

# 2021 LSMRCE Annual Conference

*"Empowering Diverse STEM Innovators"*

October 22-24, 2021



 **#LSMRCE2021 @LSMRCE**

## Virtual Conference Snapshot and Proceedings & Celebration of the LSAMP 30<sup>th</sup> Anniversary

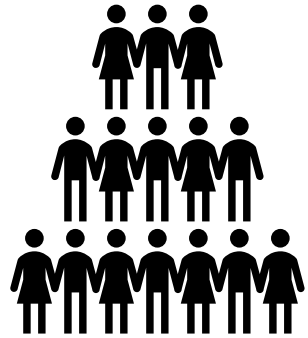


Louis Stokes Alliances  
for Minority Participation

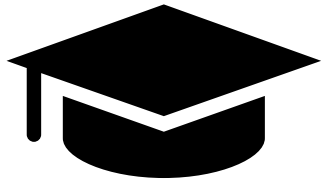


Louis Stokes Midwest Regional Center of Excellence is supported by National Science Foundation award numbers HRD-1826626 (IUPUI) and HRD-1826719 (CSU)(2018-2023)

# 2021 Conference Attendee Snapshot

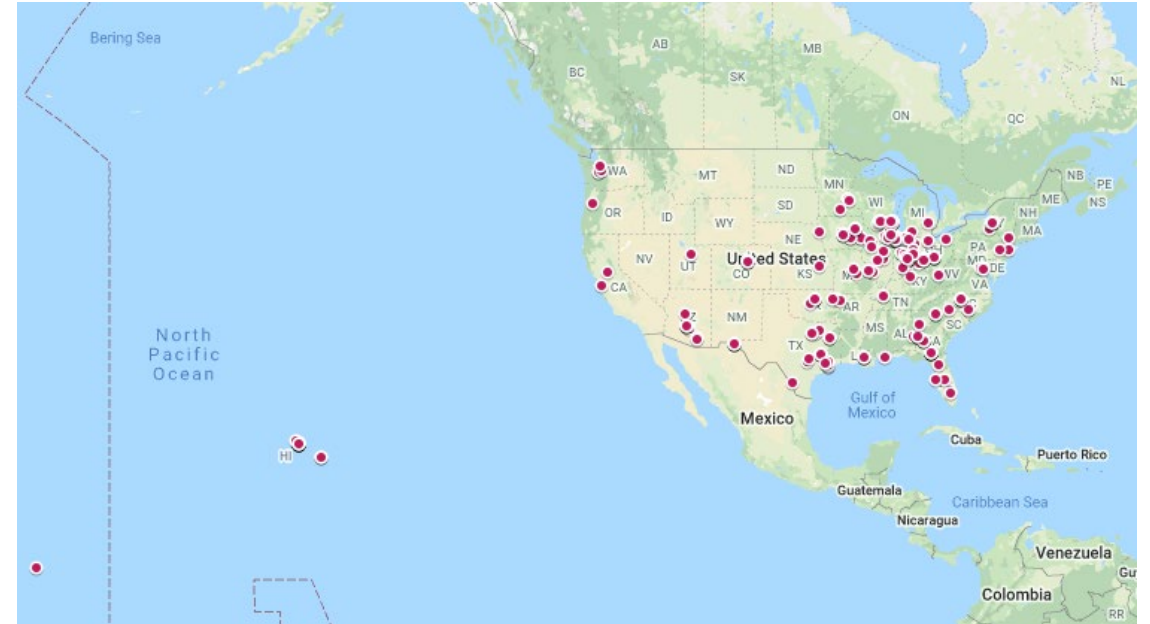


**566** Registrants  
**152** Institutions of higher learning  
**39** Louis Stokes Alliances (LSAMPs)  
**36** US States



**289** Students  
**128** Poster Presenters

## Where Participants Are From



This year we were pleased to welcome the Islands of Opportunities (IOA) alliance!



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# Recorded Sessions

The LSMRCE Conference recorded sessions are available on the conference Portal using this link and login credentials:

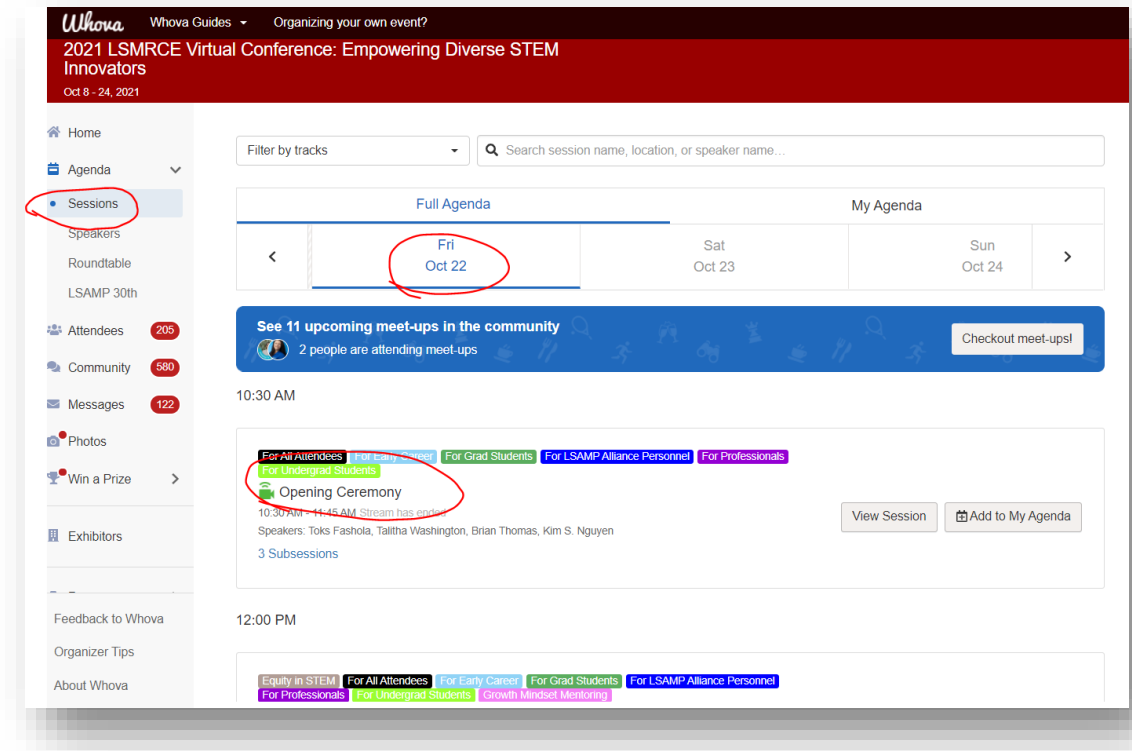
Link:

[https://whova.com/portal/webapp/lsmrc\\_202110/Agenda](https://whova.com/portal/webapp/lsmrc_202110/Agenda)

Username: **contact@lsmrce.org**

Password: **LSMRCE20**

Use the agenda to browse the sessions. Click on the session title and the recorded meeting, Q&A, and chat are available to view. You can also continue to add to the Q&A and chat, as well as reach out to speakers via their profile page!



