



This volume highlights selected O.U.R. activities from late Spring and Summer of 2026:

### 13th Annual EXPO – April 30th & May 1st

The 13th Annual Exhibition of Undergraduate Research and Creative Activities, EXPO 2026, was held in the Setzer Student Center on April 30 and May 1 in celebration of the National Undergraduate Research Week. We welcomed a record number of undergraduate and graduate student participants from Lamar University and five prominent Texas institutions: UT Austin, UT Dallas, UTMB Galveston, University of Houston, and East Texas A&M. The EXPO 2026 featured a record of 53 research posters and 45 oral presentations representing all six academic colleges at Lamar University.

### EXPO 2026 Awards Ceremony – May 8th

Twenty-four student presenters were awarded for their outstanding oral or poster presentations at the EXPO 2026. Five students have been recognized for their exceptional work in the first edition of the *AI and Software Pitch Competition*, organized in partnership with the Lamar University Venture Center and College of Engineering. Two U.R.G. students received awards for writing compelling narratives about their research projects in our 2<sup>nd</sup> edition of the Paper Competition at EXPO.

### 2026 Faculty Mentor Awards

The O.U.R. offers two Faculty Mentor Awards (FMA) per year for one STEM faculty mentor and one HASBSEB faculty mentor who have each excelled in mentoring undergraduate students in research and led them to exceptional results. The two FMA awardees recognized at the Banquet of the EXPO 2026 are Dr. Sylvestre Twagirayezu, Associate Professor of Chemistry (the STEM FMA) and Dr. Yan Yan, Assistant Professor of Curriculum and Instruction (the HASBSEB FMA).

### S.U.R.F. Kickoff Day – May 28<sup>th</sup>

Sixteen projects have been selected by 57 reviewers for the Summer Undergraduate Research Fellowship (S.U.R.F.) 2026 program representing all six academic colleges, the Reaud Honors College and Texas Academy. The 18 winners were recognized at the Banquet of the 13th Annual EXPO, and they shared their projects on May 28th at the S.U.R.F. Kickoff Day.



### The LU Office of Undergraduate Research

Since its inception in Fall 2013, the O.U.R. has provided a central clearinghouse for information and a voice for undergraduate research at Lamar University. Our office supports student engagement in research and creative activities from all academic areas. We offer two grant programs: The Undergraduate Research Grants (U.R.G.) and Summer Undergraduate Research Fellowship (S.U.R.F.), travel support for students willing to attend and present to regional and national conferences, and two major conferences on-campus: one in mid-November - *The Fall O.U.R. Conference* (where student research done over the past summer can be presented) and one in mid-April (to celebrate the National Undergraduate Research Week). Both undergraduate and graduate students from all academic areas are welcome to present in a poster format or at the podium.



**Interested in what the O.U.R. has to offer?** Scan here to access the O.U.R. webpage and find information regarding upcoming conferences, research and funding opportunities, event calendars, and more!

# EXPO 2026 Event Summary



The 13th Annual Exhibition of Undergraduate Research and Creative Activities, EXPO 2026 was hosted in the Setzer Student Center on April 30th and May 1st to celebrate the national week of undergraduate research. We welcomed a record number of undergraduate and graduate student participants from Lamar and five other schools in Texas: University of Houston, UT Austin, UTMB—Galveston, UT Dallas and East Texas A&M. Also, we had a record number of 53 posters displayed in the Live Oak Ballroom and 45 exceptional research talks on various topics of academic areas included in our five colleges at Lamar University. We are very proud of all our participants who made this annual conference a special event! A BIG 'Thank you!' goes to our higher administration who participated in our event, and in particular to Dr. Joby John, the Dean of College of Business, for inviting two outstanding academic professors from Massachusetts, Dr. Pierre Berthon, Clifford F. Youse Chair of Experience Design, Marketing, and Strategy, McCallum School of Business, Bentley University and Dr. Tamara Rabonivich, Senior Instructional Designer and Technologist at Quincy College, and to Dr. Rebecca Boone, the Dean of College of Arts and Sciences, who graciously offered the welcoming remarks at the EXPO 2026 and introduced the plenary speakers Dr. Greg Morrison, Associate Professor, Department of Physics, University of Houston Center for Theoretical Biological Physics, and Dr. Laura Dumin. Processor of Technical Writing & English at the University of Central Oklahoma. Thank you, Dr. Samuel Jator, Sr. Associate Provost for Academic Affairs, for your participation to EXPO 2026 in its various components and your strong support! Our deep gratitude goes to President Taylor and Provost Welch for their continuous support to growing the O.U.R. programs and events at Lamar.

