapolis.

IUPUI, 2021 BSPH Epidemiology, Nora Gilliam, Translational Biomedical Science PhD program University of Rochester.

BSU, 2018 BS Chemistry and 2021 MA Chemistry, Cristina Preston, PhD student at Cornell University Fall 2021.

Alums Earned Graduate Degrees

IUB, 2018 BS Informatics, Jamon Gaines, awarded an Information Systems MS at IUB in Spring 2021.

BSU, 2018 BS Chemistry, Cristina Preston, awarded an MA in chemistry in 2021.

Honors/Awards/Recognition

Rebeca Mena, INLSAMP Research Scholar at BSU, finished her term as the sole student member of the BSU Board of Trustees for a two-year term (2019-2021).

An IUB scholar was accepted to attend Caltech's [FUTURE Ignited](#) program on October 2, 2021.

Scholar Conference Presentations

Our alliance spends time developing scholar's writing skills as part of the research process. This includes journal clubs, writing science abstract workshops, and faculty/mentor review of submitted abstracts. Scholars are encouraged to present their research findings beyond the summer research symposium at national conferences such as SACNAS, ERN, or ABRCMS. This preparation has resulted in 386 student presentations since the start of the award with 58 completed by October 15 of this reporting period and approximately 52 more planned for submission by the end of year five.

Faculty Mentor Training

To date, IN LSAMP has on-boarded 110 faculty mentors across six campuses: BSU (29), IUB (27), IUN (11), IUPUI (30), IUSB (11) and ITCC (2). Among the faculty mentors we recognize 24 Professors, 37 Associate Professors, 38 Assistant Professors, 5 Lecturers, and 1 Researcher, 1 Assistant Research Scientist, and 4 in other roles. In year five, the alliance provided online faculty mentor training for 18 new mentors.

Key outcomes or Other achievements:

Goodman Research Group, Inc. (GRG) prepared the IN LSAMP Year 5 Annual Evaluation Report, and a copy of the report is submitted in the Supporting Files section. The report highlighted three key outcomes and the associating impacts of the IN LSAMP achievements.

1. The IN LSAMP institutions and URM students: Because of the campus leadership, strengthening by LSAMP financial support, full-time enrollment of URM students in the STEM disciplines has continued to trend upward, particularly among first-year students. The number of URM STEM degrees awarded across the Alliance has also continued to increase, and the senior graduation rate of IN LSAMP direct participants continued to rise notably above the national LSAMP rate.
2. The IN LSAMP Alums have already pursued graduate or professional education in STEM or employed in jobs related to their STEM degrees. Almost all the alums responded to the survey reported that they plan to remain in the STEM workforce. A majority of IN LSAMP alums felt that the program had helped them earned their bachelor's degrees in STEM, attend graduate schools, and attain post-college jobs in the fields applicable to their studies.
3. Faculty mentors of IN LSAMP value their relationships with their students and with other mentors. The faculty survey asked whether they would recommend becoming an IN LSAMP Faculty Mentor to another faculty member at their institution, 67% of the surveyed faculty said yes and they would do so enthusiastically.

*** What opportunities for training and professional development has the project provided?**

IN LSAMP Annual Retreat. Hosted virtually by the leadership team and project manager, this one-day virtual training event occurred on July 23, 2021. Components of the retreat included:

1. Alliance leadership update from the Alliance Director focusing on a year of setbacks due to the 2020-2021 COVID-19 pandemic and plan for future acceleration.
2. Year 5 evaluation report, focusing on data including alumni survey results, presented by Goodman Research Group external evaluator.
3. Campus presentations and best-practices discussion hour.
4. Strategic Planning and Operational Improvement breakout sessions. One session included a professional development presentation regarding CN ePortfolios and review of the 2021 campus website project overseen by the alliance.
5. Overview of additional logistics and updates from alliance.
6. Open discussion.

IN LSAMP Coordinators Meetings. The Project Manager conducted one-hour meetings with campus Coordinators via zoom on 1/14/21, 7/15/21, 8/12/21, and 9/16/21 with future meetings scheduled for 11/11/21. Topics of discussion included NSF, alliance, and campus updates, general project management, as well as LSMRCE and other conference presentations. During the September meeting, the IU Office of Research Compliance provided training to Coordinators on CITI Responsible Conduct of Research (RCR) certificate compliance.

IN LSAMP Leadership Meetings. The Alliance Leadership Team, consisting of the three Co-PIs Hundley, Lang and Nguyen, met monthly to address our operational challenges, especially during this reporting period. Ms. Michelle Quirke resigned in January 2021 and the leadership team met frequently during the project manager search. Ms. Amber Huff was appointed the Alliance Project Manager and has become a participant in these monthly leadership meetings since May 2021.

Responsible Conduct of Research. Every student receives support from INLSAMP personnel during orientation to complete the CITI RCR certificate. Each new faculty mentor receives guidance on completion during training.

Professional Development for Students. 2021 research scholars were encouraged to attend the summer and fall LSMRCE student speaker series webinars. Webinar topics included: racism in STEM, imposter syndrome, mentor vs sponsor, work-life balance, a graduate school panel, and more. ITCC LSAMP scholars were asked by their coordinator to write a reflection after attending a session.