## Interested in viewing the recordings?

Browse the Agenda in Whova and click on the desired session name to open the embedded video and related documents and discussion board.



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# Competitive Poster Session

The poster session was held virtually via Symposium by ForagerOne.

Talented undergraduate and graduate students from **59 colleges and universities across the world including the Philippines, Micronesia, Palau, Guam, and Hawaii**, submitted their abstracts and recorded poster material for competition.

**128** Poster presenters

**119** Abstracts accepted

**59** Colleges and universities represented

The LSMRCE Conference virtual poster presentations are available on the Symposium Portal using this link and logon credentials:

## [View the Posters](#)

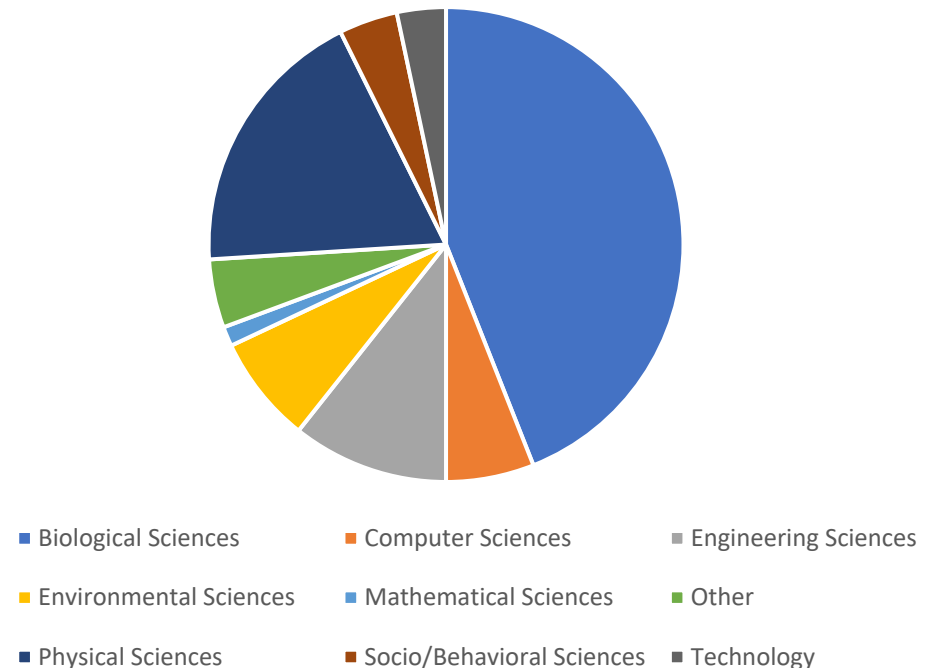
Username: [contact@lsmrce.org](mailto:contact@lsmrce.org)

Password: **Lsmrce2020**

## [Download the Poster Session Booklet](#)



POSTERS BY STEM DISCIPLINE



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# Attendee Virtual Engagement



#LSMRCE2021 @LSMRCE



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# Attendee Interactions

## Event App Usage

TOTAL NUMBER OF  
ATTENDEES ON WHOVA



455

out of 629 attendees  
(72%)

BREAKDOWN BY PLATFORM



Desktop/Laptop (371)

- Mobile Users (52%, 238)
- Desktop Users (82%, 371)
- Used both mobile & desktop (34%, 154)

## Agenda Webpage Views

TOTAL AGENDA  
WEBPAGE VIEWS



2,605

## Networking Activities

TOTAL PROFILE VIEWS



1,958

TOTAL MESSAGES  
SENT/RECEIVED



3,841

## Tweets

TOTAL TWEETS



35

## Personalized Agenda

NUMBER OF ATTENDEES  
WITH PERSONALIZED  
AGENDA

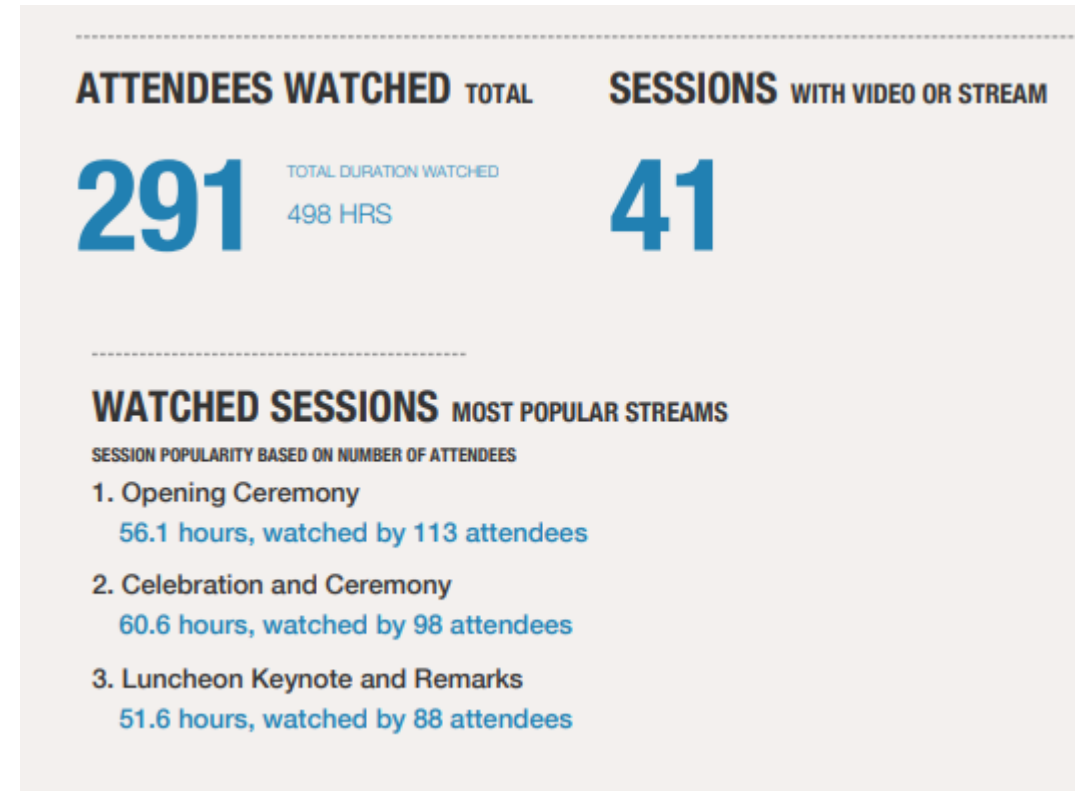


252

# Community & Agenda



# Viewing Activity



Louis Stokes Midwest Regional Center of Excellence is supported by National Science Foundation award numbers HRD-1826626 (IUPUI) and HRD-1826719 (CSU)(2018-2023)