**-Dr. Cristian Bahrim, Director of the O.U.R.**







OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

Undergraduate and  
Graduate students and all  
faculty/staff are invited to:

***The 13<sup>th</sup> Annual EXPO for  
Undergraduate Research  
and Creative Activities***



**April 30 - May 1, 2026**  
**Setzer Student Center**  
Begins at 8 a.m.  
in Live Oak Ballroom

**SEE FOR  
YOURSELF**



For more information please  
contact us at **[our@lamar.edu](mailto:our@lamar.edu)**



Abstract  
Submission Portal  
**Deadline: April 10<sup>th</sup>**

## **Guest Speakers**



**Dr. Greg Morrison**

Associate Professor, Department of Physics  
University of Houston  
Senior Investigator  
Center for Theoretical Biological Physics

*Plenary Talk: A Brief Tour of Biophysics*  
9:15 to 10 A.M. - Live Oak Ballroom



**Dr. Pierre Berthon**

Clifford F. Youse Chair of Experience Design,  
Marketing, and Strategy  
McCallum School of Business  
Bentley University

*Banquet Speaker: Mindful Design and  
the Shadow of Affordances*  
6:15 to 7 P.M. - Live Oak Ballroom



**Dr. Laura Dumin**

Professor of Technical Writing & English  
Director of UCO Technical Writing B.A. Program  
AI Campus Coordinator  
University of Central Oklahoma

*Plenary Talk: Writing With (and Without) AI: Practical  
Strategies for the Humanities & Liberal Arts Classroom*  
9:15 to 10 A.M. - Live Oak Ballroom

# Welcome to our outstanding Plenary Speakers!



***Dr. Greg Morrison***

***Associate Professor, Department  
of Physics, University of Houston  
Center for Theoretical Biological  
Physics***



***Dr. Pierre Berthon***

***Clifford F. Youse Chair of  
Experience Design, Marketing, and  
Strategy, McCallum School of  
Business, Bentley University***



***Dr. Laura Dumin***

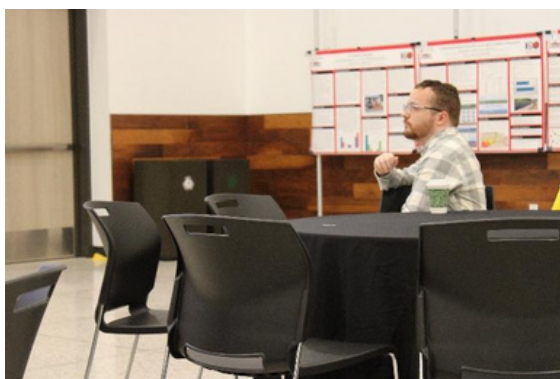
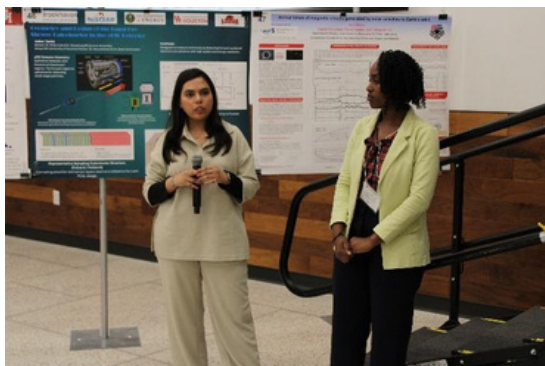
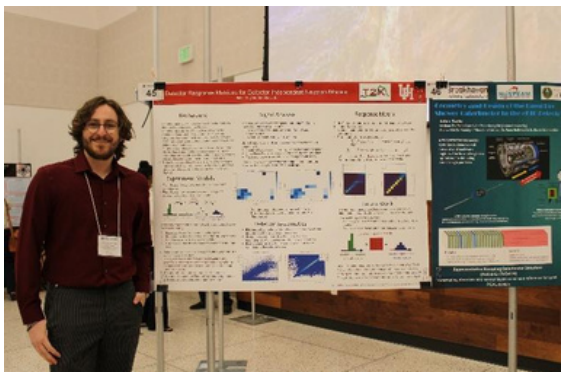
***Professor of Technical Writing &  
English, Director of UCO Technical  
Writing B.A. Program, AI Campus  
Coordinator, University of Central  
Oklahoma***



