"Empowering Diverse STEM Innovators"

October 22-24, 2021







Virtual Conference Snapshot and Proceedings **Celebration of the LSAMP** 30th Anniversary

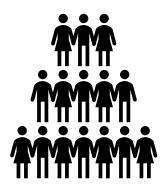


Louis Stokes Alliances for Minority Participation



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)

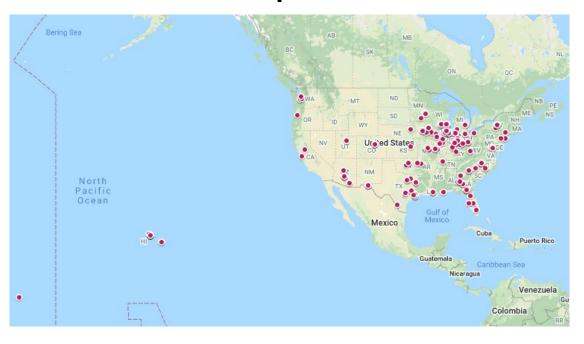
36 US States



289 Students

128 Poster Presenters

Where Participants Are From



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



Recorded Sessions

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

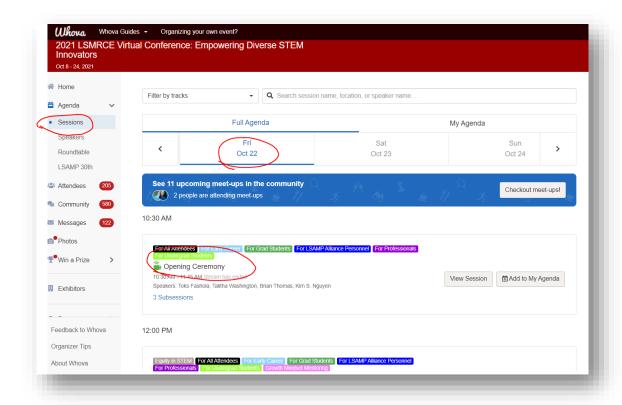
Link:

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.



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

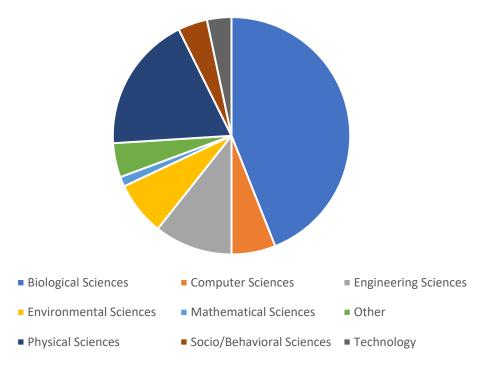
Username: <u>contact@lsmrce.org</u>

Password: Lsmrce2020

Download the Poster Session Booklet



POSTERS BY STEM DISCIPLINE



"Empowering Diverse STEM Innovators"

October 22-24, 2021

Attendee Virtual Engagement





#LSMRCE2021 @LSMRCE





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

Attendee Interactions

Event App Usage

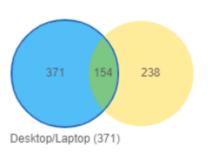
TOTAL NUMBER OF ATTENDEES ON WHOVA



455

out of 629 attendees (72%)





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

Agenda Webpage Views

TOTAL AGENDA WEBPAGE VIEWS



Networking Activities

TOTAL PROFILE VIEWS



TOTAL MESSAGES SENT/RECEIVED

 Ω 3,841

Tweets

TOTAL TWEETS



Personalized Agenda

NUMBER OF ATTENDEES WITH PERSONALIZED **AGENDA**



Community & Agenda

AGENDA IN-APP VIEWS

PERSONAL AGENDA SET-UP BY ATTENDEES

3447

252

PERCENTAGE OF ATTENDEES SET

51%

AGENDA SESSIONS MOST POPULAR

SESSION POPULARITY BASED ON LIKES AND PERSONAL AGENDA ADDS

- Competitive Poster Session
 15 likes and 65 personal agenda adds
- Opening Ceremony10 likes and 65 personal agenda adds
- SPECIAL SESSION: Coded Bias Discussion Panel 9 likes and 55 personal agenda adds
- Real Talk Breakfast
 6 likes and 53 personal agenda adds
- Luncheon Keynote and Remarks
 4 likes and 50 personal agenda adds