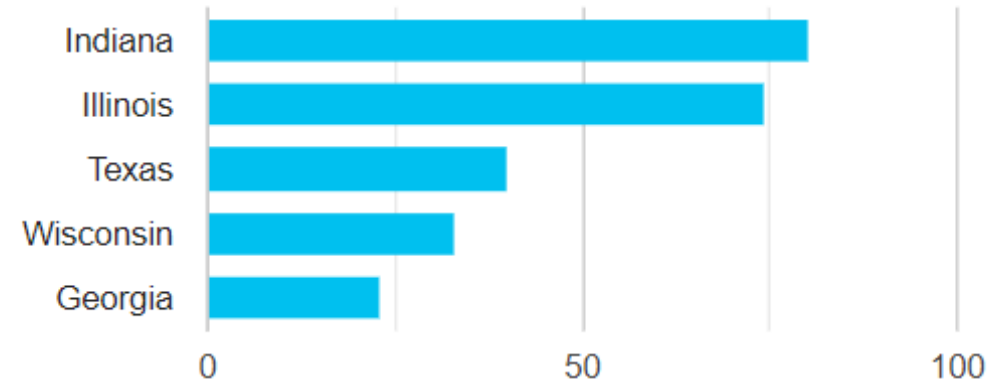
# Attendees Breakdown

## BREAKDOWN BY STATES (in the United States)

Total number of states: 36

### TOP 5 STATES:

1. Indiana (80)
2. Illinois (74)
3. Texas (40)
4. Wisconsin (33)
5. Georgia (23)

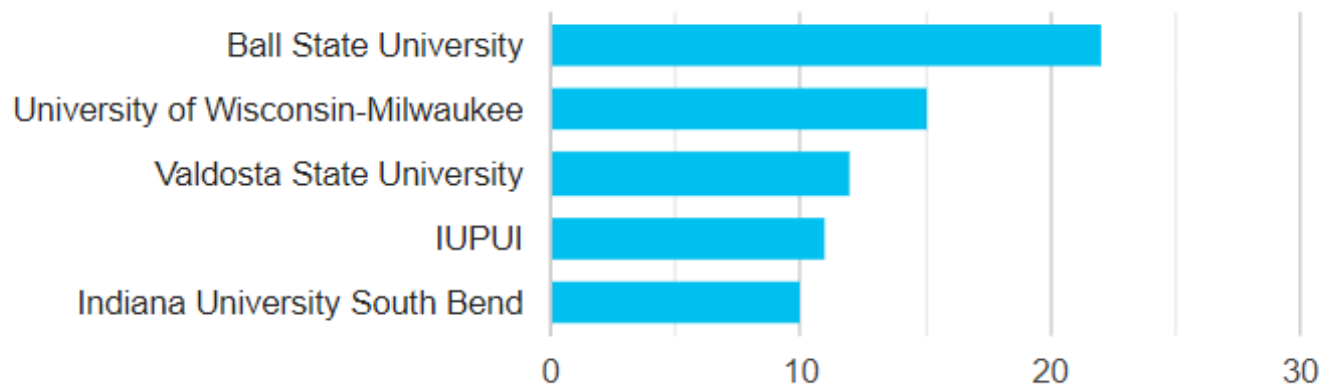


## BREAKDOWN BY AFFILIATION

Total number of affiliations: 306

### TOP 5 AFFILIATIONS:

1. Ball State University (22)
2. University of Wisconsin-Milwaukee (15)
3. Valdosta State University (12)
4. IUPUI (11)
5. Indiana University South Bend (10)





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## Featured Presenters



#LSMRCE2021 @LSMRCE



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# **Talitha Washington, PhD**

Director & Professor  
AUC Data Science Initiative &  
Clark Atlanta University

*Empowering Data Science  
for Social Justice*

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Watch the recorded address:

<https://youtu.be/Yl9jzmyae98?t=1408>







## **Jarrad Hampton-Marcell, PhD**

Postdoctoral Researcher,  
University of Illinois at Chicago  
and Argonne National Laboratory

*The Sport of Science:  
Being Competitive in STEM*

Watch the recorded address:

<https://youtu.be/pSG7NASTtDg?t=1600>

# Voices of Success

A conversation with the alumni of the Louis Stokes Alliances for Minority Participation



**Kayla Bolibrzuch, BS,** Wisc-AMP STEM Inspire alumnus



**RaiAnna Hopson, PhD,** H-LSAMP alumnus



**Pam Shaw, DMD, MPH,**  
Moderator



**Pablo Guzmán, PhD,**  
ILSAMP and SUNY LSAMP alumnus

Watch the recorded discussion: <https://youtu.be/pSG7NASTtDg?t=3346>



# *Coded Bias*

A discussion with *Coded Bias* filmmaker, Shalini Kantayya; Moderated by Nathan Ensmenger, PhD

View the recorded discussion:  
<https://youtu.be/sfGJSq8gp9U?t=141>



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Louis Stokes Alliances  
for Minority Participation

## NSF LSAMP 30<sup>th</sup> Celebration Activities



Louis Stokes Midwest Regional Center of Excellence is supported by National Science Foundation award numbers HRD-1826626 (IUPUI) and HRD-1826719 (CSU)(2018-2023)

# LSAMP 30th Anniversary Celebration

October 2021 marks the 30th Anniversary of the of NSF Louis Stokes Alliances for Minority Participation (LSAMP) and LSMRCE hosted several celebration events that culminated at the annual conference, Empowering Diverse STEM Innovators, which was held virtually October 22-24th. We invite you to view the recorded events and activities related to the 30th Celebration below.

