

2018 Annual Report

Kentucky-West Virginia
Louis Stokes Alliance for
Minority Participation
(KY-WV LSAMP)



Submitted to
The National Science Foundation
2415 Eisenhower Avenue
Alexandria, VA 22314





Annual Research Symposium



Dr. R. Paula Arscott-Hopson - Symposium Keynote



LSMCE Conference



LSMCE Conference



LSMCE Conference: Alliance to Alliance Workshop



NCUR 2018



KY Posters @ the Capitol



Women of Color STEM Conference



WV Res Day @ the Capitol

Kentucky-West Virginia Louis Stokes Alliance for Minority Participation

2018 Annual Report

Kentucky – West Virginia
Louis Stokes Alliance for Minority Participation
In Science, Technology, Engineering, and Mathematics
(KY-WV LSAMP STEM)

Submitted by

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INTRODUCTION

The Kentucky-West Virginia Louis Stokes Alliance for Minority Participation program (KY-WV LSAMP) is a nine-institution alliance led by the University of Kentucky. Alliance members include: Bluegrass Community and Technical College (BCTC), Centre College, Kentucky State University (KSU), Marshall University, University of Kentucky (UK), University of Louisville (UofL), West Virginia State University (WVSU), West Virginia University (WVU), and Western Kentucky University (WKU). Alliance goals are to create, enhance, and expand programs designed to broaden participation and increase the quality and quantity of students from underrepresented populations who receive degrees in science, technology, engineering, and mathematics (STEM) disciplines. The alliance projects the following key outcomes: increase URM STEM BS degrees at alliance institutions by 50% for a total of 1,000 BS STEM degrees over five years. This will be accomplished by achieving increases in total alliance enrollments to 2000 average annually (a 25% increase) with similar increases in retention, transfer rate, and graduation rates. These increases will contribute to increases in application to and attendance in STEM graduate degree programs.

Each institution has developed programs consistent with LSAMP goals. Institutions have also, with the help of LSAMP, built sustainable partnerships within campus programs as well as with external (outreach) programs and organizations. Program activities and partnership resources focus on outreach and recruiting, peer mentoring, undergraduate research experiences, research presentation opportunities, summer bridge and transitional programs for entering students, curriculum reforms in “gatekeeper” courses, international experiences, and workshops on professional development and STEM career options.

The **intellectual merit** of the program is the increased knowledge base related to teaching and learning practices for STEM disciplines, practices for improved recruiting and retention, and the development of improved curriculum materials and practices for STEM disciplines. As Scholars pursue their degrees and participate in program activities, they develop the skills needed to succeed not only in their degree programs, but also in the professional community of their chosen field. They learn the skills necessary to be the leaders and experts. Scholars give and receive mentoring on multiple levels from middle school and high school students to world-renowned researchers. In addition to increasing their knowledge and research skills, this multi-level mentoring also helps the Scholars to build excellent professional networks for current and future research, presentation, educational and professional opportunities. Often, the connections made through the LSAMP program guide Scholars to the next opportunity.

The **broader impact** is the increase in URM STEM BS degree production. This will broaden math, science, and engineering participation of underrepresented students from the two Established Program to Stimulate Competitive Research (EPSCoR) states and surrounding regions. Because of the skills developed and the connections made through LSAMP, Scholars are uniquely qualified for graduate programs and industry. Once they have received their BS degrees, many participants continue into graduate programs. This will increase the diversification of the STEM workforce and broaden the participation of underrepresented students who seek and earn graduate degrees.

The increase in skilled workforce has the potential to significantly improve the competitive position of the two states and eventually to improve faculty diversity in STEM fields. In turn, participants will play key roles in educating their respective communities about STEM fields and encouraging younger students to pursue STEM disciplines. The multi-level mentoring gives Scholars a venue for serving as role models for future generations.

The mission statement and logo adopted in 2016 continue to be used. The logo is easily recognized and is expected to be used by program staff and Scholars throughout the alliance on presentations, including, but not limited to posters and papers. The logo is helping to unify the alliance into a group working together for a common purpose.

There have been many successes as well as some continued challenges and trials in 2017-18. Progress continues to be made to increase the quality and quantity of students from underrepresented populations who receive degrees in science, technology, engineering, and mathematics disciplines.

PROGRAM PROJECTED OUTCOMES

The Kentucky-West Virginia Louis Stokes Alliance for Minority Participation consists of nine colleges and universities. Of these, there are comprehensive research universities, two historically black college and universities (HBCU), regional universities, and a 2-year college. Using knowledge learned from past successes paired with lessons learned from past shortcomings, the alliance will continue to increase the number of students from underrepresented populations who receive degrees in science, technology, engineering, and mathematics disciplines. To accomplish this goal, the following objectives were proposed and have been met.

Projected Outcome One

To increase URM STEM BS degrees from 168 annual average to 250 annually for a total of 1,000 degrees over 5 years

In 2016-17, 360 URM STEM BS degrees were granted by KY-WV LSAMP institutions. This is a 31% increase from the previous year, a 114% increase from the 168 average used in the proposal, and a 101% increase from the baseline year (173 degrees in 2006-07). Since the last annual report, some data for years 2011-2014 (that was previously missing) was acquired from the Kentucky Council on Postsecondary Education and the West Virginia Higher Education Policy Commission. Including 2013-14 degrees, the Alliance has granted 1177 URM STEM bachelor's degrees during the current funding period. This meets the proposed goal of 1000 degrees. Figure 1 shows the number of degrees from 2006-07 to 2016-17. Overall, there have been more than 2,400 URM STEM bachelor's degrees granted at KY-WV LSAMP institutions since 2006. In addition, when exploring degrees by ethnicity, it is clear there has been a significant increase in degrees granted to African Americans, Hispanics, and students of more than one race. Figure 2 shows the breakdown of URM STEM bachelor's degrees granted by KY-WV LSAMP institutions by ethnicity.

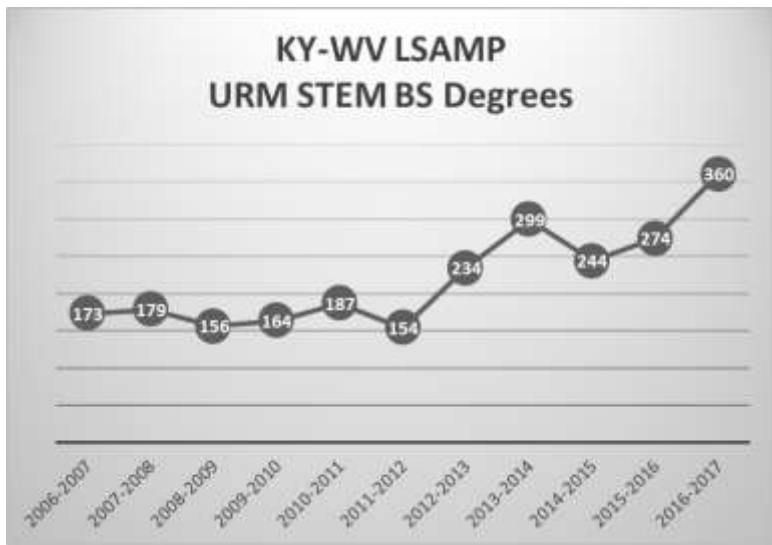


Figure 1: URM STEM BS Degrees Granted at KY-WV LSAMP Institutions

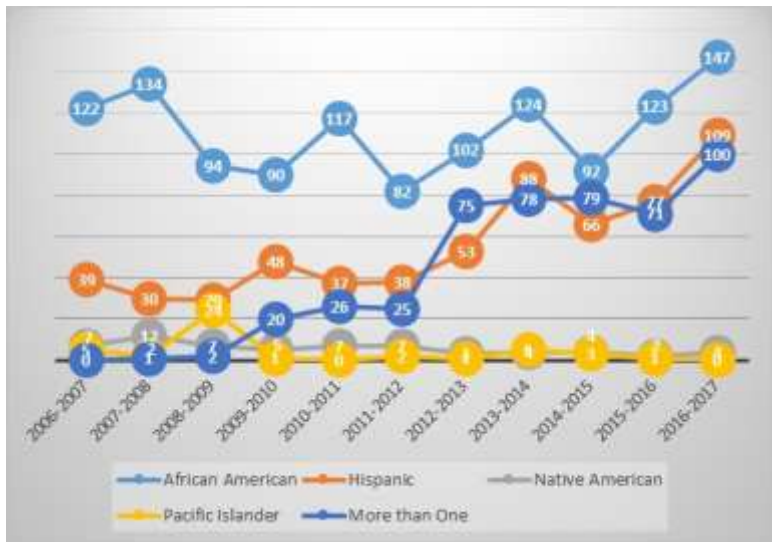


Figure 2: URM STEM BS Degrees Granted by Ethnicity

Projected Outcome Two

To increase URM STEM enrollments from 1599 to 2000 annual average

Traditionally, underrepresented (URM) populations targeted by the national LSAMP program (African American, Hispanic, Native American, and Pacific Islanders) represent an almost unique recruiting challenge for the KY-WV LSAMP institutions because of their unusually low percentages of the populations of the two states. Even though the URM population accounted for over 26% of the US population, they comprise only 16% and 6%* of the population in Kentucky and West Virginia, respectively. This continues to be a challenge to recruiting students.

* Source of URM population data: Kaiser Family Foundation estimates based on the Census Bureau’s March 2015 Current Population Survey (CPS: Annual Social and Economic Supplement).

Even with this challenge, the KY-WV LSAMP has been successful in increasing enrollments. In 2016-17, there were 2,627 URM students enrolled in STEM BS degree programs at KY-WV LSAMP institutions. This is a 16% increase from the previous year and a 37% increase from 2006/07. This also brings the average annual enrollment for the funding period to 2,306 - meeting the goal of 2000 per year. Figure 3 shows the number of URM STEM enrollments at KY-WV LSAMP institutions since 2006. Again, there has been a significant increase in the number of African Americans, Hispanics, and students of more than one race who enrolled in STEM programs at KY-WV LSAMP institutions. Figure 4 shows the breakdown of URM STEM enrollments by ethnicity.

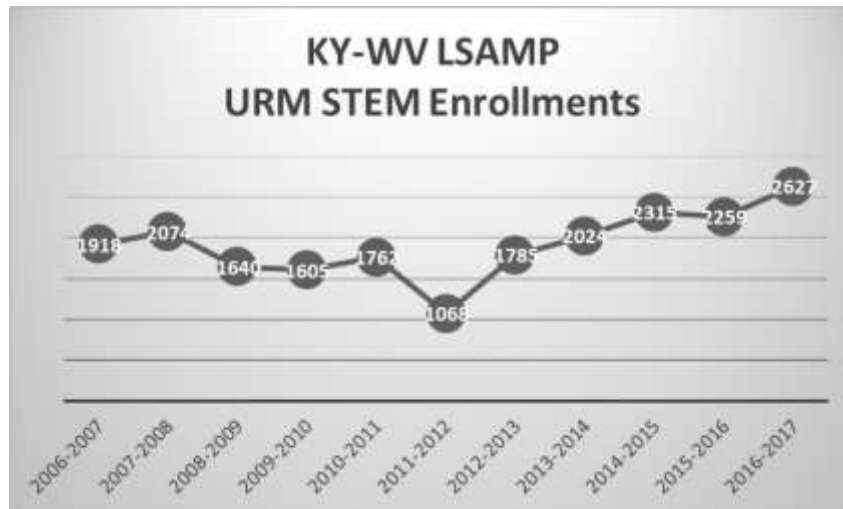


Figure 3: URM STEM Enrollments at KY-WV LSAMP Institutions

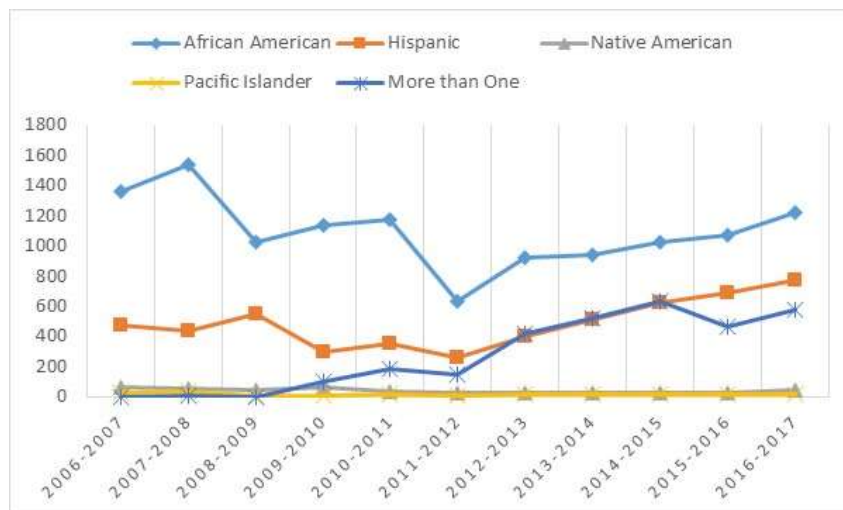


Figure 4: URM STEM Enrollments by Ethnicity

Additional Important Outcomes

KY-WV LSAMP Participants

In order to meet program goals of increasing URM STEM enrollments and degrees, KY-WV LSAMP must strive to increase the number of students who participate in program activities and receive program benefits. The increase in program participants (Scholars) should result in a ripple effect that increases the number of students earning STEM degrees not only at the partner institutions, but throughout the entire region including all of West Virginia and Kentucky. This is demonstrated in Figure 5. **Directly Funded Scholars** receive direct LSAMP financial support (such as stipends, tuition aid, textbooks, conference travel, etc.) *and* participate in program activities. **Unfunded Scholars** do not receive direct LSAMP financial support but are documented as being accepted into the program *and* participating in program activities. **Non-Scholar Participants** have not been formally accepted into the program but participate in one or more program activities (such as attending Scholar Meetings and research symposia). **Influenced Students** have no direct connection or communication with program staff or participation in program activities but may be influenced and/or mentored by friends and/or family who do. The ending result is an increase in URM, STEM, and undergraduate research programs and participants throughout the alliance and the region.

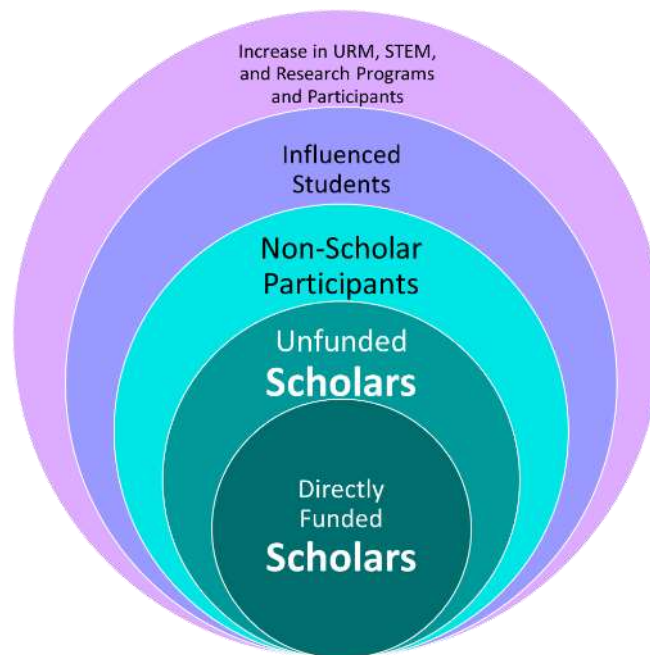


Figure 5: Graphic Representation of the KY-WV LSAMP Ripple Effect

In 2016-17, KY-WV LSAMP supported 286 Scholars at nine institutions. In 2017-18, the number of Scholars decreased 7% to 265. However, there continues to be significant energy and enthusiasm in the alliance that has resulted in an increase in the level of participation in program activities in 2017-2018. Figure 6 shows the number of KY-WV LSAMP participants each year.

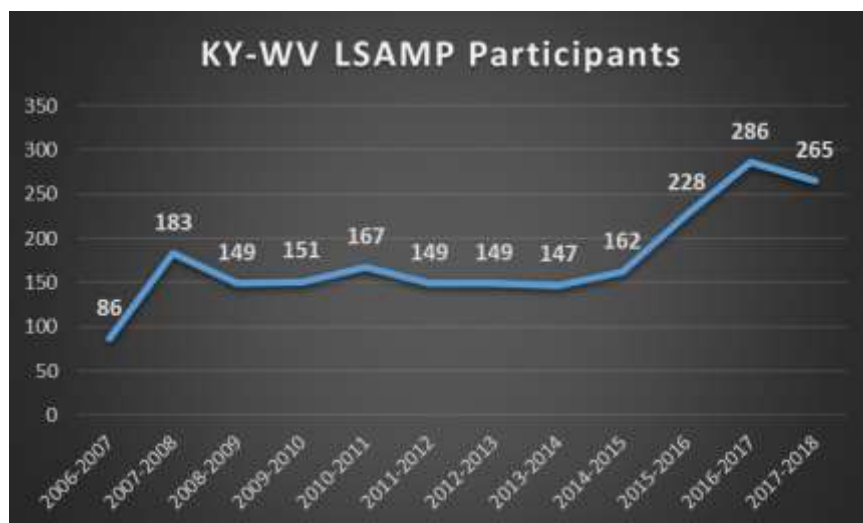


Figure 6: Number of KY-WV LSAMP Participants by Year

PROGRAM ACTIVITIES

Continued Activities

Research with Faculty Mentors

KY-WV LSAMP Scholars are highly involved in research projects. Many Scholars participated in research during the academic year, and some conducted research during a summer internship. These research projects led to over 70 presentations at local, state, regional, and national conferences. These conferences included, but were not limited to: the Louisiana State University (LSU) international Research Experience for Undergraduates (iREU) Workshop in France, the Kentucky Academy of Sciences Annual Meeting, West Virginia Research Day at the Capitol, the KY-WV LSAMP Annual Research Symposium, the National Conference on Undergraduate Research, and the American Chemical Society National Meeting. Table 1 shows the number of documented presentations by type and institution. Table 2 shows a comparison of documented presentations in 2015-16, 2016-17, and 2017-18.

Table 1: Number of Presentations Made by KY-WV LSAMP Scholars by Type and Institution

	Local	State/Regional	National	International	TOTAL
BCTC	0	0	0	0	0
Centre	1	2	1	0	4
KSU	0	3	0	0	3
Marshall	0	5	3	0	8
UK	8	4	8	2	22
UofL	0	8	3	2	13
WVSU	11	4	1	2	18
WVU	0	2	3	0	5
WKU	0	1	1	0	2
TOTAL	20	29	20	6	75

Table 2: Comparison of Presentations by Academic Year

BY TYPE	2015-16	2016-17	2017-18	TOTAL
Local	8	11	20	39
State/Regional	32	26	29	87
National	11	10	20	41
International	0	2	6	8
TOTAL Presentations	51	49	75	175
Non-Present Nat'l	Unknown	13	31	44

International Experiences

I. Khalil Appleton, UK mechanical engineering junior, participated in a study abroad in Japan Summer 2017. Two Scholars conducted international research summer 2017 courtesy of the LSU iREU program. **Danielle Chavis**, WKU chemistry senior, conducted research in Puerto Rico. **Sarah Hodges**, UK biochemistry sophomore, conducted research in Grenoble, France. Through her experience in planning her travel, she developed a checklist for international research travel. This document will help countless future Scholars in planning for and taking advantage of international experiences. A copy of the checklist can be found in Appendix A. Sarah has been chosen to serve as a student leader for the LSU iREU summer 2018 and her checklist has already been utilized and updated several times.

In summer/fall 2018, nine KY-WV LSAMP Scholars will have international experiences. **Asare Nkansah**, UK, has been selected for the France iREU program and is conducting research in Bordeaux, France. Three Scholars (**Ky'Achia Atkins**, WVSU; **Lloyd Bartley**, UofL; and **Taylor Fisher**, UofL) will present at the LSU iREU in-France workshop to be held June 28-30, 2018, in Toulouse, France. **Edwina Barnett**, WVSU, will participate in the Organization for Tropical Studies REU in Costa Rica. **Mohanad Abdallah**, UK, will conduct research in Germany through a Research Internship in Science and Engineering from the German Academic Exchange Service. Four Scholars will participate in study abroad experiences. **Sajana Dumre** will be in Spain Summer 2018. **Scott Lopez**, WVU, will be in China for one year with support from the Boren Scholarship. **Karen Udoh**, UofL, will study abroad in Greece through a Fulbright Scholarship.

Annual Research Symposium

The KY-WV LSAMP 10th Annual Research Symposium was held March 2-3, 2018. Activities on Friday, March 2 were for KY-WV LSAMP participants only. Sessions for the Scholars included a presentation on communications by Kathy DeBoer (Executive Director of the American Volleyball Coaches Association) and a presentation on dress etiquette by Cagney "CC" Coomer and Kayla Titilii (UK biology graduate students) as well as several networking activities. Friday sessions were attended by 97 people including 74 undergraduates and 10 faculty. Saturday, March 3 was open to the general public and was attended by 112 people including 84 undergraduate students and 13 faculty. Sessions included recruitment tables as well as 21 poster presentations and four oral presentations made by Scholars. R. Paula Arscott-Hopson, Ph.D. (former LSAMP Scholar and Bridge to the Doctorate Fellow) presented the keynote address. Dr. Arscott-Hopson talked about her experiences as an undergraduate and graduate in the LSAMP program as well as her current research and job position.

Scholars who presented were:

Oral Presentations

William	Britt	Centre	Computer Science
Emmely	Ovalle	Centre	Behavioral Neuroscience
Kai	Davis	UK	Agricultural Biotechnology
Sarah	Hodges	UK	Chemistry

Poster Presentations

Noah	Ichite	Marshall	Exercise Science
Lloyd	Bartley	UofL	Microbiology
Ky'Achia	Atkins	WVSU	Biology
Edwina	Barnett	WVSU	Biology
Manuela	Botaka	UofL	Biology
Noela	Botaka	UofL	Biology
Gabriel	Brown	Marshall	Biology
Sonia	Chandi	Marshall	Biology
Tat'ana	Dillard-Sims	WVSU	Biology
Obiamaraije	Igwe	UofL	Biology
Jaleyea	Foster	UofL	Physiology
L. Stephanie	Warlitner	Marshall	Digital Forensics
Asare	Nkansah	UK	Computer Science
Malik	Smith	Marshall	Civil Engineering
Deyshon	Ward	KSU	Civil Engineering
I. Khalil	Appleton	UK	Electrical Engineering
Corey	Mattic, Jr.	KSU	Chemical Engineering
Brittany	Brush	WVU	Geology
Nathan	Crowdus	WKU	Meteorology
Demetrius	Davis	KSU	Chemistry
Miguel F.	Henriquez	WVU	Physics

Table 3 shows a comparison of the 2016, 2017, and 2018 symposium attendees. The number of Saturday attendees in 2018 was a 20% increase from 2017. The cover of the program, event agenda, and photos can be found in Appendix B. The program book (in its entirety) can be found on the KY-WV LSAMP website on the Alliance Activities page.

Table 3: Number of Symposium Attendees

	Faculty	Staff	Graduate Students	Undergrad Students	K-12 Students	Other	TOTAL
2016 Saturday	15	11	1	27	0	5	59
2017 Friday	8	9	4	43	0	2	66
2017 Saturday	17	14	8	50	0	4	93
2018 Friday	10	9	3	74	0	1	97
2018 Saturday	13	9	2	84	2	2	112

Course Corrections

Operations Manual

A draft operations manual (Campus Coordinator Handbook) is being created. This document will help to provide guidance to new campus program staff and to create unity and consistency in program communications and data collection and maintenance. The manual includes information such as suggested program activities, requirements for student program participation, instructions and formats for providing participant data, and much more. When the final draft is complete, the document will be provided to each campus in electronic and print formats.

Data Collection, Management, and Reporting

A database of Scholars has been created to track demographics, program participation, and accomplishments. The database is updated periodically and can be easily edited to store additional information as needed for project evaluation, reports, and dissemination. Templates have been created for quarterly reporting, so information gathered and collected can be more easily documented and be more consistent throughout the alliance.

Quarterly reports are required from each institution. Using a template, coordinators must report on participants (including demographics and academic progress), program activities, and Scholar highlights (such as presentations, publications, honors, and awards). Reports are required to be submitted before invoices will be processed for payment.

External Evaluation Plan and Report

Each year, the evaluation team visits three of the nine institutions in order to perform focus groups and interviews with Scholars, faculty mentors, program staff, and campus administration. An electronic survey is distributed to all Scholars throughout the alliance. Interviews are also held with the Project Director and other program staff at the lead institution. Using data collected through these methods as well as data provided by the Project Director, the evaluation team creates an analysis of the success of the LSAMP program as an alliance. They offer recommendations to improve the program as a whole as well as give quality feedback to the site visit campuses.

Dr. Willie Pearson, Jr. was contracted to serve as the external evaluator of the KY-WV LSAMP program. Ed Marshall assists Dr. Pearson in evaluating the program. In June 2015, nine recommendations were suggested by the evaluators. Of those, all have been addressed and/or continue to be addressed. Program aspects that require continuous adaptations and improvement include: data gathering and maintaining processes, dissemination of best practices, website updates, and inter-alliance communications. In June 2016, nine more recommendations were made. Of those, seven have been and continue to be addressed. Two are in progress – documenting program participation and adjusting program activities and services to meet the needs of all participants. In June 2017, 16 recommendations were made by category – four for students, three for program staff, two for program administrators, and seven for the external evaluation. Of these, six have been addressed, substantial progress has been made to five, and five are being addressed.

March 2018, the evaluation team visited three of the nine alliance campuses. During those visits, the evaluators conducted faculty and Scholar focus groups and interviews. An electronic survey was created and emailed to each active KY-WV LSAMP Scholar. Using these data and additional information received from alliance communications and from the project director, an evaluation was created. A copy of the complete evaluation is in Appendix C. A few highlights include:

The evaluation team drew several conclusions from the site visits. Though the three campuses were unique, the visits had similarities. Areas that continue to need improvement include LSAMP visibility on campuses and the recruitment of students from target populations and of diverse STEM majors. Though the frequency and quality of alliance communication has improved, more is needed. It is important to continue building a sense of community among LSAMP stakeholders including participants, mentors, program staff, and campus administration. It was concluded, “Despite the various challenges mentioned above, all stakeholders agreed that the value of the LSAMP was worth it.”

Recommendations for the coming year are:

- Continue to address past recommendations
- Increase the number of Scholars who conduct research and produce presentations and publications – program staff and Scholars meet with mentors to discuss LSAMP goals and presentation/publication timelines
- A more concerted effort to identify and recruit URM students – utilize current Scholars as well as minority student affairs offices
- More workshops on identifying and applying to graduate school – utilize workshops and graduate student/post doc panels at the symposium
- Build a stronger sense of community – utilize social media and implement a formal orientation structure for LSAMP Scholars, mentors, and administrators
- Establish an alliance-wide schedule for collecting and submitting data (including Scholar contact information) to the central office.

Program Staff Roles

Project Director

In the last year, the project director has continued to learn about the successes and problems on each campus. She has worked to increase communication and collaboration within the alliance. There was an Alliance Retreat held June 9-10, 2017. This retreat continued the development of a more cohesive alliance. Program staff communicated best practices and set goals for 2017-18. Some of those goals and the resulting data from the academic year include:

Increase the number of participants to 275 in 2017-18

In 2017-18, KY-WV LSAMP supported 265 students – the goal of 275 participants was not met. This is a 7% decrease from the 286 participants the previous year but still a 45% increase in the number of participants during the initial year (2006).

*Increase the number of documented Scholar presentations
from 49 in 2016-17 to 100 in 2017-18*

In 2017-18, KY-WV LSAMP Scholars made 75 presentations at local, state, national, and even international conferences. In addition to Scholars who made research presentations (as seen on page 8), Scholars attended non-presentation national and regional conferences including the Women of Color STEM Conference, the Black Engineer of the Year Award (BEYA) Conference, and the National Society of Black Engineers (NSBE) Conferences. Though the goal of 100 documented presentations was not met, there was a 47% increase from the previous year, and the expectation of research presentations is spreading throughout the alliance.

*Increase the percentage of Scholars conducting
academic year research to 20% in 2017-18*

In 2017-18, forty-eight (18%) of the 265 Scholars conducted research during the academic year. Though this does not meet the 20% goal, it is a significant increase from the 11% last year. Studies have shown that students who conduct research have many benefits to their professional skills and connections as well as improvement of their academics. Each campus will encourage, enhance, and offer more opportunities for Scholars to participate in research projects during the academic year.

*Increase the number of documented summer
research internships to 50*

Seventy-eight of the Scholars were selected to participate in summer 2018 experiences including international experiences. This is a 123% increase from the number of Scholars who participated in summer internships during Summer 2017 and represents 29% of all 2018 KY-WV LSAMP participants. International experiences included, but were not limited to:

- One Scholar participated in the LSU France iREU.
- One Scholar conducted research in Germany through a Research Internship in Science and Engineering (RISE) from the German Academic Exchange.
- One Scholar participated in the Organization for Tropical Studies Costa Rica REU.
- One Scholar participated in a study abroad in Spain.
- One another Scholar will spend a full year in China through a Boren Scholarship.
- One Scholar will study in Greece through a Fulbright Scholarship.

Other internships included the EPSCoR, General Motors, and Air Products and Chemicals. The goal of 50 documented internships was met. With aggressive encouragement and promotion of summer opportunities, the number of Scholars participating in summer internships is expected to continue to rise.

*Document 20 KY-WV LSAMP graduates
who have been accepted into graduate programs*

In 2017-18, thirty-one Scholars graduated. Of those, 16 are pursuing graduate study. This did not meet the goal of 20 Scholars accepted into graduate programs, however 52% of all 2017-18 KY-WV LSAMP graduates have plans to immediately pursue graduate degrees/programs.

A summary of goals set during the alliance retreats (2016 and 2017) and actual accomplishments can be found in Table 4.