Eight IN LSAMP students participated in the Trek10 AWS launch program during the summer 2021 semester. Students received hands-on instruction, led by an AWS certified SysOps Administrator and Solutions Architect, to prepare for the AWS solutions architect – associate exam in August. BSU reported that this partnership with Trek10 has aided in expanding BSU IN LSAMP participation from the computer science and math departments.

*** Have the results been disseminated to communities of interest? If so, please provide details.**

The results of the INLSAMP project have been disseminated through participation in conferences panel discussions, collaborative projects with Alliance partners, and community meetings with potential pipeline programs.

IN LSAMP website. The inlsamp.org website continues to serve as a hosting site for reports, faculty mentor training, campus coordinator resources, events, and links to each of the six partner sites.

IN LSAMP campus websites. Each of the six campuses has an individual inlsamp.org/xxx website which include: scholar applications, list of acceptable majors, overview of campus LSAMP opportunities, successful student stories, scholar profiles, and events. In our effort to streamline the websearch navigation at the campus websites, beginning June 2021, the alliance has begun work with a contracted partner to re-design and uplift the six campus LSAMP websites to provide uniformity across the alliance, where possible.

Email campaigns. The alliance continues to share internship, bridge to doctorate, conference presentation opportunities, and other activities with campus LSAMP leadership via email to disseminate to scholars. The ITCC LSAMP Director communicated information regarding the LSAMP program to Marcia Nettle, retention specialist for the School of Advanced Manufacturing, Engineering and Applied Sciences. Mrs. Nettle included information regarding LSAMP in her bi-monthly email to STEM students. During the pandemic, IUN sent emails with tutor schedules and zoom room links to all department chairs to notify of the tutor transition to an online format. In addition, IUN also disseminates monthly LSAMP meetings to student university email accounts as well as other sources.

Other Print & Communication Sources. BSU LSAMP continues to disseminate results using the currency of STEM fields, through posters and publications. The COVID-19 pandemic created barriers to not only the production of novel results but also venues to present due to travel restrictions and conference cancellations. To compensate for this, mentors encouraged participation in BSU campus events and virtual opportunities. Promotional flyers were designed by the GAs to inform campus members of upcoming events.

The IUSB Foundation magazine carried a story on LSAMP that included interviews from scholars and faculty (<https://foundations.iusb.edu/2020-fall/increasing-diversity-in-stem-fields.html>).

At IUN, math placement information is disseminated through place cards in the advising office.

The ITCC LSAMP director presented LSAMP information to the ITCC faculty and staff at the School of Technology monthly meeting.

Social Media

Twitter. As of August 2021, @INLSAMP has 269 followers, an increase of 38% from the previous year. We average 1,747 Tweet impressions a month with March 2021 showing the highest number of tweet impressions at 3,066 and 470 profile visits.

LinkedIn. The IN LSAMP group was created in 2017 to connect IN LSAMP Scholars and alumni with funding and career opportunities in STEM. This community serves as a support group to provide guidance and leadership among the members. As of August 2021, 73 IN LSAMP Scholars and alumni have joined the group. See attachment titled “Year 5 LinkedIn_eportfolio” for IN LSAMP LinkedIn membership.

YouTube channel. The alliance hosts a YouTube channel (IN LSAMP) and has two playlists. As of August 2021, we have 22 videos uploaded for public view. In summer 2021, two BSU LSAMP alumni created a video to share their experiences as LSAMP participants.

Other social media. BSU continues to seek non-traditional venues to share what has been learned since being involved in LSAMP. This includes through blog posts and social media opportunities. Co-Director Dr. Mary Konkle (Chemistry), published a piece in the Mentoring Matters column on the Undergrad in the Lab website (<https://undergradinthelab.com/node/231>). It described how her experience being mentored informs how she mentors now. This included how she mentors as part of the IN LSAMP Program. She also published a piece in the CUR Chemistry blog about how to safely re-enter the lab during the COVID-19 pandemic.

IU INLSAMP Scholars are featured on the IU Undergraduate Research Blog site, IUUR newsletter, and Engaged Learning social media:

Kat Jones: <https://blogs.iu.edu/iuur/2021/06/28/kat-jones-lsamp-scholar/>

Summer 2021 Posters:

<https://undergradresearch.indiana.edu/share-your-research/summer-posters.html>

*** What do you plan to do during the next reporting period to accomplish the goals?**

The campus alliances are opening up more research opportunities during the academic year for students to continue or start their faculty-mentored research. Continuing research after the summer provides continuity along with an extended chance to dig deeper into their experimental work. For those starting in the fall, it fulfills a need for those who cannot stay on campus.

Expand internal partnerships across campus. Several campuses have started to cooperate with their university’s learning centers and student success programs to more place STEM tutors and mentors in student-centered spaces. Additionally, Ball state has a new Multicultural Center centrally located on campus that can be a resource for recruitment and programming. Retired IN LSAMP Co-PI Dr. Patti Lang, serves on the BSU NSF Includes Task Force, 2020-present.

As travel opportunities for students open up in the spring and summer 2022, we plan to emphasize and support student and mentor travel to professional meeting.