## Celebrating the 30th Anniversary of the Louis Stokes Alliances for Minority Participation (LSAMP), a National Science Foundation program

Dr. Stephen Hundley from the IUPUI Assessment Institute featured an LSAMP-centric podcast Celebrating the 30th Anniversary of the Louis Stokes Alliances for Minority Participation (LSAMP). Drs. LeRoy Jones II, Kim Nguyen, and Zakiya Wilson-Kennedy share their voice and perspectives on the topic. Listen to the podcast: <https://lsmrce.org/events/annual/2021-annual/lsamp-30th-anniversary-celebration.aspx>

## LSAMP Alumni Messages

As part of the LSAMP Anniversary celebration activities, the alumni of the program submitted their video messages. Recorded October 2021. Watch the alumni messages montage: <https://youtu.be/sLmLG17nQq4>

## Stokes Family Tribute Video

The Stokes family reflects on the late, Honorable Stokes' vision and dedication to providing all individuals access to education and how the LSAMP program has fulfilled that vision. Recorded October 2021. Watch the Stokes Tribute: <https://youtu.be/LTGRGfsf4y8>



**Louis Stokes Alliances  
for Minority Participation**





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## LSAMP Celebration Webinar

# Perspectives on the Progression and Institutionalization of LSAMP Best Practices

Recorded October 15, 2021

Dr. Benjamin Flores leads a discussion among leaders within the Louis Stokes Alliances for Minority Participation (LSAMP) community in this interactive, celebration of the LSAMP program achievements and how the programs retain and graduate students through the institutionalization of LSAMP practices.

### Moderator

Benjamin Flores, University of Texas at El Paso

### Panelists

- Karen Butler-Purry, Ph.D., Texas A&M University
- Earnest Chavez, Ph.D., Colorado State University
- Lisa Hammersley, Ph.D., California State University, Sacramento
- LeRoy Jones II, Ph.D., Chicago State University

[Recorded webinar](#) | [Download the flyer](#)

## Perspectives on the Progression and Institutionalization of LSAMP Best Practices

Friday, October 15, 2021, at 4pm ET

Register for the webinar at: <https://bit.ly/LSAMP30Celebration>

Moderator



**Ben Flores, PhD,**  
University of Texas  
at El Paso

Panelists



**Karen Butler-Purry, PhD,**  
Texas A&M  
University



**Earnest Chavez, PhD,**  
Colorado State  
University



**Lisa Hammersley, PhD,**  
California State University  
at Sacramento



**LeRoy Jones II, PhD,**  
Chicago State  
University



Louis Stokes Alliances  
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## LSAMP Celebration Webinar

# LSAMP - A Gamechanger in Cultivating STEM Talent

Recorded October 8, 2021

Dr. Zakiya Wilson-Kennedy leads a virtual discussion among LSAMP PIs in this 1-hour, interactive celebration of the LSAMP program achievements. Learn more about the Louis Stokes Alliances for Minority Participation (LSAMP) program beginnings and how the program has evolved over the past 30 years to where it is today.

### Moderator

Zakiya Wilson-Kennedy, Ph.D., Louisiana State University

### Panelists

- Joseph Genz, Ph.D., University of Hawaii at Hilo
- Eduardo Nicolau López, Ph.D., University of Puerto Rico Rio Piedras
- Catherine Dinitra White, Ph.D., North Carolina A&T State University
- Kim Nguyen, Ed.D., IUPUI

[Recorded webinar](#) | [Download the flyer](#)

## LSAMP

### A Gamechanger in Cultivating STEM Talent

Friday, October 8, 2021, at 3pm ET

Register for the webinar at: <https://bit.ly/LSAMP30Gamechanger>

Moderator



**Zakiya  
Wilson-Kennedy, PhD,**  
Louisiana State  
University

Panelists



**Joseph  
Genz, PhD,**  
University of  
Hawaii at Hilo



**Eduardo Nicolau  
López, PhD,**  
University of  
Puerto Rico Rio Piedras



**Kim  
Nguyen, EdD,**  
IUPUI



**Catherine  
Dinitra White, PhD,**  
North Carolina A&T  
State University



Louis Stokes Alliances  
for Minority Participation



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# 2021 Awards



#LSMRCE2021 @LSMRCE



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# Tony Quinn Inclusive Excellence 2021 Awardee

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Dr. Cammi Valdez

Assistant Professor, Chemistry  
Associate Member, Harold Hamm  
Diabetes Center  
Department of Natural Sciences  
Northeastern State University

OK-LSAMP Alumnus

Watch Dr. Valdez's bio video

<https://youtu.be/RckbG9TfXdM>





# 5<sup>th</sup> Place Poster Winner

Maricela Manzanares

University of Cincinnati

Ohio LSAMP

Experiences of Women of Color in  
Engineering

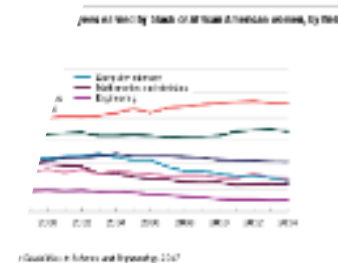
[View Poster Submission](#)

## Experiences of Women of Color in Engineering

Maricela S. Manzanares, Whitney Gaskins, Batsheva Guy, Keri Eason

University of Cincinnati

### Background



### Research Questions

How do women of color take advantage of or struggle with their experiences as engineering students?

What support do students feel are missing from the university to support them as women of color in engineering?

### Methods

Semi-structured interviews consisting of 30 questions divided into four overarching sections: experience in engineering, engineering education, engineering identity, and engineering future.

Interview questions also asked for clarification and to obtain a deeper understanding of the participants' experiences. Five Black undergraduate women at the University of Cincinnati College of Engineering and Applied Sciences participated in the study. A member of the research team used in-vivo coding to develop their own initial set of codes which were then grouped into a group codebook.

### Abstract

Women of color face many challenges in the field of engineering due to the double bind of race and gender. However, there has been little support for these women in their undergraduate careers even as universities continue to improve their diversity and inclusion efforts in their student enrollment. The goal of the study was to understand the campus climate for women engineering students of color at the University of Cincinnati and determine what action steps should be taken so that women of color can feel more included in the engineering community and have a better undergraduate experience. A qualitative methodology was utilized by interviewing students and performing an in-vivo coding analysis to determine common themes amongst the interviews. The themes developed from this study were as follows: stereotyping, family, coping, hair, and identity. The findings of this study will be used to make suggestions to the university to make it a more inclusive environment for women of color.

### Findings

Five over-arching themes were developed to describe the experiences of the participants:

1. Stereotyping
  - "I mean, you're just here on some handouts. Like – or just, 'They didn't really get that. They're just – they got that co-op for like, diversity.' And it's like, I'm still like, the only person of color or woman in my co-op so, let's stop acting like I'm taking somebody's job or that sort of thing."
2. Family
  - "I told my mom I kind of thought about switching majors and she was like no, you're not going to do that...that's what you really wanted to do and there's going to be hard times and you just have to approach through it because it's going to be worth it in the very end"
3. Coping
  - "I would honestly describe NSBE as the one place where I'm like 'Wow, this is people that I can really relate to and not feel like I either have to explain what it's like to be in engineering or what it's like to be a person of color or what it's like to be a woman."
4. Hair
  - "I just never thought about it and I never knew why, until I became natural, maybe a couple of years ago. I realized like, 'Oh.' I noticed a shift in not my interactions with people but how people would look at me."
5. Identity
  - "I feel very attached to my race. I am proud to be Black. I am proud to be a Black woman in engineering...I have, early in my college career I've definitely been like, Black women in computer science. This is going to be such a struggle. I don't even know. Is this work going to be worth it? And as the years went on, as I met people that are like me, that are Black, are Black women within not just computer science but just within the college of engineering."