COMMUNITY BOARD TOTAL MESSAGES

1887

BREAK-THE-ICE MESSAGES

104

ARTICLE SHARED MESSAGES

188

Viewing Activity

ATTENDEES WATCHED TOTAL

SESSIONS WITH VIDEO OR STREAM

291

TOTAL DURATION WATCHED
498 HRS

41

WATCHED SESSIONS MOST POPULAR STREAMS

SESSION POPULARITY BASED ON NUMBER OF ATTENDEES

- 1. Opening Ceremony
 56.1 hours, watched by 113 attendees
- 2. Celebration and Ceremony 60.6 hours, watched by 98 attendees
- Luncheon Keynote and Remarks
 51.6 hours, watched by 88 attendees



Attendees Breakdown

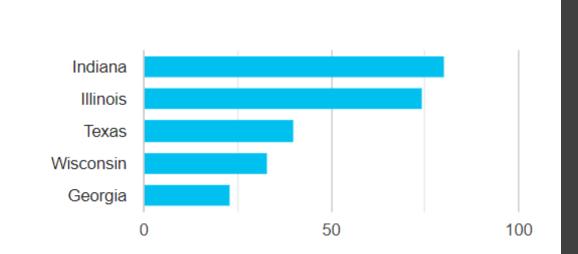
BREAKDOWN BY STATES (in the United

States)

Total number of states: 36

TOP 5 STATES:

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

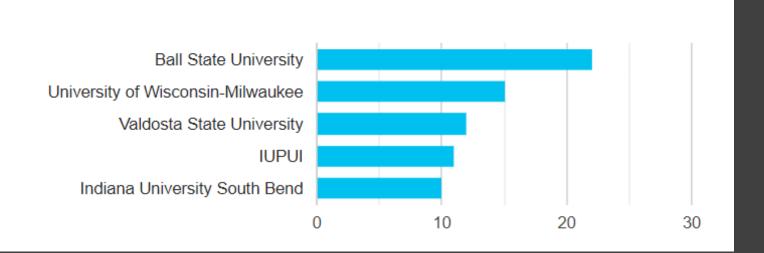


BREAKDOWN BY AFFILIATION

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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#LSMRCE2021 @LSMRCE