We will also analyze the current institutional opportunities for STEM students at each campus in order to provide the most comprehensive experiences possible. For example, at Ball State, the Sponsored Program Administration has initiated a Teacher-Scholar Program which funds research experiences for first and second year students. IN LSAMP Coordinators are leveraging those research opportunities with those provided by the NSF grant to provide a longer period of research funding for our URM STEM students. Additionally, the BSU Task Force on Success and Retention has an IN LSAMP Coordinator as one of its member.

We will continue to closely monitor each campus’ budgets, as well as analyze the strengths and challenges of the Alliance members.

In regard to our proposed goal to double the number of BS degrees in STEM granted to URM students at all IN LSAMP campuses, our summary table below indicates that we have steadily made very good progress toward the committed goal. We look forward to the exciting year ahead and improving on experiences of those in the IN LSAMP community.

Year BA/BS degrees earned by URMs

2015-2016 (baseline) 278

Year 1 (2016-17) 329

Year 2 (2017-18)	353
Year 3 (2018-19)	361
Year 4 (2019-20)	385
Year 1-4 totals: 1428	

Supporting Files

Filename	Description	Uploaded By	Uploaded On
IN LSAMP Yr5 ReportExtEvalUpload2021.pdf	IN LSAMP Year 5 Annual Evaluation Report Prepared by Colleen F. Manning - GRG	Kim Nguyen	09/28/2021
Year 5 LinkedIN_eportfolios.pdf	IN LSAMP LinkedIN membership (start of award to present) and IN LSAMP ePortfolio links from year 5.	Kim Nguyen	10/05/2021
IN LSAMP_Year 5_Presentations.pdf	Presentations by the IN LSAMP Director regarding IN LSAMP progress at the Office of the Vice Chancellor for Research monthly staff meeting (July 2021) and IN LSAMP Annual Retreat (July 2021).	Kim Nguyen	10/05/2021
Combined IN LSAMP campus event flyers_Year 5.pdf	Combined IN LSAMP campus year 5 event flyers.	Kim Nguyen	10/05/2021

Products

Books

Book Chapters

Inventions

Journals or Juried Conference Papers

Licenses

Other Conference Presentations / Papers

Other Products

Other Publications

Patent Applications

Technologies or Techniques

Thesis/Dissertations

Lilyana Salazar. *Honors College Thesis Spring 2021: Characterization of Biological Thiol Consumption by MitoNEET*. (2021). Ball State University. Acknowledgement of Federal Support = Yes

Isabelle Wright. *Honors College Thesis Spring 2021: Olfactory Recognition in Glycogen Synthase Knockout Mice*. (2021). Ball State University. Acknowledgement of Federal Support = Yes

Websites or Other Internet Sites

Participants/Organizations

What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person Month Worked
Paydar, Nasser	PD/PI	1
Hundley, Stephen	Co PD/PI	1
Lang, Patricia	Co PD/PI	1
Nguyen, Kim	Co PD/PI	4
Chen, Linda	Faculty	1
Gnezda, Anita	Faculty	1
Hernandez, Henry	Faculty	1
Kilibarda, Vesna	Faculty	1
Konkle, Mary	Faculty	1
Kopparty, Bhaskara	Faculty	1
Muna, Grace	Faculty	1
Oakley, Martha	Faculty	1
Porter, Tamiko	Faculty	1
Pappas, Donald	Community College Faculty	1
Blunck, Melissa	Other Professional	1

Name	Most Senior Project Role	Nearest Person Month Worked
Chastain, Marie	Other Professional	1
Clark, Candace	Other Professional	1
Huff, Amber	Other Professional	7
McMillen, Doug	Other Professional	1
Quirke, Michelle	Other Professional	2
Sims, Corey	Other Professional	9
Sung, Yuchen	Technician	1
Miller, Joelle	Graduate Student (research assistant)	1
Perez-Herrera, Cristina	Graduate Student (research assistant)	2
Ryan, Emily	Graduate Student (research assistant)	1
Scott, Anneka	Non-Student Research Assistant	3
Shr, Katherine	Undergraduate Student	1
Cho, Apryl	Consultant	4
Pruett, Elizabeth	Other	1

Full details of individuals who have worked on the project:

Nasser M Paydar

Email: paydar@iupui.edu

Most Senior Project Role: PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Principal Investigator oversees the key leadership team and scope of award.

Funding Support: None

Change in active other support: No

International Collaboration: No
International Travel: No

Stephen P Hundley

Email: shundley@iupui.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Oversees project implementation and evaluation of high impact practices and outcomes, as well as convening and supporting the advisory board.

Funding Support: IN LSAMP and University

Change in active other support: No

International Collaboration: No

International Travel: No

Patricia L Lang

Email: plang@bsu.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Co-PI for IN LSAMP

Funding Support: None

Change in active other support: No

International Collaboration: No

International Travel: No

Kim S Nguyen

Email: knguyen@iupui.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 4

Contribution to the Project: Oversees campus directors and coordinators in implementing the program's strategies. Responsible for daily operation of alliance, annual evaluation, reporting, and budget administration.

Funding Support: Dr. Nguyen received 30% salary support from award.