### Next

- Propose suggestions for improving the university a more inclusive environment for women of color engineering students and retention
- Potential solutions (still in progress)
  - Diversity & Inclusion training
  - Interactive cultural classes
  - Creation of counterspaces

### References

1. Smith, Kathleen N., et al. "Academic and Workplace Experiences of Women in Engineering." *Society* 25.5 (2011): 589-611.
2. Fox, Mary Frank, Gerhard. "Programs for undergraduate engineering: Issues, problems, and solutions." *Engineering Education* 25.5 (2011): 589-611.
3. Johnson, Dawn R. "Women in engineering: Issues, problems, and solutions." *Directions for Institutional Research* 75-85.
4. Cross, Kelly J., et al. "The Gender Gap in Engineering." *Proceedings of the American Society of Engineering Education* (ASEE), Columbus, OH, June 2011.

### Acknowledgements

Whitney Gaskins, CEAS - Office of Community Engagement, University of Cincinnati  
Guy, CEAS - Inclusive Excellence, University of Cincinnati  
CEAS Library, University of Cincinnati  
Stokes Alliance for Minority Professionals





# Activation of the infralimbic prefrontal cortex increases after oxycodone self-administration and forced abstinence

PUMA

Donnelly, Alya Khan, Itzel Callejas, Jack Bastable, Joshua House, Megan Vogel, Sabha Fatima, and Michael

Dept. of Psychology and Neuroscience, North Central College, Naperville, IL, USA

Contact email: mmzarate

## 4<sup>th</sup> Place Poster Winner

Maria Zarate

North Central College

PUMA-STEM LSAMP

Neural activation of the infralimbic prefrontal cortex increases after oxycodone self-administration and forced abstinence

(presenter opted to keep poster confidential)

years of abstinence, can be seen as cue-induced craving. In significantly higher after periods

old drugs has skyrocketed. This is seen, the death rates for overdose also overdose were triggered by the use of

a semi-synthetic opioid drug that has gone, Harter & Arman, 2007). Thus, it is at oxycodone.

a infralimbic cortex (IL) regulates behavior involving a skill or habit, consolidation extinction (weakening a skill/habit) learning

is critical to study the oxycodone to determine incubation. To test this, rats self-administered on a fixed ratio-1 (FR-1) schedule for five days for 15 days. Typically, on withdrawal day 1, however, on withdrawal day 15 craving has incubation of craving" (Walt, 2016).

fraction of the IL will be higher on withdrawal day 1 oxycodone rats and that neural activity is no be elevated.

### Methods

Spontaneous rats (250-275 g on arrival) were housed environment with a 12 h light-dark cycle. tested and then rats were individually housed. the daily until self-administration training. Oxycodone (0.15mg/kg) infusion on saline 10 days. A 20 second time out before another

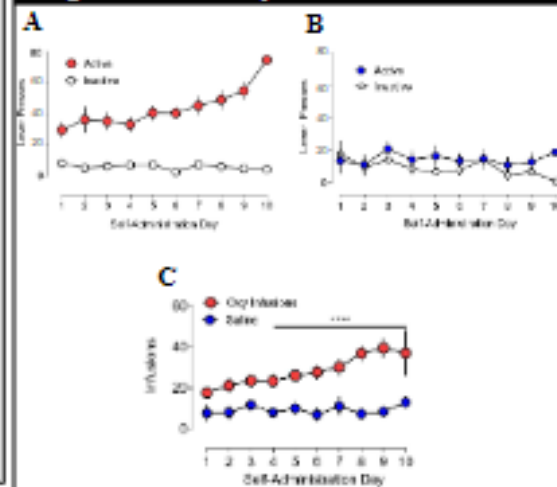
**Tests.** Rats underwent two drug-seeking tests (house cages for forced abstinence period of 1 conditions (no drug was available, but the 5-c lever). Active lever presses were used as a

in on withdrawal day 1 and 15, rats were v. % pentamethylolide. Coronal sections. v. schematics using an anti-Fos primary 0. % Triton-X + 0.01% sodium azide at V. Vector Laboratories, PK-6101). Then v. Laboratories PK-6101) and 0.05% v. 0.05% hydrogen peroxide to single

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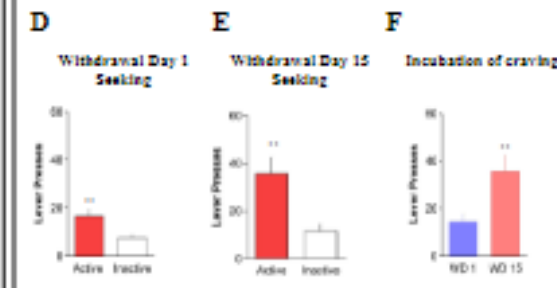
v. Fos-immunoreactive cells were v. 1.0% and used an automatic

### Oxycodone rats increase lever presses and drug intake after day 6 of self-administration



**Oxycodone intake increases on the final six days of self-administration.** After day 6 of self-administration the oxycodone (oxy) rats press more robustly the active lever indicating they have learned to associate the cues and oxy infusion (A). In comparison, the saline rats press about or the same number of times for both the inactive and active lever indicating they have not developed a preference for a lever (B). Not only do rats increase their lever pressing after day 6 but exclude their drug intake. When comparing self-administration day 1 and 10 their intake of oxycodone nearly doubles (C). \*\*\*\*p<0.0001

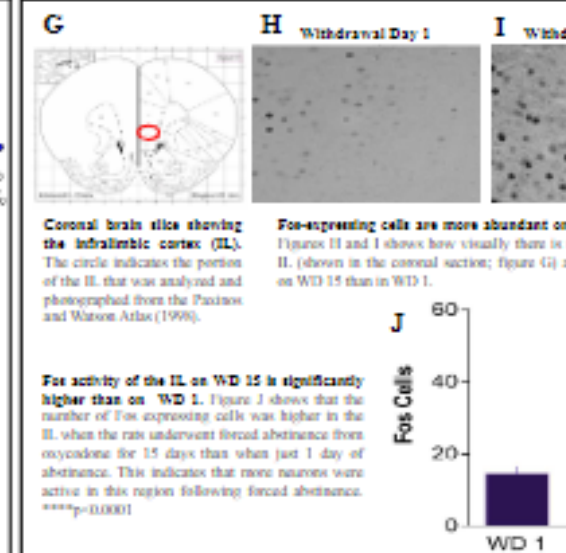
### Oxycodone craving incubates on WD 15