Featured Presenters



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

Talitha Washington, PhD

Director & Professor AUC Data Science Initiative & Clark Atlanta University

Empowering Data Science for Social Justice

Watch the recorded address: https://youtu.be/YI9jzmyae98?t=1408





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

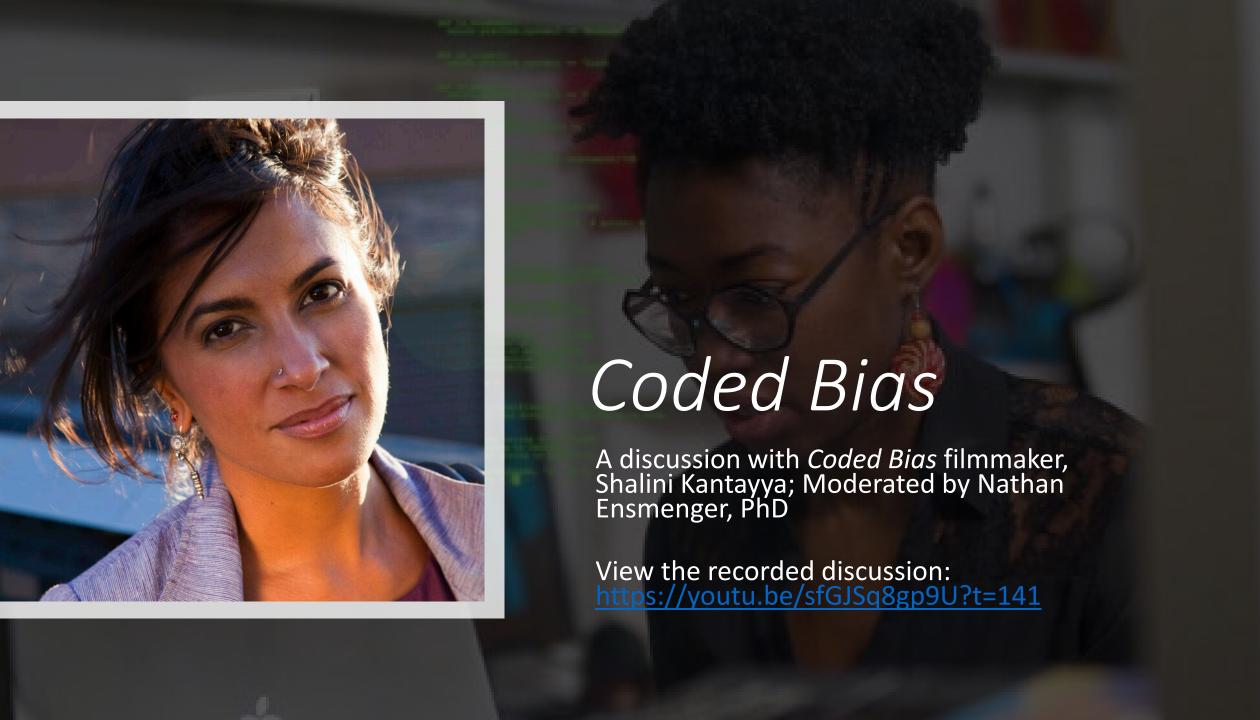


Pam Shaw, DMD, MPH, Moderator



Pablo Guzmán, PhD,
ILSAMP and SUNY LSAMP
alumnus

Watch the recorded discussion: https://youtu.be/pSG7NASttDg?t=3346



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NSF LSAMP 30th **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







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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



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., Univeristy of Puerto Rico Rio Piedras
- Catherine Dinitra White, Ph.D., North Carolina A&T State University
- Kim Nguyen, Ed.D., IUPUI

LSAMP

A Gamechanger in Cultivating STEM Talent

Friday, October 8, 2021, at 3pm ET

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



Recorded webinar | Download the flyer

"Empowering Diverse STEM Innovators"

October 22-24, 2021







2021 Awards



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

Tony Quinn Inclusive Excellence 2021 Awardee

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



5th Place Poster Winner

Maricela Manzanares

University of Cincinnati
Ohio LSAMP

Experiences of Women of Color in Engineering

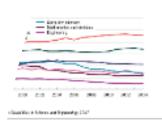
View Poster Submission

xperiences of Women of Color in Engineering

Maricela S. Manzanares, Whitney Gaskins, Batsheva Guy, Keri Eason University of Cincinnati

<u>kground</u>

years an readity black or at hour dimension women, by these



esearch Questions

urces do women of color take advantage of to with their experiences as engineering

students feel are missing from the university to support them as women of color in no?