Change in active other support: No

International Collaboration: No

International Travel: No

Linda Chen**Email:** lchen@iusb.edu**Most Senior Project Role:** Faculty**Nearest Person Month Worked:** 1

Contribution to the Project: Responsible for the management for the grant on the IU South Bend campus. Collaborating with IN LSAMP campuses and assessing the effectiveness of the program with regards to retention and graduation. Left role with IN LSAMP end of December 2020 and was replaced by Dr. Doug McMillen.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Anita Gnezda**Email:** aggnezda@bsu.edu**Most Senior Project Role:** Faculty**Nearest Person Month Worked:** 1

Contribution to the Project: Participated in LSAMP-Indiana Consortium decisions and events, liaison with members of BSU leadership team, assisted in continuing development of LSAMP career pathways peer mentor program, hired new graduate student and assisted in supervision of graduate students. Assisted in report writing, WebAMP data collection and entry, participated in summer retreat, kept records of communications with research scholars, recruited undergraduate research scholars and faculty research advisors, coordinated with the Learning Center in hiring and training math and chemistry tutors, conducted the BSU summer research orientation program for scholars and faculty research mentors, and wrote letters of recommendation for scholars applying to graduate school or summer research programs.

Funding Support: IN LSAMP and department funds

International Collaboration: No

International Travel: No

Henry Hernandez**Email:** hehernan@iupui.edu**Most Senior Project Role:** Faculty**Nearest Person Month Worked:** 1

Contribution to the Project: Works with alliance director to implement campus strategies, including recruiting, engaging, educating, and graduating students. Also works with Ivy Tech Community College (ITCC) director to assist ITCC participant's transition to a four-year STEM degree granting institution.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Vesna Kilibarda**Email:** vkilibar@iun.edu**Most Senior Project Role:** Faculty**Nearest Person Month Worked:** 1

Contribution to the Project: Collaborate with the campus director to manage the program at IUN.

Funding Support: Dr. Kilibarda receives 2% of her salary from the award.

International Collaboration: No

International Travel: No

Mary Konkle

Email: mekonkle@bsu.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Participated in LSAMP-Indiana Consortium decisions and events, liaison with members of BSU leadership team, assisted in continuing development of LSAMP career pathways peer mentor program, hired new graduate student and assisted in supervision of graduate students. Assisted in report writing, WebAMP data collection and entry, participated in summer retreat, kept records of communications with research scholars, recruited undergraduate research scholars and faculty research advisors, coordinated with the Learning Center in hiring and training math and chemistry tutors, conducted the BSU summer research orientation program for scholars and faculty research mentors, and wrote letters of recommendation for scholars applying to graduate school or summer research programs.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Bhaskara Kopparty

Email: bkoppart@iun.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Responsible for the management of the grant on the IU Northwest campus. Collaborate with alliance personnel and engage LSAMP eligible students in high-impact practices (HIPs). Responsible for the selection of URM students for summer bridge and research scholars.

Funding Support: Dr. Kopparty received 10% of his salary from the award.

International Collaboration: No

International Travel: No

Grace Muna

Email: gmuna@iusb.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Responsible for coordinating the project by working with the faculty research mentors, recruiting and selecting the IN LSAMP student scholars, and supervising the URM STEM Ambassadors and Web Master.

Funding Support: Dr. Muna received 5% of her salary from the award.

International Collaboration: No
International Travel: No

Martha Oakley
Email: oakley@indiana.edu
Most Senior Project Role: Faculty
Nearest Person Month Worked: 1

Contribution to the Project: Campus Director of program at IUB.

Funding Support: IN LSAMP and University

International Collaboration: No
International Travel: No

Tamiko Porter
Email: tnp@iupui.edu
Most Senior Project Role: Faculty
Nearest Person Month Worked: 1

Contribution to the Project: IUPUI campus coordinator primary responsibility for mentoring and educating all IN LSAMP scholars at IUPUI in summer research and peer mentoring.

Funding Support: Dr. Porter receives 15% of her salary from the award.

International Collaboration: No
International Travel: No

Donald L Pappas
Email: dpappas3@ivytech.edu
Most Senior Project Role: Community College Faculty
Nearest Person Month Worked: 1

Contribution to the Project: Campus Director of program at ITCC Indianapolis. Resigned from IN LSAMP Ivy Tech Director position October 1, 2021.

Funding Support: IN LSAMP and College

International Collaboration: No
International Travel: No

Melissa Blunck
Email: melhorto@indiana.edu
Most Senior Project Role: Other Professional
Nearest Person Month Worked: 1

Contribution to the Project: Campus coordinator of program at IU Bloomington.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Marie Chastain

Email: mchastai@iupui.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 1

Contribution to the Project: Aided in maintaining research scholar applications during Project Manager transition.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Candace Clark

Email: clbeck@iun.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 1

Contribution to the Project: Supports project personnel in implementation of scholar hiring and tracking, as well as implementation of activities.

Funding Support: IN LSAMP and department

International Collaboration: No

International Travel: No

Amber Huff

Email: adepree@iu.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 7

Contribution to the Project: Provided support with general project management and supported campus coordinators with program implementation and activities on the alliance campuses

Funding Support: From May 17, 2021 to present, received 100% salary from the award.