Table 4: Summary of Retreat Goals and Actual Accomplishments

OBJECTIVE	2015-16 Actual	2016-17 GOAL	2016-17 Preliminary	2017-18 GOAL	2017-18 Preliminary
# of Scholars	228	250	254	275	265
% Scholars AY Research	15%	20%	11%	20%	18%
# of Scholars w/ 2017 Summer Internships	9	50	35	50	78
# of Scholar Presentations	51	100	49 (plus 18 other)	100	75 (plus 31 other)
# of Graduates To Grad School	Number Not Available	20	22	25	16

At the Alliance Retreat, photos were taken of each coordinator for use in future documents. A collage of photos from the event can be found in Appendix D.

The director, again, received enrollment and degree data directly from the Kentucky Council on Postsecondary Education (KY CPE) and the West Virginia Higher Education Policy Commission (WV HEPC). This ensures more accuracy and consistency in data provided to NSF through the WebAMP system. Each agency was provided a list of NSF CIP Codes. Those codes are used to retrieve data on STEM enrollments and degrees. A list of the most current CIP Codes can be found in Appendix E.

Other duties/tasks that continue to be improved include: 1) a database for tracking participant information and activities; 2) continued improvement on the process for collection and maintenance of data to ensure complete accurate information and to make it easier for campus coordinators as well as administration staff; 3) language and ideas for improving the program website; 4) programmatic and documentation ideas for increasing the quality and quantity of program activities and participants on each campus; and 5) planning of a third alliance retreat for all coordinators and lead program staff to be held June 14-15, 2018, at Blue Licks Battlefield State Resort Park near Carlisle, KY. Great things will happen in 2018-19.

Financial Officer

Mark Pittman has been designated as the project financial officer at the University of Kentucky. Mr. Pittman (with help and oversight of the Office of Sponsored Projects) 1) creates the subcontracts for the alliance institutions, 2) processes payment of invoices from the alliance institutions, 3) tracks all expenditures, and 4) provides monthly reports to the PI, UK Co-PI, and project director.

Governing Board

The Governing Board, comprised of the presidents of the KY-WV Alliance Institutions, provides high-level direction for the Alliance. As KY-WV LSAMP PI and lead institution President, Eli Capilouto

communicates with Board members and other key campus administrators to review Alliance progress and reports from the external evaluator to provide relevant guidance and feedback to the Alliance.

External Advisory Board

An advisory board of professionals in higher education as well as research, diversity, and community organizations has been created. Members of the board provide expert advice on program activities and initiatives and represent a variety of backgrounds and experiences. Board members are listed in Table 5. Each year, board members will review the KY-WV LSAMP Annual Report and provide feedback on program activities during a video conference held in the fall. In the spring, board members will be invited to attend the Annual Research Symposium. Board members may also be asked to serve as speakers, critique Scholar research presentations, or volunteer in other capacities. Members who attended the 10th Annual Research Symposium were Bessie Guarrant and Michael J. Lauer.

Table 5: Members of the External Advisory Board

Name	Institution/ Organization	Discipline / Position	Expertise
Bessie Guarrant – 2018 Chair	UK Office of Undergraduate Research	Associate Director	Research Experiences and Professional Development
Carolina Atkins	KY Council on Postsecondary Education	Chief Diversity Officer	Recruitment and Retention
Daniel Crockett	WV Higher Education Policy Commission	Director of Student and Educational Services	Recruitment and Retention
Charles Holloway	Morehead State University	Chief Diversity Officer	Diversity and Inclusion
Michael J. Lauer	STEAM Academy	Science Teacher	Academic Preparedness and Recruitment
Julia Roberts	Gatton Academy	Executive Director	Academic Preparedness and Recruitment
Sonia Sanders	KSU; Central Kentucky Diversity Consortium	Assistant VP for Public Engagement and Community Outreach; Board member	Diversity and Inclusion
Tina Stevenson	STEAM Academy	Director	Academic Preparedness and Recruitment
Jan Taylor	WV EPSCoR	Director	Research Experience and Professional Development

External Partnerships and Funding

Scholars are encouraged to apply for summer internships through local, state, and federal programs as well as industry. Participation in these programs provides Scholars with a wider range of experiences and a larger professional network. These paid summer internships also allow better leveraging of KY-WV LSAMP funds, so the program can support more participants during the academic year as well as the summer.

In addition, KY-WV LSAMP has partnerships and collaborations with other organizations, agencies, departments, and companies.

Air Products and Chemicals – *is a world-leading Industrial Gases company in operation for over 75 years. The Company's core industrial gases business provides atmospheric and process gases and related equipment to manufacturing markets, including refining and petrochemical, metals, electronics, and food and beverage. Air Products is also the world's leading supplier of liquefied natural gas process technology and equipment.*

<http://www.airproducts.com/Company/company-overview.aspx>

General Motors, Detroit, MI – *is passionate about earning customers for life. This vision unites us as a team and is the hallmark of our customer-driven culture.*

<http://www.gm.com/company/company-overview.html>

Hensel Phelps, Phoenix, AZ – *Plan. Build. Manage. From planning and design, to construction, and facility management, we work to solve our clients' challenges from start to finish, and beyond. Our clients, both domestic and international, have entrusted us with a tremendous range of landmark projects, in nearly every market sector.* <http://www.henselphelps.com/>

Kentucky EPSCoR – *Kentucky Experimental Program to Stimulate Competitive Research exists to stimulate sustainable improvements in the Commonwealth's R&D capacity and to advance science and engineering capabilities for discovery, innovation, and knowledge-based prosperity. KY EPSCoR's activities are focused upon: developing human and physical infrastructure to advance academic research, promoting and nurturing a culture of innovation and economic creativity, and supporting increased STEM education, workforce development, and research participation diversity.* <http://kyepscor.org/>

LSU iREU, France – *the Louisiana State University international Research Experience for Undergraduates program sponsors students who are interested in projects that feature aspects of translational chemistry and incorporate major European "Innovation Campuses" where national laboratory, industry, and university scientists work as teams. This will provide students the opportunity to experience a network of research not typically available to students at most American colleges and universities.* NSF #1263336

NASA Kentucky – *Kentucky's Space Grant Consortium partners with NASA to advance research, education, and workforce development within the state. Managed alongside Kentucky's NASA EPSCoR, these programs promote aerospace-related scientific and technological innovation.* <http://nasa.engr.uky.edu/>

Organization for Tropical Studies (OTS) – *OTS hosts an REU in Costa Rica. The NSF LSAMP REU (open to students from LSAMP member institutions): students will be living at La Selva Research Station or Las Cruces Research Station for their nine-week research experience. Features of this program include 1) research skills in the field, 2) enhancing communication skills through training in scientific writing, oral presentations, science blogging, and videography, and 3) integration of cultural experiences with research development. The program will focus on environmental topics such as biodiversity conservation and agroecology and will offer opportunities to interact with local farmers, smaller field stations, and/or environmental NGOs.* <https://education.tropicalstudies.org/en/education/undergraduate-opportunities/programs/reu-research-experience-for-undergraduates-in-costa-rica.html>

Research Experiences for Undergraduates – The REU program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517

Summer Health Professional Education Program (SHPEP) – The program at Louisiana State University is strongly committed to increasing the number of students from underrepresented/underserved, rural, and/or disadvantaged backgrounds who are skilled, confident, and motivated to remain and succeed in challenging academic programs/majors that are designed to support health sciences careers. <http://www.shpep.org/site/louisiana-state-university-health-sciences-center/>

UK Environmental Research Training Laboratories, Lexington, KY – The University of Kentucky and the College of Engineering recognize the need to enhance the statewide infrastructure for environmental studies. Open to users from throughout the university, ERTL is a hands on learning and research facility used for a variety of organic and inorganic analyses and microbial analyses. Established in March of 2002, ERTL's mission is to increase research opportunities and improve results by offering personalized training and access to state-of-the-art laboratory equipment and techniques. <http://ertl.uky.edu/>

USDA Wallace-Carver Fellowship – offers exceptional college students the opportunity to collaborate with world-renowned scientists and policymakers through paid internships at leading USDA research centers and offices across the United States. The fellows also participate in a high-level week-long Wallace-Carver Leadership Symposium at the US Department of Agriculture in Washington, DC, hosted by the US Secretary of Agriculture. https://www.worldfoodprize.org/en/youth_programs/usda_wallacecarver_fellowship/

Links to Existing Campus Programs and Campus Honors

Each campus has unique resources and connections. This includes enhanced collaborations and connections with K-12 institutions and community organizations. Campuses in the KY-WV LSAMP alliance have also been given awards for diversity and other accomplishments. Examples of connections and honors are listed below. Select honors have accompanying news releases which can be found in Appendix F.

Bluegrass Community and Technical College

BCTC/KSU BLINKS Transfer Enterprise is a transfer collaboration. B is for BCTC, K is for KSU, and LINK is for The Links, Incorporated. The Links, Inc. is one of the oldest and largest volunteer service organizations of women who are committed to enriching, sustaining, and ensuring the culture and economic survival of African Americans and other persons of African ancestry. Students who are selected for the BLINKS Program receive an opportunity to utilize mentoring, study strategies, and other resources to help them be successful at BCTC and to graduate with an Associate of Arts or an Associate of Science degree. After which, if they have a 2.8 GPA or above, they are awarded full tuition to KSU for their undergraduate study. The purpose of the program is to: increase the graduation rate of community college students, increase the number of community college students who transfer to HBCUs, encourage greater collaboration among community colleges and HBCUs, increase the enrollment of selected HBCUs, and increase the graduation rate of students at HBCUs. <http://www.linksinc.org/>
http://bluegrass.kctcs.edu/en/Multiculturalism_and_Inclusion/Blinks.aspx

Carnegie Hall is a *one week intense summer immersion camp continuing throughout the year with semi-monthly Saturday learning activities*. The mission of Carnegie Hall is: *sparking an age of a generation who conquers all challenges, while remaining committed to success. Constructing mathematical and engineering thought processes so that the sciences and technological aspect lead to more success. Making others stronger, by forfeiting....NOTHING!*

This year, Carnegie Hall celebrated its 10th year and held a reunion banquet with student reflections. http://bluegrass.kctcs.edu/Multiculturalism_and_Inclusion/Carnegie_Hall.aspx

Latino Leadership and College Experience Camp (LLCEC) is a *unique experience that provides Latino and immigrant youth with an intensive college preparation and leadership development experience. Simulating college processes, high school students from across the state of Kentucky are able to enjoy a creative mix of college-like courses, leadership development workshops, team-building activities and social justice awareness. The LLCEC introduces participants to current college students, college professors, community leaders, and an extensive peer network. The close work with professors allows students to forge healthy and challenging professor/student mentorships that focus on academic success and personal accomplishment.*

http://bluegrass.kctcs.edu/en/Multiculturalism_and_Inclusion/Latino_Hispanic_Outreach/Camp.aspx

Multicultural Opportunities, Strategic and Institutional Inclusiveness Conference (MOSAIIIC) is a *time for candid and sustained dialogs on diversity and inclusion across higher education institutions in the Bluegrass area. This is a conference that is organized and funded by the Central Kentucky Diversity Consortium every year. The 2017 MOSAIIIC Conference was held on November 9-10 at the University of Kentucky. The event focused on our rights in a democracy. Conference speakers also addressed juvenile justice issues in community-based engagement - a "Know Your Rights" conference that gives hands-on skills for activist/Scholars to use in their service-learning and/or volunteer activities in their local communities. Ninety BCTC students (some of whom were LSAMP Scholars) attended and participated in the event. In addition, several UK and KSU Scholars as well as program coordinators and project director also participated in the event.* <http://www.uky.edu/studentacademicsupport/mosaaiic>.

Super Someday is an event to prepare high school students for selecting a college major and exploring career options. Charlene Walker, BCTC VP for Multiculturalism and Inclusion and LSAMP coordinator, completed career assessments with each student to help them in selecting and exploring career choices. Of the 140 students who attended the 2018 Super Someday event, 55 of them scored “Realistic and Investigative” career interests and were assigned career mentors from the STEM fields in which they showed interest.

Centre College

The Posse Foundation has partnered with Centre College for over 10 years. *It has identified, recruited and trained 7,728 public high school students with extraordinary academic and leadership potential to become Posse Scholars. Since 1989, these students—many of whom might have been overlooked by traditional college selection processes—have been receiving four-year, full-tuition leadership Scholarships from Posse’s partner institutions of higher education. Most important, Posse Scholars persist and graduate at a rate of 90 percent and make a visible difference on campus and throughout their professional careers.* <http://www.possefoundation.org/>

Centre College has a **commitment to study abroad** experiences. This commitment can be seen in their continued rank in the nation for the number of students who participate in experiences abroad.

Centre was named as a 2018 Hidden Gem by *College Raptor*.

University of Kentucky

Center for Academic Resources and Enrichment Services (CARES) is a division of the Office for Institutional Diversity. CARES's mission is to provide a comprehensive academic support system as well as enrichment services to aid in increasing the retention and graduation rates of underrepresented students. Programs and activities assist students in achieving academic excellence and adjusting to student life at the University of Kentucky. Services provided by CARES include: Academic planning through academic progress sessions with a CARES counselor, free tutoring that includes individual tutoring and study groups, assistance with study skills through one-on-one meetings or workshops; and enrichment programs and activities through activities designed to address specific topics at each grade level, i.e. the Critical First Year Program that focuses on topics that range from Understanding Faculty Expectations to Study Abroad Opportunities for first year students, Pathfinders Program that focuses on major exploration and career development for sophomores, and SOAR that focuses on professional and leadership development that enhances career preparedness for juniors and seniors. CARES also hosts the Freshman Summer Program. A University computer lab is also housed at CARES.

<http://www.uky.edu/cares/>

Center for Applied Energy Research (CAER) serves as a center to answer today's energy questions. Among the most important aims is to assure that the benefits of investigations, research and study are applied, made available to the public and brought into the widest possible use. The Center, through its technology innovation and service to the community, contributes to improving the lives of Kentuckians by creating jobs and economic opportunities; by sustaining vital industries and public services; and by improving energy efficiency and protecting the environment. <http://www.caer.uky.edu/energy/energy-research.shtml>

Engineering Broadening Participation Program is funded by the National Science Foundation and focuses on mentoring students from underrepresented populations at both the undergraduate and graduate level. Housed at the CAER, the program has three goals: 1) to motivate African American, Hispanic, and Native American students to choose engineering and help them graduate with engineering degrees, 2) to help these students acquire the skills they need to become engineering professionals, academics, leaders, and role models, and 3) to investigate if mentoring in research centers offers advantages over mentoring in traditional engineering departments.

<http://enr-mentoring.caer.uky.edu/about.html>

NerdSquad makes science an experience; bringing it to life, making it tangible so it becomes real, relatable and above all memorable. LSAMP Scholars in Lexington volunteer with this non-profit organization that provides hands-on science activities and mentoring to K-12 students. KY-WV LSAMP Scholars are also mentored by Cagney "CC" Coomer, NerdSquad founder, who is a UK biology Ph.D. candidate and Lexington community leader.

<https://www.facebook.com/NERD-SQUAD-1429006443980870/>

Office of Undergraduate Research's mission is to promote high quality, undergraduate student-faculty collaborative research and Scholarship in all disciplines across campus, and to use all available resources to support and advance the research endeavor. This office provides extensive matching assistance as well as support for academic year research, summer research, and presentation opportunities and support including the annual UK Showcase of Undergraduate Research and the National Conference on Undergraduate Research (NCUR). <http://www.uky.edu/academy/UGResearch>

STEAM Academy was created through a grant awarded by EDUCAUSE and the Gates Foundation as part of the Next Generation Learning Challenge (More information here: <http://www.educause.edu/focus-areas-and-initiatives/teaching-and-learning/next-generation-learning-challenges>). This grant was awarded to STEAM due to the partnership with the University of Kentucky and particularly the College of Education Faculty and was used to construct the innovational foundations for STEAM. University of Kentucky Faculty are helping to create the infrastructure and instructional model for STEAM. As content experts, faculty members provide training for classroom teachers across a range of instructional innovations including project-based learning, design thinking, digital literacy, and blended learning. Pre-service teachers, master teachers and faculty all work together in this innovative learning environment. Dual enrollment opportunities, internships, as well as multiple events at the University of Kentucky campus throughout the high school curriculum, will ensure that STEAM students graduate ready for college and careers. <https://sites.education.uky.edu/steam/>

STEMCats, is a Howard Hughes Medical Institute (HHMI) funded initiative. STEMCats is a pre-Fall freshmen academic, research and professional-development residential program. This living learning program is intended for first year students who have applied for a STEM major or who are interested in a STEM major plus a small cohort of transfer students from the Bluegrass Community and Technical College. STEMCats is supported by the College of Arts and Sciences, Pharmaceutical Sciences, Physiology, Molecular & Biomedical Pharmacology, and the Division of Natural Sciences at Bluegrass Community and Technical College. STEMCats will make for a smoother transition for first year and transfer students coming to UK.

<https://stemcats.as.uky.edu/stemcats-about-us>

University of Louisville

The Summer Research Opportunity Program (SROP) directed by the Office of the Executive Vice President for Research and Innovation and the Office of the Provost, provides University of Louisville students, who would like to know more about graduate-level education, with a 10-week research experience in a department that offers graduate degrees. These fellowships will also be available to under-served/under-represented student populations from regional colleges and universities. Mentors will provide students with individualized research projects, and the program will provide group seminars on topics related to research and graduate education. Students should be, preferably, in their sophomore or junior year of study. <http://louisville.edu/research/students/srop/details>

West Virginia University

The Emerging Scholars Program (ESP) classes at West Virginia University are 100% funded by the institution. The faculty salaries, classroom space, and other needs of the class are provided by WVU at no cost to the LSAMP program.

Programs on Multiple Campuses

On each campus, the LSAMP program has a close working relationship with the **Diversity Offices**. The level of support and partnership varies among institutions, but types of support have included, but is not limited to: direct financial support for LSAMP Scholars, support for recruitment and retention initiatives, and partnerships with programs housed under the diversity office. In some cases, the LSAMP program is directly housed under the Diversity Office.

Bucks for Brains began in 1997 when the Kentucky legislature approved a bold plan to reform the state's system of higher education. The goal was to develop a "seamless, integrated system of postsecondary

education strategically planned and adequately funded to enhance economic development and quality of life.” A key component of this reform was the state’s creation of the Research Challenge Trust Fund, a strategic investment in university research designed to create new jobs, generate new economic activity and provide new opportunities for Kentucky citizens. Commonly known as “Bucks for Brains,” the program uses state funds to match private donations, effectively doubling the impact of private investment supporting research in strategically defined areas and planting the seeds for a better future.

The University of Kentucky, University of Louisville, and West Virginia University were selected for the 2017 HEED Award. The University of Kentucky was selected as a 2017 HEED Diversity Champion. More information on the award can be found in Appendix F. **INSIGHT Into Diversity Higher Education Excellence in Diversity (HEED) Award**. The HEED Award and the Health Professions HEED Award *are the only national awards that honor individual institutions for being outstanding examples of colleges, universities, or health profession schools that are committed to making diversity and inclusion a top priority across their campuses. Sharing this important recognition with your campus and community helps showcase your school’s excellence in developing innovators and leaders for today’s global workforce.*

<http://www.insightintodiversity.com/about-the-heed-award/>

Student Support Services (SSS) Program is a TRiO program funded by the Department of Education. This program exists on many of the alliance campuses and serves as a partner for recruitment and services to LSAMP Scholars. *Funds are awarded to institutions of higher education to provide opportunities for academic development, assist students with basic college requirements, and to motivate students toward the successful completion of their postsecondary education. SSS projects also may provide grant aid to current SSS participants who are receiving Federal Pell Grants. The goal of SSS is to increase the college retention and graduation rates of its participants.* <http://www2.ed.gov/programs/triostudsupp/index.html>

Upward Bound and Talent Search are TRiO programs funded by the Department of Education. These programs are intended for middle school and high school students to prepare them for entrance into and success in college. One or both programs exist on many alliance campuses and serve as a resource for recruiting students to college and the LSAMP program. In addition, there are occasions when LSAMP Scholars serve as volunteers, speakers, and/or summer staff for these programs.

New Activities

Cyber-Sharing

KY-WV LSAMP strives to increase communications and dissemination of program accomplishments and best practices. The program website has been extensively updated and continues to evolve to include more information and resources for Scholars, program staff, mentors and faculty across the nation. New features include, but are not limited to: revised information on each of the partner campuses and important resource links for Scholars and other students including copies of the Annual Reports and symposium program books. <http://www.uky.edu/KYWV-LSAMP/index.html>

The Facebook group continues to grow. Though it has not, yet, gained adequate participation, it will aid in conversations regarding accomplishments and opportunities. Information and questions may be posted by

anyone who is a member of the Facebook group. Scholars are encouraged to post questions to each other and to other members of the group including faculty mentors and graduate students. The possibilities are endless.

<https://www.facebook.com/groups/750676201700146/>

KY-WV LSAMP now has Twitter and Instagram accounts. Social media will be utilized more in the new phase of the program.

@KYWVLSAMP, <https://twitter.com/KYWVLSAMP>

<https://www.instagram.com/kywvlsamp/>

Dissemination

There have been several avenues for dissemination. KY-WV LSAMP continues to update the program website by continuing to add resources for Scholars, faculty mentors, and program staff. There continues to be plans for Co-PI's, campus coordinators, and the project director to submit abstracts to conferences and continue working on articles for peer-reviewed journals. Dissemination in 2017-2018 included:

1. Dr. Kazi Javed, KSU Co-PI and Coordinator, presented at the 2018 Lilly Conference. There, he discussed the procedures and success of the Peer-Led Team Learning (PLTL) activities.
2. Dr. David Miller, WVU Co-PI and Coordinator, presented at the Louis Stokes Midwest Center of Excellence (LSMCE) Conference. He talked about the WVU Emerging Scholars Program (ESP) and the success of the calculus classes that are taught via cooperative learning rather than traditional lecture.
3. Fara Williams, project director, facilitated a workshop at the LSMCE Conference in which coordinators, directors, and PI's discussed successes and issues regarding LSAMP.
4. At the 2018 LSMCE Conference and the 2018 American Chemical Society National Meeting, Sarah Hodges (UK Scholar) and Dr. Eduardo Santillan-Jimenez (her mentor) presented the benefits and recommended preparations for conducting international research.
5. Dr. Kazi Javed submitted an abstract to present a Faculty Administration Network (FAN) session at the National Conference on Undergraduate Research. Fara Williams gave the presentation about PLTL at the event.

Proposal for Continued Funding

In January 2018, KY-WV LSAMP submitted a proposal for continued funding. A major change to the program will be the addition of another community college. Jefferson Community and Technical College (JCTC) will be added to the KY-WV LSAMP alliance with the next cycle of the program. This addition was made at the request of the external evaluators and will add new energy, participants, and potential collaborations for JCTC as well as the rest of the alliance. JCTC is located in Louisville, Kentucky, and has the largest number of URM students enrolled in community college STEM programs in Kentucky and West Virginia. We are looking forward to adding JCTC to the KY-WV LSAMP family and anxiously await approval from NSF.

New/Enhanced K-12 Connections

Many alliance campuses participate in recruitment events. Several BCTC activities (such as Super Someday) focus on high school recruitment. This year, several campuses enhanced LSAMP activities with connections to local K-12 institutions and organizations. Some examples include:

- In 2017 and 2018, BCTC's Super Someday has specifically targeted STEM majors/careers.
- Summer 2017, one of the WVSU Scholars created and implemented hands-on science curriculum.
- UK has increased its connections with the NerdSquad in Lexington. LSAMP Scholars have served as volunteers for this organization, and the founder, Cagney "CC" Coomer has mentored LSAMP Scholars on conference trips.
- April 26, 2018, three UK Scholars presented on a panel to a group of 23 URM students from STEAM Academy.
- May 9, 2018, 17 URM STEAM Academy students toured the UK Center for Applied Energy Research. The tour was organized (in part) by the LSAMP project director. Both the project director and UK campus coordinator participated in the tour.

FACULTY and STAFF HIGHLIGHTS and PROFESSIONAL DEVELOPMENT

KY-WV LSAMP program administration and staff continue to be active in their respective fields as well as disseminate best practices learned via LSAMP. KY-WV LSAMP support staff are an important aspect of the program. Project staff continue to seek professional development opportunities. Copies of abstracts, conference proceedings, pictures and news releases can be found in Appendix G. Highlights, include, but are not limited to:

Pamela Feldhoff, UofL Coordinator, stepped down as Associate Vice President for Research. **V. Faye Jones, MD, Ph.D., MSPH** was selected for the position and became the LSAMP Coordinator at UofL.

Kazi Javed, KSU Co-PI and Coordinator, presented, "Increasing STEM Student Success Through PLTL at KSU" at the Lilly Conference in Austin, TX, January 4-6, 2018. He also led the submission of an abstract and the creation of the presentation given at the National Conference on Undergraduate Research in Edmond, OK, April 4-7, 2018.

Charles McGruder, WKU campus coordinator, (1) accompanied Scholars to NCUR, Edmond, OK, April 4-7, 2018; (2) traveled to South Africa to give lectures and participate in physics events, April 17-21, 2018; (3) presented to the WKU Society of Physics Students, May 4, 2018, where he discussed the career paths and options for those with physics degrees; and (4) attended the 100th Birthday Celebration of Dr. Richard Feynman (one of Dr. McGruder's professors during his undergraduate studies), May 11-12, 2018.

David Miller, WVU Co-PI and campus coordinator, (1) served as a reader of AP calculus exams; (2) attended the LSMCE Conference with two KY-WV LSAMP Scholars (one from UK, one from WVU) in Indianapolis, IN, October 6-8, 2017; and (3) presented a breakout session, "Building a Community of Underrepresented STEM Majors in Calculus: The Emerging Scholars Program," at the LSMCE Conference.

Johné Parker, UK Co-PI, served as a keynote speaker at the 12th Annual Peach State LSAMP Symposium and Research Conference, Atlanta, GA, October 19-21, 2017.

Hannah Payne, WVSU campus coordinator, (1) accompanied 23 students (including 15 KY-WV LSMAP Scholars from Centre, Marshall, UK, UofL, and WVSU) to the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; and (2) served in a leadership capacity in planning and implementing the West Virginia Research Day at the Capitol, Charleston, WV, February 16, 2018.

Eduardo Santillan-Jimenez, UK research mentor, presented with his mentee (Sarah Hodges) a breakout session, “Using a Research-center-based Mentoring Program to Broaden Participation in STEM and to Facilitate Access to an International Research Experience for Undergraduates,” at the LSMCE Conference in Indianapolis, IN, October 6-8, 2017.

Raúl Torres, UK campus coordinator, (1) accompanied 23 students (including 15 KY-WV LSMAP Scholars from Centre, Marshall, UK, UofL, and WVSU) to the Women of Color STEM Conference Detroit, MI, October 5-7, 2017; (2) attended the UK Women’s Forum Conference, University of Kentucky, Lexington, KY, October 18, 2017; (3) began taking graduate courses for an MS degree in higher education; (4) accompanied 11 students (including 10 LSAMP Scholars) to the Black Engineer of the Year Award (BEYA) Conference, Washington, D. C., February 8-10, 2018; (5) attended Kentucky Posters at the Capitol, Frankfort, KY, February 8, 2018; (6) attended West Virginia Research Day at the Capitol, Charleston, WV, February 16, 2018; (7) accompanied eight KY-WV LSAMP Scholars to the National Conference on Undergraduate Research (NCUR), Edmond, OK, April 4-7, 2018; (8) attended the UK Showcase on Undergraduate Research, Lexington, KY, April 25, 2018; (9) volunteered for a Tech Savvy event at Kentucky State University, Frankfort, KY, May 19, 2018; (10) will attend the National Association of Student Personnel Administrators (NASPA) Bridging the Achievement Gap Conference in Columbus, OH, May 31-June 2, 2018; and (11) completed/attended several UK professional development trainings.

Fara Williams, project director, (1) planned and implemented an Alliance Retreat for KY-WV LSAMP program staff including Co-PI’s and Campus Coordinators, Four Points Sheraton, Lexington, KY, June 9-10, 2017; (2) presented/volunteered for the Cherokee College Preparatory Institute (CCPI) - college readiness program for Native American high school juniors and seniors, at Carl Albert State University, Poteau, OK, July 15-21, 2017; (3) participated in Preparing Science Professionals Symposium, University of Kentucky, Lexington, KY, September 29-30, 2017; (4) participated in the University (of Kentucky) Women’s Forum Conference, Lexington, KY, October 18, 2017; (5) attended the LSMCE Conference with two KY-WV LSAMP Scholars (one from UK, one from WVU) in Indianapolis, IN, October 6-8, 2017; (6) led a workshop, “Alliance to Alliance: Sharing Best Practices,” at the LSMCE Conference; (7) attended the Multicultural Opportunities, Strategies, and Institutional Inclusiveness Consortium (MOSAIC) Conference, University of Kentucky, Lexington, KY, November 9-10, 2017; (8) attended *Defamation, the Play*, University of Kentucky, Lexington, November 15, 2017; (9) became a member of the IN LSAMP Policy and Procedure Manual Committee, a committee formed to produce a policy and procedure manual to share at the IN LSAMP retreat in Indianapolis; (10) attended Science and Engineering for Social Good Conference, Georgia Tech, Atlanta, GA, February 9-11, 2018; (11) attended Kentucky Posters at the Capitol, Frankfort, KY, February 8, 2018; (12) attended West Virginia Research Day at the Capitol, Charleston, WV, February 16, 2018; (13) presented, “Integrating Team Learning and Research: A Recipe for Student Success” the NCUR at the University of Central Oklahoma, Edmond, OK, April 4-7, 2018; (14) attended meetings of the Kentuckiana FileMaker Developers Group, Louisville, KY; (15) attended the inaugural meeting of the Lexington FileMaker Developers Group, Lexington, KY, May 12, 2018; (16) volunteered at a Tech Savvy event at Kentucky State University, Frankfort, KY, May 19, 2018; (17) presented LSAMP to students individually and in groups including at the BCTC STEM Academy; (18) attended various UK HR Professional Development sessions including *Communicating with Success* and *Facilitating Teams and Meetings*; and (19) attended various events and activities at the University of Kentucky including staff

appreciation day and a workshop led by Dr. Damon A. Williams for diversity and inclusion officers on June 11, 2018.