**Craving for oxycodone incubates over the 15 days of withdrawal.** Active lever presses during seeking tests (our measure of oxycodone craving) nearly doubles from WD 1 to WD 15, indicating the craving for the drug has incubated (D: n=13, F: n=8). \*\*p<0.01

### Results

#### Fos expression in the IL increases following incubation of craving



### Conclusions & Future Directions

- Oxycodone self-administration (0.15 mg/kg/inf) leads to escalation of drug intake (A) to oxycodone like the one followed here (6 hr/day) shows that animals increase the 10 days of self-administration.
- The oxycodone craving is significantly higher WD15 compared to WD 1 (D-F). oxycodone craving incubates, similar to other drugs of abuse (Walt, 2016).
- Neural activation of the IL (measured through Fos cells) is higher on WD 15 compared to WD 1. Unpaired t-test indicated that on WD 15 there were significantly more Fos cells, almost 2x than on WD 1.
- Future investigations include examining if there is a difference in neural activation of IL of saline rats compared to oxycodone WD 1 & 15 rats and increasing the sample of oxycodone

Barber, J. M., Taylor, J. R., & Jones, C. (2014). Assessing the role of the infralimbic cortex in extinction and relapse. *Learn. Mem.* 21(10), 1000-1008. <https://doi.org/10.1016/j.learnmem.2014.08.001>

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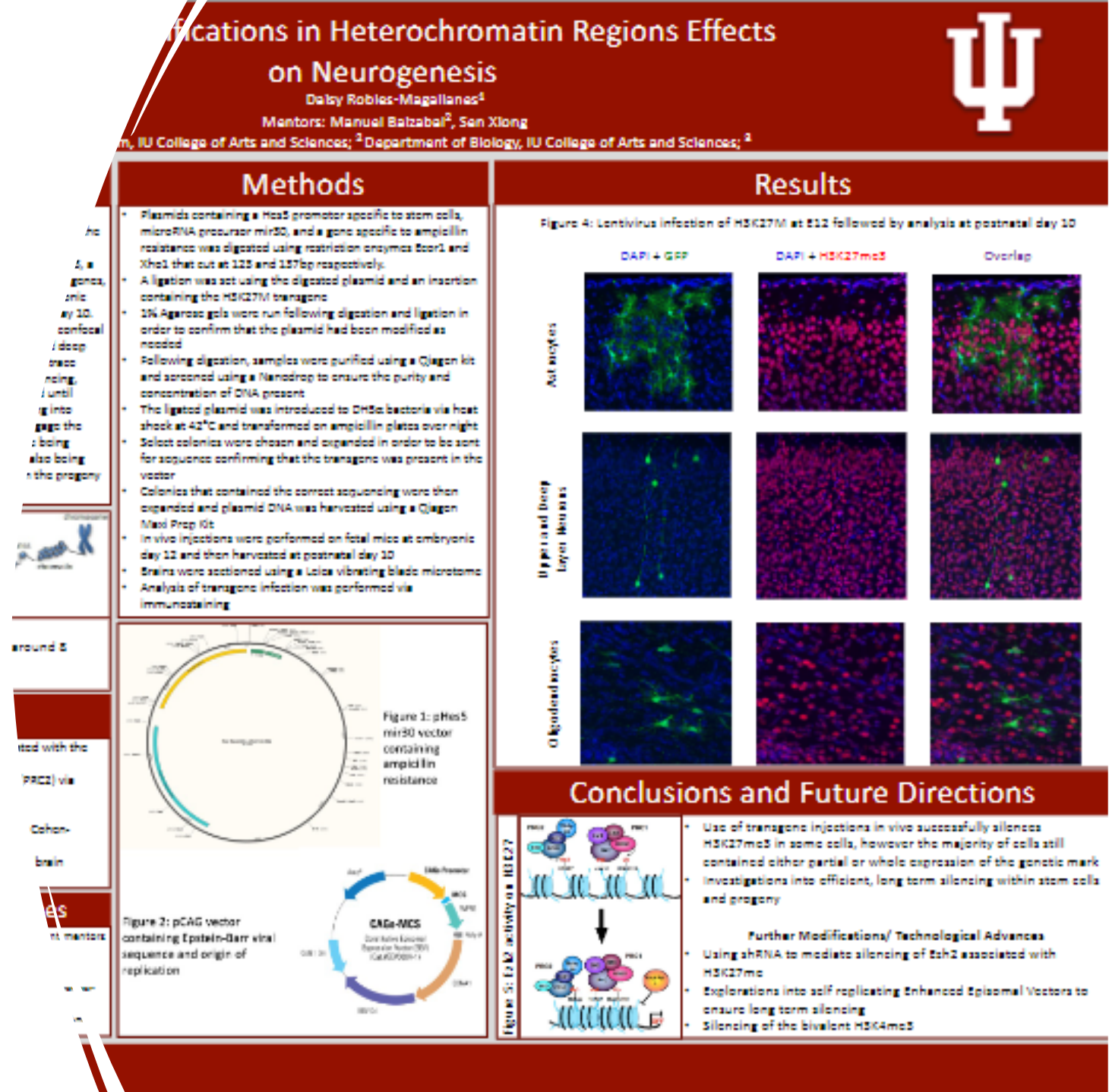
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# 3<sup>rd</sup> Place Poster Winner

**Daisy Robles-Magallanes**  
Indiana University, IN LSAMP

Histone Modifications  
Effects on Neurogenesis

[View Poster Submission](#)