International Collaboration: No

International Travel: No

Doug McMillen

Email: dmcmille@iusb.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 1

Contribution to the Project: Campus Director of program at IUSB.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Michelle Quirke

Email: mvquirke@iu.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 2

Contribution to the Project: Provides support with general project management and supports campus coordinators with program implementation and activities on the alliance campuses. Let role with IN LSAMP mid-January 2021.

Funding Support: From December 1, 2020 - January 15, 2021 received 100% salary from the award.

International Collaboration: No

International Travel: No

Corey Sims

Email: csims23@ivytech.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 9

Contribution to the Project: Campus coordinator at Ivy Tech Community College. Left role as IN LSAMP Ivy Tech campus coordinator on August 13, 2021.

Funding Support: Mr. Sims was paid 100% on IN LSAMP award.

International Collaboration: No

International Travel: No

Yuchen Sung

Email: yusung@iupui.edu

Most Senior Project Role: Technician

Nearest Person Month Worked: 1

Contribution to the Project: Systems analyst for website. Oversees updates and web design.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Joelle Miller

Email: jjmiller6@bsu.edu

Most Senior Project Role: Graduate Student (research assistant)

Nearest Person Month Worked: 1

Contribution to the Project: Served as a resource, counselor, and referral agent for students with personal or academic concerns. Assisted in supervising peer mentors. Served as role model for LSAMP scholars. Attended all CPP mentor meetings. Made posters and flyers for dissemination of event information. Assisted in planning and co-hosted special career events.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Cristina Perez-Herrera

Email: cperez@bsu.edu

Most Senior Project Role: Graduate Student (research assistant)

Nearest Person Month Worked: 2

Contribution to the Project: Graduate assistant for BSU program. Served as a resource, counselor, and referral agent for students with personal or academic concerns. Assisted in supervising peer mentors. Served as role model for LSAMP scholars. Attended all CPP mentor meetings. Made posters and flyers for dissemination of event information. Assisted in planning and co-hosted special career events.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Emily Ryan

Email: ryan7@iu.edu

Most Senior Project Role: Graduate Student (research assistant)

Nearest Person Month Worked: 1

Contribution to the Project: Graduate Assistant for IUB IN LSAMP program.

Funding Support: IN LSAMP and University

International Collaboration: No

International Travel: No

Anneka Scott

Email: scottat@iu.edu

Most Senior Project Role: Non-Student Research Assistant

Nearest Person Month Worked: 3

Contribution to the Project: IUPUI campus Program Coordinator. Summer research program assistant to campus coordinator. Left position July 2021.

Funding Support: IN LSAMP

International Collaboration: No
International Travel: No

Katherine Shr
Email: kshr@iu.edu
Most Senior Project Role: Undergraduate Student
Nearest Person Month Worked: 1

Contribution to the Project: Project Coordinator for IUPUI IN LSAMP. Assists campus coordinator with summer research and other campus LSAMP projects.

Funding Support: IN LSAMP

International Collaboration: No
International Travel: No

Apryl T Cho
Email: tcho@iu.edu
Most Senior Project Role: Consultant
Nearest Person Month Worked: 4

Contribution to the Project: Aided in revamping and maintaining alliance and campus websites as well as maintaining alliance social media.

Funding Support: IN LSAMP

International Collaboration: No
International Travel: No

Elizabeth Pruett
Email: epruett@indiana.edu
Most Senior Project Role: Other
Nearest Person Month Worked: 1

Contribution to the Project: Program Assistant and Engaged Learning Program Support Specialist at IU Bloomington.

Funding Support: IN LSAMP and University

International Collaboration: No
International Travel: No

What other organizations have been involved as partners?

Name	Type of Partner Organization	Location
21st Century Scholar Program	Academic Institution	Bloomington, IN

Name	Type of Partner Organization	Location
Diversity, Enrichment, Achievement Program, IUPUI	Academic Institution	Indianapolis, IN
School of Science Dean's Office	Academic Institution	Indianapolis, IN
Student Life & Activities, Ivy Tech CC	Academic Institution	Indianapolis, IN
Trek10	Other Organizations (foreign or domestic)	South Bend, IN
Women in STEM Living Learning Center	Academic Institution	Bloomington, IN
Goodman Research Group, Inc.	Industrial or Commercial Firms	Cambridge, MA
Groups Scholars Program STEM Initiative, IU	Academic Institution	Bloomington, IN
Hudson and Holland Scholars Program	Academic Institution	Bloomington, IN
Louis Stokes Midwest Regional Center of Excellence	Other Organizations (foreign or domestic)	Indianapolis, IN
McKenzie Center for Innovation and Tech, Lawrence Central HS	School or School Systems	Indianapolis, IN
Noblesville High School	School or School Systems	Noblesville, IN
Raphael Health Center	Other Nonprofits	Indianapolis, IN
Research Scholars Cohort Program / IU Undergraduate Research	Academic Institution	Bloomington, IN

Full details of organizations that have been involved as partners:

21st Century Scholar Program

Organization Type: Academic Institution
Organization Location: Bloomington, IN

Partner's Contribution to the Project:
 Collaborative Research

More Detail on Partner and Contribution: IUB LSAMP partners with the IU 21st Century Scholars Program providing financial and academic resources to support, retain and graduate thousands of IU 21st Century Scholars. We work closely with IU 21st Century Scholars to recruit LSAMP scholars.