John Wilson, Centre Coordinator, was selected as the 2017-18 Diversity and Inclusion Faculty Fellow for Centre College. In this role, he worked to develop support mechanisms that will increase the number of students from underrepresented populations who pursue STEM degrees at Centre. He attended the Recruiting and Retaining Historically Underrepresented Students in STEM Conference in San Antonio, TX, October 2-3, 2017. This event was hosted by Academic Impressions and provided information on the challenges to success in STEM majors. As a result of Dr. Wilson's attendance to the conference and his role as Diversity and Inclusion Faculty Fellow, several math professors at Centre are exploring changes to the lower level math curriculum and a substantial overhaul of the calculus sequence.

SCHOLAR and ALUMNI HIGHLIGHTS

Conferences and Symposia

There were some conferences that were attended by Scholars from multiple campuses. In some cases, travel for these events was coordinated in order to provide opportunities for Scholars on different campuses to meet and interact with one another. Pictures and graphics from those events can be found in Appendix H.

Women of Color STEM Conference

Fifteen KY-WV LSAMP Scholars attended the Women of Color STEM Conference held in Detroit, MI, October 5-7, 2017. The Scholars were accompanied by **Raúl Torres**, UK coordinator; **Hannah Payne**, WVSU Coordinator; **Kayla Titalii**, UK biology graduate student and former LSAMP Scholar from Washington State University; and **Cagney "CC" Coomer-Felton**, UK biology graduate student and founder of Nerd Squad. CC received a student leadership award for which she was nominated by KY-WV LSAMP. Scholars in attendance included: **Ky'Achia Atkins**, WVSU; **Kelsie Dillard**, Marshall; **Tat'Ana Dillard-Sims**, WVSU; **Sajana Dumre**, UK; **Sana Ghori**, Marshall; **Charity Hairston**, Marshall; **Onyee Ibekwe**, UK; **Oby Igwe**, UofL; **LaShonda McDowell**, Marshall; **Je'Coiya Moore**, Centre; **Jaliya Slaton**, UK; **L. Stephanie Warlitner**, Marshall; **Ariana Swayne**, Marshall; **Makayla Swayne**, Marshall; and **Day Vance**, Centre.

Louis Stokes Midwest Center of Excellence (LSMCE) Conference

The LSMCE Conference was held in Indianapolis, IN, October 6-8, 2017. Two Scholars presented. **Brittany Brush**, WVU, presented a research poster, "Robust Empirical Modeling of Stream Chlorophyll-A: Scaling by a Single Reference Observation." **Sarah Hodges**, UK, presented a research poster, "The Influence of Cellulose Properties on the Thermal Behavior of Biomass." **Sarah** and her mentor, **Dr. Eduardo Santillan-Jimenez**, presented a breakout session, "Using a Research-center-based Mentoring Program to Broaden Participation in STEM and to Facilitate Access to an International Research Experience for Undergraduates." **Dr. David Miller**, WVU LSAMP Coordinator, presented a breakout session, "Building a Community of Underrepresented STEM Majors in Calculus: The Emerging Scholars Program." **Fara Williams**, project director, facilitated a workshop, "Alliance to Alliance: Sharing Best Practices."

Posters/Research Day at the Capitol

Several Scholars were selected to represent their universities and presented at *Kentucky Posters at the Capitol* and *West Virginia Research Day at the Capitol*. **Edwina Barnett**, WVSU, presented *Amplification and Sequencing of the Internal Transcribed Spacer of Rubus*. **Karen Udoh**, UofL, presented *Targeting Cancer Stem Cells in Recurrent Lung Cancer*. **Obiamaraije “Oby” Igwe**, UofL, presented *Neuronal Degeneration and Short-term Memory Impairment after TBI*.

Black Engineer of the Year Award (BEYA) Conference

Ten KY-WV LSAMP Scholars attended the BEYA Conference in Washington, D. C. February 8-10, 2018. Scholars were accompanied by **Raúl Torres** (UK campus coordinator) and Kayla Titalii (UK biology graduate student). Scholars from Marshall included: **Jacqueline Brown, Charity Hairston, Malik Smith, and Romello Thorpe**. Scholars from UK included: **Mark Lawhorn, Jimmy Mickens, Asare Nkansah, Chelsea Robinson, and Ndeye Thiaw**. **D’Jreya Boyd** represented UofL. At the conference, Charity and Alesia Hairston volunteered to perform in a talent search. They sang an original song about how their choice to pursue a STEM degree will set them up for success.

National Conference on Undergraduate Research (NCUR)

KY-WV LSAMP was represented at the 32nd NCUR. The April 2018 event was held at the University of Central Oklahoma, Edmond, OK. Scholars presented posters and gave oral presentations on their research projects. In addition, they attended pre-conference workshops, other student presentations, visited with graduate school and industry representatives, made connections with faculty, and explored the Edmond/Oklahoma City area.

Five Scholars were selected to present at the 2017 NCUR. Those Scholars were: **I. Khalil Appleton**, UK, *Effect of Key Factors Contributing to Cross-Programming in RFID Multi-tag Applications*; **Nathan Crowds**, WKU, *Influence of 'Small' Elevation Changes on Mesoscale Temperature Variations*; **Sarah Hodges**, UK, *Effects of Lignocellulose Characteristics During Thermal Analysis*; and **Asare Nkansah**, UK, *Revolutionizing Hybrid Parallelization through Data Communication Techniques*. **Fara Williams**, project director, presented information on the KSU Peer-Led Team Learning activities. In addition, three WKU Scholars (**Koji Barnaby, Raquel Dominguez, and Whitney King**) attended the conference and **Danielle Chavis**, WKU graduate, volunteered at the conference. Campus coordinators Charles McGruder (WKU) and Raúl Torres (UK) attended the event as well.

Individual Accomplishments

Many Scholars made accomplishments and received honors throughout the 2017-18 academic year. Snapshots and news releases of select accomplishments can be found in Appendix I. Below are some examples of KY-WV LSAMP Scholar accomplishments.

Mohanad Abdallah, UK electrical engineering senior, received an internship to conduct research in Germany summer 2018.

I. Khalil Appleton, UK mechanical engineering junior, (1) presented at the KY-WV LSAMP 10th Annual Research Symposium; (2) presented at the National Conference on Undergraduate Research, Edmond, OK, April 5-7, 2018; (3) received a summer internship as a business technology consultant at Deloitte; and (4) participated in a study abroad to Japan Summer 2017.



Ky'Achia Atkins, WVSU biology sophomore, (1) presented at the WVSU SURE Symposium, July 28, 2017; (2) attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; (3) presented at the KY-WV LSAMP 10th Annual Research Symposium; (4) presented at the WVSU 23rd Annual Research Symposium; (5) received the WVSU NSM Citizenship Award for her work with the community; and (6) has been invited to present a poster at the LSU iREU Meeting, Toulouse, France, June 25-30, 2018.

Joe Baird, WVSU biology sophomore, presented at the WVSU SURE Symposium, July 28, 2017.

Koji Barnaby, WKU freshmen, attended the National Conference on Undergraduate Research, Edmond, OK, April 5-7, 2018.



Edwina Barnett, WVSU biology sophomore, (1) presented at the LSU iREU Meeting, Bordeaux, France, July 2017; (2) presented at the WVSU SURE symposium, July 28, 2017; (3) presented at West Virginia Research Day at the Capitol, Charleston, West Virginia, February 16, 2018; (4) presented at the KY-WV LSAMP 10th Annual Research Symposium; and (5) is participating in the Organization for Tropical Studies REU in Costa Rica this summer.

Lloyd Bartley, UofL cellular biology senior, presented at the KY-WV LSAMP 10th Annual Research Symposium and has been invited to present a poster at the LSU iREU Meeting, Toulouse, France, June 25-30, 2018.

Cheyenne Boone, KSU chemistry Scholar, will conduct research at the UK Environmental Research Training Laboratories (ERTL) summer 2018.

Manuela Botaka, Marshall biology Scholar, presented at the KY-WV LSAMP 10th Annual Research Symposium.

Noela Botaka, Marshall biology Scholar, presented at the KY-WV LSAMP 10th Annual Research Symposium.

Deja Bowen, UK biology senior, completed her BS degree and is pursuing graduate school.

D'Jreya Boyd, UofL industrial engineering senior, attended the Black Engineer of the Year Award (BEYA) Conference, Washington, D.C., February 8-10, 2018.

William Britt, Centre Scholar, presented at the KY-WV LSAMP 10th Annual Research Symposium and at Centre's 11th Annual Research, Internships, and Creative Endeavors (RICE) Symposium.

Erin Brown, KSU biology senior, graduated May 2017 and is preparing for pharmacy school at UK.

Gabriel Brown, Marshall biology sophomore, presented at the Society of Neuroscience 47th Annual Meeting in Washington, D. C., November 11-15, 2017, and at the KY-WV LSAMP 10th Annual Research Symposium.

Jacqueline Brown, Marshall biology Scholar, attended the BEYA Conference, Washington, D.C., February 8-10, 2018.



Brittany Brush, WVU geology senior, (1) presented at the LSMCE Conference, Indianapolis, IN, October 6-8, 2017; (2) presented a poster at the KY-WV LSAMP 10th Annual Research Symposium, Lexington, KY, March 2-3, 2018; (3) completed her BS degree; and (4) has begun graduate study in civil engineering at WVU.

Sonia Chandi, Marshall biology senior, presented at the Society of Neuroscience 47th Annual Meeting in Washington, D. C., November 11-15, 2017, and at the KY-WV LSAMP 10th Annual Research Symposium.



Danielle Chavis, WKU chemistry senior, participated in the LSU iREU program during summer 2017. She spent the summer in Puerto Rico conducting research on art conservation. She graduated in December 2017 and volunteered at NCUR, Edmond, OK, April 5-7, 2018.

Trevor Claiborn, (Former BCTC) KSU agriculture senior, is also known as Farmer Brown tha' MC and continues to be featured by various media. He frequently presents to K-12 students and teachers including attendees of the KY-WV LSAMP 10th Annual Research Symposium. He completed his BS degree in December 2017 and continues to work on the KSU research farm.

Nathan Crowdus, WKU meteorology senior, presented at the KY-WV LSAMP 10th Annual Research Symposium and at NCUR, Edmond, OK, April 5-7, 2018.

Nicholas David, WVU mechanical engineering freshmen, has been selected as an intern with GE.

Demetrius Davis, KSU biology junior, conducted research during summer 2017 at the UK Environmental Research Training Laboratory and presented at the KY-WV LSAMP 10th Annual Research Symposium. He will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Kelsie Dillard, Marshall biology Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.



Tat'Ana Dillard-Sims, WVSU biology sophomore, (1) presented at the WVSU SURE Symposium, July 28, 2017; (2) attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; (3) presented at the KY-WV LSAMP 10th Annual Research Symposium; and (4) presented a chromatography lesson to 100 female K-12 students in the local community.

Raquel Dominguez, WKU meteorology freshmen, attended the National Conference on Undergraduate Research, Edmond, OK, April 5-7, 2018.

Sabita Dumre, UK biology graduate, has been accepted to medical school at Lincoln Memorial University in the DeBusk College of Osteopathic Medicine.

Sajana Dumre, UK neuroscience sophomore, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; and will participate in a study abroad to Spain this summer.

Taylor Fisher, UofL bioengineering sophomore, and has been invited to present a poster at the LSU iREU Meeting, Toulouse, France, June 25-30, 2018.

Paola M. Flores, KSU biology freshman, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Miekayla R. Ford, KSU biology Scholar, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Jaleya Foster, UofL Scholar, presented at the KY-WV LSAMP 10th Annual Research Symposium.



Makaylah Garrett, KSU biology senior, was listed as an author on an article, “Effect of Cu promotion on cracking and methanation during the Ni-catalyzed deoxygenation of waste lipids and hemp seed oil to fuel-like hydrocarbons,” published in *Catalysis Today*. She graduated May 2018.

Tigist Geberehiwot, WVSU chemistry senior, (1) presented a poster at the WVSU SURE Symposium, July 28, 2017; (2) presented a poster at the 25th EPSCoR Conference, Missoula, MT, November 5-7, 2017; and (3) completed the BS degree in December 2017.

Sana Ghori, Marshall biology Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.

Raina Gray, KSU biology senior, graduated May 2018.

Charity Hairston, Marshall biology senior, (1) attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; (2) attended the BEYA Conference, Washington, D.C., February 8-10, 2018; (3) sang in the talent show at the BEYA Conference; and (4) is a lab analyst at Pinnacle Environmental.

Imani Harris, KSU biology Scholar, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Miguel Henriquez, WVU physics senior, (1) presented a poster at the KY-WV LSAMP 10th Annual Research Symposium, Lexington, KY, March 2-3, 2018; (2) completed his degree in May 2018; and (3) will be pursuing a physics graduate degree at WVU.



Sarah Hodges, UK biochemistry senior, (1) conducted research in Grenoble, France during summer 2017 thanks to the LSU iREU program; (2) presented at the LSU iREU Meeting, Bordeaux, France, July 6-8, 2017; (3) presented a research poster at the LSMCE Conference, Indianapolis, IN, October 6-8, 2017; (4) presented an oral presentation about preparing for and participating in international research experiences at the 2017 LSMCE Conference; (5) presented at NCUR, Edmond, OK, April 4-7, 2018; (6) presented a research poster at the American Chemical Society National Conference (ACS), New Orleans, LA, March 18-22, 2018; (7) gave an oral presentation about preparing for and participating in international research experiences at the 2018 ACS Conference; (8) presented on a panel presentation at STEAM Academy, April 26, 2018; and (9) is serving as a student leader for the 2018 LSU iREU in France.

Ieisha Hopwood, KSU biology Scholar, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Onyee Ibekwe, UK biology junior, spent the summer 2017 in Spain for study abroad and attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.



Noah Ichite, Marshall exercise science senior, (1) presented research at the 33rd American Society for Gravitational and Space Research Annual Meeting in Seattle, WA October 25-28, 2017; and (2) presented at the KY-WV LSAMP 10th Annual Research Symposium.

Obiamaraije “Oby” Igwe, UofL biology junior, (1) attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; (2) presented at Kentucky Posters at the Capitol, Frankfort, KY, February 8, 2018; and (3) presented at the KY-WV LSAMP 10th Annual Research Symposium.

Tiara Johnson, KSU biology senior, will graduate Summer 2018 and is preparing for graduate school.

Osei Jordan, UK agriculture biotechnology sophomore, attended the 33rd annual conference for Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS), Greensboro, NC, April 4-7, 2018. At the conference, the UK MANRRS chapter was named National Chapter of the Year. Osei will be conducting research at UK during summer 2018.

Mahireyaa Kao, KSU biology freshman, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

K’Lynn King, UK chemical engineering freshman, will participate in the UK Engineering Undergraduate Research Opportunity Program.

Whitney King, WKU information sciences freshmen, attended the National Conference on Undergraduate Research, Edmond, OK, April 5-7, 2018.

Mark Lawhorn, UK engineering freshman, attended the BEYA Conference, Washington, D.C., February 8-10, 2018. He will intern with the City of Columbus summer 2018.

Fabian Leon, UK agriculture biotechnology sophomore, received a Wallace-Carver Fellowship. With this fellowship, Fabian conducted research during summer 2017 with the Agriculture Research Service at the National Laboratory for Agriculture and the Environment in Ames, IA. His project worked to evaluate the effect of increasing temperatures on corn and wheat response of a variety of different genetic material.

Savannah Lewis, UK electrical engineering freshman, will participate in a University of Missouri REU summer 2018.



Scott Lopez, WVU chemistry junior, received the Boren Scholarship and will spend a year learning the language and culture of a country that has been identified as critical to US interests. He will receive intensive language training at the Beijing Language and Culture University this summer. Next year, he will study at Tsinghua University.

Corey Mattic, Jr., KSU chemistry and chemical engineering junior, conducted research during summer 2017 in the UK Materials Science and Chemical Engineering Department and presented at the KY-WV LSAMP 10th Annual Research Symposium. He will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss nad Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

LaShonda McDowell, Marshall Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.

Courtney McKelphin, UK chemical engineering graduate, is working on a MS in project management at the University of Kansas while working in industry.

Jimmy Mickens, UK mechanical engineering junior, (1) received an internship with General Motors in Detroit for summer 2017; (2) attended the BEYA Conference, Washington, D.C., February 8-10, 2018; (3) presented on a panel presentation at STEAM Academy, April 26, 2018; and (3) will spend summer 2018 in Detroit, MI as an intern for GNC.

Je'Coiya Moore, Centre Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.



Asare Nkansah, UK computer science sophomore, presented at the Annual Biomedical Research Conference for Minority Students, Phoenix, AZ, November 1-4, 2017; (2) attended the BEYA Conference, Washington, D.C., February 8-10, 2018; (3) presented at a UK Board of Trustees Meeting, February 23, 2018; (4) presented at the KY-WV LSAMP 10th Annual Research Symposium; (5) presented at the NCUR, Edmond, OK, April 5-7, 2018; (6) presented at the UK Showcase of Undergraduate Scholars, April 25, 2017; (7) presented on a panel presentation at STEAM Academy, April 26, 2018; (8) is conducting international research in Bordeaux, France, through the LSU iREU program summer 2018; (9) has been selected as a UK Undergraduate Research Ambassador to *inspire broader engagement in undergraduate research at the University of Kentucky*; and (10) will present at the LSU iREU Meeting, Toulouse, France, June 28-30, 2018.

Raisa Nunez, Marshall biotechnology junior, transferred to West Virginia University. She continues to participate in LSAMP and presented at the NCUR, Edmond, OK, April 5-7, 2018.

LaShonna T. Odom, KSU biology sophomore, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Emmely Ovalle, Centre Scholar, presented at the KY-WV LSAMP 10th Annual Research Symposium.

Jazmine L. Richmond, KSU mathematics and engineering Scholar, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Steven Roberts II, UK mining engineering mining engineering junior, will participate in an internship with a mining engineering company summer 2018.

Chelsea Robinson, UK mechanical engineering junior, received an internship with Air Products and Chemicals for summer 2017 and 2018 and attended the BEYA Conference, Washington, D.C., February 8-10, 2018.

Alexius Shorter, KSU biology freshman, will conduct biotechnology and water quality research at KSU with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Jalaaaja Slaton, UK biology sophomore, will participate in a 2018 Summer Health Services Internship.

Jaliya Slaton, UK biology senior, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017. She graduated May 2018 and is pursuing graduate study.



Malik Smith, Marshall civil engineering sophomore, attended the BEYA Conference, Washington, D.C., February 8-10, 2018; and presented at the KY-WV LSAMP 10th Annual Research Symposium.

Ariana Swayne, Marshall Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.

Makayla Swayne, Marshall Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017.



Ndeye Thiaw, UK biology senior, (1) attended the BEYA Conference, Washington, D.C., February 8-10, 2018; (2) received the Gertrude Flora Ribble Undergraduate Fellowship for recognition of academic achievement and scientific excellence; (3) volunteered for the UK BioBonanza; (4) was invited to the UK College of Pharmacy Open House; (5) attended the UK Graduate and Professional School Showcase; (6) attended the MOSAIIC Conference; (7) presented at the UK Showcase of Undergraduate Scholars, April 25, 2018; and (8) volunteered at a Tech Savvy event at Kentucky State University, Frankfort, KY, May 19, 2018.

Romello Thorpe, Marshall Scholar, attended BEYA, Washington, D.C., February 8-10, 2018.

Alijah Travascio-Green, UK computer science senior, graduated.



Karen Udoh, UofL biology senior, presented at Kentucky Posters at the Capitol, Frankfort, KY, February 8, 2018. She has been selected as a Fulbright Scholar and will be studying in Greece.

Day Vance, Centre Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; and presented at the Midwestern Psychological Association Conference, Chicago, IL, April 14, 2018.

Taylor Walker-Smith, Centre senior, received the Paula M Crumbie Memorial Prize. This award is given to a junior or senior who exhibits excellence of character, leadership, and academic achievement. She will be attending dental school at the University of Louisville, Fall 2018.

Deyshon Ward, KSU engineering junior, conducted research during summer 2017 at the UK Center for Applied Energy Research and presented at the KY-WV LSAMP 10th Annual Research Symposium.

L. Stephanie Warlitner, Marshall Scholar, attended the Women of Color STEM Conference, Detroit, MI, October 5-7, 2017; and presented at the KY-WV LSAMP 10th Annual Research Symposium.

Desiree Warren, KSU biology freshman, will conduct biotechnology and water quality research with Dr. Tamara Sluss and Li Lu. Equipment for this project is funded by a USDA Capacity Building Grant.

Courtney Williams, KSU biology senior, graduated May 2018.

APPENDIXES

APPENDIX A
INTERNATIONAL RESEARCH
TRAVEL CHECKLIST

International Research Travel Checklist

Travel information

Departing Flight Booked	Amount of Luggage Allowed:	Returning Flight Booked	Amount of Luggage Allowed:
Time to Arrive at Airport:	Airport Address:	Time to Arrive at Airport:	Airport Address:
Time of First Flight:	Time of Final Landing:	Time of First Flight:	Time of Final Landing:
Mode of Transportation to Destination: Car/ Rental Car TaxiTrainBus	Destination Address:	Mode of Transportation to Destination: Car/ Rental Car TaxiTrain Bus	Destination Address:

STUDENT VISA (For 90+ days abroad, Arrange 7-12 weeks before arrival)

- Campus France Application
- Identity photo
 - Passport
 - Permanent Address
 - Program Description
 - Validating document from host Research Institution
 - Resume
 - Language Proficiency
 - \$180.00 3 week processing fee
OR \$330.00 3 day processing
 - Signed and Scanned Service Form
- Visa Application
- Visa Appointment (within three month of leaving the US, no less that three weeks before leaving)
 - Valid Original Passport
 - Proof of travel medical insurance (\$50,000 minimum)
 - Proof of Financial Means
 - US permanent residence card (non US citizens only)
 - Completed Application form
 - Completed and Approved Campus France Application
 - Travel Itinerary (Do not purchase tickets)
 - Pre-paid express mail envelope addressed to yourself
 - Passport sized photo (Passport photo restrictions apply)

Internship Visa (Any period of time) (Arrange 4-12 weeks before arrival)

- Visa Application
- Visa Appointment (within three month of leaving the US, no less that three weeks before leaving)
 - Valid Original Passport
 - US permanent residence card (non US citizens only)
 - Processing fee \$71.00 (in Cash)
 - Completed Application Form
 - "Convention de Stage" completed form (Can be found on visa application website)
 - Proof of Financial means or payment agreement
 - Pre-paid express mail envelope addressed to yourself
 - Passport sized photo (Passport photo restrictions apply)

International Communication (only check 1, Arrange 2-3 weeks before arrival)

- Contact phone service provider about unlocking cell phone (Necessary if you plan to purchase an international SIM card) and canceling service for months abroad
- Contact domestic phone service provider about a short term or long term international plan

International Housing (Arrange 4-8 weeks before arrival)

- Arrange for Arrival (keys, entrance pass, etc.)
- Pack or plan to buy housing items (linens, pillows, dishes, towels, etc.)
- Pay housing deposit, fees and/or first rent
- Plan route from housing to workplace
- Read housing reviews and amenities

International Banking (2-4 weeks before arrival)

- Acquire small amount of foreign currency before departure from US (can be done at an international airport or ordered through a domestic bank)
- Collect required materials for opening a bank account (Some banks will require a copy of your birth certificate)
- Notify Domestic bank of travel and all credit card companies
- Research international banking system (compatible with US bank or not compatible)
- Research requirements for setting up a bank account
- Purchase a prepaid travel card (recommended)

Insurance and Medical Needs (1-4 weeks before arrival)

- Check CDC recommended vaccinations and health risks for host country
- Check foreign national requirements for insurance (some countries require civil insurance, recommend purchasing through a local company in host country)
- Check international coverage on current medical insurance or purchase medical insurance in host country
- Purchase Traveler's insurance

What to Pack

Medications

Note: Before packing any medications check which drugs are allowed or not allowed in host country. All medications should be in original packaging.

- Allergy Medications
- Common Cold Medications
- Daily Medications (Supply For The Duration Of Your Stay)
- Emergency Medications (Ex. EpiPen, Inhaler)

- Multivitamins
- Motion sickness/ Altitude sickness drugs
- Pain Medication

Clothing

Note: Check weather averages for the entire duration of your stay in the host country.

- Belt
- Business Pants/ Skirts
- Business Shirts
- Casual Lab Appropriate Shirts
- Casual Long Pants
- Casual Shorts
- Exercise bottoms
- Exercise tops
- Formal/ Business Shoes

- Glasses/ Sunglasses
- Outdoor Jacket
- Pajama bottoms
- Pajama tops
- Rain Jacket
- Swimsuit or swim trunks
- Socks
- Sweater(s)
- Undergarments

Toiletries

Note: Most things can be bought in host country, bring for 1-2 weeks.

- Contacts and contact solution
- Deodorant
- Feminine Hygiene Products
- Floss
- Formal/ Business Shoes
- Laundry Detergent
- Lotion
- Mouthwash
- Shaving kit/ Razor

- Face wash
- Hair Accessories
- Hair comb/ brush
- Makeup and makeup remover
- Personal Hygiene items
- Sunscreen
- Shampoo and Conditioner
- Toothbrush and toothpaste
- Toilet paper

- Linens

Note: Some may be provided by or can be rented from the housing establishment; others can be bought in the host country.

 - Blanket (travel size)
 - Eye/Sleep mask
 - Hand dry towel
 - Pillow
 - Pillow case
 - Sheet set
 - Travel Pillow
 - Washcloth and towel set

- Electronics

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 - Camera
 - Plug Adapter/ Converter
 - Phone charger
 - Laptop/ Tablet
 - Headphones

- Travel Documents

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 - Birth Certificate (if needed)
 - Flight Itinerary
 - Documentation of Insurance
 - Host country housing documents
 - Passport
 - Personal ID/ Drivers License
 - Student ID
 - Visa documentation

Important Contacts

LSAMP Campus Coordinator Name:	Campus Study Abroad Office Contact Person:	REU/Program Coordinator: Name:
Phone Number:	Phone Number:	Phone Number:
Email:	Email:	Email:

Recommended Steps:

- Register with the State Department Smart Traveler Enrollment Program

The Smart Traveler Enrollment Program notifies the nearest US embassy to your location abroad of your presence in that country. The State Department will notify you of any relevant information to your safety such as: terrorist's attacks or heightened possibility of terrorist attacks, natural disasters, disease outbreaks, and travel warnings.

Enroll at: <https://step.state.gov/step/>
- Register with Study Abroad office

Some study abroad offices keep a list of all students abroad, regardless of the program you are participating in. This provides a second safety net while abroad and may consist of: additional security alerts, medical coverage while abroad, and a network of resources while abroad.
- Talk to your on campus Financial Aid advisor, Office of Undergraduate Research, or Study Abroad Office

Some universities have money set aside for students wanting to travel abroad to do research. Often one or multiple of the listed offices will be able to inform you of the amount available, conditions, and deadlines associated with receiving financial support for your research abroad.

Helpful Links While Abroad

Travel Within France

Trains (SNCF)	https://en.oui.sncf/en/
Busses (Oui Bus)	https://www.ouibus.com/
Busses (Flix Bus)	https://www.flixbus.com/
Flights (Ryan Air)	https://www.ryanair.com/fr/fr/
Car Sharing (Bla Bla Car)	https://www.blablacar.fr/

Travel Outside of France

Busses (Oui Bus)	https://www.ouibus.com/
Busses (Flix Bus)	https://www.flixbus.com/
Flights (Ryan Air)	https://www.ryanair.com/fr/fr/
Car Sharing (Bla Bla Car)	https://www.blablacar.fr/

Purchasing a French Sim Card (Phone)

Free Mobile	http://mobile.free.fr/
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Purchasing French Insurance (Of Any Kind)

MAE Insurance	https://www.mae.fr/
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Learning French

DuoLingo	https://www.duolingo.com/course/fr/en/Learn-French-Online
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French Banking

Société General	https://www.societegenerale.fr/
La Banque Postale	https://www.labanquepostale.fr/
Western Union	https://www.westernunion.com/fr/en/home.html

APPENDIX B

KY-WV LSAMP 10th
ANNUAL RESEARCH SYMPOSIUM
LEXINGTON, KENTUCKY
MARCH 2-3, 2018

KY-WV LSAMP

10th Annual Research Symposium



Celebrating 10 Years

University of Kentucky

Lexington, Kentucky

March 2-3, 2018

<h1>Agenda</h1>			
Friday, March 2, 2018		For LSAMP Only	
Four Points Sheraton, Lexington, KY			
01:00-05:00 PM	Symposium Registration		
01:30-03:30 PM	Networking Mixer / Pool Party		Sheraton Pool
03:00-04:00 PM	Hotel Check In / Break		Lobby Area
04:00-04:30 PM	Welcome and Introductions	Kazi Javed , Ph.D., KY-WV LSAMP Co-PI Fara Williams , KY-WV LSAMP Director	Salon B & C
04:30-05:30 PM	KY-WV LSAMP	Fara Williams , KY-WV LSAMP Director	Salon B & C
05:30-06:30 PM	Communications	Kathleen DeBoer , Executive Director, AVCA	Salon B & C
06:30-07:00 PM	Dinner		Salon B & C
07:00-08:00 PM	Dress Etiquette	Cagney "CC" Coomer , and Kayla Titalii UK Biology Ph.D. Candidates	Salon B & C
08:00-09:00 PM	Networking Mixer / One-on-One Clinic		Salon B & C
Saturday, March 3, 2018		For the General Public & KY-WV LSAMP	
UK Jacobs Science Building			
08:00-10:00 AM	Symposium Registration and Refreshments		JSB Lobby
09:00-09:30 AM	Welcome and Introductions	Sonja Feist-Price , Ph.D., VP Institutional Diversity, UK Johné Parker , Ph.D., KY-WV LSAMP Co-PI Fara Williams , KY-WV LSAMP Director	321 JSB
09:30-10:30 AM	Keynote Presentation	RaiAnna Arscott-Hopson , Ph.D., Associate Chemist, Industry	321 JSB
10:30-11:00 AM	10th Anniversary Pictures		1st Floor
11:00-11:15 AM	Break		
11:15-12:15 AM	Poster Session	See Presentation List	3rd Floor Hall
11:15-12:45 AM	Recruitment Tables	See Recruitment List	3rd Floor Hall
12:15-1:30 PM	Networking Lunch		1st Floor Lobby and 143 JSB
12:15-01:30 PM	Alliance Meeting Lunch	KY-WV LSAMP Administration, Campus Coordina- tors, and Invited Guests	
01:30-01:45 PM	Break		
01:45-02:45 PM	Farmer Brown, Tha' MC	Trevor Claiborn Former BCTC Scholar	331 JSB
01:45-02:45 PM	Oral Presentations	See Presentation List	321 JSB
02:45-03:15 PM	Closing / Recognition Presentations	Fara Williams , KY-WV LSAMP Director	321 JSB



KY-WV LSAMP 10th Annual Research Symposium



Four Points Sheraton
University of Kentucky, Jacobs Science Building
Lexington, KY, March 2-3, 2018



Keynote: R. Paula Arscott-Hopson, Ph.D.