Methods

tured interviews consisting of 30 questions of four overarching sections: experience in engineering in engineering orgineering

tions also asked for clarification and to obtain tristanding of the perticipents' experiences. Five Black undergraduate women at the gineering and Applied Sciences in member of the research team used in-vivo

kp their own initial set of codes which were left 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."
- 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"
- 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.
- 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."
- Identity
- "I feel very attached to my race. I am proud to be Black. I am proud to be a Black women in engineering...! 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 im university a more inclusive color engineering students retention
- Potential solutions (still in p
 Diversity & Inclusion train
- Interactive cultural classe
- Creation of counterspace

Refer

- Smith, Kathleen N., et al. "
 Academic and Workplace B
 Women in Engineering." Sono. 1, 2018, pp. 11.
- Fox, Mary Frank, Gerhard: "Programs for undergradus engineering: Issues, proble Society 25.5 (2011): 589-6
- Johnson, Dawn R. "Womer technology, engineering, ar Directions for institutional F 75-86.
- Cross, Kelly J., et al. "The Gender: A Look into The E) in Engineering." Proceeding Engineering Education Ann (ASEE), Columbus, OH. Ju

<u>Acknowle</u>

Whitney Gaskins, CEAS - Off Community Engagement, Uni Guy, CEAS - Inclusive Excelle Engagement, University of Cir CEAS Library, University of C Stokes Alliances for Minority F





4th 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)

vation of the infralimbic prefrontal cortex increases after ycodone self-administration and forced abstinence

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: mmzarat

Oxycodone rats increase lever presses and own as cue-induced craving. In significantly higher after periods

old drans has skyrocketed. This is nues, the death rates for overdose also overdose were trippered by the use of

a semi-synthetic opioid drug that has go, Harón & Arranz, 2007). Thus, it is as envicodone.

a inftalimbic cortex (III.) regulates behavior audoping a skill or habit), consolidation otinction (weakening a skill/habit) learning

is critical to study the oxycodone to determine incubation. To test this, rate self-administered on a fixed ratio -1 (FR1) schedule for 6hrv/day for 15 days. Typically, on withdrawal day 1, however, on withdrawal day 15 craving has incubation of craving" (Wolf, 2016).

fration of the IL will be higher on withdrawal ry 1 oxycodone rate and that neural activity in so be elevated.

hods



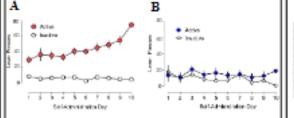
Sprague-Dawley rats (250-275 g on anival) were tolled environment with a 12 h light dark cycle. broad and then sats were individually housed. din daily until self-administration training. Ournister exycodone (0.15mg/kg/ infusion) or saline 10 days. A 20 second time out before another

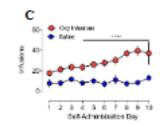
Tests. Rate underwest two drug-sarking tests. home cages for forced abstinence period of 1 conditions (no drug was available, but the 5-s hype). Active lever presses were used as a

to to on withdrawal day 1 and 15, sats were v. % paraformaldelesde. Coronal sections is schemistry using an anti-c-Fox primary 9. 9% Triton-X + 0.01% audium axide at 10. Vector Laboratories, PK-610(1), Then vi. Laboratories PK-6101) and 0.05% W. 1995; hydrogen peroxide to single

> Fee-immunossative cells were to 1,40s and used an automatic

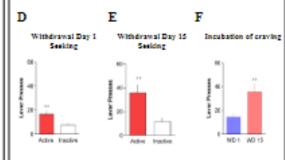
drug intake after day 6 of self-administration





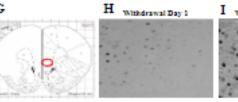
Oxygodone intake increases on the final six days of self-administration. After day 6. of self-administration the oxygodone (oxy) rats press more robustly the active. lever indicating they have learned to associate the case and one inflation (A). In comparison, the valine rate trees about or the same number of times for both the itactive and active lever indicating they have not developed a preference for a lever (II). Not only do rate increase their lever proxing after day 6 but excelste their drug intake. When comparing self-administration day 1 and 10 their intake of oxygodone nearly doubles (C).

Oxycodone craving incubates on WD 15



Craving for oxygodone incubates over the 15 days of withdrawal. Active lever proves during seaking tests (our measure of oxygodone craving) nearly doubles from WD 1 to WD indicating the craving for the drug has inculated (1): n=13, 1; n=6, **p=0.01.