Diversity, Enrichment, Achievement Program, IUPUI

Organization Type: Academic Institution
Organization Location: Indianapolis, IN

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Eric Williams, Senior Executive Director, has worked with the IN LSAMP team to plan and recruit for activities. DEAP students participate in IUPUI LSAMP programming.

Goodman Research Group, Inc.

Organization Type: Industrial or Commercial Firms
Organization Location: Cambridge, MA

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Goodman Research Group provides external evaluation for the project. Will disseminate results of the research.

Groups Scholars Program STEM Initiative, IU

Organization Type: Academic Institution
Organization Location: Bloomington, IN

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: The Groups Scholars Program at IU supports first generation, underrepresented students. Among their initiatives is a STEM research experience summer program for incoming freshmen. We worked closely with the Groups STEM director to coordinate a Summer Research Poster Symposium. We work closely with Groups STEM to recruit for LSAMP.

Hudson and Holland Scholars Program

Organization Type: Academic Institution
Organization Location: Bloomington, IN

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: The Hudson and Holland Scholars Program at IU supports high-achieving underrepresented minority students. The IUB LSAMP works closely with HHSP's STEM advisor to recruit for LSAMP.

Louis Stokes Midwest Regional Center of Excellence

Organization Type: Other Organizations (foreign or domestic)
Organization Location: Indianapolis, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: LSMRCE is a funded NSF Center (HRD-1826626 (IUPUI) and HRD-1826719 (CSU 2018-2023)) that provides support connecting research and resources with other LSAMP programs. We have collaborated on presentations and conference workshops.

McKenzie Center for Innovation and Tech, Lawrence Central HS

Organization Type: School or School Systems

Organization Location: Indianapolis, IN

Partner's Contribution to the Project:

Facilities

More Detail on Partner and Contribution: McKenzie attend the IN LSAMP Annual Conference each year with a group of URM high school students pursuing STEM degrees. Dr. Pappas works with the curriculum and advisory board to arrange credit for the students to attend.

Noblesville High School

Organization Type: School or School Systems

Organization Location: Noblesville, IN

Partner's Contribution to the Project:

Facilities

More Detail on Partner and Contribution: Dual-credit Project Lead the Way teachers attended a workshop at Ivy Tech and were given information regarding the LSAMP program. Teachers used the information engage with potential student scholars.

Raphael Health Center

Organization Type: Other Nonprofits

Organization Location: Indianapolis, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Raphael Health Center hosted a student scholar as an intern.

Research Scholars Cohort Program / IU Undergraduate Research

Organization Type: Academic Institution

Organization Location: Bloomington, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: The Research Scholars Cohort Program is an initiative out of the IU Undergraduate Research office and supports first-generation and underrepresented students interested in research, beginning in their first year of undergraduate studies. Several of the current IUB LSAMP scholars cohort were recruited from this program.

School of Science Dean's Office

Organization Type: Academic Institution

Organization Location: Indianapolis, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Assisted with recruiting of LSAMP students at IUPUI.

Student Life & Activities, Ivy Tech CC

Organization Type: Academic Institution

Organization Location: Indianapolis, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Staff help increase visibility of the IN LSAMP program in the Indianapolis service area.

Trek10

Organization Type: Other Organizations (foreign or domestic)

Organization Location: South Bend, IN

Partner's Contribution to the Project:

Other: Offered AWS cloud technology course

More Detail on Partner and Contribution: The Alliance partnered with Trek10 to offer Amazon Web Services (AWS) cloud technology course to ten students during summer 2021. Students took part in a 10-week hands-on experience course, led by an AWS certified SysOps Administrator and Solutions Architect, to prepare for the AWS solutions architect – associate exam. Exam results for summer 2021 participants to be reported in Fall 2021.

Women in STEM Living Learning Center

Organization Type: Academic Institution

Organization Location: Bloomington, IN

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: The IUB LSAMP works closely with the WSTEM LLC to recruit for LSAMP.

Were other collaborators or contacts involved? If so, please provide details.

1. BSU

- Faculty Mentors: Philip Albiniak, Douglas Bernstein, Robert Berrington, Kathleen Foster, Marie Kelly-Worden, Mary Konkle, Lan Lin, Bartholomew Pederson, Sergiy Rosokha, Robert Sammelson, Bikram Sharma, Wei Shi, Michael Skoby, Jessica Ward, Stacy Yager
- Missy Adkins, provides enrollment, retention, & graduation data & submits data to WebAMP
- Todd Davidson, manages grant
- Laura Pittman, distributes informational flyer to incoming LSAMP eligible FY students & helped with student admission to the EXCEL and Power into Math summer bridge programs
- President Geoff Mearns, Provost and EVP for Academic Affairs Susana Rivera-Mills, & Vice Provost for Research Sue McDowell, provides program support
- Academic Advisors Sarah Williams, Julie Ridgeway, and Lesley Fortriede, promotes program to advisees
- Jennifer Haley, helps recruit and train chemistry & math tutors
- Dillon Waggoner, helped with career development programs