21 Poster Presentations



Kayla Titiali, Cagney "CC" Coomer-Felton, Trevor Claiborn, Speakers



4 Oral Presentations



Kathleen DeBoer, Speaker



APPENDIX C

2018 KY-WV LSAMP
PROGRAM EVALUATION
SUBMITTED BY
DR. WILLIE PEARSON JR. &
MR. ED MARSHALL

External Formative Evaluation Report: 2017-2018

Kentucky\West Virginia LSAMP Alliance

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July 1, 2018

Executive Summary

Phase II of the KY-WV Alliance for Louis Stokes Alliance for Minority Participation (LSAMP) Program ([nsf.gov/lsamp](https://www.nsf.gov/lsamp), 2017), funded by the National Science Foundation, aims to build on achievements of Phase I of the grant, further enhancing the participation of underrepresented racial and ethnic minority (URM) populations in STEM related academic majors and careers. Some of the key successes in Phase I included the recruitment of target populations and enhancement of undergraduate research experiences.

Phase II of the grant seeks to address challenges associated with Phase I, including the recruitment of Hispanics, project management, and faculty development. In addition, Phase II aims to implement virtual platforms to help generate a better sense of community among LSAMP participants, and to aid with the sharing of resources among partner institutions. Given some demographic transitions at the partner institutions, the recruitment of Hispanics has proven to be a challenge. This year, some program staff mentioned that when they were unable to recruit sufficient numbers of the targeting groups—underrepresented racial and ethnic minorities (URM)--recommended in the LSAMP Program announcement ([nsf.gov/lsamp](https://www.nsf.gov/lsamp), 2017), they recruited non-URM students. The approval to do so was unclear. This practice manifested itself in the survey respondents where 35% self-identified as non-URM.

A gap associated with the funding between Phase I and Phase II of the grant led to disruptions in program management at some institutions, including the lack of an Administrative Director (AD) at the lead institution. However, based on recommendations from external evaluators, an AD was hired. This has resulted in operational changes that were immediately apparent to and embraced by Alliance partners, including enhanced communication and streamlined data management. While faculty development specific to functioning within LSAMP was an objective of Phase II, it has not emerged as a significant issue during external evaluation. This may be partially reflective of the high degree to which partner institutions have not fully regained function as a true Alliance, often operating in silos. The establishment of a virtual/cyber environment to enhance community and the sharing of resources among participants and faculty at the various partner institutions is still lacking, which is one of many factors that may be contributing to the low level of program identity among participants. Nevertheless, substantial and measurable progress has been made with the enhancement of the Alliance website, allowing general information, forms and documents to be readily accessed.

Some the most significant themes emerging from this year's site visits were somewhat similar to last year. These themes are grouped into six major categories: (1) fostering greater campus program visibility, (2) building a greater sense of community both within and cross partner institutions, (3) developing funding strategies to sustain the program, (4) facilitating more research opportunities for students during the academic year and summer, (5) continuing to build on the progress made in the last four years, and (6) developing and implementing a recruitment plan that engages other campus officials involved with diversity programming. Because some of the themes parallel those from last year, many of the recommendations for this year have already been or are being addressed. Similar to last year, an accurate count of active participants is illusive. The Alliance Administrative Director is encouraged to continue monitoring and authenticating the actual numbers of students participating, especially in research during the academic year and summer. Based on the challenges in securing an accurate list of email

addresses from each institution of its active participants, the Alliance may be underperforming on this important goal. Despite some expected institutional variability, the three sites visited this year were performing relatively well on some performance indicators, while underperforming on others.

Introduction

While there has been some measurable progress, African Americans, Hispanics and American Indians (underrepresented racial/ethnic minorities or URM) continue to be underrepresented at each level of science, technology, engineering and mathematics (STEM) education and the workforce (National Academies, 2018; 2016; National Center for Science and Engineering Statistics, 2017; National Science Board, 2016; Slaughter, Tao and Pearson, 2015; Pearson and Miller, 2012; National Research Council, 2011; Committee on Equal Opportunities in Science and Engineering, 2011; Frierson, Pearson, and Wyche, 2009; Leggon, 2006). Many federal and private foundation efforts have been implemented to increase the participation of URM in STEM disciplines and careers (BEST, 2004; National Research Council, 2005, 2011). There is strong evidence that a high-quality undergraduate research experience and mentoring play significant roles in recruiting and retaining URM in STEM disciplines and careers (Leggon and Pearson, 2010; Chemers et al., 2011; Ghee et al., 2014).

The National Science Foundation's Louis Stokes Alliance for Minority Participation (LSAMP) Program seeks to proactively encourage greater participation of URM in STEM disciplines, especially during the undergraduate years. In 2006, Phase 1 of the KY-WV Alliance (hereafter Alliance) began by establishing a relationship among 10 diverse academic institutions, two state EPSCoR programs, and the undergraduate research and diversity programs at the partner institutions. During Phase 1, some success occurred in the areas of outreach and recruiting, peer mentoring, undergraduate research experiences, as well as summer bridge transitional programs for entering students, curricular reforms in "gatekeeper" courses, and workshops on STEM research career options. Aspects of Phase 1 that proved particularly challenging included recruitment from Hispanic communities, project management, faculty development to improve academic climate, the implementation of a new cyber-enabled project component, and the communication/sharing of information between campuses.

Phase II attempts to capitalize on the successes and momentum of Phase 1, as well as remedy key challenges that were encountered. Nine of the original ten institutional partners are participants in this phase. Targeted initiatives in Phase II are aimed at aggressively increasing the quality and quantity of students from URM receiving baccalaureate degrees in STEM fields, as well as increasing the number of URM attending graduate school or entering the STEM workforce upon receipt of a STEM degree (KY-WV LSAMP Proposal).

The primary purpose of this final Phase II formative evaluation report is to continue assessing the extent to which the KY-WV Alliance is accomplishing the goals and objectives outlined in its Phase II proposal, covering academic year 2017-2018. This report is organized in four sections: (1) *status of 2016-2017 evaluation recommendations*, (2) *methodology*, (3) *findings*, (4) *conclusions*, and (5) *recommendations*.

Status of 2016-2017 Recommendations

The following recommendations relate to enhancing the efficiency and effectiveness of the KY-WV LSAMP Alliance.

Students

- Expand campus and near campus research opportunities, especially during the academic year
- More consistent and inclusive communication
- More interaction among students to build a sense of community
- More campus visibility

Status: In progress

Program staff

- More programming for students and program administrators beyond the Symposium
- More community building among program participants
- Develop a talent pool based on a pathway model that begins as early as late middle school to ensure larger cohorts of students will get pre-college preparation in advanced science and mathematics courses and, consequently, be more likely to pursue a STEM major and continue the pathway to a STEM career

Status: In progress

Senior college administrators

- Promising marketing strategies to bring visibility to the program, especially to those students who are eligible but may be unaware of the program
- View the program as a tool to recruit high school students

Status: In progress

External evaluation

- Develop a sustainability plan with less reliance on federal grants
- Formally recognize mentors' contributions to student development
- Enhance orientation and community building opportunities among research mentors
- Share promising practices (e.g., curricula, faculty research mentor database, data management)
- Strategies to promote collaborations that take into consideration differences in institutional missions (Carnegie classifications, demographic groups. etc.)
- Better communications with students on the importance of data collection (e.g., survey completions rates and focus group participation) as it relates to program funding
- Monitor and verify the actual number of students engaged in academic year and summer research

Status: In progress

Methodology

This formative evaluation plan calls for data collection using a mixed method approach-- quantitative and qualitative (Frankfort-Nachmias and Leon-Guerrero, 2015; Babbie, 2014; Berg and Lune, 2012; Neuman, 2011; Frechtling, 2010; Clewell and Fontenberry, 2009; Booth, Colomb, and Williams, 2008; Frankfort-Nachimias and Nachimias, 2008; Posava and Carey, 2007; Gorden, 1987). As was the case last year, in conjunction with the Administrative Director, three public partner institutions of varying Carnegie classifications, geographical location and student demographic composition were selected for case studies. Because of the challenges associated with participant anonymity and confidentiality this year, the evaluation report will focus more on the student survey component. As in previous reports, institutions are identified as A, B, and C. However, out of necessity, the narrative will be extremely general on some topics.

Quantitative data collection is based primarily on e-surveys administered to participants at all partner institutions. The original email list of the respective program participants provided by the Administrative Director amounted to 318. However, due to accuracy issues, 134 addresses were eliminated, generating an N=184. Overall, 82 students returned useable surveys, generating a response rate of 44%. Unless otherwise noted, all scaled items are on a 5-point scale (5=highest). Given the response rate, caution should be exercised when reviewing the survey analysis below.

Qualitative data were gathered from individual and focus group interviews with LSAMP participants. At the case study sites, data were collected via focus group interviews with student participants, college administrators (non-LSAMP), and research mentors. Individual interviews were conducted with LSAMP program staffs. Focus groups were conducted with 6 administrators, 3 program staffs and 37 student participants. Of the 37 students, 7 at one institution indicated they that “were not familiar with LSAMP” and 2 at another institution were not URM.

All participants were informed of their rights as human subjects. All interviewees signed a form giving their consent (or gave verbal consent) for interviews to be audio taped. All tapes were transcribed verbatim without any identifiers by a professional transcriptionist. The transcripts were analyzed for critical themes by two experienced evaluators. In compliance with the confidentiality agreement, every effort has been made to avoid the identification of any respondent and partner institution; therefore, some responses are presented in general terms. What follows is a discussion of findings of the case studies.

Case Study Findings

Institution A

Program Administration

Recruitment. Generally, the program administrator indicated a good understanding of the goals and objectives of LSAMP. The program administrator indicated that this was not the case during early stages of Phase I: “The first five years were a disaster. In the beginning, I had challenges because I didn’t know how to go about recruiting students.”

However, things began to change in Phase II. The program administrator *asserted*:

I now have an effective strategy in securing the names and emails to the top underrepresented racial/ethnic minority students. I have a committee which assists me. Initially, we look at the gpa. I send top students emails describing the program. If they are interested, I invite them to meet with me. Once I meet with them, they usually accept the invitation to join the program.

The program administrator acknowledged the challenges in reaching the current numerical goal set forth in the proposal. Yet, the program administrator argued “we want to increase the number of students that we have but we are limited by the funds allocated in Phase II”. However, the program administrator goes on to express disappointment in recruiting students: “Recently, I emailed __ minority students inviting them to meet, only 2% showed up and no one expressed an interest in joining the program”.

Student retention. The program administrator stressed that retention has gone rather smoothly because “I keep in touch with them, and I know their supervisor.” The program administrator *adds*: “I try to get supervisors closest to the student’s interest. Once that connection is made, *I have little to do with it.*” Regarding retention, the program administrator *explains*: “Now, that’s retention within the program...but *whether they pursue a PhD is a different story.*”

Faculty Awareness. The program administrator admitted that some faculty members probably did not know about the program because of cuts to university’s budget - less money is available from College than in previous years (Phase I) to cover certain expenses.

Student academic assistance. When asked if the program provided students with academic support, the program administrator responded: “Typically, we have the best caliber of the students; so, they don’t need academic help”.

Campus Administrator

Unlike other sites visited, only one college administrator was scheduled for an interview and no one from the Dean’s office. In the administrator’s previous position, the administrator worked closely with the LSAMP program administrator. It is unsurprising that the administrator expressed a good understanding of the goals and objectives of the LSAMP Program. Like the program administrator, the administrator *commented*: “I would love to see more students

participate because we have a fair number of students who qualify. Getting students to respond to the invitation is a challenge. Even though we provide a lot information to them. Getting them to show up for an orientation is not working”. The administrator *explains*: “We can probably do better recruiting students by getting more faculty members involved with the program. In turn, they may encourage more students to participate in the program. Faculty who are involved in the program have a real passion and commitment to the students”.

Mentors

Three mentors participated in the focus group. All indicated that the primary goal of LSAMP is to enhance research opportunities of the underrepresented minority students. According to the mentors, their initial involvement began with the program administrator inviting them to provide research opportunities for LSAMP recruits. One mentor recalled that the former Dean of School had a good understanding of the LSAMP program because Phase I was implemented during _ ’s tenure. The mentor continues “the current Dean understands the program based on briefings from __ (program administrator).”

Mentors acknowledged that while they did not have a formal orientation to the program, the program administrator did provide individual briefings. Overall, mentors rated the program administrator’s performance as 4.5. The most senior mentor indicated hosting at least three LSAMP Scholars, while the most recent mentor reported one. Regarding adequacy of resources, a more senior mentor felt that the institution had sufficient resources to meet the goals and objectives related to LSAMP, while the other mentors were recent participants and were unable to comment. All mentors reported being satisfied with no compensation for their mentorship. However, they mentioned that the time commitment can be a challenge. Nevertheless, all believe that the research experiences are beneficial to students, especially in the following ways:

- It motivates participants in their coursework
- Requires reviewing journal articles that enhance reading comprehension
- Pushes participant to embrace the importance of publishing

The mentors agreed that foundational preparation tends to be related to the participant’s classification. For example, upperclassmen tend to be better prepared than underclassmen because of course experience. However, all agreed that motivation and willingness to work hard were the most critical factors.

Students

Because they participated in the initial interview session with the program administrator, all Scholars knew their responsibilities to the program as well as the program goals.

Recruitment. When asked to comment on the recruitment process, students expressed views that were contrary to that of the program administrator. Specifically, all respondents were critical of the approach to recruitment. *One recalled*: “My invitation came in the form of an email. Honestly, I was confused. I was reading through the email and my first thought was ‘*is this legitimate*’? I am just being honest.” *Another student elaborated*: “The email was not very professional. It was disorganized. It was like, ‘*here’s what LSAMP is. We think you belong*

here...Message me back for more details.” *Yet, another student added:* “... one day, without warning, I got a random email from the LSAMP program administrator. Because I was not sure whether the email was *spam*, I asked my advisor if the email was real. He said ‘yes’ and that I should consider taking it.”

Program visibility. There was considerable discussion around the topic of program visibility on the campus. There was consensus that if more students are to consider joining LSAMP Program, the program administrator is not properly marketing it. *One student had this to say:* “Once students find out about the program, I don’t see why they wouldn’t want to be a part of it. But, I never heard of the program until I got the email. Once I did research on it, I found out that it is a big deal. I was amazed and asked myself, Why didn’t I find out about the program earlier.” There was consensus on this point.

When asked about the *greatest benefits* of the program, most respondents cited: skills building, research experience, and attending conferences. At the time of the site visit, all had received an email from the program administrator inviting them to attend the Alliance Symposium. While all planned to attend the symposium, there is some confusion regarding the communication. Students indicated that the email lacked specificity regarding travel arrangements and what they would be doing. The following comment is relevant: “We don’t really have any details about it... We are supposed to meet the program administrator at a certain time. I don’t know if we are sleeping over... So, I don’t know what to pack.” The one student who had previously attended the symposium agreed to update the others as what to expect. This student said that one of greatest benefits is “the program has provided opportunities for me to meet students and faculty from other universities.”

When asked about the *least beneficial* aspects of the program, all agreed that the program needs more structure. One student captured the group’s discussion thusly: “You are told to do something but there’s not really an organized plan for it. You are just kind of thrown out there with your supervisor.” When asked about academic support, one student said: “For me, honestly, nobody has come up and said how are you doing in your classes.” Recall that program administrator was under the impression that the students do not need any support because they are high achieving students.

Research. About half of the interviewees had been engaged in research during the academic year and summer. Generally, all were *satisfied* with both research experience and mentor. However, one student *emphasized*, “I think this goes back to __ (program administrator) not providing enough information. My research mentor didn’t get much information either... For example, at our first meeting, my mentor just talked about research papers, even though they didn’t really have anything to do with what I wanted to do.” In general, students rated their research skills (3.6) slightly lower than their academic ability (4.0).

Sense community. Students indicated there is a lack of community among LSAMP Scholars. They attributed this to the fact that they meet individually with the program administrator.

Graduate School: Overall, students rated their confidence to pursue STEM grad degrees

highly (4.3) . One student *commented*: “From the get-go, I always wanted to go to grad school.” Another student was less certain but added: “I am not sure about graduate school yet. But, my mentor encourages me to do my best. That has me considering grad school.” Another *explained*:

At this point, I may be burned out with research. Honestly, I put school first but sometimes I get bogged down with classes. My mentor gets upset with me if I am not keeping up the lab work. Sometimes I get so overwhelmed that ask myself ‘if this is what grad school is like, I am not sure this is what I want to do.’ I don’t have anything negative about my mentor but the demands of taking upper-level courses and doing research at the same time can be overwhelming.

Summary

Although students agreed that program administrator deserved a positive performance rating (4.3), they called for some significant changes if the program is to be successful on their campus. In particular, the students emphasized that a good starting point would be for the program administrator to meet with them collectively and listen to them. Further, the program administrator recruitment strategy is viewed as a ‘bust’. Simply put, the students argue that there is no evidence to suggest that the recruitment strategy actually works. The fact that a recent program administrator’s invitational email generated only a 2% response rate and no one accepted an appointment speaks to this point. They assert that the invitational email is poorly constructed (e.g., lacks specificity about the program goals and expectations). Because they receive so many emails, including spam, they agreed that a hardcopy letter should be sent first to alert students that an email will be forthcoming. Under this condition, students argued that the email would be expected. Further, the students suggest that the email include more information about the KY/WV LSAMP (e.g., a link to a website). All students agreed with the student who suggested that any communication include language that explains “this is why we want you to do this, and this is what you are going to receive after you do this.”

Another issue referred to the fact that the students claimed that they were never asked to evaluate their research and academic experiences or mentors. According to the students, prior to the evaluators’ site visit, no one had ever asked them to discuss their research experiences. Moreover, students reported that rather than always meeting individually, they should meet as a group. Group meetings were viewed as a mechanism to establish a sense community and strategies to recruit more applicants.

The students could not recall ever being asked to assist with the recruitment process. Relatedly, students saw these issues as serious barriers to the program’s campus visibility. Specifically, the LSAMP Program seemed detached from other campus diversity activities. In brief, the students argued that the talent pool of eligible students was not being reached. In terms of marketing the program, both students and faculty mentors reported the need for some substantial improvement.

Like the students, none of the research mentors indicated having participated in a

collective orientation related to the LSAMP Program. All research mentors believed there were adequate resources for LSAMP students to participate in on campus research. However, there was some question about the adequacy of travel funds, especially for travel to external summer research sites and conferences. Because of time constraints, the evaluators were unable to probe for more detail. Therefore, it is unclear what were the underlying factors (e.g., LSAMP Program budget limitations, lack of faculty grant funds, etc.).

Similar to the mentors, all students believed that gaining research skills was an important component of the LSAMP experience. The more academic advanced students indicated that the program administrator should dedicate more time to discussing the transition from undergraduate to graduate school. Students pointed out that besides occasional encouragement from a mentor, no substantial discussion on the graduate school process has taken place. At this institution, at least on the surface, the program elements appear to be highly compartmentalized. There appear to be few, if any occasion, where students, mentors and the program administrator interact and discuss their respective experiences and how the program could be strengthened. Although the program administrator saw the LSAMP Program budget as a major impediment in expanding the program, all interviewees point to the ineffective recruitment strategy. Ironically, the program administrator spoke of meeting recruitment goals expected by considering the inclusion of non-underrepresented minorities. Despite these issues, all interviewees indicated that the potential of value of the program to the campus is enormous.

Institution B

Program Administration

The program administrator expressed a good understanding of the goals and objectives of the LSAMP Program. Nevertheless, the program administrator emphasized that more outreach remains in orienting some of the mentors and university administrators. Regarding the mentors, the program administrator explained that “some don’t really understand the importance of the research component.” The program administrator took responsibility by admitting that the situation “probably falls on my shoulders to communicate the goals and objectives more effectively. Our primary goal is to increase the number of underrepresented minorities pursuing graduate school.”

Recruitment. The program administrator had this to say about recruiting:

...it was challenging when paired with the fact that none of the college administration really is familiar with LSAMP. None were really jumping at the opportunity to help us in that way. There are not many research mentors who are involved in a research program geared toward minority students.

Our communications must be clear that the target population is underrepresented minorities. For example, there are more Latinos on campus than the percentage participated in

LSAMP. I think we only have one student. We need to get more information about the program to them, so that they can take advantage of the program.

The program administrator believes that building relationships around the campus community is going to be the best way forward. This would involve partnering with other offices to advertise LSAMP. In particular, more exposure from the Office of Institutional Diversity was singled out as helping recruit more students.

Retention. According to the program administrator, retention has not been a problem. In fact, the program administrator was unaware of any student who withdrew from the program.

Research Experience. The program administrator expressed concern about the quality of students' research experience. The program administrator explained: Students who were conducting research weren't in a position to present that research and that seemed problematic to me. This caused me to think whether the research was not productive enough to present. The students need to be engaged in research that will lead to conference presentations and publications.

One challenge singled out by the program administrator involved the low numbers of students participating in summer research internships. The program administrator believes that one potential solution is for the LSAMP Program to establish close relationships with more researchers who will engage students in more productive projects.

Mentors

Familiarity with the LSAMP program varied considerably among mentors. The following comments are illustrative: One mentor *remarked*: "I didn't know what LSAMP stood for." Another *commented*: "I didn't know what LSAMP was about because the undergraduate students in my lab participate through another campus program. In fact, I was not aware that one of the students in my lab was affiliated with LSAMP until being informed about *participating in this focus group*." Another mentor *added*: "I only recently found out about LSAMP. A student in my lab was recently selected into the LSAMP Program. That's how I found out about the program. As a result, I have reached out to find other opportunities to bring students into my lab." One mentor *recalled*: "I have never had a student come into my lab saying I am an 'LSAMP Scholar'. They were already in my lab when said they were applying for the LSAMP Program." One researcher made this *point*: "It would have been fantastic for me to have had an orientation to the LSAMP Program. In particular, learning the objectives and the other opportunities that are available. As I write education-based and outreach-type grant proposals, it would be nice to actually harness what LSAMP already has established and to collaborate with them."

Some researchers, however, took a proactive approach to recruiting underrepresented minority STEM majors. For example, one researcher with long tradition of involving undergraduates in research *emphasized*: "I reached out to the underrepresented minorities in

STEM departments to make them aware of opportunities in my lab.” Among the few researchers who were familiar with LSAMP, they spoke positively about the value of the program. One of these researchers made this *comment*: “I think the program is a wonderful support system that the students may not get outside the lab.” Another *adds*, “I think the program has been quite valuable to the students.”

Research Experience. Regarding the actual student research experiences, most mentors lauded the work ethics of the students:

- “If they are enthusiastic, they will do well. Maybe they don’t have the best hands but they are still going to think about things and work through a project at some level. *Hire the attitude and teach the skills.*”
- “A lot depends on the students and what they want to get out of the program.”
- “There are students who are very driven and very motivated.”
- “I think getting students to think differently about science, about how the body is working, and thinking differently about why she/he is doing what she/he is doing. I think it is absolutely a benefit.”
- “The soft skills that are developed that don’t show up on the transcript—working as a team, working on a project, presenting—those kinds of things are what you want them to get.”

Students

All interviewees understood the goals of and their responsibilities to the LSAMP Program. According to the students, the goals are reinforced at the beginning of each semester and again at monthly meetings. Additionally, students reported that they are encouraged to bring classmates to the monthly meetings. Both the program administrator and students viewed this as a viable recruitment tool. Moreover, both graduate and undergraduate speakers discuss their research at the monthly meetings.

When asked about the *greatest benefit* of the program, students mentioned the follow:

- Professional development
- Research that leads to a conference presentation
- Outlet for STEM majors
- Knowledge resource
- Learning about grad school and how the process works

When asked about *least helpful* aspect of the program, some student comments are instructive:

- The program is so broad that it does not always address specific needs of some majors or research interests
- The meeting schedule because it is hard to find a time for everyone. When you begin to take more advanced courses, some are in the evening, while most freshman classes are early afternoon. The program is trying supplement with individual meetings.

Research Experience. Most students reported that they were already working in a lab when they became LSAMP Scholars. According to one student: “My mentor didn’t have the money to support me. So, I was fortunate to have LSAMP funding.” As a result, a majority reported that they were *satisfied* with their research experiences and mentor. One student *recalled*: “My mentor gives us (another undergrad) what he wants us to work on. We meet with him frequently to make certain that we are on right path.” Another *remarked*: “My mentor is very much removed from the bench work because of writing papers and traveling. I work more with Ph.D. students. But, __ (the mentor) is always available”. However, one student had this *comment*: “I was in the lab for a short time before my mentor took leave. I work with grad students. I don’t really have a relationship with my mentor. I think that he only remembers my face”.

During the site visit, students indicated that they had never been asked to evaluate their mentors or LSAMP staff. The program administrator’s performance was rated 5. One student had this to say about the LSAMP Program staff:

_ is our *comfort blanket* when we encounter any personal or academic problems. I believe that they genuinely care about our personal and future professional wellbeing. They are always available and willing to offer advice, more resources, links to internships and research opportunities. They are always giving without asking for anything in return. They are not afraid to admit that they don’t know something and then finding out for you.

Regarding the organization of LSAMP Program, the rating was slightly less positively (4). For example, one student commented that at times the program “seems disorganized sometimes”. Another student *explained*: “some of us cannot always attend the meetings. But, there is a lack of email updates in between. So, I am not certain whether I am missing some opportunities.”

Summary

Overall, there was consensus across stakeholder groups that the program lacks campus visibility. The program administrator agrees and has plans to implement new strategies to engage more students and research mentors. Specifically, the plan calls for more concerted efforts to reach out to the Office of Diversity and Inclusions and the Office of Sponsored Programs. Interestingly, there was consensus among mentors that the university president was a strong supporter of the goals of programs such as LSAMP. Because some LSAMP students participate in research through another campus program, mentors were unaware of the LSAMP connection. Consequently, they were challenged to answer interview questions pertaining to the LSAMP Program. Nevertheless, all mentors expressed a strong commitment to undergraduate research and having more students participating on research projects. As mentioned, the program administrator expressed concern that insufficient numbers of students are engaged in summer research as well as the caliber of research that leads to conference presentations.

Some students expressed concern that sometimes the program seems disorganized. These students may be referring to a period prior to the hiring of a program administrator. Also, students acknowledged the difficulty of scheduling monthly meetings convenient to all students, especially juniors and seniors. However, the students gave high marks for being encouraged to

bring their peers to the meetings. Students indicated that the monthly meetings were instrumental in building a sense of community among LSAMP Scholars. In fact, it was at the monthly meetings where some students discovered that some of their classmates were LSAMP Scholars.

Finally, both students and mentors reported that they were willing to work with the program to develop and implement strategies to increase the visibility of LSAMP. Students emphasized that far too many underrepresented minority students have no idea that LSAMP exists on the campus. The program administrator pointed to the severe underrepresentation of Hispanics in the Program.

Institution C

Caution should be exercised when reviewing the discussion for this institution. The LSAMP Program is integrated into two distinctive campus programs rendering its identify subliminal. One of the programs has a primary focus on undergraduate research, while the other does not. Consequently, a substantial number of interviewees frequently had difficulty distinguishing the LSAMP program from the two activities in which it is embedded.

Campus Administrators

Several administrators from various offices that involve students were interviewed. In general, individuals with more responsibilities involving outreach to undergraduate students were more aware of activities designed to engage this population in research activities. Unsurprisingly, most interviewees were more knowledgeable of the larger campus program than the LSAMP program. Some of these interviewees indicated an awareness that there were efforts to increase the participation of women and racial/ethnic minorities in research, especially in STEM fields. There was some discussion regarding the student demographic profile of the institution. One interviewee *commented*: “The student body at __ is not very diverse with respect to underrepresented minorities. When narrowed to STEM majors, the numbers are incredibly small.” Another interviewee said that minorities are “about 6% of the university’s population but did not know the percent for STEM majors”. According to one administrator, students in the larger campus program who are funded by a given program, such as LSAMP, receive a letter outlining the goals of the funding program as well as their responsibilities.

There was general agreement that most faculty (and students) have limited knowledge of the LSAMP Program. Even among the interviewees, there was considerable conflating of the LSAMP Program and larger campus program. Few interviewees reported having received any formal communication from the LSAMP program administrator. There was consensus that the program administrator needs to be far more deliberate and intentional in developing relationships with administrators at the college levels where many have offices dedicated to undergraduate research as well as offices that focus on minority or multicultural student affairs. One administrator *added*: “As a grant-funded program, they (LSAMP students) could apply to become a student organization and be chartered with Student Life”.

Administrators with more involvement in recruiting undergraduates for research indicated that because most STEM faculty are conducting research, they “don’t have a problem

recruiting mentors.” Additionally, students who are interested in conducting research are directed to a campus website page that instructs them on how to find a research advisor. According to interviewees, most faculty are very receptive to having underrepresented undergraduate students involved in their research projects. Their challenge is finding assistance in recruitment of underrepresented racial/ethnic minority students.