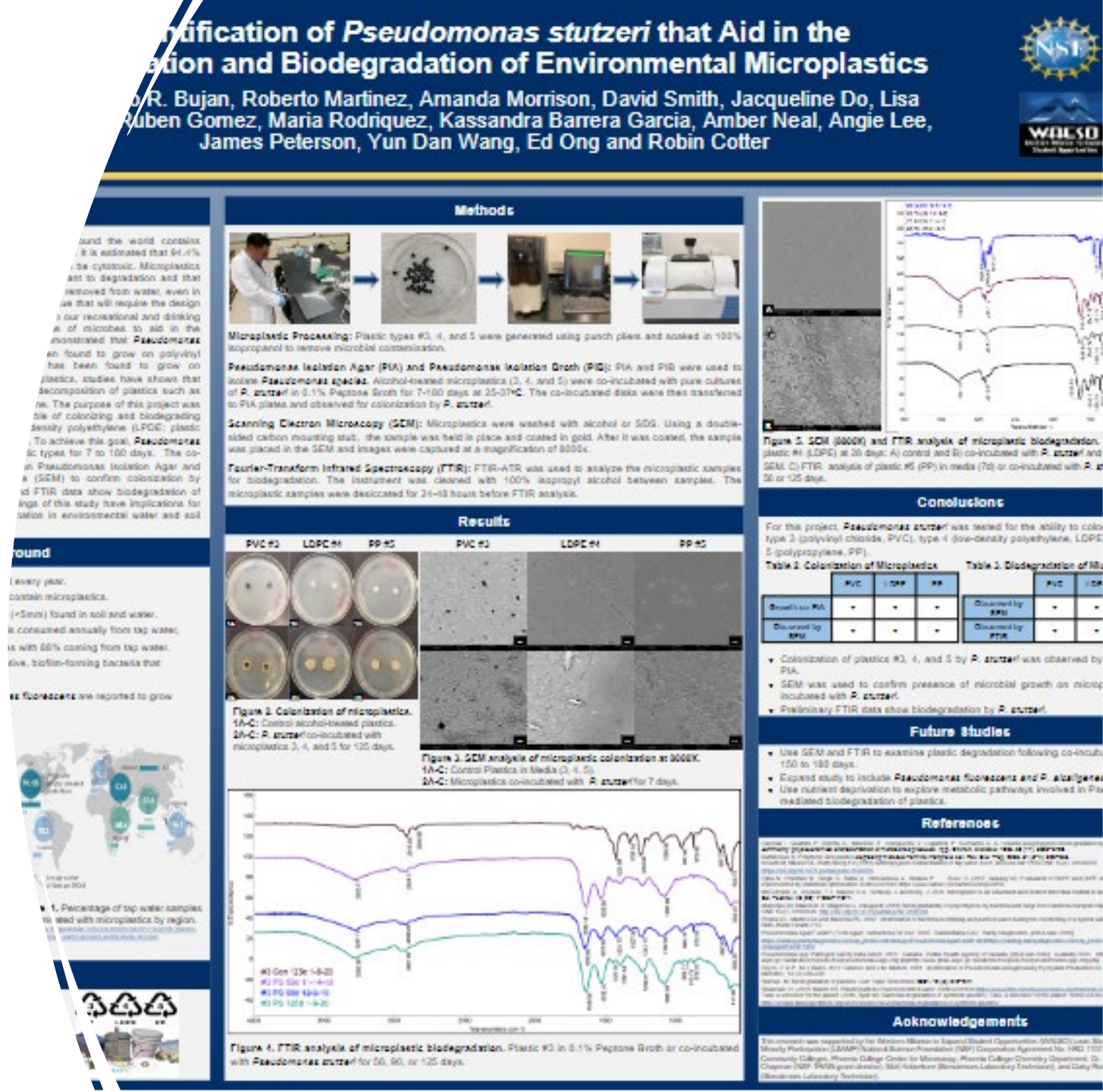


# 2<sup>nd</sup> Place Poster Winner

Reynaldo R Bujan  
Arizona State University  
WAESO LSAMP

## Identification of *Pseudomonas stutzeri* that Aid in the Colonization and Biodegradation of Environmental Microplastics

[View Poster Submission](#)



# 1<sup>st</sup> Place Poster Winner

Tiffany Rivera

Chaminade University of Honolulu  
Islands of Opportunity Alliance (IOA)

## Heart Disease Cardiac Resource Availability by the Counties in the State of Hawai'i

[View Poster Submission](#)

Heart disease is the leading cause of death in the United States, accounting for 1 in 4 deaths. In the State of Hawai'i, heart disease is the leading cause of death for people of non-Hispanic Asian or Pacific Islander descent. The average cost of heart disease is \$10,000 per patient, and the average cost of heart disease is \$10,000 per patient. The average cost of heart disease is \$10,000 per patient, and the average cost of heart disease is \$10,000 per patient.

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## Heart Disease Cardiac Resources by Counties in the State of Hawai'i

Tiffany Rivera, Johnny Tudela Alden  
School of Natural Science and Mathematics  
Chaminade University of Honolulu  
tiffany.rivera@student.chaminade.edu

### Results



FIGURE 1: Aggregated data from 2010-2018. This data includes all patients, all ages, and all ethnicities. Generally, heart disease is the leading cause of heart disease, with heart disease being the leading cause of heart disease. The average cost of heart disease is \$10,000 per patient, and the average cost of heart disease is \$10,000 per patient.

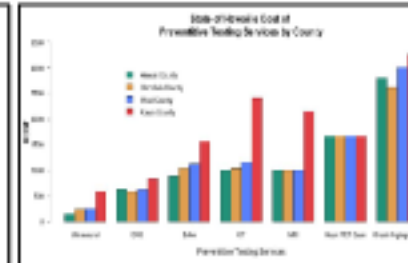


FIGURE 2: Cost of preventive testing services by county. From least to most expensive (left to right), the least expensive being Lanai County and the most expensive being Maui County. The cost of the services is higher in Maui County. Data compiled in Maui County, which has the lowest, according to Maui County Health.

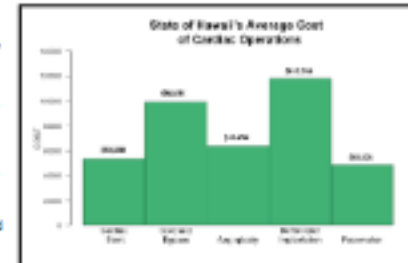


FIGURE 3: The average cost of major cardiac procedures used in heart disease in the State of Hawai'i. The lowest cost is the Percutaneous Coronary Intervention, and the highest being the Coronary Artery Bypass Graft. According to Maui County Health.

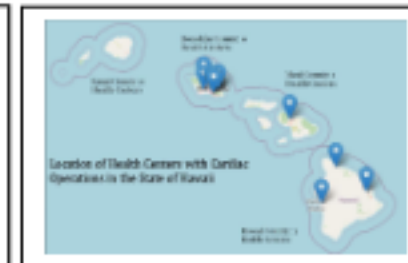


FIGURE 4: Depicts the actual locations of health care facilities that provide major cardiac procedures. Facilities are located in Maui County, Lanai County, and Maui County, and Maui County, Lanai County, and Maui County, according to Maui County Health.

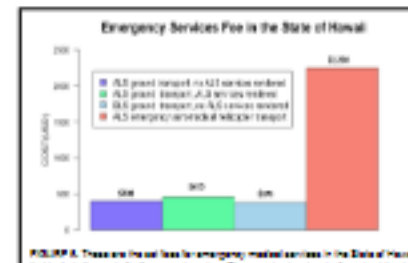


FIGURE 5: The average fee for emergency medical services in the State of Hawai'i. The average fee for emergency medical services is \$10,000 per patient, and the average fee for emergency medical services is \$10,000 per patient. The average fee for emergency medical services is \$10,000 per patient, and the average fee for emergency medical services is \$10,000 per patient.