2. IUPUI

- Faculty Mentors: Nathan Alves, Lauren Christopher, Bill Gilhooly, Qin Hu, Christopher Lapish, Chi-Chien Lin, Christine Picard, Randall Roper, Andres Tovar, Lindsey Turnbull, Susan Walsh
- Robbie Lopez-Shue, CTAS Director, provided IUPUI transition session to ITCC LSAMP scholars

3. IUSB

- Faculty Mentors: Tom Clark, Kasey Clear, Hossein Hakimzadeh, Deborah Marr, Grace Muna, Shahir Rizk,

4. IUB

- Faculty Mentors: Melissa Blunck, Manuel Baizabal, Richard Carpenter, Heather Hundley, Roni Khardon, Lantao Liu, Tuli Mukhopadhyay, Nicholas Port, Patrick Shih

5. IUN

- Faculty Mentors: Ming Gao, Jie Wang

6. ITCC

- Retention Specialist Marcia Nettle, bi-monthly dissemination of LSAMP information
- Martha Sanchez, disseminates LSAMP info to prospective Latinx students
- Michael Nave, disseminated LSAMP materials to Black Faculty and Staff for potential mentors
- Brandon Houston, provided opportunity to present LSAMP information to increase campus exposure

7. Other

- Paul Ardayfio, Eli Lilly Clinical Research Advisor, faculty mentor for IUPUI research scholar & research liaison

Impacts

What is the impact on the development of the principal discipline(s) of the project?

At all campuses of the Alliance, including ITCC, the project brings the STEM awareness to all majors and has the following impacts:

- Increase in STEM enrollment
- More student-faculty interactions resulted in deeper commitment to earn degrees in STEM
- Mentoring opportunities from the project team members that increase student retention
- Opportunity for STEM students to be professionally prepared to face the workforce

- Opportunity to conduct undergraduate research in STEM.

BSU desired to increase funded-research opportunities for LSAMP Scholars and decided to offer financial incentive to ten additional tenured/tenure-track faculty research mentors. Each of these were offered (in addition to student support) up to \$500 in supplies, and limited amounts of funding to pay for virtual professional conference registration. The research outcomes produced by engaging the LSAMP scholars and the employed graduate assistants (all STEM majors) are contributing to the body of knowledge of their disciplinary fields of study.

What is the impact on other disciplines?

Increasing diversity in the workforce is key to ensure our nation's competitiveness in STEM fields. Faculty research mentors and Ball State INLSAMP staff are extending their research into best practices in education and disseminating results through invitations as invited external speakers at conferences.

What is the impact on the development of human resources?

IN LSAMP impacts on the development of human resources are seen from a variety of perspectives and activities at specific campuses of the Alliance.

- During the pandemic, some IN LSAMP campuses collaborated with institutional student support groups such as Counseling Services to provide a session to scholars on destressing and mental health support.
- Faculty research advisor, Dr. Mary Konkle (Chemistry) serves as the Chemistry Representative for Diversity and Inclusion for the Council of Undergraduate Research (CUR).
- Summer research scholars become experts in their fields and serve as tutors, peer mentors and others are embedded in the labs. IUSB reported that some students become aware of leadership opportunities on campus and are involved in clubs such as the Biology Chemistry club.
- Project allows students opportunities to improve skills in resume writing and internship application development.
- Project provides opportunities for faculty/staff members to prepare and conduct workshops and presentations.
- Project allows STEM faculty to expand skills through professional development and conference attendance.
- Project allows students to learn and practice leadership and technological skills requisite for their fields of interest. BSU reported that peer mentors also gain transferable skills in organization, motivation, leadership, and resourcefulness as they are responsible for planning weekly activities with their proteges that are engaging and useful. They share in the responsibility for developing the group events and soliciting attendance. Due to the pandemic, the mentors now also have experience meeting in the virtual environment.
- Project provides an avenue to highlight programs and student achievement, which in turn supports faculty/staff recruitment.
- ITCC - One on one mentoring with faculty and staff: Each ITCC LSAMP scholar attended weekly meetings with either a faculty mentor or the Program Coordinator. ITCC supported nine LSAMP scholars who worked as learning assistants under faculty or laboratory technicians. Learning Assistants assist with class preparation, directed learning activities and LSAMP recruitment. All scholars are part-time employees of ITCC, which require them to participate in a host of new employee training and further support our efforts to encourage professionalism and develop career ready graduates.

What was the impact on teaching and educational experiences?

BSU Co-Director Dr. Mary Konkle (Chemistry), published a piece in the Mentoring Matters column on the Undergrad in the Lab website (<https://undergradinthelab.com/node/231>). It described how her experience being mentored informs how she mentors her current students, especially those engaged in the IN LSAMP Program. Dr. Konkle also published a piece in the CUR Chemistry blog about how to safely re-enter the lab during the COVID-19 pandemic. (<https://curchem.wordpress.com/2020/06/16/getting-back-in-the-lab-during-a-pandemic/>)

IUSB reported that engagement in research and participation in professional development series has led students being aware of career pathways that they didn't know existed, and many students are determined to pursue graduate studies and professional schools.

What is the impact on physical resources that form infrastructure?

The ITCC LSAMP director and coordinator established a dedicated office for scholars at the North Meridian ITCC campus. This space includes a computer lab to complete web-based trainings. The lab provides a dedicated space to study, build community, and gain networking experience.