Program Administration

The program administrator confirms that the program has sufficient resources required to meet the goal specified in the proposal. The program administrator pointed out that the larger research-focus partner “helps with identifying mentors”. This was confirmed in the focus group interview with administrators and mentors. The program administrator adds, “research mentors probably don’t understand the goals of the (LSAMP) program because most of the students are working with grad students and postdocs.”

Regarding recruitment, the program administrator had this to say: “When we send out letters to the Scholars, *the majority are underrepresented minorities*, we tell them who they are getting funded by and what the program is about”. It is unclear whether this is the letter referenced in the administrator interview or a letter sent by the program administrator. The program administrator adds: “But I don’t harp on this... I don’t have a meeting at the beginning of the semester to discuss and say here’s LSAMP.” Relatedly, an interviewee from the non-research focused component had this to say: “In the __ (activity), LSAMP is not discussed. Most students will only know that they are in __ (activity)”. The referenced activity is not limited to LSAMP scholars. Because of the primary focus of the activity, it tends to be dominated by engineering students. The students who tend to come through the research-focused partner seem to include more diverse science majors (e.g., biology).

Despite the available resources, recruitment is a challenge. The program administrator comments: “We didn’t get many research Scholars last year”. The program administrator admits that the academic year participation is particularly problematic: “This is probably the one thing that has been most negative. I keep so busy during the year, it’s hard get that implemented.” Most of the program administrator’s time and efforts appears to focus on a summer program: “Summer recruiting is where I use LSAMP language in the materials.” However, the program administrator admits: “Summer numbers have been trending downward”. The program administrator reasons that the decline may be attributed to the fact that: “Some of the underrepresented minorities got better funding opportunities from sources external to LSAMP.” Whether summer or academic year, very few LSAMP scholars are engaged in any ‘authentic research’.

Mentors

Some of the above discussion is replicated by the feedback from the research mentors. Most mentors were unfamiliar with the LSAMP program. They were aware of the name of the __ (the larger research-focused program) in which LSAMP is embedded. Moreover, they were aware that they were participating in an activity that provided research experiences for minority students. One long-time mentor *explains*:

LSAMP is a sub-component of the __ program. So, I have students who come through that program. The recruiting is not so much LSAMP as it is for the wider net cast by the __ program. There were students who applied for the __ program who fit the LSAMP criteria. So, they were designated as LSAMP Scholars.

Another mentor *adds*: “The advertising from the __ program is very clear that focus is on minority students and underrepresented groups are particularly sought after.” No interviewee could recall having more than one LSAMP student in the lab. All mentors mentioned that it is not always clear which students are LSAMP scholars. One mentor *explains*: “...I learned how my student was funded by LSAMP when I was contacted by the LSAMP program administrator about participating in this focus group...” The mentor *adds*: “It’s nice of him to find money to serve these things that we believe in...Now, we can concentrate in identifying students in our classes who will fit the criteria for LSAMP, accept and bring them into our research.”

Most of the interviewees had a long history of mentoring undergraduate students, including minorities. One mentor *said*: “I got involved because I have hosted students for about a decade”. Another *commented*: “I believe strongly in having those students with additional potential opportunities.” Yet, another mentor had this to *say*: “I am always looking for good students...I have a soft spot and strong commitment to broaden participation on campus” . One mentor proudly *recalled*: “My student went good to great...And, from *locally* competitive to *nationally* competitive with some of the best and brightest students from around the country.” Mentors tended to describe their minority students as ‘great’.

None of the interviewees reported having an orientation regarding their mentoring duties as it pertained to LSAMP Scholars. The primary reason appears to be because they are recruited by the program administrator of the _ program. Indeed, mentors rated the LSAMP program administrator’s performance as 4 because of their limited contact with the individual. One mentor captures the discussion: “LSAMP needs a better marketing plan in order improve the visibility of the program on campus.”

Students

Caution should be exercised when reviewing the focus group interview discussion in this section for several reasons: (1) the vast majority of students were first- and second-year students; (2) two graduate students (former participants on the non-research program component) with no knowledge of LSAMP were included; (3) non-U.S. citizens and non-permanent residents were included; (4) the over-representation of engineering majors due to the non-research activity; and (5) nearly half of the student focus participants had no knowledge of the LSAMP program.

As mentioned above, with few exceptions, most of the students self-reported as engineering majors, especially mechanical. Given the underrepresentation of women majoring in engineering nationally, it is of no surprise that most of the students were males. Students majoring in biology or non-quantitative majors indicated that they usually took the minimum required quantitative courses. No students reported any formal orientation to the LSAMP Program. One student’s experience is *enlightening*: “I didn’t know anything about LSAMP until they said they could provide funding, which was great...but this was not until late...It would

have been more helpful had they gone through ...(a campus minority office)". Another student *commented*: "Before we went to the conference, we didn't know too much about LSAMP. At the conference, we had a great time and learned a lot about the program".

Four or 16% of the students reported involvement in some form of 'authentic' research and all were *satisfied* with both the experience and the mentor. Of these, two had presented at a conference. Only two students indicated having evaluated a mentor or the mentor's graduate students. One student had this to say about the value the research experience: "If I hadn't been involved in LSAMP, I would not have gotten the current position that I have...If I didn't have that position, I would not be as confident as I am today in my ability to do research."

Prior to the site visit, no student had evaluated LSAMP staff. Although all focus group participants rated the program administrator's performance as 5, some students admitted not knowing the program administrator or having been in the communication with the program administrator.

When asked about the *greatest benefits* of the LSAMP program, most cited:

- Alliance Symposium
- Research opportunities
- Special courses

The *least beneficial* aspects of the program are:

- Lack of followed up
- Lack of community

Summary

Overall, the LSAMP Program's identity and potential are largely hidden in the way its implemented. All stakeholders acknowledge the relative invisibility of the LSAMP Program as a 'campus brand'. It is unclear why the program administrator has taken a passive approach to articulating and reinforcing the program goals. Based on the student focus group discussion, nearly half of them were unfamiliar with the LSAMP Program and its goals. This is not surprising because one staff member said it is not mentioned in the non-research component. The program administrator confirms "not harping on" the LSAMP goals and target population". In the end, few designated LSAMP Scholars had been exposed to any 'authentic' research, especially during the academic year. In fact, not much happened during the summer either as it pertains to engaging students in 'authentic' research. Students at this institution rated their research skills the lowest of the sites visited. Furthermore, the dominance of the engineering majors appears to be directly related to the focus of the non-research focused component. Moreover, engineering is a major where women and racial minorities are severely underrepresented. The site is not recruiting from the larger institutional STEM talent pool. This would likely address the Program's declining appeal to underrepresented minority students. Interestingly, students in the focus group pointed to a disconnect or lack of engagement of the LSAMP Program with campus offices and organizations that focus on minority students. They point out underrepresented students lack awareness that the LSAMP Program exists on campus.

Conclusions

Although the three public institutions differed significantly on some dimensions related to the implementation of the goals and objectives of LSAMP Program, they also shared commonalities. Overall, Institution B seems to be doing a relatively better job than its two peers in building a sense of community among LSAMP Scholars. They are doing so by engaging Scholars in group monthly meetings. Institution B tended to be the most intentional in its primary program focus on underrepresented racial and ethnic minorities, while Institution C had the least explicit focus.

Visibility. Regardless of institution, the LSAMP Program's campus presence is largely muted. Across stakeholder groups, interviewees reported that most of their peers were unaware of the Program's existence. This was particularly the case at Institution C. Much of the challenge, it seems, is related to the fact that one person is primarily responsible for the management of all facets of the program, including outreach to potential campus partners.

Recruitment. This was a challenge across institutions but for different reasons. At Institutions A and C program administrators indicated that the pool of eligible students was small. However, Scholars at the same institutions indicated that there are sufficient numbers of students but program recruitment strategies are flawed. According to Scholars, they have not been asked to assist in recruiting or give their opinion on increasing their numbers. In short, "I can't find them" was viewed as excuses. In particular, Scholars at both campuses argued that they receive other program recruitment correspondence from the minority affairs offices but not LSAMP. Institution B has had more success recruiting Blacks but less on tapping the Hispanic talent pool.

Orientation. Across institutions, most mentors reported not having any formal orientation to the goals of LSAMP. Indeed, some were unaware that they had LSAMP Scholars working on their research projects. The mentors indicated that having an orientation would enable them to recruit their colleagues as well as have a better understanding of the desired research outcome.

Communication. Although frequency of communication among the program administrator and the stakeholder groups varied, all stakeholder groups emphasized the need for communication. In addition to the frequency of communication, Scholars expressed concern about the quality of the content and timeliness. Further, Scholars called for telecommunication technology that would foster a sense of community among the stakeholders.

Student research engagement. Scholars at Institutions A and B reported more engagement in some level of research than their peers at Institution C. However, the low participation of Scholars presenting their research at conferences, including the Alliance Symposia, raises questions about the quality of the research experiences and/or the mentor's understanding the purpose of the research experience. In either case, more students need to be engaged in leading-edge research. As shown below, Scholars tended to rate themselves lowest of factors related to research (e.g., preparedness for graduate school and confidence in research skills). This was particularly the case for Institution C. Based on the focus group discussion, the students' research experience appears to be limited or not monitored at all.

The average ratings of student by institution on items relevant to the Program:

Item	Institution A	Institution B	Institution C
Prepared for upper level STEM coursework:	4.0	4.3	3.8
Confidence in research skills:	3.7	4.0	2.7
Prepared to do grad level coursework:	4.3	4.3	3.4

Community building. A strong sense of community among LSAMP stakeholders did not emerge. The closest thing to it was Institution B’s monthly Scholars’ meetings, involving research presentations by mentors, Scholars and graduate students. Scholars were also encouraged to bring peers. The meetings also provided informational presentations. Mentors and Scholars reported they would welcome opportunities to meet outside of the labs and classrooms. Because many students at the three institutions were first generations, they cited the need for more discussions on the transition from undergraduate to graduate school.

Despite the various challenges mentioned above, all stakeholders agreed that the value of the LSAMP was worth it. Scholars, especially first generations, described their experiences as transformative. They singled out the Alliance Symposium because they realized the magnitude of being a Scholar. Most recounted how impressive it was to see so many gifted and talented STEM majors in one gathering.

Survey Findings

Demographics. Approximately, two-thirds of the 82 respondents self-identified as female. Most respondents racially identified as Black/African-American (59%) or White (26%), with the remainder being Asian (7.5%) or American Indian (7.5%). It should be noted that the racial category of Whites has been combined with that of Asian and is depicted as White/Other, primarily because both classifications are not considered under-represented minorities (non-URMs) within STEM fields. Black/African-American females accounted for the largest group of respondents at 40%, followed by White/other females (23%), Black/African-American males (20%), White/other males (12%). American Indian females (4%) and males (1%) were the smallest groups of respondents. In terms of ethnicity, 22% of respondents self-identified as Hispanic, with 56% being women.

As depicted in Table 1, slightly less than two-thirds of respondents were juniors and seniors. The percentage is similar among White/other and Black/African American but higher for American Indians (75%). All the respondents were United States Citizens or Permanent Residents, 14% of whom were born in 11 different countries. Most of the foreign-born respondents self-identified as Black/African American (42%) or non-Hispanic (83%). Overall, 63% of respondents reported having at least one parent with a bachelor’s degree, the majority of whom were Black/African American (65%), followed by White/Others (31%) and American Indian (4%). Ethnically, 19% of respondents having at least one parent with a bachelor’s degree identified as Hispanic.

Table 1: Enrollment Classification by Race and Gender (N=82)				
	American Indian	Black or African American	White/Other	Total
Freshman Male	0	2	1	3
Freshman Female	1	4	4	9
Sophomore Male	0	4	1	5
Sophomore Female	0	8	4	12
Junior Male	0	8	4	12
Junior Female	1	12	7	20
Senior Male	1	2	4	7
Senior Female	1	9	4	14
Total	4	49	29	82

College major. Tables 2 and 3 illustrate intended and current college majors by race and gender. Prior to entering college, slightly more than 9 in 10 respondents intended to major in a STEM field, mostly life sciences (31%) and engineering (30%). However, nearly 4 in 10 changed their major once matriculating in college, usually from one STEM field to another. Nearly half switched fields in their first year of college, while more than one third did so in the sophomore year. Blacks/African Americans changed majors at the highest rate (43%), similar to rates for Whites/Others (27%) and American Indian (25%), while slightly lower than for Hispanics at 22%. In terms of changing from one general category of an NSF field classified major to another (e.g. life sciences to engineering), Black/African American respondents exhibited the highest rate (52%), with White/Others being much lower (25%). When switching majors, Hispanics all remained in the same general NSF category in terms of classification, with none switching from one category to another. Racially, the greatest percentage of intended engineering majors was with Black/African Americans at 17%, followed by White/Others at 10% and American Indian at approximately 1%. Ethnically, 9% of intended engineering majors were Hispanic. Among Black/African American respondents showed most of the intended engineering majors as male (75%), while females (30%) dominated in the life sciences. Black/African American females represented 88% of the intended chemistry majors overall for respondents, but a majority (57%) changed majors to another NSF field category. Among American Indians, no females intended to major in engineering, while 50% intended to major in the life sciences. There was only one American Indian male, with an intended major of engineering who did not change majors. No Black/African American or American Indian males were intended life science majors, with the number just as low at 8% for White/Other males. Hispanics had the greatest percentages of intended majors occurring in engineering (39%) and the life sciences (39%).

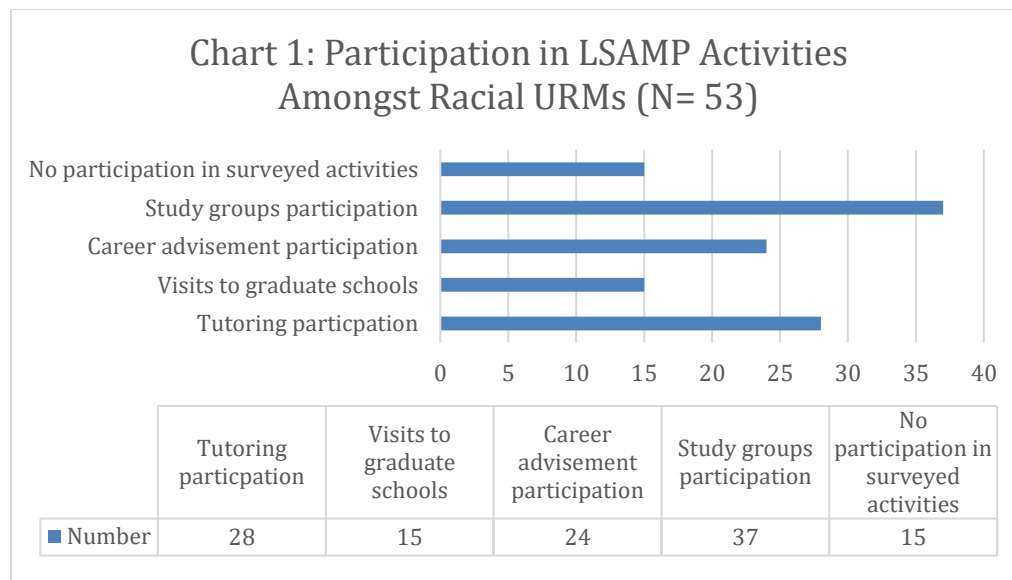
Table 2: Intended Major by Race and Gender (N=82)									
	Black/African American			American Indian			White/Other		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agricultural Sciences	1	0	1	0	2	2	1	0	1
Chemistry	0	6	6	0	0	0	1	0	1
Computer Science	4	1	5	0	0	0	0	2	2
Engineering	8	6	14	1	0	1	5	4	9
Environmental Science	0	0	0	0	0	0	1	0	1
Life/Biological Sciences	0	12	12	0	0	0	1	11	12
Mathematics	1	1	2	0	0	0	0	0	0
Other	0	7	7	0	1	1	0	2	2
Physics/Astronomy	0	0	0	0	0	0	1	0	1
Social Science	2	0	2	0	0	0	0	0	0
	16	33	49	1	3	4	10	19	29

Table 3: Current Major by Race and Gender (N=82)									
	Black/African American			American Indian			White/Other		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agricultural Sciences	1		1	0	0	0	1	0	1
Chemistry	1	3	4	0	0	0	1	1	2
Computer Science	5	2	7	1	0	1	0	1	1
Engineering	8	7	15	0	0	0	5	5	10
Environmental Science	0	0	0	0	0	0	1	0	1
Life/Biological Sciences	0	17	17	0	2	2	1	10	11
Mathematics	0	1	1	0	0	0	0	1	1
Other	0	2	2	0	1	1	0	1	1
Physics/Astronomy	0	0	0	0	0	0	1	0	1
Social Science	1	1	2	0	0	0	0	0	0
	16	33	49	1	3	4	10	19	29

Activities and Support Services. Over 70% of respondents indicated that they received monetary/financial support from LSAMP. When asked how they learned about the Kentucky/West Virginia LSAMP, most reported from a professor (45%) or peer (21%). Table 4 indicates overall respondent involvement in select LSAMP related activities, with Charts 1 and 2 indicating the same for racial URMs and Hispanics respectively. Overall and with underrepresented racial minorities, the highest participation rates were for study groups (55%) and the lowest rates were for graduate school visits (22%). The highest participation rate was also for study groups for Hispanics, with the lowest rate for graduate school visit. Table 5 ratings indicate how beneficial respondents found the respective LSAMP activities. Most respondents found the activities to be “beneficial” or “very beneficial,” however, just as apparent were the number of individuals not participating.

Table 4: Overall Participation in LSAMP Sponsored Activities (N=82)

	Percent	Number
Activity		
Tutoring	42%	28
Visits to graduate schools	22%	15
Career advisement	36%	24
Study groups	55%	37
None of the above	22%	15



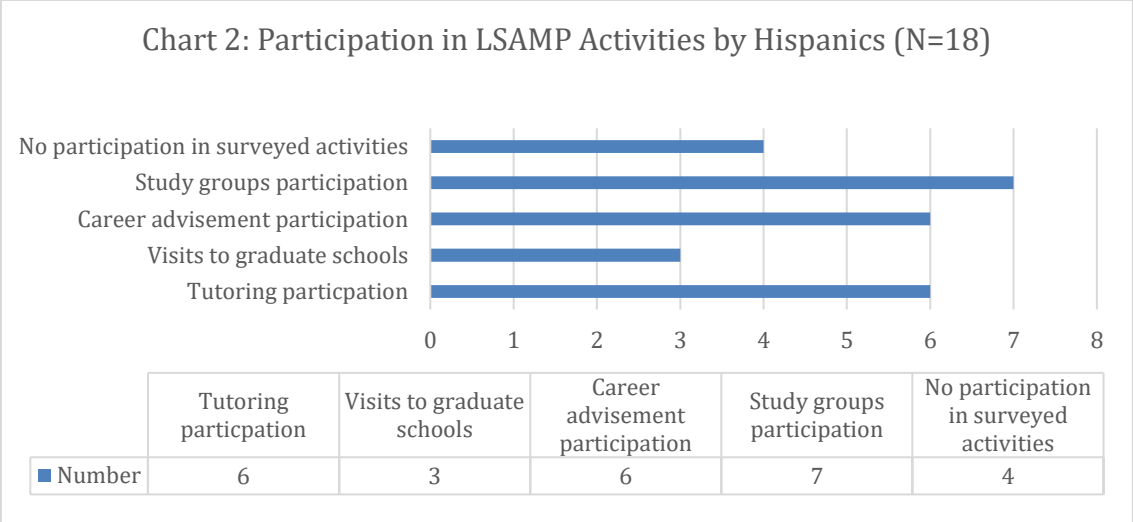
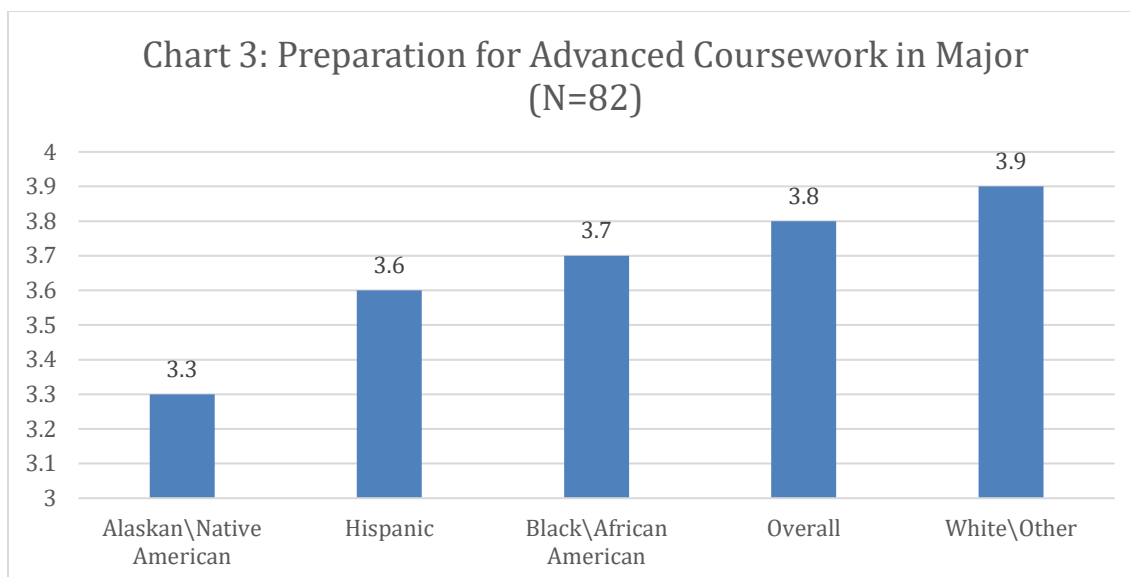


Table 5: Benefit of LSAMP activities. (N=82)

Activity	Very beneficial		Beneficial		Did not participate	
	Percent	Number	Percent	Number	Percent	Number
Tutoring	62%	26	21%	9	35%	23
Visits to graduate schools	54%	15	21%	6	56%	36
Career advisement	63%	24	24%	9	42%	28
Study groups	63%	29	22%	11	30%	20

In terms of a scientific career, 38% of the respondents indicated that LSAMP staff at their institutions had given them advise. Nearly half (48%) of the respondents reported that they were “*satisfied*” or “*very satisfied*” with the career advice. Over 70% of respondents received monetary/financial support from LSAMP, with all indicating that they were “*satisfied*” or “*very satisfied*” with the compensation.

Academic Experiences. Approximately 6 in 10 respondents indicated that they were “*satisfied*” or “*very satisfied*” with their overall academic performance this year. Half of the respondents taking science courses and 60% taking math courses indicated that they were “*satisfied*” or “*very satisfied*” with their academic performance. Chart 3 provides average rating of how prepared respondents perceive themselves to be for advanced coursework in their major, giving an average overall rating of 3.8. White\Others rated themselves highest in advanced coursework preparation at 3.9 and American Indian the lowest at 3.3. When asked about their level of satisfaction with the academic support they received from their LSAMP staff, nearly 70% indicated that they were “*satisfied*” or “*very satisfied.*”



Research Experience. During the 2017-18 academic year, 32% of respondents participated in research during the Academic Year. Of these 67% were Black/African American, 33% White/Other and none American Indian. There was a large difference in academic year research between Black males (11%) and females (79%). Overall, 66.7% of respondents participating in research were “*satisfied*” or “*very satisfied*” with the experience. Although the rating was similar for Black/African Americans, it was higher for White/Others at 71% and Hispanics at 83%. A substantial majority (76%) participated in academic year research at their home institution. In sharp contrast, only 13% of the respondents participated in a 2017 summer research experience. About 42% conducted summer research at their home institution. Approximately, 7 in 10 respondents reported that they were “*satisfied*” or “*very satisfied*” with their summer experience. Black/African Americans (60%) and Hispanics (50%), however, reported somewhat lower rates. Approximately 82% of respondents participating in summer research also participated in academic year research.

In terms of enrollment classification, most of summer research participants were juniors (73%) or seniors at 18%. Although juniors accounted for a majority of the summer research participants, they expressed the lowest level of satisfaction, with just 50% noting that they were “*satisfied*” or “*very satisfied*” with the experience. Compared to males (%), females expressed a slightly higher level of satisfaction, with 60% indicating that they were “*satisfied*” or “*very satisfied*” with the experience. All seniors reported that they were “*satisfied*” or “*very satisfied*” the summer research experience. In general, females tended to report higher levels of satisfaction with their experiences.

As presented in Table 6, respondents cited themselves and/or faculty members as having played the most significant role in securing research experiences than LSAMP staff.

Table 6: Person Most Significant in Securing Research Experience				
	Academic Year (N=21)*		Summer (N=11)*	
	Percentages	Count	Percentages	Count
LSAMP staff	9.5%	2	8.3%	1
Faculty member at your college	42.8%	9	33.3%	4
College Administrator (non-LSAMP)	0.00%	0	0.00%	0
Self	28.6%	6	41.6%	5
Peer	9.5%	2	8.3%	1
Other	9.5%	2	8.3%	1
	*No response from 5 respondents		*2 responses from 1	

When asked to rate their research skills on a 5-point scale, respondents assigned an average rating of 3.4, with underrepresented racial minorities ranking themselves higher at 3.5 and Whites\Others and Hispanic lower at 3.0. Seniors ranked their research skills highest at 3.8, 57% of whom were Black/African-American, 29% White/Other, 14% American Indian and 14% identifying ethnically as Hispanic. Perceived research skills were rated lowest by freshman at 3.0, with 50% being Black/African-American, 50% White/Other and none identifying ethnically as Hispanic.

Respondents indicated low attendance at conferences, with just 7% (n=6) doing so during the summer, increasing to 28% (n=23) in the academic-year. During the summer, all scientific conference attendees were racial URMs, with 83% (5) being Black/African American, 17% (n=1) American Indian and none that were White/Other or Hispanic. A similar pattern held for the academic year, Black/African Americans at a similar 83% or 5 and White/Others (self-identified as Hispanic) at 17% or 1, with no American Indian participating.

During the summer, 50% (n=3) of the respondents attending scientific research conferences presented, while 26% (n=6) did so during the academic year presented. In terms of attendance and presentation rates at the 2018 KY-WV LSAMP Annual Research Symposium, 48% (n=29) planned to attend. Of these, only 8.1% (n=5) intend to present.

Postsecondary Plans. Some 70% of respondents reported plans to apply for graduate school (60% in science and 22% in engineering). Table 7 indicates the highest degree aspirations for respondents, where 48% planned to pursue a PhD or MD/PhD, with the rate being highest for Black/African Americans (50%) and slightly lower for Hispanics (44%). At 25%, Hispanics indicated the lowest rate of aspiration to pursue a graduate degree. However, those with aspirations to pursue an advanced degree were more likely than other demographic groups to aspire for a medical-related degree.

Degree	All Respondents	Racial URMs	Hispanic
Bachelors	17%	15%	25%
Masters	25%	27%	19%
MD	10%	8%	13%
MD/PhD	25%	25%	25%
PhD	23%	25%	19%

Table 8 provides average ratings of respondents' LSAMP experiences. Overall, respondents rated their LSAMP experience as 4.3, with the average being slightly higher (4.4) for underrepresented racial minorities, but lower for Hispanics (4.1). In terms of gender, female (4.3) respondents rated their overall LSAMP experience higher than males (4.1). Ethnically, Hispanic females provided an overall rating of 4.4, which was also higher than that of Hispanic males (3.8), the lowest for all groups. As indicated in Table 8, the lowest overall rating of Hispanic males remained consistent across all LSAMP experiences. Racial URMs were the only group in which males (4.3), rated their overall LSAMP experience higher than females (4.2). Nearly all (95%) of respondents reported that they would recommend the LSAMP Program to a peer. After graduating from college, approximately 84% would be willing to complete a survey relevant to LSAMP and college experience.

Experience				Racial URM			Hispanic		
	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female
Overall LSAMP Experience	4.3	4.1	4.3	4.4	4.3	4.2	4.1	3.8	4.4
LSAMP meeting needs in a timely manner	4.2	4.1	4.2	4.1	4.0	4.1	4.2	4.0	4.3
Support from LSAMP staff	4.3	4.1	4.4	3.9	4.3	4.4	4.1	3.6	4.5
Quality of instruction in major courses	4.0	4.0	4.0	3.9	3.9	3.9	4.1	4.0	4.2
Overall education received at current institution	4.0	4.0	4.0	4.0	4.1	4.0	4.1	4.0	4.2
Resources received from LSAMP	4.3	4.2	4.3	4.2	4.2	4.16	4.0	3.6	4.4
Travel assistance received from LSAMP	4.1	4.0	4.2	4.1	4.3	4.0	3.7	3.3	4.0
School and research supplies received from LSAMP	4.0	3.8	4.0	4.0	4.0	4.0	3.3	3.0	3.7

Summary

Low rates of participation in research existed among the respondents. Respondents who participated in summer research were very likely to participate in academic year research. In addition, satisfaction with summer research experiences was lower, even more so for Black/African American and Hispanics. LSAMP staff rarely helped respondents with securing research experiences in the summer or academic year. Research opportunities were primarily identified by the respondent's faculty members at their institution. Given the low rates of research engagement, it is unsurprising that research presentation levels were low. This also applies to the low level of respondents intending to present at the 2018 KY-WV LSAMP Annual Research Symposium. There was no participation in research among American Indians and a large difference in academic year research participation between Black males and females. Hispanics and Whites/Others did not participate in summer conferences, with American Indians and Whites/Others not participating during the academic year. Juniors participated in research at the highest rates during summer and the academic year but had low levels of satisfaction. Seniors had very high levels of satisfaction with research experiences during the academic year.

Few respondents indicated that LSAMP staff at their institutions had advised them about a scientific career. Moreover, a substantial number did not indicate high levels of satisfaction with the advice or overall influence of LSAMP regarding their pursuit of a scientific career. Most respondents plan to seek graduate degrees, with a strong focus on MD/PhDs or PhDs. However, Hispanics were most likely to indicate a lack of desire to pursue degrees beyond the bachelors.