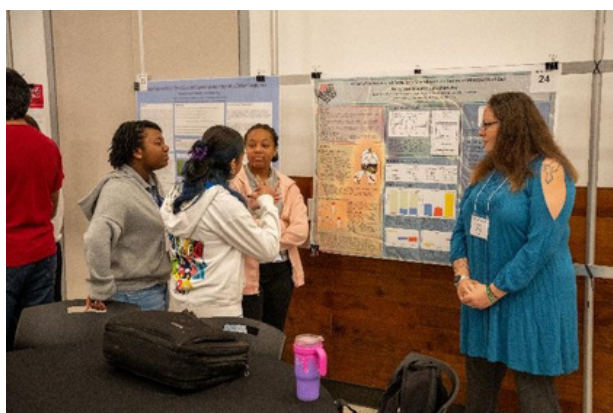
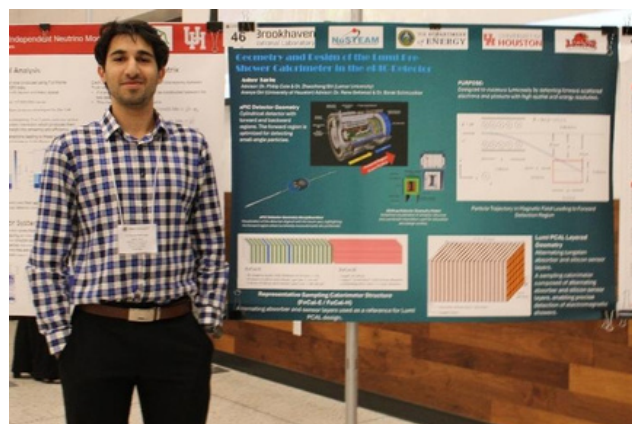
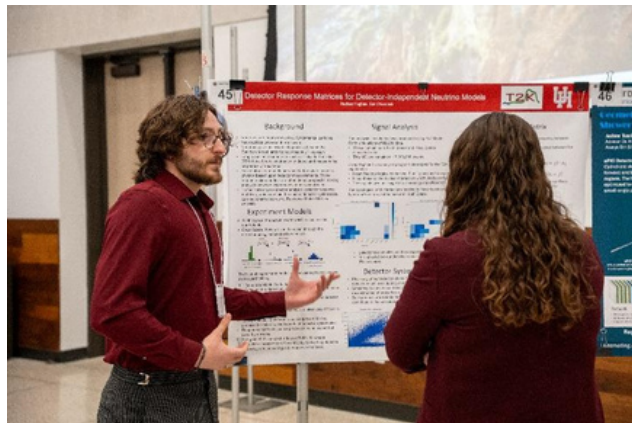
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# Welcome student visitors!



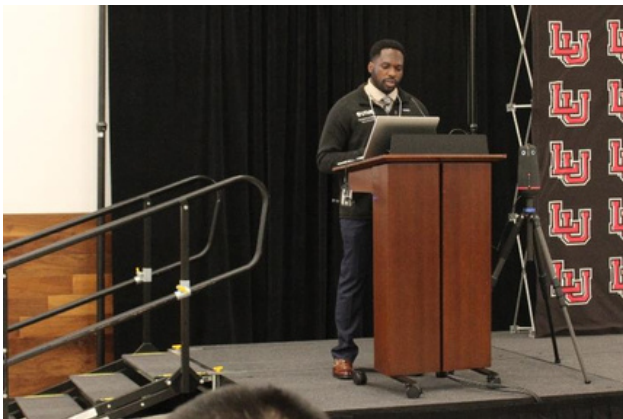
# Thank you, poster presenters!