What is the impact on institutional resources that form infrastructure?

The IUSB LSAMP program is partnering with the Academic Center for Excellence to ensure effective tutoring for the science and math courses.

What is the impact on information resources that form infrastructure?

Nothing to report.

What is the impact on technology transfer?

- The program uses Canvas which facilitates learning modules implementation across the alliance. Professional development series developed by the LSAMP Alliance as well as the LSMRCE seminar series help to prepare scholars professionally.
- The IN LSAMP Alliance administrative office has provided training to ITCC Institutional research personnel to ensure data is collected appropriately.
- At IUSB the eight summer research scholars participated in professional development activities using the prerecorded IN LSAMP 2020 series (<https://insamp.org/professional-development-student/>). Students created Course Networking ePortfolio, LinkedIn connections, IN LSAMP website profiles, and curriculum vitae.

What is the impact on society beyond science and technology?

- The inclusion of URM undergraduate research students in the STEM community of scholars may have the biggest impact on society. This is true not only for the LSAMP Scholars themselves, but also their lab mates and mentoring faculty who often belong to the majority groups in a predominantly white institution. It can help develop understanding of others of different gender, ethnicity, sexual preference, international status, etc. Learning how to resolve cultural differences is key to a high functioning society.
- The program is creating a community of individuals with similar interests and backgrounds. Once the students graduate, they will contribute to the society in their different fields.

What percentage of the award's budget was spent in a foreign country?

Nothing to report.

Changes/Problems

Changes in approach and reason for change

Due to the pandemic, in-person meetings and programming transitioned to an online format with many activities continuing virtually to present. In summer 2021, campuses were able to offer in-person research experiences following the campus specific safety guidelines for COVID-19. BSU, IUPUI, IUB allowed researchers, both faculty and students, to re-enter the laboratories in June 2020 at limited capacity which resulted in fewer student researchers working fewer hours than in previous reporting years. In addition, this situation was further compounded by the global shortages and delays of scientific supplies that were diverted (necessarily) towards efforts to make and distribute vaccines for COVID-19. The campus also reported that while the students, co-directors and facilitators had become comfortable with technology such as Zoom, it was clear that the lack of in-person interactions inhibited the formation of a cohesive community. Research mentors also bemoaned the lack of mentoring moments that happen spontaneously in the hallways, labs, and classrooms.

All IN LSAMP campuses offered summer 2021 scholar research orientation virtually due to the pandemic.

IUPUI was not able to have LSAMP peer mentors and scholar staff gathering in the campus tutoring room due to the pandemic. As campus restrictions were lifted in fall 2021, IUPUI was able to offer in-person tutoring opportunities again. Two of their scholars selected for research in summer 2020 deferred research to the 2021 academic year.

IUN experienced a university hiring freeze related to the pandemic. Since the university lifted the freeze, the campus is in-process to interview new tutors for the STEM tutoring center to replace those who graduated. The campus also had to make changes to certain aspects of their programming plan, such as cancelling the summer 2021 high school STEM camp, due to the pandemic.

The ITCC coordinator's office was established at the Indianapolis NMC campus to improve the visibility of the LSAMP program to STEM majors housed at the NMC building. Of the 12 supported CIP coded majors at ITCC, only one major is housed at the current LSAMP office in Lawrence. The newly established LSAMP office at the Indianapolis downtown campus will allow the leadership team to interact with faculty and potential LSAMP scholars.

Actual or Anticipated problems or delays and actions or plans to resolve them

The two largest participating departments in BSU LSAMP, Departments of Biology and Chemistry, experienced additional delays due to a move to a new state-of-the-art building on the Ball State campus in the summer of 2021. The Co-Directors anticipated this and hired more students in the Spring of 2021 and fewer in the Summer of 2021. Some of the

summer scholars were able to continue virtual projects that were started due to the COVID-19 pandemic in the Summer of 2020.

Institutional travel was not permitted by faculty, staff, and students at the IU campus prior to August 2021. As travel restrictions are lifted, the alliance hopes to have students resume attending and presenting at in-person conferences.

At ITCC, while further shutdowns and closures are anticipated to occur during the coming semesters due to the pandemic, the campus program coordinator accepted another position in August and the search for his replacement is on-going.

Changes that have a significant impact on expenditures

Most professional conferences in 2020 and 2021 were shifted to virtual. The change in conference delivery has minimized opportunities and travel costs for attending or presenting research at STEM conference in-person.

IN LSAMP leadership team decided not to hold its own research conference in 2021 and has partnered with LSMRCE annual conference to celebrate the 30th LSAMP Anniversary on October 22-24. The monetary saving from 2021 conference budget will be made available for the IN LSAMP-Research Symposium in September 2022.

The IUPUI LSAMP project coordinator part-time position increased working hours per week from 15 to 20-25 during the pandemic. Anneka Scott resigned August 1, 2021, and her replacement has been hired on September 16, 2021.

Significant changes in use or care of human subjects

Nothing to report.

Significant changes in use or care of vertebrate animals

Nothing to report.

Significant changes in use or care of biohazards

Nothing to report.

Change in primary performance site location

Nothing to report.