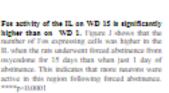
Fos expression in the IL increases following in



Coronal brain slice showing the infralimbic cortex (IL). The circle indicates the portion of the II, that was analyzed and photographed from the Paxinos. and Watson Atlas (1998).

Results

Figures II and I shows how visually there is: II. (shown in the coronal section; fleure G) a on WD 15 than in WD 1.





Conclusions & Future Direc

- Oxycodone self-administration (0.15 mg kg inf) leads to escalation of drug intake (. to oxygodone 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). oxygodone craving inculates, similar to other drups of abuse (Wolf, 2016).
- Neural activation of the IL (measured through for cells) is higher on WD 15 comps unpaired Hest indicated that on WD 15 there were significantly more for cells, almost 2-II, than on WD 1.
- Future investigations include examining if there is a difference in neural activation of 15 of saline rate compared to oxygodone WD L& 15 rate and increasing the sample of ox

This work is appropriately the National Reienze Foundation through the LECARF Program under Joseph Number 19 11 27 L. Any opinions. Studings, and conclusions or recommendations represent in this majorial are those of the author(s) and do not necessarily reflect the views of the National Science Scandaton

3rd Place Poster Winner

Daisy Robles-Magallanes Indiana University, IN LSAMP

Histone Modifications Effects on Neurogenesis

View Poster Submission

cations in Heterochromatin Regions Effects

on Neurogenesis

Dalsy Robies-Magallanes¹
Mentors: Manuel Balzabel², Sen Xlong

, IU College of Arts and Sciences; ² Department of Biology, IU College of Arts and Sciences; ²



Methods

 Flasmids containing a Hos5 promotor specific to stem cells, microRNA procursor mir50, and a gene specific to ampleillin resistance was digested using restriction enzymes Scor1 and Xho1 that out at 135 and 137 by respectively.

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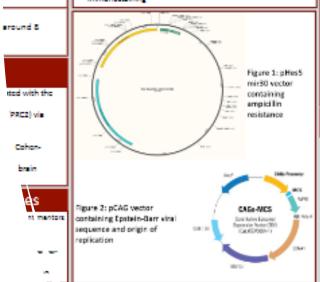
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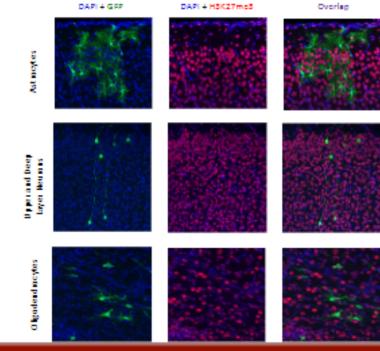
: boing

- A ligation was set using the digested glasmid and an insertion containing the HSK27M transgene
- 1% Agarosc gols wore run following digestion and ligation in order to confirm that the plasmid had been modified as needed
- Following algostion, samples were purified using a Qiagon kit and screened using a Nanodrop to ensure the purity and concentration of ONA present
- The ligated plasmid was introduced to OHSe bectoria via heat shock at 42°C and transformed on ampicillin plates over night
- Soloct colonies were chosen and expanded in order to be sent for sequence confirming that the transgene was present in the vector
- Colonies that contained the correct sequencing were then expanded and plasmid DNA was harvested using a Qiagon Mast Prop Kit
- In vivo injections were performed on fetal mice at embryonic day 12 and then hervested at postnatal day 10
- Brains were sectioned using a Leica vibrating blade microtome
- Analysis of transgone infection was performed via immunestaining

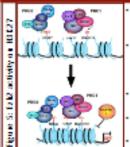


Results

Figure 4: Lentivirus infection of HSK27M at \$12 followed by analysis at postnatal day 10