Very few males intended to major in the life sciences. In addition, the attrition rate of intended chemistry majors for Black/African American females is very high, with most indicating it as an intended major for switching to a new one at some point. Respondents rated their LSAMP experience highly, with Hispanic males rating their experience the lowest. Respondents indicated a strong willingness to recommend LSAMP to a peer.

Some survey respondents provided written comments that mirror some of those from the student focus groups. Highlighted below is a representative sampling of the comments:

- You could make benefits of LSAMP more well known. Even now, I am not quite sure what LSAMP is or what it does/can do.
- I had no idea of the purpose of LSAMP nor what it does. I think educating those who participate in LSAMP about what it stands for and all the benefits it offers would be most beneficial, as it would urge students to participate more in LSAMP.
- To be more aware that I was involved in the program because I wasn't fully aware what it was all about.
- Overall my experience has been pretty good. I just have noticed it seems some people take advantage of it to just receive financial benefits instead of trying to improve in their studies as well.
- Communication through email could be better
- More professors (mentors) are needed
- More visits to grad schools
- I would like more knowledge about careers that people don't commonly think about regarding STEM majors (nuclear forensics, CIA, etc.)
- This is a great and helpful program

- Everything I have experienced so far has been up to par, therefore I have no additional recommendations for LSAMP.

Recommendations

As reported last year, organizational, managerial, and structural changes continue to bring the partnership closer to a functioning alliance. However, some old and dysfunctional habits remain. The recommendations from last year are relevant here with a few exceptions. These exceptions are highlighted here.

Research. The low participation of Scholars in conference presentations persists. It may be worthwhile for the **program administrator and the Scholar to meet with the mentor to discuss the goals of the program and develop a timeline for producing research paper suitable for presentation at a conference and publication.**

The **Alliance office should assist Scholars in identifying potential summer REU placements.** There are websites at various federal agencies and labs, professional societies as well as student research-focused organizations.

Recruitment. There should be a more concerted effort to identify and recruit underrepresented racial/ethnic minorities rather than resorting to the default categories of underrepresented groups—first gens, bi/multiracial, etc.

Scholars indicated that they are willing to assist in identifying eligible students. They also recommended that the LSAMP Program should be more engaged with the various offices that focus on minority student affairs.

Transition from College to Graduate School.

Scholars, especially first generation, called for more workshops on identifying and applying to graduate school. In addition, LSAMP sponsored trips to visit graduate institutions were rated very low and should be increased.

The Alliance Office should partner with the Graduate and Medical Schools to hold workshops at Symposium. Underrepresented racial/ethnic minority graduate students and postdocs would also be good sources for panels or workshops. Many pointed out that the fees for the GRE and related exams are significant financial barriers.

Community Building. Regular group meetings, at least monthly, are recommended to help create a stronger sense of community for Scholars and to share resources. Attendance at the aforementioned meetings can become a condition for the receipt of LSAMP funding. The Alliance is still lacking a dedicated virtual community space, as proposed in its funding request, which will provide a mechanism for Scholars to connect, especially inter-institutionally. Scholars and mentors recommended that an electronic newsletter would be useful in community building. **The Alliance Office could engage students in this activity because some are proficient in social media construction.** Lastly, a formal orientation structure should be implemented for LSAMP Scholars, mentors and administrators. Given that multiple partners have developed orientations of some sort, this may be best addressed by resource sharing.

Data Management. An Alliance-wide schedule should be established and followed for the timely collection and submission of data to the central Alliance office, including up to date Scholar contact information.

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APPENDIX D

ALLIANCE RETREAT
JUNE 9-10, 2017



**KY-WV LSAMP
ALLIANCE RETREAT
Four Points Sheraton
Lexington, KY, June 9-10, 2017**



Top Row: Pamela Feldhoff, UofL; Hannah Payne, WVU; Bessie Guarrant, UK; Charlene Walker, BCTC; Fara Williams, UK
 Middle Row: John Parker, UK; David Miller, WVU; Kazi Javed, KSU
 Bottom Row: Lenny Demoranville, Centre; Gimay Berhie, Marshall; Maurice Cooley, Marshall; Charles McGruder, WKU; Raúl Torres, UK



APPENDIX E
NSF CIP CODES

Agricultural Sciences	01.09	Animal Sciences
Agricultural Sciences	01.10	Food Science and Technology
Agricultural Sciences	01.12	Soil Sciences
Agricultural Sciences	01.99	Agriculture, Agriculture Operations and Related Sciences, Other
Architecture	04.02	Architecture
Biological Sciences	26.01	Biology, General
Biological Sciences	26.02	Biochemistry, Biophysics and Molecular Biology
Biological Sciences	26.03	Botany/Plant Biology
Biological Sciences	26.04	Cell/Cellular Biology and Anatomical Sciences
Biological Sciences	26.05	Microbiological Sciences and Immunology
Biological Sciences	26.07	Zoology/Animal Biology
Biological Sciences	26.08	Genetics
Biological Sciences	26.09	Physiology, Pathology and Related Sciences
Biological Sciences	26.11	Biomathematics, Bioinformatics, and Computational Biology
Biological Sciences	26.12	Biotechnology
Biological Sciences	26.13	Ecology, Evolution, Systematics, and Population Biology
Biological Sciences	26.15	Neurobiology and Neurosciences
Biological Sciences	26.99	Biological and Biomedical Sciences, Other
Business and Management	52.13	Management Sciences and Quantitative Methods, Other
Computer and Information Sciences	11.01	Computer and Information Sciences, General
Computer and Information Sciences	11.04	Information Science/Studies
Computer and Information Sciences	11.07	Computer Science

Engineering	14.01	Engineering, General
Engineering	14.02	Aerospace, Aeronautical and Astronautical Engineering
Engineering	14.03	Agricultural Engineering
Engineering	14.04	Architectural Engineering
Engineering	14.06	Ceramic Sciences and Engineering
Engineering	14.07	Chemical Engineering
Engineering	14.08	Civil Engineering
Engineering	14.09	Computer Engineering, General
Engineering	14.10	Electrical, Electronics and Communications Engineering
Engineering	14.11	Engineering Mechanics
Engineering	14.12	Engineering Physics
Engineering	14.13	Engineering Science
Engineering	14.14	Environmental/Environmental Health Engineering
Engineering	14.19	Mechanical Engineering
Engineering	14.20	Metallurgical Engineering
Engineering	14.21	Mining and Mineral Engineering
Engineering	14.22	Naval Architecture and Marine Engineering
Engineering	14.23	Nuclear Engineering
Engineering	14.24	Ocean Engineering
Engineering	14.25	Petroleum Engineering
Engineering	14.27	Systems Engineering
Engineering	14.28	Textile Sciences and Engineering
Engineering	14.32	Polymer/Plastics Engineering
Engineering	14.37	Operations Research
Engineering	14.40	Paper Science and Engineering
Engineering	14.41	Electromechanical Engineering
Engineering	14.42	Mechatronics, Robotics, and Automation Engineering
Engineering	14.43	Biochemical Engineering
Engineering	14.44	Engineering Chemistry
Engineering	14.45	Biological/Biosystems Engineering.
Engineering	14.99	Engineering, Other
Engineering Technologies	15.15	Engineering-Related Fields
Engineering Technologies	15.16	Nanotechnology

Interdisciplinary Studies	30.01	Biological and Physical Sciences
Interdisciplinary Studies	30.06	Systems Science and Theory
Interdisciplinary Studies	30.08	Mathematics and Computer Science
Interdisciplinary Studies	30.1	Biopsychology
Interdisciplinary Studies	30.19	Nutrition Sciences
Interdisciplinary Studies	30.27	Human Biology
Interdisciplinary Studies	30.3	Computational Science
Interdisciplinary Studies	30.32	Marine Sciences
Mathematics	27.01	Mathematics
Mathematics	27.03	Applied Mathematics
Mathematics	27.05	Statistics
Mathematics	27.99	Mathematics and Statistics, Other
Natural Resources and Conservation	03.01	Natural Resources/Conservation, General
Natural Resources and Conservation	03.01	Natural Resources Conservation and Research
Natural Resources and Conservation	03.02	Natural Resources Management and Policy
Natural Resources and Conservation	03.03	Fishing and Fisheries Sciences and Management
Natural Resources and Conservation	03.05	Forestry
Natural Resources and Conservation	03.06	Wildlife and Wildlands Science and Management
Natural Resources and Conservation	03.99	Natural Resources and Conservation, Other
Physical Sciences	40.02	Astronomy and Astrophysics
Physical Sciences	40.05	Chemistry
Physical Sciences	40.06	Geological and Earth Sciences/Geosciences
Physical Sciences	40.08	Physics
Physical Sciences	40.10	Materials Science
Physical Sciences	40.99	Physical Sciences, Other

APPENDIX F

KY-WV LSAMP
CAMPUS EVENTS,
HONORS, AND
NEWS RELEASES



To save **YOUR SPOT** Email:
Charlene.walker@kctcs.edu



Friday, June 9, 2017 @ 8:45am

**BCTC Leestown Campus
164 Opportunity Way, Lexington, KY 40511**

College Fair

Sector Breakouts based on Majors

and



Will return to Campus @ 10:00pm



SUPER SOMEDAY

BCTC, Newtown

Lexington, KY, March 9, 2018





Centre College ranked #3 in the nation for study abroad

Posted by Centre News in [News](#), [Rankings](#) 15 Nov 2016

Centre College continues to hold prominence as a leader in international education, with an endorsement released this week by the Institute of International Education (IIE) distinguishing the College with a #3 national ranking for study abroad participation rates at an undergraduate institution.

Centre has consistently ranked among the top colleges in the nation in the “Open Doors” report, being named in the top 5 of the IIE report all but one year over the last decade. In 2014 and 2012, the College was ranked #1 in the nation.

Director of the Center for Global Citizenship Milton Reigelman attributes the success of Centre’s program to the College’s strong focus on global citizenship emphasized by its study abroad guarantee and a free passport for every incoming student as part of the [Centre Commitment](#).

“Study abroad is central to the Centre experience—an ‘adventure,’ if you will—underscoring our responsibility to prepare students to function and succeed in an increasingly interconnected world,” he says.

85% 
**STUDY
ABROAD**

9 **COUNTRIES**
FOR RESIDENTIAL
**STUDY ABROAD
PROGRAMS**

The IIE designation follows a number of national rankings and college guidebooks that have recently acknowledged Centre's premier study abroad program.

U.S. News & World Report has routinely ranked the College in the top 5 nationally for study abroad over several years. In its 2016 report, it named Centre a ["Best College" pick for its study abroad program](#), a distinction echoed by the [Princeton Review's latest listing of America's best colleges](#) that cites Centre as a place that equips students with "a global perspective."

While these ranking methodologies may vary, the IIE "Open Doors" report is unique in that it calculates the number of study abroad experiences three weeks or longer in a given year divided by the number of graduates. If a student studies abroad, say, in the fall as well as during the College's three-week CentreTerm in January, he or she is counted twice. Since this is not uncommon, Centre's participation rate often exceeds 100 percent, as it did again this year, for the fifth time in a row.

The 2016 IIE ranking was based on data from the 2014-15 academic year, which saw 383 students taking advantage of Centre's study abroad guarantee, nearly half of whom traveled for a full semester.

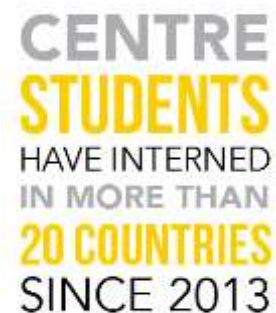
In total, 85 percent of Centre students have studied abroad at least once during their college career and approximately 30 percent have traveled two or more times.

According to Reigelman, the high participation rates are reflective of a robust program that epitomizes two hallmarks of the College's curriculum, high-impact and community-based learning, in locations across the globe.

Centre's signature long-term, residential programs in Strasbourg, France; Merida, Mexico; and London, England are completely staffed and run by the College. In each of these cities, students live with fellow Centre students, sometimes in homestays with local residents, and are taught by Centre professors and local experts.

"Students in Centre's semester programs abroad shop, cook, interact with homestay families and neighbors, and engage in an internship or worksite," says Reigelman. "The site itself is a student's 'lab.'"

Other semester-long programs are available in Shanghai, China; Reading, England; Yamaguchi, Japan; Glasgow, Scotland; and Northern Ireland options at Queens or Ulster universities.



The three-week CentreTerm programs span the world and are often team-taught with an interdisciplinary focus. Upcoming CentreTerm courses this January include travel to Austria, Belgium, Cuba, England, France, Ghana, Israel, Italy, Mexico, the Netherlands, New Zealand and Thailand.

“Students everywhere routinely say that their study abroad experience is the defining part of their college education,” explains Reigelman. “At Centre, many faculty say that teaching their disciplines in a different cultural context has broadened and enriched their material. “Even more, doing so has internationalized our campus as nothing else could have,” he concludes.

The Institute of International Education was created in 1919 after the end of World War I to promote peace through international educational exchange. Its “Open Doors” report, which first appeared in 1949, is issued each November and is regarded as the authoritative source on international education, tracking trends of American students studying abroad and international students who study in the United States.

For more information about the “Open Doors” report, visit the [IIE website](#).

Learn more about [study abroad and global citizenship at Centre College](#).

Follow [#CentreAbroad](#) on social media to track the study abroad student experience in destinations across the world.

*by Amy Clark Wise
November 15, 2016*

25 Sep
2017

Centre College again named best in Kentucky and among top in South by College Raptor

Posted by Centre News in News, Rankings

College rankings have long been the product of magazines or intended to be turned into comprehensive books for prospective students and their families to pore through.

College Raptor appeared on the scene in 2016, building a web platform focused, they say, to help "students and their families discover quality, affordable college options they might not have considered because of a lack of awareness or financial concerns."

Given its consistent focus on academic excellence and affordability, Centre College has appeared on the top of College Raptor lists from the start—and continues again this year.

For the third year in a row, Centre has been named to the "hidden gem" list, which is reserved for what's deemed the top institution in each state. Criteria include metrics gathered from the National Center for Education Statistics such as application numbers, graduation rates, campus diversity and endowment per student.

Also this year, Centre was named to College Raptor's Top 25 Best Southeast Colleges, at #15 overall and #4 among liberal arts colleges, behind only Washington and Lee, Davidson and the University of Richmond.

Besides making this list every year, Centre has also previously appeared on the 25 Best Small Colleges list, coming in at #23 in the nation, Centre appeared even higher, #4 in the nation, on the 2016 "Smartest Choice" list.

According to College Raptor, "We highlight institutions like Centre because they go beyond academic excellence and invest in an environment that provides the best educational outcomes for their students."

In addition to more than \$100 million in capital improvements to the campus over the last decade, Centre has targeted 80 percent of its current \$200 million campaign on raising money for student scholarships and institutional aid, which translated to \$31,670,000 this current year.

As for outcomes, 98 percent of the most recent graduating class (2015) for which data is available, 98 percent of Centre College graduates were employed or pursuing advanced study. This exceeded the already impressive figures of 95, 96 and 97 percent the previous three years.

Full information is available [here](#) (hidden gems) and [here](#) (Southeast).

*by Michael Strysick
September 25, 2017*

Hidden US Gem 2018

CENTRE COLLEGE NAMED A 2018 HIDDEN US GEM

CENTRE COLLEGE

Map of colleges and universities across the United States:

- Whitman College
- Linfield College - McMinnville Campus
- Northwest Nazarene University
- Carroll College
- University of Wyoming
- University of Alaska Southeast
- Brigham Young University - Hawaii
- Arizona State University - West
- Westminster College
- Nevada State College
- Pitzer College
- Regis University
- New Mexico Institute of Mining and Technology
- Austin College
- University of Mary
- Augustana College
- Nebaska Wesleyan University
- Benedictine College
- Stars University
- Gustavus Adolphus College
- Drake University
- Rockhurst University
- Hendrix College
- Nicholls State University
- Lawrence University
- Wheaton College
- Wheaton College - Illinois
- Centre College
- Rhodes College
- Samford University
- William Carey University
- Champlain College
- Hope College
- Franciscan University of Steubenville
- University of North Carolina at Asheville
- Wofford College
- Ringling College of Art and Design
- St. Mary's College of Maryland
- Catholic University of America
- Wellesley College
- University of England
- Rhode Island School of Design
- Connecticut College
- Drew University
- Wesley College

WWW.COLLEGERAPTOR.COM

Jefferson Opens College's First Multicultural Center

Oct 23, 2017

Louisville, KY – Serving the largest number of students considered "underrepresented minorities," Jefferson Community & Technical College proudly cut the ribbon today to signify the opening of its new Multicultural Center on the Downtown Campus. Jefferson President Ty J. Handy joined students, staff and community leaders in launching a new effort to promote inclusion, spearheaded by college's Office of Diversity, Inclusion and Community Engagement.

The Multicultural Center was born out of research from the Achieving the Dream Initiative, a non-governmental reform movement for educational success helping more than four million students have better economic opportunities. The center will host events surrounding diversity dialogues and cultural heritage month celebrations, will offer advising and tutoring and will also be the hub for the 15,000 Degree-Jefferson Rise Together Partnership.

"In order for us to succeed as a college, it's important that Jefferson's learning environment is comfortable and welcoming to all," said Handy. "Opening a center to inspire and educate students as well as staff, faculty and the community has been a priority since I arrived more than a year ago. It reflects our mission to open doors to all who wish to be lifelong learners."

Jefferson educates the most African-American students of any college in Kentucky. In the Fall 2016 semester, 30 percent of the Jefferson student population identified as an "underrepresented minority" (e.g. 19-percent African American, seven-percent Hispanic, and 4-percent American Indian, Native Hawaiian, or two or more races).

Jefferson Community and Technical College is the largest of the 16 colleges forming the Kentucky Community and Technical College System. Jefferson prepares students for transfer into baccalaureate programs and for high wage, high-demand careers.

###

RECIPIENTS OF THE 2017 *INSIGHT INTO DIVERSITY* HIGHER EDUCATION EXCELLENCE IN DIVERSITY (HEED) AWARD



2017 DIVERSITY CHAMPIONS

Columbia University in the City of New York
Florida State University
Indiana University-Bloomington
James Madison University
Kennesaw State University
Kent State University
Metropolitan State University of Denver
Oklahoma State University

Rochester Institute of Technology
University of Cincinnati
University of Kentucky
University of North Florida
University of Oklahoma
University of Virginia
Virginia Polytechnic Institute and State University



2017 HEED AWARD RECIPIENTS

Arizona Summit Law School
Augusta University
Ball State University
California State University, East Bay
California State University, Fresno
California State University, Northridge
California State University San Marcos
Case Western Reserve University
Central Washington University
Clemson University
Cleveland State University
Cuyahoga Community College
Davenport University
DePaul University
East Carolina University
Eastern Kentucky University
El Paso County Community College District
Florida Coastal School of Law
Georgia Institute of Technology
Georgia State University
Greenville Technical College
Indiana University-Purdue University Indianapolis
Kansas State University
Louisiana State University and Agricultural
and Mechanical College
Metropolitan State University
Millersville University
North Carolina State University
Northeastern University
Northern Virginia Community College
Palo Alto University
Raritan Valley Community College
Salem State University

San Diego State University
Seminole State College of Florida
Southern Illinois University Carbondale
Southern Illinois University Edwardsville
Southwestern Law School
Stockton University
SUNY Buffalo State College
SUNY Oneonta
SUNY System Administration
Swarthmore College
Texas Tech University
The Pennsylvania State University
The School of the Art Institute of Chicago
The University of Georgia
The University of South Carolina
The University of Texas at Austin
The University of Tulsa
Union College in New York
University of Central Florida
University of Colorado Boulder
University of Delaware
University of Houston
University of Houston Law Center
University of Illinois at Urbana-Champaign
University of Louisville
University of Minnesota-Twin Cities
University of North Carolina at Chapel Hill
University of North Carolina Wilmington
University of Pittsburgh
Western Michigan University
West Virginia University
William Marsh Rice University (Rice University)
William Rainey Harper College (Harper College)



LGBTQ Center Director Cris Mayo (front right) is congratulated during the center's dedication ceremony at [West Virginia University](#).

At the **University of Louisville**, a multidisciplinary team of students, faculty, and staff meets monthly to support **undocumented students** by working to remove barriers that stand in their way. After the announcement of the rescission of DACA, the team served as first responders for these students and trained the campus about next steps.



Sharing One's Diverse Identity

Created by the **University of Kentucky's** (UK) Humanity Academy — an initiative composed of faculty, staff, and students devoted to inclusion — the "I Am ..." Diversity Project celebrates differences within the UK community. In recognition that every person is diverse in some way, facilitators of the video project record testimonies from faculty, staff, and students on what makes them unique. The videos, which are shared online, have become so popular that "I Am ..." is now an official student organization that works to increase the visibility of diversity on campus.

Diversity Champions

Diversity Champions exemplify an unyielding commitment to diversity and inclusion throughout their campus communities, across academic programs, and at the highest administrative levels.

A limited number of colleges and universities across the nation have been selected for this honor.



Known for visionary leadership, Diversity Champions are institutions that set the standard for thousands of other campus communities striving for diversity and inclusion. They develop successful strategies and programs, which then serve as models of excellence for other institutions. Diversity Champion schools exceed everyday expectations, often eclipsing their own goals.

Selected institutions rank in the top tier of Higher Education Excellence in Diversity (HEED) Award recipients. The HEED Award is presented annually by *INSIGHT Into Diversity* to recognize colleges and universities that are dedicated to creating a diverse and inclusive campus environment.

2017 Diversity Champions





University of Kentucky Creates a Community of Belonging By and for All



by *Alexandra Vollman* 

CDOs, chief diversity officers, equality, grants, social justice, unconscious bias



Diversity Champions exemplify an unyielding commitment to diversity and inclusion throughout their campus communities, across academic programs, and at the highest administrative levels. INSIGHT Into Diversity selected institutions that rank in the top tier of past Higher Education Excellence in Diversity (HEED) Award recipients.



As the largest university in Kentucky – with 30,000-plus students, several thousand faculty and staff, and 20 colleges and schools – the **University of Kentucky** (UK) in Lexington recognizes the importance of involving all of its members in creating what Vice President for Institutional Diversity Sonja Feist-Price calls a “community of belonging.”

"It is very hard for any one individual or any one office to do the work that must be done, so what's important is creating a synergistic partnership across our campus so that we can effect change not only within the university, but throughout [the surrounding] community," says Feist-Price.



Sonja Feist-Price

One way UK facilitates this synergy is by having a chief diversity officer in every college or school. These individuals meet regularly with Feist-Price to share best practices and discuss areas and strategies for improvement. "I often refer to [UK] as a university without walls because we really strive to work across the aisle with diversity in all sorts of ways so that ... we can become the university we want to [be]," explains Feist-Price.

Already with a diverse mix of faculty, staff, and students, UK concentrates its efforts on ensuring that each person feels valued and comfortable being his or her true self on campus. "The pinnacle of what we aspire to have at our institution is a community of belonging such that all of our faculty, staff, and students feel that they belong to the university and that the university belongs to them," she says. "The richness of our diversity is very important, but ... it's only when people feel that they are a valued member that they bring themselves in totality to our campus."



Students on UK's campus in Lexington, Ky.

UK strives to build this community through a variety of approaches, including working to continuously improve the campus climate by overcoming biases, offering everyone a seat at the table, and creating opportunities to examine important diversity-related issues and topics.

Inclusive Excellence Program Grants

With a dual purpose to increase students' sense of belonging on campus and provide diversity programming, the Office for Institutional Diversity (OID) offers Inclusive Excellence Program Grants. Made possible by a \$6 fee that students pay at the beginning of each semester – which Feist-Price says generates about \$150,000 each semester – the grants allow students, faculty, and staff to develop and execute diversity programming and events.

Every spring and fall, OID has a call for proposals, and individuals submit an application to be considered for an award, the largest of which is \$25,000. A committee of faculty, staff, and students reviews all proposals to ensure that a project meets all qualifications. Not only must plans concentrate in some way on diversity, but they must also be inclusive of different student populations; demonstrate collaborative partnerships between a variety of groups, offices, and student organizations; serve as models for replication across the campus; and expand the success of existing programs at UK, according to the program's website.

While faculty and staff can also apply for the grant, Feist-Price says the funds must be used to benefit students. Since launching last fall, the program has featured a number of diversity- and inclusion-related events focused on a variety of topics and identities – from LGBTQ-inclusive healthcare, to stereotypes and prejudice, to African culture. “It really takes on different shapes and forms, so it might be diversity through music or diversity through food,” explains Feist-Price. “[It could be] cultural [or] educational.”

In April, student group Poetic Justice – which uses creativity to address societal issues – was awarded a \$10,000 Inclusive Excellence Grant to host what the organization called an Accountability Cypher. The event brought together artists, academics, and community leaders who used their work to encourage conversation around issues affecting marginalized identities.

[Photo above: Guest speakers and students during student group Poetic Justice’s Accountability Cypher event, a project funded by a UK Inclusive Excellence Program Grant]

“Our intent with this event was multifaceted,” says Gabe Tomlin, a member of Poetic Justice. “We wanted to change the format of the usual dry panel discussion to something a little more engaging, show the role of art within activism, and give artists and educators of color the space to be seen, heard, and considered critically while engaging in discussion around important topics.”



Artists and community leaders discuss issues affecting marginalized identities at the Poetic Justice event.

At the end of these experiences, organizers must submit a report on what they accomplished. Feist-Price believes this and other aspects of the program help students grow. “It really gives students an opportunity to bring to fruition the things that are most meaningful and most valuable to them,” she explains. “This gives [them] a voice.”

For Tomlin, having opportunities such as that provided by the Inclusive Excellence Program Grant is important and reveals UK’s commitment to its students. “A good way of seeing where an institution’s concerns and priorities are is to look at who and what it invests in, and how it invests in them,” Tomlin says. “Giving the opportunity to students to be active leaders and curators of their own experiences is infinitely important. While planning the event, we felt powerful. We felt like we had the ability to do something, and that’s [critical], too.”

Unconscious Bias Initiative

With a focus on the broader campus community, UK’s Unconscious Bias Initiative (UBI) targets every person at every level, including the board of trustees, senior leadership, faculty, staff, students, and those who serve on faculty search committees.

After UK President Eli Capilouto expressed concerns that some individuals felt they had no voice in the university's operations, he initiated the development of UBI, which is led by Marietta Watts, executive diversity liaison for OID. Through a partnership with consulting firm Cook Ross and direction from faculty, staff, student, and healthcare subcommittees, Watts and her team developed an interactive curriculum for the training aimed at addressing the needs and challenges of each group on campus.



Marietta Watts

"We started at the top," explains Watts. "The president and all of his direct reports, deans and directors of centers, and then our board of trustees all attended at least a one-day training program, and then we began rolling it out to various colleges [and] departments."

Designed to equip individuals to identify and mitigate their biases, the training is structured as a two-hour session that introduces participants to the concept of unconscious bias, including the ways in which the mind works and the way biases show up in our everyday lives and interactions. Following relevant video clips, participants engage in discussion and exercises.

"We invite them to talk to one another, to think about times when maybe they were perpetrators of unconscious bias or that bias was directed toward them ... to show how our biases work — to normalize it, not to excuse it; to explain that every single person alive has biases," says Watts. "Some of them are conscious, but [with] others, ... we act but don't know what is driving [our] behavior."

Though not required, the training is "strongly recommended," Watts says. However, the deans of some colleges have made it mandatory for all of their faculty and staff. "For those areas, we anticipate that we're going to get at least 95 to 98 percent participation," she says.

As of mid-September, approximately 25 percent of all UK faculty and staff had completed UBI, which began in fall 2016. Training for students kicks off in October as part of the UK 101 class, which is required of all incoming freshmen. Additionally, Watts says that she has received requests from Greek and other student organizations that want to participate.

Although she has no hard data yet on its effectiveness, Watts says anecdotal feedback on UBI has been very positive. Before rolling out the next round of training, she and her team plan to track and assess the first iteration's impact, looking for changes in behavior and a reduction in bias incidents as well as improvements in retention rates. Watts says she may also use that information to inform future trainings.

"I anticipate that there will be an uptick in the number of complaints at first simply because people understand [bias]. Then [we'll see] how long before that begins to level out and people feel empowered enough to have those kinds of conversations on their own," she says. "We'll be looking at all of the pieces that need to be in place so that we can determine whether the behaviors are moving in the direction that we want them to be moving in."

While other institutions have taken steps to address unconscious bias, Watts says that UK is the first university in the country to implement training of this nature organization-wide. "I'm excited because I think that it's a wonderful opportunity for other universities to see how this can be done," she says.

The Center for Equality and Social Justice

In reaction to the unrest occurring on college campuses across the country that began more than two years ago, UK created the Center for Equality and Social Justice to bring together faculty and students researching and engaging in these issues. Its mission is "to promote equality and social justice through collaborative scholarship and education and to help advocate for social justice within our communities, public policies, and laws," according to the center's website.

According to Christia Spears Brown, PhD, director of the center, its efforts focus on three specific areas: scholarship and research, public policy and law, and advocacy and community engagement. "I think of us as the academic arm of all of the other diversity initiatives going on at UK," she says. With faculty affiliates from all 20 colleges and schools represented, Spears Brown hopes that collectively, they will be able to have broader impact.

"We do research, and we do it in our own domains, but really, when you do work on equality and social justice, you want to improve equality and social justice; our topics don't exist in social vacuums. So the center is designed to help faculty and students have a sense of connection with others who do this work and to train [them]... how [to] use their scholarship to impact change in ways that promote equality and social justice," she explains. "That means, how do we take work out of the university and affect communities in positive ways and how can we shape public policy and laws to be more equitable."

The research and scholarship being conducted by faculty and students through the center varies in terms of discipline and approach as well as the group or issue being examined. "We define equality on the basis of race and ethnicity, immigration status, gender identity, sexual orientation, religion, disability level, [and so forth]. [It's] been really remarkable to see how many people in their own ways are working toward equality and social justice. We have people in fine arts. We have people in journalism. We have an economist."

By providing funding, a support network, and avenues for publishing and disseminating research, the Center for Equality and Social Justice serves as a "megaphone for the work that people are doing," Spears Brown says. In addition to opportunities for faculty to publish policy briefs and position papers, fellowships are available for students to do research alongside a faculty mentor. Currently, the center has two such fellows, one of whom is researching how to improve the retention of underrepresented students.