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# Thank you, oral presenters!



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# Thank you, David J. Beck Fellows!

**The David J. Beck Fellowship** rewards outstanding academic achievement and allows top students to further challenge themselves with unique opportunities for undergraduate research & creative study. Undergraduates, please consider applying for a Beck Fellowship research experience!



## 2026-27 Beck Fellows

**Sneha Jobby**, Biology Major

**Homero Tijerina**, Biochemistry Major

**Isabella Tran**, Biology Major



## 2025-26 Beck Fellow

**Harvest Fairchild**, Speech & Hearing Sciences Major



## 2025-26 Beck Fellow

**Mohamed Irhabi**, Biology Major  
(Pre-Med Concentration)  
Chemistry Minor



**Thank you, Upper Administration,  
for your participation and support!**



**Dr. Joby John**

**Dean of College of Business**



**Dr. Shannon Jordan (left)**  
**Associate Dean of Reaud  
Honors College**



**Dr. Rebecca Boone**

**Dean of College of Arts &  
Sciences**



**Dr. Samuel Jator**

**Senior Associate Provost for  
Academic Affairs**  
**Dean of Undergraduate  
Studies**

**Dr. Elizabeth Casey**

**Chair of Curriculum &  
Instruction**



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# EXPO 2026 Banquet

April 30<sup>th</sup>, 2026



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# Congratulations Faculty Mentor Awardees!

## 2026 FMA STEM:

**Dr. Sylvestre Twagirayezu**  
Assistant Professor  
Department of Chemistry  
and Biochemistry



## 2026 FMA HASBSEB:

**Dr. Yan Yan**  
Assistant Professor  
Department of Curriculum &  
Instruction

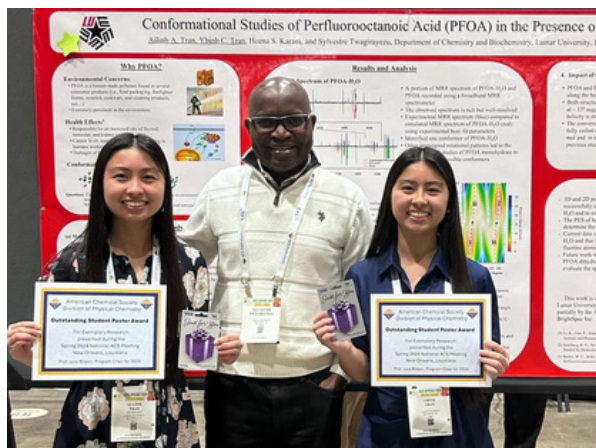


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**FMA Application Page**

# 2026 STEM FMA Winner

## Dr. Sylvestre Twagirayezu



**Ailinh Tran and Ybinh Tran**  
presented their research findings  
at the **ACS Spring 2024**  
Conference, where they received  
the **ACS Award for Best Poster** in  
the **Division of Physical Chemistry**.



**Sai Jasti, Rebecca Bundu, Ailinh**  
**Tran, Ybinh Tran, Byanca McCray,**  
**and Megan Do** received  
**awards for Best Poster**  
**Presentation at the LU Chemistry**  
**Poster Competition (Fall 2024).**



**Ramya Gollamudi and Layali**  
**Abusaleh** at the **Illinois**  
**International Symposium on**  
**Molecular Spectroscopy**  
**(Summer 2025)**



**Heena Karani and Sai Jasti**  
presented their research results  
at the **Illinois International**  
**Symposium on Molecular**  
**Spectroscopy (Summer 2023)**



**FMA**  
**Application**  
**Page**



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# 2026 HASBSEB FMA Winner

## Dr. Yan Yan



**Mackenzie Howell and Ashlyn Junot  
at the 2025 EXPO SURF Award  
Ceremony for their project “Effects  
of Elementary Children’s Screen  
Time on the Sociometric Status.”**