Conclusions and Future Directions



Use of transgene injections in vive successfully allences H3K27mc3 in some cells, however the majority of cells still contained either partial or whole expression of the genetic mark investigations into efficient, long term allencing within stem cells and progeny

Further Modifications/ Technological Advances
Using shRNA to modiate silencing of Esh2 associated with

- Explorations into self-reglicating Enhanced Episomal Vectors to ensure long term altereding
- Silencing of the bivalent MSK4meS

2nd 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

dification of Pseudomonas stutzeri that Aid in the tion and Biodegradation of Environmental Microplastics

R. Bujan, Roberto Martinez, Amanda Morrison, David Smith, Jacqueline Do, Lisa uben Gomez, Maria Rodriquez, Kassandra Barrera Garcia, Amber Neal, Angie Lee, James Peterson, Yun Dan Wang, Ed Ong and Robin Cotter



e of microbes to aid in the monattived that Pseudomonas en found to grow on palyviny! has been found to grow on lastics, studies have shows that ecomposition of plastics such as re. The purpose of this project was his of colonizing and biodegrading density polyethylene (LPDE; plastic To achieve this goal, Pseudomoner Sc types for 7 to 160 days. The coin Pseudomonas Isolation Agar and a (SEM) to confirm colorization by of FTIR data show biodegradation of ings of this study have implications for on the retry intramopiyas of notice

Pseudomonas Isolation Agar (PIA) and Pseudomonas Isolation Broth (PIB): PIA and PIB were used to isolate Passalomonas apacias. Alcohol-treated microplastics (3, 4, and 5) were co-incubated with pure cultures. of P. grytterf in 0.1% Paptone Snoth for 7-160 days at 25-37°C. The co-incubated disks were then transferred

Scanning Electron Microacopy (SEM): Microplantics were washed with alcohol or SDS. Using a doublesided carbon mounting stub. the sample was held in place and coated in gold. After it was coated, the sample was placed in the SEM and images were captured at a magnification of \$000s

Fourier-Transform Infrared Spectroscopy (FTIR): FTIR-ATR was used to assigne the microplastic samples for biodegradation. The instrument was cleaned with 100% isopropyl alcohol between samples. The nicroplastic samples were designated for 34-kg hours before ETID enabels.

Recuits

LOPE #4

PVC #3

PVC+0 LDPC+4 PP+5

For this project, Pseudomones surper was rested for the ability to colo Table 2. Colonization of Microplantics

- incubated with P. parted

- Expand study to include Pseudomonas fluorescens and P. alcaligane Use nutrient deprivation to explore metabolic pathways is



(>5min) found in soil and water is with 55% coming from top water. rive, bigfilm-forming bacteria that as fluorescent are reported to grow



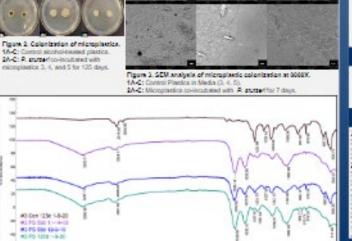


Figure 4. FTIR analysis of microplastic biodegradation. Plastic 93 in 6.1% Peptone Broth or co-incubated ith Pseudomonas stutteri for 56, 90, or 125 days.

1st Place Poster Winner

Tiffany Rivera

Chaminade University of Honolulu Islands of Opportunity Alliance (IOA)

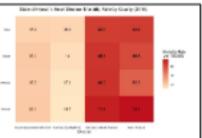
Heart Disease Cardiac Resource Availability by the Counties in the State of Hawai`i

View Poster Submission

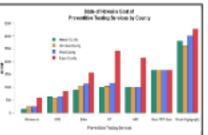
Heart Disease Cardiac Resources by Counties in the State of Ha

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

Results



POLICE L. Ingresion from the 2000 St. Teaching and advantage on all namalar pagulalan lagga 200 000 panglal, in sampalan la Marakka Cauriy lagga \$50,000, Marriel County has a higher marketly release? Life you \$50,000 has black the day on different have CCC Visionian Harmathia Library Mont Communical Brain States



POLICE 2. Contral expression in the province to much expely flow hand to war ngaraka (ali kulghi). Prokusi ngaraka kulg alimmada ani Permulangaraka bring a charl angleg age). The control has constant is higher for Kaval Cavaly Care, mercent in March J. Courte Parities for hund, Countries in New Chaire Marity.