The center also plays the role of connecting other campus units with individuals who have expertise in areas related to equality and social justice — when a speaker is needed for an event, for example. Perhaps most important, though, are the connections it makes with lawmakers. "We're often in contact with state politicians and our federal legislators to make sure they're aware of the research coming out that's relevant for laws that are currently being discussed and to translate it in ways that can be useful," says

Spears Brown. "All we can really do is plant that seed."

On UK's campus, the center's work has also taken the form of events and speakers – last year, it hosted a one-day symposium called *Black and Blue: Critical Issues in Race and Policing*, featuring scholars from across the U.S. – as well as consulting the university on issues regarding diversity and equality. Additionally, Spears Brown says she and her colleagues try to promote the work of other on-campus multicultural programs and centers, such as the Martin Luther King Center.

Because the Center for Equality and Social Justice is still in its infancy, Spears Brown says it is in the process of building its infrastructure, but in the future, she hopes to grow its reputation as a resource for the UK community and beyond. "What I hope is that policymakers, particularly at the state level, will come to us when they have to make decisions," she says.

In addition to sending a powerful message to individuals of underrepresented and marginalized groups on campus, the center demonstrates UK's commitment to creating a community of belonging where the concerns of any one group are shared and addressed by all.

"I think [the center] conveys a powerful message that this university cares about equality and social justice," says Spears Brown. "There's a lot to be said for that when it comes to fostering a sense of belonging – that this university not only says it but is funding that kind of work."●

Alexandra Vollman is the editor of *INSIGHT Into Diversity*. The University of Kentucky is a 2017 *INSIGHT Into Diversity* HEED Award recipient.

RACE, RELIGION, CLASS AND GENDER
COLLIDE IN THE RIVETING
COURTROOM DRAMA

DEFAMATION

A PLAY BY
TODD LOGAN

FALL 2017 NATIONAL TOUR

Sep 11	LAKELAND HEALTH - 1st Show	Oct 30	RHODE ISLAND COLLEGE
Sep 11	LAKELAND HEALTH - 2nd Show	Oct 31	EMMA WILLARD SCHOOL
Sep 12	LAWRENCE TECHNOLOGICAL UNIVERSITY	Nov 1	UNIVERSITY OF NEW HAMPSHIRE-MANCHESTER
Sep 15	WABASH COLLEGE	Nov 1	UNIVERSITY OF NEW HAMPSHIRE-DURHAM
Sep 18	PURDUE UNIVERSITY	Nov 2	PINGREE SCHOOL
Sep 20	HOCKING COLLEGE	Nov 2	ROGER WILLIAMS UNIVERSITY SCHOOL OF LAW
Sep 21	METHODIST THEOLOGICAL SCHOOL IN OHIO	Nov 3	BOSTON COLLEGE HIGH SCHOOL
Sep 22	ST. EDWARD HIGH SCHOOL	Nov 3	CATHOLIC MEMORIAL SCHOOL
Sep 25	CUYAHOGA COMMUNITY COLLEGE, OH - Metro Campus	Nov 6	MARSHALL UNIVERSITY
Sep 25	CUYAHOGA COMMUNITY COLLEGE, OH - Eastern Campus	Nov 7	BALL STATE UNIVERSITY
Sep 26	PENN STATE UNIVERSITY-MAIN CAMPUS	Nov 8	CINCINNATI HILLS CHRISTIAN ACADEMY
Sep 27	SETON HILL UNIVERSITY	Nov 9	LAKE COUNTY BAR ASSOCIATION
Sep 28	CUYAHOGA COMMUNITY COLLEGE, OH - Western Campus	Nov 10	MOODY BIBLE INSTITUTE CHICAGO
Sep 28	BALDWIN WALLACE UNIVERSITY	Nov 14	UNIVERSITY OF KENTUCKY SHOW1
Oct 2	UNIVERSITY OF PITTSBURGH	Nov 14	UNIVERSITY OF KENTUCKY SHOW2
Oct 3	INDIANA UNIVERSITY OF PENNSYLVANIA	Nov 15	UNIVERSITY OF KENTUCKY SHOW3
Oct 4	CASE WESTERN RESERVE UNIVERSITY	Nov 15	UNIVERSITY OF KENTUCKY SHOW4
Oct 5	PENN STATE UNIVERSITY-ALTOONA	Nov 16	UNIVERSITY OF KENTUCKY SHOW5
Oct 9	WEST VIRGINIA UNIVERSITY COLLEGE OF LAW	Nov 17	GRAND RAPIDS CHAMBER OF COMMERCE
Oct 10	HOLTON-ARMS SCHOOL		
Oct 11	TOWSON UNIVERSITY		
Oct 12	MONTGOMARY COUNTY COMMUNITY COLLEGE		
Oct 12	JOHNS HOPKINS UNIVERSITY		
Oct 17	PENNSYLVANIA COLLEGE OF TECHNOLOGY		
Oct 18	WASHINGTON AND LEE UNIVERSITY SCHOOL OF LAW		
Oct 19	WILLIAM & MARY COLLEGE		
Oct 23	LE MOYNE COLLEGE - 1st Show		
Oct 23	LE MOYNE COLLEGE - 2nd Show		
Oct 24	ITHACA COLLEGE		
Oct 25	NEW JERSEY CITY UNIVERSITY		
Oct 25	HOFSTRA UNIVERSITY		
Oct 26	ST. LUKE'S SCHOOL		
Oct 27	HACKLEY SCHOOL		
Oct 27	SALISBURY SCHOOL		
Oct 30	THAYER ACADEMY		

DEFAMATION IS AVAILABLE TO BOOK THROUGHOUT THE YEAR

To book Defamation, contact Kimm Beavers

defamationtheplay.kimm@gmail.com

DEFAMATION

DEFAMATION has been performed more than 350 times and has been seen by more than 60,000 people.

DefamationThePlay.com

CANAMAC PRODUCTIONS

Old Imani Baptist Church building to be permanent home for STEAM Academy



By WKYT News Staff | Posted: Mon 10:32 PM, Dec 04, 2017 | Updated: Tue 4:47 PM, Dec 05, 2017

LEXINGTON, Ky. (WKYT) - Fayette County Public Schools voted Monday night to move its STEAM Academy to a new, permanent location.

FCPS announced it has purchased the old Imani Baptist Church building off Georgetown Road for \$10.6 million.

Before students can move in, the building must be renovated. School leaders say starting with the 2018-19 school year, students in grades 10-12 will be housed in Bluegrass Community & Technical College's Cooper Drive property. The board on Monday allowed the superintendent to negotiate a lease agreement with BCTC to use the facility as BCTC is moving to its new campus on Newtown Pike.

Right now, the STEAM Academy is using the old Johnson Elementary School building on East Sixth Street in Lexington.

The school district has not set a timeframe for how long renovations are supposed to last on the old church building. The church closed in October after selling back to its bank.

<http://www.wkyt.com/content/news/Old-Imani-Baptist-Church-building-to-be-permanent-home-for-STEAM-A...> 12/6/2017

Diversity Leader Damon Williams Visits Campus June 11

By **Gail Hairston** May 30, 2018



Damon Williams

LEXINGTON, Ky. (May 30, 2018) — [Damon A. Williams](#), author of the best-selling books “[Strategic Diversity Leadership: Activating Change and Transformation in Higher Education](#)” and “[The Chief Diversity Officer: Strategy, Structure and Change Management](#)” as well as the monograph “[The Role of the Chief Diversity Officers in Academic Medicine](#),” will speak at the University of Kentucky June 11.

Formerly vice president and chief diversity officer at the University of Wisconsin-Madison, Williams now leads the [National Inclusive Excellence Leadership Academy](#) and is recognized as a national expert in strategic diversity leadership. He launched the National Inclusive Excellence Tour in 2017 with the stated objective to engage universities and corporations in conversations about diversity, equity, inclusion and change.

“Dr. Williams is a committed visionary, an inspirational leader and a recognized national expert in strategic diversity leadership, youth development, corporate responsibility, educational achievement, social impact and organizational change,” said UK Vice President for Institutional Diversity Sonja Feist-Price.

Williams will speak 9:30 to 11 a.m. Monday, June 11, in the Bill Gatton Student Center Grand Ballroom, room 212A. Seating is limited. To confirm attendance, email vpid@uky.edu.

Among other issues, Williams “helps empower diversity leadership to build strong, robust diversity change agendas, while addressing the inherent and recurrent challenges that confront ongoing diversity efforts. He also helps to establish evidence-based diversity and inclusion strategies, while engaging students digitally,” Feist-Price said. The UK [Office for Institutional Diversity](#) is sponsoring Williams’ visit.

Williams earned his doctoral degree at the University of Michigan Center for the Study of Higher and Postsecondary Education, specializing in organizational behavior and management. He earned his bachelor’s and master’s degrees from Miami University.

In a recent interview with Insight Into Diversity magazine, Williams said, “I think we have to continue not just establishing chief diversity officer roles, doing campus climate studies, and writing diversity plans, but also doing these things with a real focus on changing our systems and the ways in which we work. We need to focus on becoming more evidence-based in our approach.”

UK is the University for Kentucky. At UK, we are educating more students, treating more patients with complex illnesses and conducting more research and service than at any time in our 150-year history. To read more about the UK story and how you can support continued investment in your university and the Commonwealth, go to: uky.edu/uk4ky. #uk4ky #seeblue

APPENDIX G
FACULTY AND STAFF
HIGHLIGHTS AND
PROFESSIONAL DEVELOPMENT



Cherokee College Preparatory Institute
Carl Albert State University
Poteau, Oklahoma
July 15-21, 2017





Contact:
Whitney Dittman
whitney.dittman@cn-fns.com
918-384-6714

Janice Randall
jr@cherokeefoundation.org
918-207-0950

July 25, 2017

Cherokee Nation Foundation wraps up sixth annual college prep camp at Carl Albert State College

Weeklong camp connects students with university representatives from across the US

TAHLEQUAH, Okla. – Cherokee Nation Foundation recently wrapped up its sixth annual Cherokee College Prep Institute at Carl Albert State College in Poteau. Nearly 30 high school juniors and seniors were in attendance this year, connecting with university representatives from across the nation.

“CCPI has grown so much throughout the years, and we are beyond thankful for the support we continue to receive from our academic partners,” said Janice Randall, executive director of the Cherokee Nation Foundation. “In only six years we have helped hundreds of Cherokee students prepare to chase their dreams and know that they will achieve great things for themselves and for the Cherokee Nation.”

The weeklong program helped students explore schools of interest, research scholarship opportunities and navigate the application process.

“We push the students to get outside of their comfort zones and explore all possibilities,” said Jennifer Sandoval, program coordinator of the Cherokee Nation Foundation. “Once they gather all the information and consider scholarships, they may find that their dream school is within reach and may be more affordable than they thought. Our staff is here to help guide them through the process and connect them to information and resources that will allow them to make the best decision for their future.”

The students stayed in traditional dorms and got to explore the campus to gain a better understanding of what college life is really like.

“I will be a first generation college student, and this camp has helped me more than they know,” said Cole Chandler, senior at Claremore High School. “I have attended three CNF camps in the past, and each one has helped prepare me in different ways. This year, the admissions counselors

EVIDENCE-BASED TEACHING & LEARNING

Lilly Conference - Austin, Texas - January 4-6, 2018

Plenary Presenters



Elizabeth Barkley
Foothill College



Claire Howell Major
The University of Alabama



Todd Zakrajsek
*University of North Carolina,
Chapel Hill*

Agenda Overview

Thursday

1:00p - 5:00p	Registration Open
1:30p - 2:00p	Welcome & Opening Remarks
2:05p - 3:30p	Plenary Presentation
3:50p - 4:40p	Concurrent Sessions
4:50p - 5:40p	Concurrent Sessions

Friday

7:30a - 5:00p	Registration Open
7:30a - 8:15a	Breakfast Served
8:15a - 8:45a	Round Tables
9:00a - 9:50a	Concurrent Sessions
10:05a - 10:55a	Concurrent Sessions
11:10a - 12:00p	Concurrent Sessions
12:00p - 1:00p	Lunch Served
1:00p - 2:30p	Plenary Presentation
2:50p - 3:10p	Concurrent Sessions
3:30p - 4:20p	Concurrent Sessions
4:30p - 5:20p	Concurrent Sessions
5:30p - 6:30p	Poster Session Reception

Saturday

7:30a - 2:30p	Registration Open
7:30a - 8:15a	Breakfast Served
8:20p - 9:10p	Concurrent Sessions
9:20a - 10:10a	Concurrent Sessions
10:30a - 11:20a	Concurrent Sessions
11:30a - 12:20p	Concurrent Sessions
12:20p - 1:00p	Lunch Served
1:00p - 1:50p	Concurrent Sessions
2:00p - 3:15p	Plenary Presentation

Conference Information

Meals/Snacks

Registration includes an afternoon snack on Thursday, breakfast, morning coffee, lunch, afternoon refreshments and a reception on Friday; and breakfast, morning coffee, lunch, and afternoon refreshments on Saturday. Name badges are required for entrance to all sessions, meals, and receptions.

Making Greener Choices

We continue to evolve into a "greener" conference by making conscious decisions to curb waste and reduce our environmental impact. We significantly reduce paper consumption by reducing print materials. Abstracts and session information can be found on our website and in the Guidebook Mobile App.

Evaluation of Sessions and Conference

In keeping with our theme of Evidence-Based Teaching and Learning, assessment is important to us. We encourage you to complete session evaluations following each concurrent session; and to complete an overall conference evaluation following the conference. If you have any concerns during the conference, please come to the conference registration desk and speak to an ITLC staff member.

Award for Outstanding Poster

This year, we again present the Award for Outstanding Poster. The award includes \$200 in credit toward registration at a 2019 Lilly Conference AND \$200 credit toward the 2019 Lilly Conference registration to be given by the poster winner to any ONE person who has never been to a Lilly Conference.

More Information

For more information, please visit our website at:
www.lillyconferences-tx.com

SATURDAY, JANUARY 6, 2018

Breakfast - Phoenix Central		Austin	Dewitt	Dezavala	Robertson
7:30a - 8:15a	ROOMS				
8:20a - 9:10a	Phoenix South				
	Redesign Course with Evidence-Based Teaching Pedagogies <i>X. Zhao</i> 8:20 - 8:50	The Use of Metacognition and Calibration in Curriculum... <i>E. Kraus, et al.</i>	Lessons Learned: Cultivating Successful Undergraduate Level... <i>K. Bailey & J. Tan</i>	Encouraging Student Learning Through Formal Writing <i>G. Randall</i>	A Relational Approach to Collaboration and Connection... <i>P. Sczygiel</i>
9:20a - 10:10a 9:20a - 9:40a	Data-Driven, Student-Centered Curriculum Redesign in... <i>T. Wickersham & N. Early</i>	Creating Impact with Your Feedback <i>V. Harding</i>	Student-Community Partnerships for Local Social, Economic, ... <i>S. Manning</i>	Redesigning an Online Course for Scalable Personalized Learning <i>S. Felber & J. Williams</i>	Benefits and Challenges of Publishing Undergraduate... <i>C. Burns</i>
9:50a - 10:10a		Enhance Student Learning Using Frequent Low-Stakes Assessments <i>C. McCarron & T. Partridge</i>	Teaching Intercultural Competence Through Perspective... <i>D. Wilkerson-Barker</i>	Blueprinting: Building a Faculty Development Program for... <i>M. Russell & A. Battaglia</i>	Student Research Showdown: A Research Communication... <i>R. Reichle</i>
10:30a - 11:20a		Using the Five Languages of Appreciation to Strengthen... <i>C. Biggerstaff & J. Johannigman</i>	Building a Shared, Multi-Disciplinary Creativity Requirement... <i>M. Plotkins</i>	Successfully Tackling Writing in Business and the Sciences <i>T. Stampff, et al.</i>	Practical Examples of SOTL Research in a Community... <i>J. Ziegler, et al.</i>
11:30a - 12:20p	Using the Power of Skilled Observational Techniques in... <i>P. Solomon</i>	Innovative Instructional Design Strategies that Break the... <i>D. Papanagnou & C. Rodriguez</i>	Navigating Curriculum Redesign: Organizational and... <i>J. Stewart, et al.</i>	Graduate Student Teaching Training Through Mentorship <i>C. Richmann & L. Wright</i>	Increasing STEM Student Success Through PLI at Kentucky State... <i>K. Inyed</i>
12:20p - 1:00p	Lunch - Phoenix Central				
1:00p - 1:50p	Masterclass: Cultivating Communication Capacities <i>R. Blanton & T. Guinn</i>	Contemporary Culture: A Foundation to Kick-Start Engaged... <i>M. Thompson</i>	Borrowing Across Disciplines for Integrated Curriculum... <i>M. Scanlon & M. Crumpton</i>	Modeling Metacognition and Providing Background... <i>J. Wulfmeyer</i>	Teaching in Colonized Classrooms: Creating Deeper and... <i>E. Kirkland</i>
2:00p - 3:15p	Closing Plenary Presentation: Strategies for Effective Teaching and Enhanced Student Learning: Principles of Brain-Based Learning Applied...				Phoenix South Todd Zajacksek - Phoenix South



FEYNMAN 100

Join us on May 11 & 12, 2018 for a celebration of Richard Feynman's life & legacy, on the occasion of his 100th birthday.

Our Evening Celebration honors his adventures as scientist, teacher, explainer, and general enthusiast for finding things out.

The Scientific Symposium on May 12 features leading scientists at the current frontiers of knowledge - exploring new ideas and sharing their vision of where science is heading.

The Feynman 100 events are free but tickets are required. The Friday and Saturday events will be ticketed separately.

EVENING CELEBRATION

Friday, May 11, 2018

Program begins at 8:00 pm, Beckman Auditorium

Looking back at the astounding changes in our world over the past 100 years, we can only marvel at what's to come. Join us for a Celebration of Richard Feynman, honoring his adventures as scientist, teacher, explainer, and general enthusiast for finding things out. Our Evening Celebration will feature talks by scientists, family, friends, and those who hope to continue his legacy.

The Friday night celebration is sold out, but due to overwhelming demand, the Friday night event will now be live-streamed [here](#). There will be a standby line on Friday night at Beckman Auditorium and seating from this line will begin at 7:45pm.

Contact feynman100@caltech.edu with any questions.

SCIENTIFIC SYMPOSIUM

Saturday, May 12, 2018

9:00 am to 5:00 pm, Beckman Auditorium

Richard Feynman looked toward the future with enthusiasm and curiosity. Join us for this day-long Symposium as leading scientists survey the current frontiers of knowledge and share their vision of where science is heading. These are the talks that Richard Feynman would have wanted to attend.

A limited number of additional tickets are now available for the Saturday Symposium [here](#).

STEM Innovators Conference 2017



The STEM Innovators Conference 2017 will hold sessions for both professional development and enhancement featuring concurrent oral and poster presentations from undergraduate student research. The exhibitor fair will include numerous graduate schools, government agencies, corporations and businesses that will be on-site to recruit students and expose them to opportunities in their respective programs.

AGENDA AT GLANCE



Dr. Andres Garcia
Opening Keynote Speaker



Dr. Robin N. Cogger
Dinner Keynote Speaker



Dr. Johnne' M. Parker
Closing Keynote Speaker



CONFERENCE

[Agenda](#)

[Location](#)

[Speakers](#)

[Register](#)

Recruiting and Retaining Historically Underrepresented Students in STEM

October 2 - 3, 2017
San Antonio, TX

[Register](#)

Learn how to design a framework for a sustainable model for increasing STEM student enrollment and retention, especially for underrepresented groups.

APPENDIX H
CONFERENCES AND
SYMPOSIA

2017 International Travel



Sarah Hodges, UK biochemistry sophomore
Grenoble, France summer research



Danielle Chavis, WKU chemistry senior
Puerto Rico summer research



Sarah and Eduardo presented at the
LSMCE Conference, Indianapolis, IN,
October 6-8, 2017



*Using a Research-center-based Mentoring
Program to Broaden Participation in STEM
and to Facilitate Access to an International
Research Experience for Undergraduates*



Dr. Eduardo Santillan-Jimenez
UK CAER research scientist
LSU iREU Faculty Award



Edwina Barnett, WVSU biology junior
Grenoble, France conference presentation

Louisiana State University France International REU

Women of Color STEM Conference

Detroit Marriott at the Renaissance Center

October 5-7, 2017



Cagney "CC" Coomer-Felton received a Student Leadership Award for Community Service



23 Undergraduate students from six campuses including 15 LSAMP Scholars



L-R: Kelsey Huff, KSU; Jaliya Slaton, UK; Ariana Swayne, Marshall; Sajana Dumre, UK; Adia Jumper, UK; KeyAnna Washington, UK; LaShonda McDowell, Marshall; L Stephanie Warlitrer, Marshall; Ky'Achia, WVSU; Charity Hairston, Marshall; Oby Igwe, UofL; Tat'Ana Dillard-Sims, WVSU; Makaylah Swayne, Marshall; Sana Ghori, Marshall; Onyee Ibekwe, UK. Not pictured: Essence Lee, Laura Mbogo, Je'Coiya Moore, Nahndi Moulta Ali, Shannon Russell, and Day Vance from Centre and Robin Alместica from UK.

5TH ANNUAL
2017 LSMCE
CONFERENCE

Take Action: Reaching Deeper into the Nation's Diverse Pool of STEM Talent

October 6-8, 2017
Sheraton Indianapolis Hotel
at Keystone Crossing

ismceconference.org



Sponsored by the National Science
Foundation Award #1202563

Brush, Brittany — Poster # 17

ROBUST EMPIRICAL MODELING OF STREAM CHLOROPHYLL-A: SCALING BY A SINGLE REFERENCE OBSERVATION

Chlorophyll-a (Chl-a) is a green pigment in plants, and is a powerful indicator of stream water quality and ecosystem health. Chl-a concentrations typically represent a diurnal cycle, which can vary across sites, seasons and years. However, continuous observations of Chl-a are rarely available. A robust empirical model was developed to solve this problem by using continuous (hourly) observations recorded in 26 streams across the continental United States. A single reference observation from each diurnal cycle was considered as a scaling parameter to normalize different cycles into a general dimensionless cycle. The scaled cycle was then estimated by employing an extended stochastic harmonic analysis algorithm. Model calibrations and validations indicated good predictions. Estimated model parameters did not noticeably vary in time or space, leading to a single parameter set. The model can predict the entire diurnal cycle of hourly Chl-a from the corresponding single reference observation for a chosen stream. The model can, therefore, be used as an ecological engineering tool to robustly estimate missing data, and make a dynamic assessment of stream health. Funding: NSF CAREER Award to Dr. Omar I. Abdul-Aziz (NSF CBET Environmental Sustainability Award #1561942/1454435)

Hodges, Sarah — Poster # 79

THE INFLUENCE OF CELLULOSE PROPERTIES ON THE THERMAL BEHAVIOR OF BIOMASS

In the production of biofuels, biomass undergoes various chemical treatments and synthesis processes. When producing biofuels from wood resources the feedstock must undergo the thermochemical conversion process of torrefaction. As an element of the torrefaction process, the LPG2 laboratory at the University of Grenoble, France, is researching the thermal effects of the modification of cellulose in biomass. Modifications to cellulose occur throughout the various chemical treatments to the biomass feedstock, affecting properties such as degree of polymerization, crystallinity, and content of functional groups. The thermal behavior of treated cellulose is analyzed through utilizing thermogravimetric analysis (TGA), pyrolysis gas chromatography-mass spectrometry (Py-GC/MS), and attenuated total reflectance (ATR IR). The crystallinity is observed through scanning electron microscopy (SEM), in addition to various chemical properties of cellulose being measured through standard chemical analysis methods. Funding: LSAMP France iREU; NSF Grant CHE 1560390; University of Kentucky's Chapter of the NSF Broadening Participation in Engineering Program; NSF Grant 1444779; University of Grenoble Alps INP

■ Building a Community of Scholars ■ Broadening Participation ■ Evaluation and Impact ■ Mentorship ■ Professional Development

Building a Community of Underrepresented STEM Majors in Calculus: The Emerging Scholars Program

Suite 8, 9
& 10

David Miller, Ph.D., Associate Professor of Mathematics, West Virginia University; Kentucky-West Virginia LSAMP

In the past two to three decades, there have been significant efforts to recruit and retain underrepresented STEM students. As a result, the STEM pipeline has seen a recent surge of enrollment. Unfortunately, the outcome of this focus on retention has not had significant impact on underrepresented students.

In 2009, a colleague and I adapted Treisman's Professional Development Workshop. We infused group and inquiry-based learning where students work in small groups on white boards to solve calculus problems and present their solutions in a whole class discussion. Students are supported by the instructor and class assistants as they work through the problems. The problems range from conceptual building, that focus on students understanding why; procedural problems, so students understand how; and more challenging problems, so that students are pushed to think more deeply and practice problem solving. We call this class the Emerging Scholars Program (ESP), and expanded these classes to Calculus II in 2010 and to Calculus III and Differential Equation in 2013, due to student demand.

In this breakout session, I will give a brief background of ESP and discuss the program's development, the curriculum, class management, and participation of other faculty members. In addition, I will present some data since 2009 to give perspective of the program's success.

BREAKOUT SESSION 1 ABSTRACTS

Using a Research-center-based Mentoring Program to Broaden Participation in STEM and to Facilitate Access to an International Research Experience for Undergraduates

Suite 4 & 5

Eduardo Santillan-Jimenez, Ph.D., Research Scientist Principle, Center for Applied Energy Research, University of Kentucky; KY-WV LSAMP
Sarah Hodges, University of Kentucky; KY-WV LSAMP
Fara Williams, Director of KY-WV LSAMP, University of Kentucky
Randy Duran, Ph.D., Professor, Chemistry, Cain Chair in Science, Technological, Engineering, and Mathematical Literacy, Louisiana State University; LS-LSAMP

Mentoring has been identified as an effective tool not only for attracting and retaining students from groups traditionally underrepresented in STEM disciplines, but also for improving their academic performance. However, additional benefits could be obtained by housing mentoring initiatives in research centers rather than traditional academic departments—because the former foster an excellent environment for mentoring efforts designed to broaden participation in STEM. Most saliently, research centers commonly display higher research staff-to-student ratios. Additionally, research center staff members do not experience the strain caused by the teaching and administrative loads of faculty members. These conditions can result in a more engaging, immersive, and personalized mentoring experience. As such, a mentoring initiative based at the University of Kentucky Center for Applied Energy Research is striving to test this hypothesis.

Providing participating students access to international research opportunities has become a focus of this mentoring program. Collaborative work involving a number of key individuals and initiatives—including the Kentucky-West Virginia LSAMP, as well as the international Research Experience for Undergraduates (IREU) program of Louisiana State University—has allowed Ms. Sarah Hodges, a participant in all the aforementioned programs, to perform research; attend summer school; present the results of her work; and visit a number of research facilities in Grenoble, Lyon, and Bordeaux, France. In this breakout session, all considerations associated with lining up, preparing for, participating in, and disseminating the results of an IREU will be covered. Emphasis will be placed on the how-to and lessons learned through Ms. Hodges' experiences.

Alliance to Alliance: Sharing Best Practices

Fara Williams, Director, KY-WV LSAMP, University of Kentucky
Darlene Croci, Program Coordinator, OK LSAMP, Oklahoma State University

This is an interactive roundtable session to encourage discussion of best practices among LSAMP alliances and others. The audience will participate in open and impactful discussion with LSAMP leaders. This will result in better awareness of and communication with others in the LSAMP community who have proven practices for successful implementation of LSAMP activities. Participants will gain important knowledge and practical tips on methods to achieve LSAMP goals and to overcome program challenges.

Plaza
D & E





LSMCE Conference

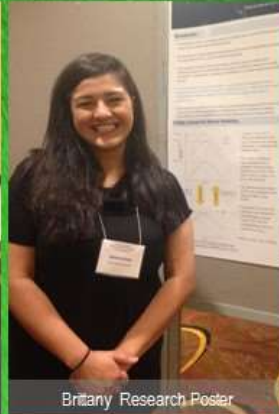
(Louis Stokes Midwest Center of Excellence)

Indianapolis, TN

October 6-8, 2017



Front: Sarah Hodges, UK Scholar; Eduardo Santillan-Jimenez, UK mentor; David Miller, WVU Coordinator; Britany Brush, WVU Scholar
Back: Stacy Miller, WVU mentor; Fara Williams, Director



Britany Research Poster



Sarah Research Poster



David Emerging Scholars Program Presentation



Eduardo and Sarah International Presentation



LSAMP Meeting for PIs, Directors, and Coordinators



Alliance to Alliance workshop led by Fara

17th
annual

POSTERS
At-The-Capitol

February 8th, 2018
Frankfort Kentucky
Transforming Education for a Brighter Tomorrow

Schedule of Activities

February 8, 2018

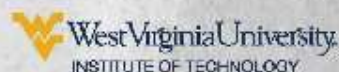
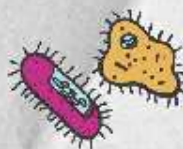
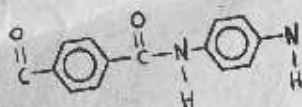
- 9:00 a.m.*Posters-at-the-Capitol* Registration Opens (House-side Mezzanine)
- 9:00 a.m. to 9:45 a.m.Poster Setup, Participant Browsing, and Legislative Visit Time
- 10:00 a.m.....Group Photograph (Senate Staircase)
- 10:15 a.m.Brief Organizational Meetings by Institution
(Locations for these meetings will be announced during the group photograph)
- 10:30 a.m.Welcome and Invited Guests (Rotunda)
- 11:00 a.m. to 11:30 a.m.Student Posters Viewing
- 11:30 a.m. to 12:30 p.m.Legislative Visit Time and Lunch
- 12:30 p.m. to 2:30 p.m.General Poster Display Time
- 1:30 p.m. to 2:30 p.m.Reception (Senate-side Mezzanine)
- 3:00 p.m.Conclusion (Return easels and boards to registration table)

All times listed are in Eastern Standard Time.