**Laci Graham at the 2025 Fall  
Conference URG Awards  
Ceremony for her project  
“Comparing Pre-Service and In-  
Service Elementary Science  
Teachers’ Experience with Using  
ChatGPT for Lesson Planning  
Activity Design and Assessment”**



**Anna Rodriguez at the EXPO 2026  
SURF Award Ceremony for her  
project “Summer Nutrition  
Assistance Programs Impact on  
Student Outcomes”**



**Chelsey Gallagher at the EXPO 2026  
SURF Award Ceremony for her  
project “Effects of AI-Generated  
Visual Support on Reading  
Motivation and Comprehension”**



**FMA  
Application  
Page**



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# Congratulations Paper Competition winners!

At each annual EXPO, we celebrate the best narratives written by undergraduate students involved in research sponsored by the O.U.R. The best compelling narratives in the HASBSEB and STEM academic areas are recognized and receive a \$200 award. This year, we congratulate Sarah Short and Mary O'Malley for their exceptional papers presented in the competition at EXPO 2026!

**HASBSEB Winner: Sarah Short**

**Mentor: Dr. Raul Prezas**

**Paper: “*Deaf Mentorship for Speech-Language Pathology Patients: Effectiveness and Availability*”**



**STEM Winner: Mary O'Malley**

**Mentor: Dr. Sylvestre Twagirayezu**

**Paper: “*Screening of Residual Solvents in Over-the-Counter (OTC) Analgesics by Molecular Rotational Resonance Spectroscopy.*”**

***Paper Competition  
Application Page***



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# AI & Software Pitch Competition

May 1<sup>st</sup>, 2026

Held as part of the 2026 EXPO Annual Conference, the AI & Software Pitch Competition showcased innovative AI-supported applications with potential for commercial applications, research advancement, creativity, and innovation. Ten finalists from a variety of disciplines presented early-stage ideas and demonstrated how their computer-focused projects could address real-world challenges while highlighting their future market potential.

## Winners of the 1<sup>st</sup> AI & Software Pitch Competition

### First Place

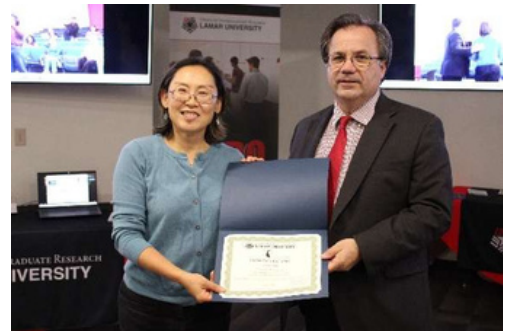
**Winner: Aiden Ma**

Westbrook High School

Mentor: Dr. Wenhao Yang

Dr. Victor Zaloom Department of Industrial and Systems Engineering, Lamar University

Topic: "MOTION (Musculoskeletal Optimization and Treatment through Immersive Orthopedic Navigation)"



### Second Place

**Winners: Vivian Latona and Aminat Ayakoya**

Mentors: Dr. James Curry

Dr. Victor Zaloom Department of Industrial and Systems Engineering, Lamar University

Topic: "Adsight360"



### Third Place

**Winner: Farha Kamal and Mahesh B. Polineni**

Mentor: Dr. Rakibul Islam

Department of Computer Science,  
Lamar University

Topic: "Intelligent Degree Direction"



# EXPO 2026 Awards Ceremony

May 8th, 2026—Landes Auditorium, Galloway Bldg.



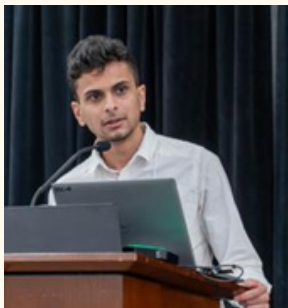
The EXPO 2026 conference celebrated twenty-four student awardees for their best poster or oral presentations in various categories (early-phase, in-progress and advanced levels) in the two major academic areas: STEM and HASBSEB. The worthy winners have been selected by judges from the 53 poster presenters and 45 presenters at the podium. Both undergraduate and graduate student participants at the EXPO 2026 qualified for awards and prizes. Among the winners of awards, we have students from UT Dallas, University of Houston, UT Austin, and Lamar University. The awardees are presented in the next pages.