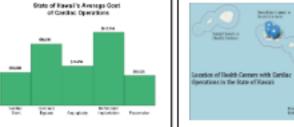
Discussion

Research Arm 1: CVD seems to be the leading cause The findings placed Honolulu County with the lowest mo 169.1 ger 100,000 population and Hawaii County with th at 177 per 100,000 population, it is interesting to note th. lowest population of a little over 72,000 people (U.S. Cer a higher mortality rate of 159.2, compared to Honolulu. Limitations: Only aggregated data was utilized and lac

Research Arm 2: Analysis did reveal that the outer-isl availability in comparison to Honolulu County, Analysis n County is the most underserved population (Fig. 4). If someone from Kaual (and same for Lanal or Molokal) A possible reason that Honolulu County and Hawall Coudemand for cardiologists is because they have to accoun their own county as well as at the neighboring counties t (Fig. 6). Unfortunately, the Native Hawailans and Pacific communities are also disproportionarely impacted by var therefore may not be able to utilitie such services if grew readily available. There is a vast demand for cardiologis 30,000 parients per cardiology physician, therefore the s may impact the backlog and scheduling for gatients who

Limitations: Limited numbers of cardiologists by sig co or scholarly sources that provide the exact whereabouts their services, as well as confirmation for greventive test Research Aim 3: Findings revealed the costly expens testing and treatments, its CVD is the leading cause of d have to pay 999,900 (Coronary Bugges) to treat it. The co for Kaual County is higher compared to the other countie Emergency Medical Service feet would most impact and Native Hawailan and Pacific Islander communities who v with limited benefits. 5

Limitations: Little to no information regarding the expe



18087 2. The energy and all enjoyments granularly word in hard band. banana is iku Birla of Yazari. Ter kumai mali is iku Pamesaka: wanatan m a Nebadi kales ika Califelialar iwalashilar, Amanike ia Kata Chalas Madik



Supply is Demand of Cardiology Physicians

FIGURE 6: The number of Pul-Time Equivalent (FTE) cardiology

physicians out of the a total of 2.912 FTE physicians that serve

the total gogulation of State of Hawaii: 1,415,972 (According to

U.S. Census Sureau, as of 2000).

Future Direction

- 1. Work with health and government agencies to estab collect data from the NHPI community.
- community to create a report and solutions on issue

References

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neonle with Heart

30 Individuals, Hawall ligher cases of HF and

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/e resting services (s s. Statewide, a total of 19

dito serve a noticulation of

Hawall countes shoulder

However, the demand needed

inh morally rase of HF and

arces, and high cost of services

e of heart disease, stroke, or other

use of death in the Store of Hawaii. leading cause of death for neonle of res: örnerican Indian or ölaska Native

Non-Hispanick* In 2014, Native

els; than non-Hananic whites, to be

disease and health disparties." These costs, sodial inequity, and decreased

t the State of Hawaii, as of 2019, is: costs will exceed §f office in the United

ments and testing (a \$9500), as well

t of nersons who receive care are key

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Aims

Hawalian Counties correlation to:

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Emergency Services Fee in the State of Howali All years toward All serving regime. B.S pract traper, or A.S review sectors
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4.2 Adaption U.S. Sarrari Committee are standard trade-partic annual rate of blacks. E.S. Bark Ch. Legach partition revolute made and the defended reduced in

Oral Presenter Winner

Abelline Fionah

University of Kentucky, KY-WV LSAMP

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

View Poster Submission

ization of Polyether ether ketone Membranes for Imp rice in Water Treatment

Laura Brady¹, Marin Benett¹, Cannon Hackett², Audie Thompson², Isabel Escobar¹ ty of Kentucky¹, University of Arkenses²

eption of fouling reasents onto the

nance(flux, permeability, selectiveness,

ic nature of membranes by introducing as onto the surface.