University of Louisville

Poster No.	Student		Faculty Mentor	House No.	Senate No.
59	Bartley	Lloyd A.	Michael H. Perlin	40	35
55	Christian	Caroline	Cheri Levinson	4	4
55	Cox	Dustin	Jian Du-Caines	6	2
60	Duong	Nicholas	Gerard Williger	36	36
58	Igwe	Oby	Nino Muradashvili	48	26
63	Kline	David	Sachin Handa, Justin Smith	59	26
57	Kusmic	Samir	Benne Holwerda	38	37
56	Mills	Bri	Gerard Williger	44	33
61	Oropilla	Gabrielle	Dr. Leah Siskind	25	10
54	Riney	Logan	Artem Rudenko, Daniel Rolles	42	35
62	Udoh	Karen	Sham Kakar	36	36

15th Annual Undergraduate
RESEARCH
DAY AT THE | February 16,
CAPITOL | **2018**



50. Small Scale Optimization of Amplification and Sequencing of the Internal Transcribed Spacer of *Rubus*

Edwina Barnett (Ohio); Doug Bright (Kanawha, WV)

Institution: West Virginia State University
Field: Biology
Faculty Advisor: Doug Bright

Rubus is the taxonomic name for a genus of fruiting plants including the blackberry, raspberry, and thimbleberry. This genus is ecologically important in early forest succession and economically important as fruiting crops and ornamentals. The taxonomy of the genus is complex, therefore a solid understanding of the evolutionary relationship within the genus is needed for breeders to take advantage of these traits. To achieve this molecular based study of *Rubus*, DNA was extracted from 47 fresh *Rubus* tissue samples, the internal transcribed spacer for RNA-coding nuclear genes (ITS) was amplified, and gel electrophoresis was run on the samples. A band present at 376 – 378 bp was indication of successful ITS1 amplification and a band at 409 – 411 bp was indication of successful ITS2 amplification. The samples were then prepared for sequencing and the sequenced samples were edited, assembled, and aligned. Phylogenetic trees of the markers were generated using Bayesian inference, along with concatenated trees. The overall sequencing success rate of ITS1 was 72.3 % and the sequencing success rate of ITS2 was also 72.3 %.

Funding: Federal (The Louis Stokes Alliances for Minority Participation)

51. Genome Wide Association studies on nutraceutical effects of *Nigella sativa* on *Drosophila melanogaster*

Samantha Belcher (Kanawha County, WV)

Institution: West Virginia State University
Field: Biology
Faculty Advisor: Umesh Reddy

Nigella sativa (Family Ranunculaceae) (black-caraway or black cumin) is native to Southern Europe, North Africa and Southwest Asia. It has a variety of uses in cuisine and medical field. Its pharmacological action includes anti-diabetic, anticancer, immunomodulator, analgesic, antimicrobial, anti-inflammatory, spasmolytic, bronchodilator, hepato-protective, renal protective, gastro-protective, antioxidant properties, etc. The seeds of *N. sativa* have also been widely used in the treatment of different diseases and ailments. Some of its important active compounds are thymoquinone, thymohydroquinone, dithymoquinone, p-cymene, carvacrol, 4-terpineol, t-anethol, sesquiterpene longifolene and thymol etc. We focused mainly on its anti-obesity, anti-diabetic, and antioxidant properties. We intend to study these benefits on *Drosophila melanogaster*. Black cumin seeds were fed to the flies. Changes in dry body weight, glucose level and lifespan were measured after two weeks of feeding. We used 40 *Drosophila melanogaster* Genetic Reference Panel (DGRP) lines to perform a genome-wide association analysis for food intake, body weight and lifespan and negative geotaxis using ~2M common single nucleotide polymorphisms (SNPs). Preliminary data shows some fly genotypes respond positively to the black cumin treatment. There is a reduction in the body weight and a decrease in the glucose level in the *Drosophila* body. Details will be presented.

Funding: Private (AT&T)

*Black Engineer of the Year Award Conference
Washington, D.C., February 8-10, 2018*



Jacqueline Brown & Romello Thorpe, Marshall



Alesia & Charity Hairston, Marshall



Raul Torres, Jimmy Mickens, Mark Lawhom, Asare Nkansah, UK



Chelsea Robinson & Ndeye Thiaw, UK



D'Jreya Boyd, UofL



NCUR

UNIVERSITY OF CENTRAL OKLAHOMA

NATIONAL
CONFERENCE ON
UNDERGRADUATE
RESEARCH

April 4-7
2018





Wellness Center - Kiosk 45 Side C

Effect of Key Factors Contributing to Cross-programming in RFID Multi-tag Applications

Ibrahim Appleton, University of Kentucky

Wellness Center - Kiosk 49 Side B

Influence of 'Small' Elevation Changes on Mesoscale Temperature Variations

Nathan Crowder, Western Kentucky University

Wellness Center - Kiosk 46 Side C

Effects of Lignocellulose Characteristics During Thermal Analysis

Sarah Hodges, University of Kentucky

Wellness Center - Kiosk 8 Side B

Revolutionizing Hybrid Parallelization Through Data Communication Techniques

Asare Nkansah, University of Kentucky



KY-WV LSAMP Poster Presenters: Sarah Hodges, UK; Asare Nkansah, UK; Khalil Appleton, UK; Nathan Crowdus, WKU



KY-WV LSAMP Oral Presenter: Raisa Nunez, WVU. Plenary Speakers: Claudia San Pedro; Kareem Abdul-Jabbar



Front: Charles McGruder, WKU Coordinator; Koji Barnaby, WKU; Sarah; Nathan; Whitney King, WKU; Khalil; Raquel Dominguez, WKU. Back: Raúl Torres, UK Coordinator; Asare. Not Pictured: Fara Williams, Director

APPENDIX I
INDIVIDUAL
SCHOLAR and ALUMNI
HIGHLIGHTS

3 UK Students Awarded Research Internships in Germany

By **Whitney Hale** April 10, 2018



Mohanad Abdallah

LEXINGTON, Ky. (April 10, 2018) — Three University of Kentucky students, Mohanad Abdallah, Emily Major and Jared Schmal, have been selected to receive [Research Internships in Science and Engineering \(RISE\)](#) from the [German Academic Exchange Service](#) (Deutscher Akademischer Austauschdienst – DAAD).

DAAD's RISE is a summer internship program for undergraduate students from the United States, Canada and the United Kingdom in the fields of biology, chemistry, physics, earth sciences and engineering. The internships give each student an opportunity to do research at one of Germany's top universities or research institutions. Around 300 students participate each summer.

RISE interns are matched with doctoral students whom they assist and who serve as their mentors. All Scholarship holders receive stipends from DAAD to help cover living expenses, while partner universities and research institutes provide housing assistance.

The daughter of Emily Kate Major, of Lancaster, Kentucky, Emily Major is an [agricultural and medical biotechnology](#) senior, who is also pursuing minors in [psychology](#) and [neuroscience](#). A [Chellgren Fellow](#), she works in the [lab of Luke Bradley](#), a faculty member in the Department of Molecular and Cellular Biochemistry in the UK College of Medicine. The research she has worked on is related to her interest in neurodegenerative diseases.

“I have had the opportunity to collaborate on a project between the [Department of Neuroscience](#) and the [Department of Horticulture](#) on a biochemistry project,” Major said. “Meeting faculty members like Dr. (Roberta) Magnani and Dr. Bradley has greatly enriched my research experience.”

Major is excited to participate in RISE. “This Scholarship will allow me to continue studying underlying mechanisms associated with neurodegenerative diseases, similar to my previous research at UK and studies as a neuroscience minor. I look forward to living in the Rhineland area for 10 weeks and making connections in the German scientific community.”

In addition to this internship, Major has been a recipient of a [KY EPSCoR National Science Foundation Grant](#) and was part of the [Shoulder to Shoulder](#) Medical Brigade that served citizens in Santo Domingo, Ecuador, this spring.

After graduation, Major would like to attend medical school and one day work as a physician in an underserved community.

The son of Linda Schmal, of Lebanon, Kentucky, and husband of Jessica Frazier, Jared Schmal is a [mechanical engineering](#) junior. He previously earned a bachelor’s degree in business administration, with a concentration in accounting, from Berea College in 2009.

After working in the accounting field for five years, Schmal decided to return to college to study mechanical engineering because he wanted his career to have a positive impact on the world. “I want a career where I worry about the quality and importance of my work, not just the bottom line. I would love to work on solving global climate change,

increasing efficiency of buildings, or designing smart cities — jobs that improve the quality of life and strive for a sustainable economy.”

Schmal, who worked with [Ilka Balk](#), director of Engineering Career Development, on his RISE application, is also excited for his experience abroad. “I get to work for 10 weeks at a top German university in a field that relates directly to my interests. It is an amazing opportunity! In addition to providing great research experience, the program is well known and will hopefully lead to more opportunities upon graduation from UK.”

After graduation, Schmal looks forward to returning to the workforce and someday obtaining a master’s degree in civil or mechanical engineering.

The son of Mohamed Abdeen and Amany Elmaraghy, of Lexington, Mohanad Abdallah is a senior majoring in [electrical engineering](#) and [Spanish](#) at UK. He is part of [Management Leadership for Tomorrow](#), has been active in [UKSEDS](#) (Students for the Exploration and Development of Space) and is a member of the [National Society of Black Engineers](#). He also has served as a research assistant at UK’s [Center for Applied Energy Research](#).

After graduation, Abdallah wants to work for a power/energy company as well as pursue an MBA.

Unfortunately, due to other summer commitments Abdallah will not be able to accept this internship.

Students interested in applying for a RISE award are encouraged to contact the [UK Office of Nationally Competitive Awards](#). Part of the [Chellgren Center for Undergraduate Excellence](#) within the Division of Student and Academic Life at UK, the office assists current UK undergraduate and graduate students and recent alumni in applying for external Scholarships and fellowships funded by sources (such as a nongovernment foundation or government agency) outside the university. These major awards honor exceptional students across the nation. Students who are interested in these opportunities are encouraged to begin work with the office's director, [Pat Whitlow](#), well in advance of the Scholarship deadline.



DAAD-Websites-Member

+49 (0)30 1208-434 66

Idem



Info

Mohamed Abdallah has joined RLI in June 2018 as an intern with the Off-Grid Systems team. His objective is to develop a low carbon development plan for a small island in the Philippines. He is a student at the University of Kentucky in the USA studying Electrical Engineering and Hispanic Studies. He has been awarded the DAAD (Rise award from the German Academic Exchange Service (Deutscher Akademischer Austauschdienst) which offers undergraduate students from North America, Irish and British universities the opportunity to complete a summer research internship at top German universities and research institutions.

Apart from his work at RLI, Mohamed has worked as a research assistant at the University Of Kentucky Center Of Applied Energy Research and previously interned at Schneider Electric. After graduation, He hopes to work in implementing renewable energy technologies in rural areas and developing countries. He is interested in the development of energy technologies as well as the social and cultural impacts of renewable energy.

Tasks at RLI

- Analysis of market potential and the energy sector
- Application and development of open-source grid optimization tools

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Training the Next Generation of Scientists and Engineers



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Published on Aug 25, 2017

At the University of Kentucky, the Environmental Research Training Laboratories (ERTL) are training the next generation of scientific researchers.

ERTL is a hands-on learning and research facility specializing in a variety of organic and inorganic analysis and microbial analyses. Established in 2002 by a grant from Kentucky NSF EPSCoR, ERTL's mission is to help



Effect of Cu promotion on cracking and methanation during the Ni-catalyzed deoxygenation of waste lipids and hemp seed oil to fuel-like hydrocarbons

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ARTICLE INFO

Article history:

Received 30 November 2016

Received in revised form 6 March 2017

Accepted 16 March 2017

Available online 28 March 2017

Keywords:

Hydrocarbons

Nickel

Copper

Decarboxylation

Cracking

Methanation

ABSTRACT

Deoxygenation of yellow grease and hemp seed oil was studied over 20% Ni/Al₂O₃ and 20% Ni-5% Cu/Al₂O₃ catalysts in the presence of H₂. In the deoxygenation of 25 wt% yellow grease (dissolved in dodecane) both catalysts afforded a liquid product consisting of mainly linear C10–C17 alkanes; however, the Cu-promoted catalyst showed improved selectivity to long chain (C15–C17) hydrocarbons as a result of its lower cracking activity. Analysis of the light hydrocarbon products (C10–C16) showed that cracking mainly occurred via the removal of terminal carbons (with methane formation), although a small amount of internal cracking also occurs based on the presence of C6–C11 in the product mixtures. Similar improvements were also observed in the deoxygenation of 25 wt% hemp seed oil, showing that Cu was able to curb cracking even when a highly unsaturated feed was employed. The Cu promotion effect was more pronounced in the deoxygenation of 75 wt% yellow grease in which the 20% Ni/Al₂O₃ catalyst did not yield any liquid products, whereas the 20% Ni-5% Cu/Al₂O₃ catalyst afforded liquid products consisting of >90% diesel-like hydrocarbons.

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1. Introduction

A number of sustainability and environmental concerns have spurred interest in biofuels, which are renewable, carbon neutral and do not disrupt the food supply when produced from waste and inedible feedstocks [1,2]. Waste lipids can be converted via transesterification with methanol to a mixture of fatty acid methyl esters (FAMES), commonly referred to as biodiesel. While biodiesel offers certain advantages over petroleum-derived fuels [3], the high oxygen content of FAMES gives rise to several problems – including limited storage stability and engine compatibility issues – that render biodiesel a less than ideal fuel [4]. Thus, attention has shifted to deoxygenation processes capable of converting lipids to fuel-like hydrocarbons, such as hydrodeoxygenation (HDO) and decarboxylation/decarbonylation (deCO_x). HDO is a commercial process that is highly selective to diesel-like hydrocarbons, albeit there is a high

hydrogen requirement associated with the removal of oxygen as H₂O [5]. Therefore, deCO_x can be viewed as preferable not only because the hydrogen consumption is in principle lower than for HDO, but also because deCO_x is catalyzed by simple supported metal catalysts as opposed to the sulfided metal catalysts used in HDO [5,6].

Although most deCO_x work has focused on Pd and Pt catalysts, the high cost of these formulations is an impediment to their use in industrial applications. Consequently, inexpensive Ni catalysts have attracted interest for the deoxygenation of lipids to hydrocarbons via deCO_x [7,8]. Admittedly, Ni catalysts face certain challenges that must be overcome if they are to become an industrially viable alternative for the conversion of lipids to diesel-like hydrocarbons. Indeed, the high cracking and methanation activity of Ni can favor the formation of short chain liquid hydrocarbons, methane and coke deposits, which reduces the selectivity to diesel, decreases the hydrogen efficiency and results in catalyst deactivation.

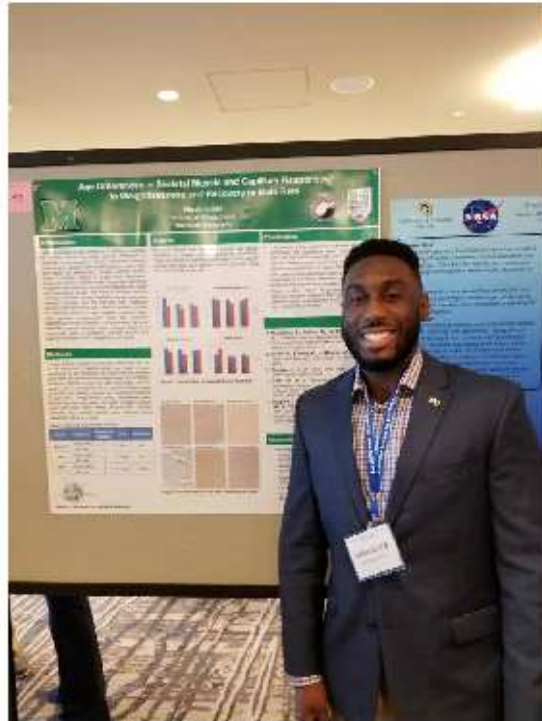
Recent results show that the aforementioned issues inherent to supported Ni catalysts can be assuaged to some degree by promoting Ni with Cu. Indeed, we have observed that Ni-Cu bimetallic

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E-mail address: mark.crocker@uky.edu (M. Crocker).

http://www.herald-dispatch.com/features_entertainment/marshall-student-presents-research-at-american-society-for-gravitational-and/article_e8d34de6-2afa-53dc-a65d-fb95e4252818.html

Marshall student presents research at American Society for Gravitational and Space Research annual meeting

Courtesy of Marshall University Nov 25, 2017



Courtesy of Marshall University Noah Ichite poses with his poster presented at the American Society for Gravitational and Space Research (ASGSR) annual meeting.

HUNTINGTON - Noah Ichite, a student in the Marshall University College of Health Professions, presented his research at the 33rd American Society for Gravitational and Space Research annual meeting, which took place Oct. 25-28 in Seattle, Washington.

http://www.herald-dispatch.com/features_entertainment/marshall-student-presents-research... 3/15/2018

Student Life (/student-life)

UK Ag Biotech Student Chosen for USDA Wallace-Carver Fellowship

By Aimee Nielson (/authors/aimee-nielson) Thursday

LEXINGTON, Ky. (Aug. 10, 2017) — Together with the World Food Prize Foundation, the U.S. Department of Agriculture selected a University of Kentucky College of Agriculture, Food and Environment (<http://www.ca.uky.edu/>) student as one of 29 USDA Wallace-Carver Fellows.

As part of the program, Fabian Leon, UK junior majoring in agricultural and medical biotechnology, was stationed at the USDA Agricultural Research Service station in Ames, Iowa, over the summer. He had the opportunity to collaborate with world-renowned scientists and policymakers during the paid internship.

“The Wallace-Carver Fellows program provides the opportunity for some of the most highly motivated young college students in America to have hands-on experiences working with leading USDA research scientists and to be inspired to pursue careers and future leadership positions in food and agricultural science,” said Kenneth Quinn, president of the World Food Prize Foundation and former U.S. ambassador to Cambodia.

Leon is a Nicholasville native, however his family’s farm is located in Mexico near La Piedad, Michoacán. While he didn’t grow up on the farm, he said he has an inborn fondness for agriculture. He became familiar with the World Food Prize Foundation while he was in high school by participating in the foundation’s Global Youth Institute. Because of that, Leon was able to apply for two internship programs, and he was selected as a Borlaug-Ruan intern in 2015. He spent the following summer in Lima, Peru, where he researched sweet potato viruses.

“Through the World Food Prize, I have been able to work alongside the scientists and policymakers at the USDA who steer American agriculture,” Leon said. “I have also been able to do my part in advancing the National Laboratory for Agriculture and The Environment’s research programs by doing the day-to-day lab and field research.”

During his tenure as secretary of agriculture, Tom Vilsack and Quinn created the Wallace-Carver Fellowship to inspire the next generation of American scientific, agricultural and humanitarian leaders. Over the past six years, 185 students have gone through the program.

The fellowship culminates in a week-long, high-level leadership symposium at the USDA Headquarters in Washington, D.C., hosted by the U.S. secretary of agriculture Sonny Perdue. During the week, the fellows will participate in a series of high-level briefings, tours and discussions around Washington, D.C., with key government officials as well as congressional and humanitarian leaders engaged in the fight against hunger.

Leon will return to UK this fall for his junior year. He is already looking forward to the future and plans to pursue a doctorate in plant and soil sciences and continue to work as a researcher.

“I want to help solve the issues our population faces with food security,” he said.

UK is the University for Kentucky. At UK, we are educating more students, treating more patients with complex illnesses and conducting more research and service than at any time in our 150-year history. To read more about the UK story and how you can support continued investment in your university and the Commonwealth, go to: uky.edu/uk4ky (<http://www.uky.edu/uk4ky>). #uk4ky #seeblue

UK Ag Biotech Student to Serve on AFA Student Advisory Team

By [Aimee Nielson](#) Thursday



Fabian Leon (right)

LEXINGTON, Ky. (May 10, 2018) — Fabian Leon is motivated and determined to make a positive impact on the world. As a junior at [University of Kentucky](#) studying [agricultural and medical biotechnology](#), he is off to a good start.

From internships and work experiences to leadership and volunteer opportunities, Leon, a Nicholasville native, pursues experiences that set him apart from his peers and prepare him to pursue a career in agriculture and biotechnology. Recently, he was selected as an [Agriculture Future of America \(AFA\)](#) student advisory team member.

AFA is a leader and professional development organization for collegiate leaders and young professionals. Providing leadership development, intern support and Scholarships, AFA seeks to be a catalyst in the preparation of a new generation of agriculture leaders. Leon and his fellow team members serve as ambassadors between AFA and their college campuses and AFA's corporate partners.

"The biggest value in the organization lies in its people," Leon said. "AFA has allowed me to network with some of the best and brightest college students in my field."

Leon and the other nine team members were selected through a competitive application process to serve as AFA's student voice and represent their peers on a national level. Leon said he is looking forward to his experiences with the team.

"I am extremely excited to participate in parts of AFA I haven't seen yet," he said. "I hope to see and learn about parts of global agriculture that I haven't explored yet."

A major component of the student advisory team's responsibilities is planning the 2018 AFA Leaders Conference. Held Nov. 1-5, in Kansas City, Missouri, this event is AFA's core leader development program with more than 800 delegates attending. The student advisory team and 16 AFA campus ambassadors met in April to kick off the planning process with team training and theme setting exercises.

"AFA Leaders Conference brings together leaders in agriculture from colleges around the nation," Leon said. "This dynamic makes for a tremendous atmosphere where there is much to learn."

Leon describes himself as an agriculture enthusiast and aspiring plant scientist. He hopes to eventually pursue a doctoral degree in plant and soil sciences. He is a 2017 Wallace-Carver Fellow and a [UK College of Agriculture, Food and Environment](#) ambassador, and he is currently serving as the undergraduate parliamentarian for the national Minorities in Agriculture, Natural Resources and Related Sciences organization.

To learn more about the agricultural and medical biotechnology program in the UK College of Agriculture, Food and Environment, visit the website here: <http://abt.ca.uky.edu/>.

UK is the University for Kentucky. At UK, we are educating more students, treating more patients with complex illnesses and conducting more research and service than at any time in our 150-year history. To read more about the UK story and how you can support continued investment in your university and the Commonwealth, go to: uky.edu/uk4ky. #uk4ky #seeblue

UK MANNRS is Top Chapter in Nation for 6th Consecutive Year

By [Aimee Nielson](#) Tuesday



UK MANRRS was named the top chapter in the nation once again.

LEXINGTON, Ky. (April 17, 2018) — For the sixth consecutive year, the University of Kentucky MANRRS chapter was named National Chapter of the Year at the recent 33rd annual conference for Minorities in Agriculture, Natural Resources and Related Sciences. The chapter is housed in the UK College of Agriculture, Food and Environment.

Mia Farrell, interim director of the college’s Office of Diversity and chapter advisor, heaped praise on the students.

“Winning this award six times in a row displays to me that when members and advisors are committed to an organization, and put forth their best work, they reap the rewards,” Farrell said. “The students have worked diligently throughout the year to earn this recognition. The UK

MANRRS Scholars showcased the work they put forth in 2017 through community service, fundraising, executive board commitment, community engagement and much more.”

Farrell and chapter co-advisors Dale Morgan and Ashley Holt took more than 52 delegates to Greensboro, North Carolina, for the conference. The students’ written report and oral presentation to the national conference described the chapter’s membership, leadership development and community service, and contained ideas for promoting the national society.

Carley Fort, a junior in community and leadership development and integrated strategic communication, was elected undergraduate vice president for National MANRRS Region 3.

“I love going to MANRRS conferences,” she said. “Witnessing minority excellence in agriculture on such a large scale reminds me of how much I love this organization. I can’t wait to help serve the society and represent our region this upcoming year. MANRRS has not only helped me discover my passion and purpose for agriculture, it has also opened so many doors for opportunities and mentors that I can carry throughout my lifetime.”

Other UK MANRRS members elected to national offices were Drexler Blue, a retailing and tourism management graduate student, who was elected graduate parliamentarian, and Montre’ale Jones, a junior in architecture, was named undergraduate parliamentarian.

UK MANRRS members also received awards. Caitlyn McFadden, career and technical education freshman, received the John Deere Scholarship, and Kameron Nelson, agricultural economics freshman, received the Farm Credit VIP Scholarship.

“The students are as busy as I am, so as an advisor I have to be as committed as the members,” Farrell said. “As a leader, I do not expect them to do what I wouldn’t do. I have developed relationships, and we have seen continued success. I am very proud of these students and excited about the future of agriculture.”

For more information about UK MANRRS and the UK CAFE Office of Diversity, visit <http://diversity.ca.uky.edu/>.

<https://uknow.uky.edu/campus-news/uk-mannrs-top-chapter-nation-6th-consecutive-year>

Four WVU students to study abroad as Boren Scholars

Monday, April 30, 2018



Annalice Mollica, Lawrence Georgiana, Scott Lopez and Brianna Paul have been awarded Boren Scholarships.

Four [West Virginia University](#) students have been awarded the prestigious Boren Scholarship and will spend a year immersed in the language and culture of countries that have been identified as critical to U.S. interests.

The Boren Scholarship, administered by the National Security Education Program, supports students who study abroad and then commit to working in the federal government for one year.

“Working with accomplished students like these is one of the best parts of my job,” said [Dr. David Hauser](#), teaching assistant professor and Boren Scholar faculty adviser. “This is a highly competitive process and it’s rewarding to see the national recognition WVU programs continue to receive.”

The 2018 recipients are all students in the [Eberly College of Arts and Sciences](#).

Lawrence Georgiana of Uniontown, Pennsylvania, will return to China for a year to study Chinese linguistics at Zhejiang University. He was in China last year as a Critical Language Scholar. The Navy veteran is a senior majoring in [international Studies](#) and [Chinese studies](#). With his military experience in South Korea and his previous studies in China, he is quite knowledgeable about the political and security issues in Asia.

“I want to pursue a career in intelligence or diplomacy and this experience will help me to better understand regional politics through a more solid grasp of the language,” Georgiana said. “I am excited about this opportunity and will be a positive student ambassador representing the U.S. abroad.”

An internship with NASA inspired **Scott Lopez** to think about the possibilities of learning Chinese and working on bilateral space cooperation with China while advancing U.S. astronautics and space research technology. The Morgantown resident is a junior [chemistry](#) major with a minor in [mathematics](#). After intensive language training at the Beijing Language and Culture University this summer, he will spend the next academic year at Tsinghua University where his brother, Colin Lopez, will also be studying as a Schwarzman Scholar.

“After interning with NASA at the Langley Research and Goddard Space Flight centers, I knew this was where I wanted to work,” Lopez said. “The Boren Scholarship is an amazing opportunity to learn about Chinese language and culture within a scientific context.”

Annalice Mollica of Falling Waters will spend the year the Qasid Institute in Amman, Jordan, studying Modern Standard Arabic and the Levantine Arabic dialect. She would like to intern for a refugee relief center. The senior [political science](#) major has a minor in [French](#) and will earn a second minor in Arabic after her studies in Jordan. She is also a student in the [Honors College](#).

“The Boren Scholarship is providing me a rare opportunity to learn Arabic in an immersive setting,” Mollica said. “After law school, I’d like to join the U.S. State Department and work in humanitarian law in the Middle East.”

Brianna Paul of Martinsburg loves learning new languages and the Boren Scholarship will enable her to study Swahili in Arusha, Tanzania this fall. With a minor in [Spanish](#) and a double major in international studies and [geography](#), she will be well prepared for the career in the U.S. government that she aspires to.

“My major in international studies has an emphasis in international development so I would like to work for the United States Agency for International Development,” Paul said. “Being proficient in multiple languages will be useful in my career.”

Two other WVU students—Morgan King and Morgan Stemler—were also awarded the Boren Scholarship but declined to take a Fulbright Scholarship instead.

Students who are interested in applying for the Boren Scholarship or any other nationally competitive awards should contact the [ASPIRE Office](#) at aspire@mail.wvu.edu to set up an appointment.

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Fulbright winner credits collegial collaboration

By Cindy Hess -

June 13, 2018

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L-R: Bethany Smith, office of National and International Scholarship Opportunities; Karen Udoh, Sotiria Boukouvala and David Hein.

Winning a Fulbright to Greece is tough: just seven people earned the award for 2018-2019. Karen Udoh, who graduated in May with a degree in biology, is one of those seven. How did she do it? Udoh said she started early and was not shy about accepting help. “I learned that you need to utilize faculty and mentors,” said Udoh. “I started the **Cancer Education Program** as a freshman—that’s how I met Dr. Hein.”

Meeting **David Hein** was fortuitous for Udoh. He is one of the nation’s top researchers examining how a person’s susceptibility to cancer is influenced by exposure to environmental and occupational chemicals. Udoh, who will start medical school in 2019, wanted to learn more about this area of research.

Through Hein, Udoh met Dr. **Sotiria Boukouvala**, an associate director of molecular genetics for Democritus University of Thrace in Alexandroupolis, Greece. Boukouvala’s work is similar to Hein’s and they have been collaborators for many years. Working with Boukouvala, Udoh outlined a research plan as part of her Fulbright application. The research focuses on how gut bacteria enzymes respond to **xenobiotics**, such as carcinogens and drugs. The goal is see if the enzymes can unlock innovative treatments for infections.

But research isn’t the only thing Udoh will do in Greece—she will also help Syrian refugees. “Greece has a lot of refugees and I thought I could help by not only welcoming them, but also by helping them succeed in their new life,” said Udoh, who has experience assisting Louisville-area refugees. “I will work with local Greek NGOs, like **ARSIS**, to learn from activists.”

Udoh is grateful for all of the help she has received from her many mentors. In her **scholar profile**, she thanks 11 people, including her parents.

For Boukouvala, who recently traveled to UofL to meet with Udoh and Hein, mentoring students is a gratifying part of her work. “It’s a privilege,” Boukouvala said. “The opportunity to work with students like Karen is the most rewarding part of being an academic.”

Tags: **David Hein, Fulbright, Peter K. Knoefel Endowed Chair of Pharmacology, Pharmacology and Toxicology, Sotiria Boukouvala**