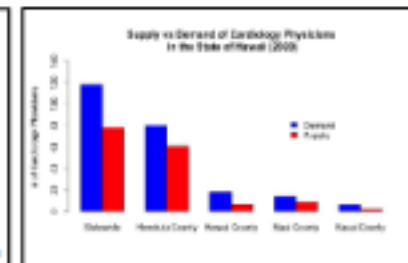


FIGURE 6: The number of Full-Time Equivalent (FTE) cardiologists per county. The number of FTE cardiologists per county is 10,000 per patient, and the number of FTE cardiologists per county is 10,000 per patient. The number of FTE cardiologists per county is 10,000 per patient, and the number of FTE cardiologists per county is 10,000 per patient.

### Discussion

Research Aim 1: CVD seems to be the leading cause of death in the State of Hawai'i. The findings placed Honolulu County with the lowest mortality rate at 177 per 100,000 population and Hawaii County with the highest mortality rate at 177 per 100,000 population. It is interesting to note that the lowest mortality rate of a state over 70,000 people (U.S.) can have a higher mortality rate of 177.2, compared to Honolulu County.

Limitations: Only aggregated data was utilized and local data.

Research Aim 2: Analysis did reveal that the current availability in comparison to Honolulu County. Analysis in Maui County is the most underserved population (Fig. 4). If someone from Maui (and same for Lanai or Molokai) needs cardiac treatment, they would have to travel to the closest possible location that Honolulu County and Hawaii County demand for cardiologists is because they have to account for their own county as well as in the neighboring counties (Fig. 6). Unfortunately, the Native Hawaiian and Pacific Islander communities are also disproportionately impacted by various factors that may not be able to utilize such services if given readily available. There is a vast demand for cardiologists, 10,000 patients per cardiologist physician, therefore the wait may impact the backlog and scheduling for patients who come.

Limitations: Limited numbers of cardiologists by zip code or scholarly sources that provide the exact whereabouts of their services, as well as confirmation for preventive testing. Research Aim 3: Findings revealed the costly expense testing and treatment. As CVD is the leading cause of death, it has to pay \$99,900 (Coronary Bypass) to treat it. The cost for Maui County is higher compared to the other counties. Emergency Medical Service fees would most impact and Native Hawaiian and Pacific Islander communities who have limited benefits.

Limitations: Little to no information regarding the expense.

### Future Direction

1. Work with health and government agencies to establish data from the NHPI community.
2. Investigate the available cardiac health services and states in comparison to the State of Hawai'i, and assess the demand for NHPI.
3. Work with State of Hawai'i health centers and person community to create a report and solutions on issues services and off-island treatments for all State of Hawai'i.

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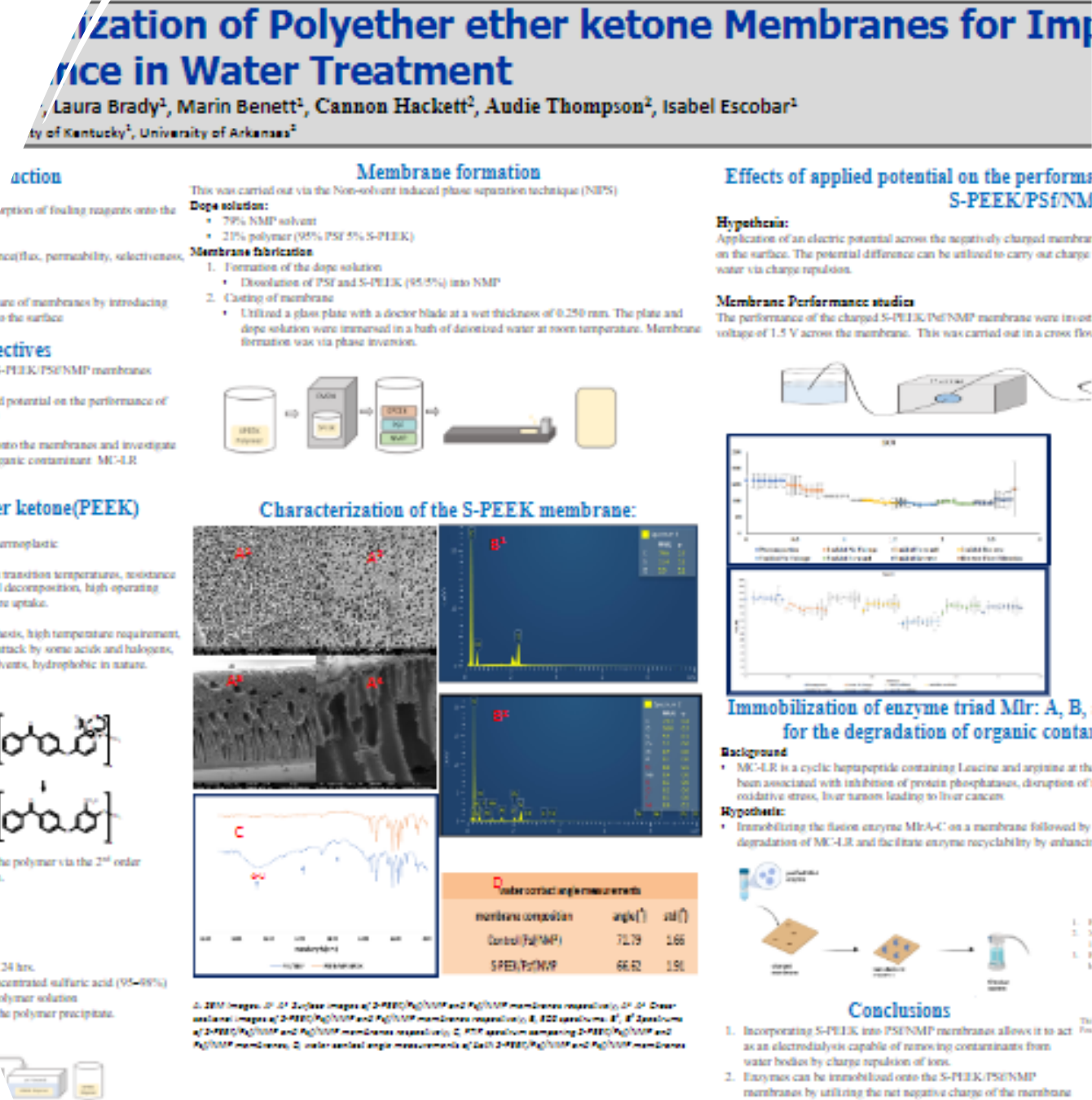


# Oral Presenter Winner

Abelline Fionah  
University of Kentucky, KY-WV LSAMP

Functionalization of Poly-ether  
ether ketone for Improved  
Membrane Performance in  
Water Treatment

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