Objectives

acterize S-PEEK/PSENMP membranes

a of applied potential on the performance of

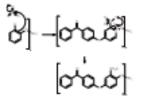
Concerns onto the membranes and investigate cerading organic contaminant MC-LR

ther ether ketone(PEEK)

lline organic thermoplastic

point and observancition termentures, resistance al and chemical decomposition, high operating and low moisture uptake.

and cost of synthesis, high temperature requirement ce to UV light, attack by some acids and halogens. most organic solvents, hydrophobic in nature.



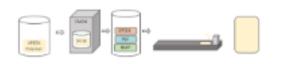
K in concentrated sufferic acid (95-98%) at the polymer solution.

in, of the polymer precipitate

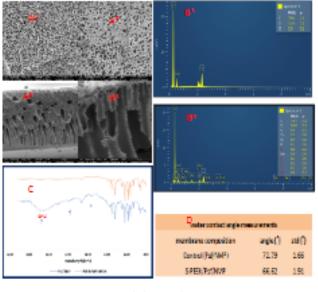
Membrane formation

This was carried out via the Non-solvent induced phase separation technique (NIPS) Doge solution:

- 79% NMP solvent
- 21% polymer (95% PSf 5% S-PEEK)
- Membrane fabrication
 - Formation of the dope solution
 - Dissolution of PSf and S-PEEK (95/5%) into NMP
- Utilized a plass plate with a doctor blade at a wet thickness of 0.250 mm. The plate and dope solution were immersed in a bath of deionized water at room temperature. Membrane



Characterization of the S-PEEK membrane:



4. 2014 images. 21-21 Zurjaus images of 2-9100/Ps@httPan2-Ps@httP mambases respectively, 21-21 Descri minoric images of 2-PHE/Prij<math>[MP] and Prij[MP] members or regardisely, \mathbf{E}_i 122 specimens \mathbf{E}_i^i \mathbf{E}_i^i 2 positives at 2-PHICPACHMF and Publisher membranes requestioning. C. PTR sensitive semanting 2-PHICPACHMF and Politiki membanas, 2. salar saniasi angir masuramenis aj tati 2-9180, Politiki end Politiki membanas

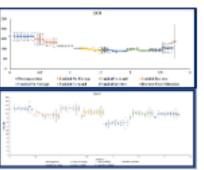
Effects of applied potential on the performa

Application of an electric potential across the negatively charged membra on the surface. The potential difference can be utilized to carry out charge water via charge repulsion.

Membrane Performance studies

The performance of the charged S-PEEK/PdFNMP membrane were invest voltage of 1.5 V across the membrane. This was carried out in a cross flo

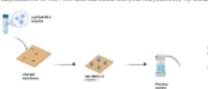




Immobilization of enzyme triad Mlr: A, B, for the degradation of organic conta

 MC-LR is a cyclic heptapeptide containing Leucine and arginine at th been associated with inhibition of protein phosphatases, disruption of exidative stress, liver turnors leading to liver cancers

Immobilizing the fusion enzyme MIrA-C on a membrane followed by



- 1. Incorporating S-PEEK into PSENMP membranes allows it to act as an electrodialysis capable of removing contaminants from water bodies by charge repulsion of ions.
- Enzymes can be immobilized onto the S-PEEK/PSENMP membranes by utilizing the net negative charge of the membrane

"Empowering Diverse STEM Innovators"

October 22-24, 2021





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Lead Institutions