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# Awardees for Best Poster and Oral Presentations



## **First Place for Poster Presentation** **Undergraduate STEM category** **In-progress Research Level**

**Winner:** Nirbhik Neupane

Mentor: Dr. Rakibul Islam

Department of Computer Science, Lamar University  
“Large Language Models for An Empirical Study of  
App Review Classification.”



## **Second Place for Poster Presentation** **Undergraduate STEM category** **In-progress Research Level**

**Winner:** Alejandra Castro-Huerta

Mentors: Dr. Sidney Lin

Dan F. Smith Department of Chemical and  
Biomolecular Engineering, Lamar University  
“Thermal Analysis of Paraffin Based Phase Change  
Materials for Packaging Applications.”



## **Third Place for Poster Presentation** **Undergraduate STEM category** **In-progress Research Level**

**Winner:** Ailinh Tran

Mentor: Dr. Sylvestre Twagirayezu

Department of Chemistry and Biochemistry, Lamar University  
“Detector Response Matrices for Detector-Independent  
Neutrino Interaction Model Comparisons”



## **Honorable Mention—Poster Presentation** **Undergraduate STEM category** **In-progress Research Level**

**Winner:** Morgan Claxton

Mentor: Dr. Iván Ojeda-Ruiz

Department of Mathematics, Lamar University  
“Image Segmentation Using Spectral Clustering and Normalized Cut  
( NCut ) Measure.”



**First Place for Oral Presentation**  
**Undergraduate HASBSEB category**

**Winner: Abigayle Welch**

Mentor: Dr. Binod Nainabasti

Department of Physics, Lamar University

"Exploring Physics Retention Across Multiple Intelligence Types in Preparatory Physics"



**Second Place for Oral Presentation**  
**Undergraduate HASBSEB category**

**Winner: Harvest Fairchild**

Mentor: Dr. Raul Prezas

Department of Speech & Hearing, Lamar University

"Phonemic Clinical Video Assessment: Strategies in Undergraduate SLP Curriculum"



**Third Place for Oral Presentation**  
**Undergraduate HASBSEB category**

**Winner: Evan Wolford**

Mentor: Mr. Andre Favors

Department of Communication & Media, Lamar University

"The Evolution of the One-Shot in Filmmaking"



**First Place for Oral Presentation**  
**Undergraduate STEM category**

**Winner: Sneha Jobby**

Mentor: Dr. Ashwini Kucknoor

Department of Biology, Lamar University

"Role of lncRNAs in Modulating Leishmania Amazonensis Infectivity in Macrophages"



**Second Place for Oral Presentation**  
**Undergraduate STEM category**

**Winner: Mohamed Irhabi**

Department of Biology, Lamar University

Mentor: Dr. Ioannis Petropoulos &

Dr. Ashwini Kucknoor

Division of Research in Medicine, Weill Cornell Medicine–Qatar

"Retinal OCT Angiography as a Window to Neurovascular Small-Vessel Disease in Ischemic Stroke"





**Third Place for Oral Presentation  
Undergraduate STEM category**

**Winner: Layali Abusaleh**

Dan F. Smith Department of Chemical and Biomolecular Engineering,  
Lamar University

Mentor: Dr. Sylvestre Twagirayezu

Department of Chemistry and Biochemistry,  
Lamar University

"Temperature-Dependent Analysis of Petroleum Mixtures by Molecular  
Rotational Resonance Spectroscopy."



**First Place for Oral Presentation  
Graduate STEM category**

**Winner: Xin Chang**

Mentor: Dr. Wennie Wang

Department of Biology, University of Texas at Austin

"Chirality induced spin selectivity (CISS) in donor-acceptor (DA) cocrystals:  
A spin-adapted approach"



**Graduate STEM category**

**Winner: Isha Sunil Kapte**

Mentor: Dr. Jason Slinker

Department of Physics, University of Texas at Dallas

"Optimizing Blue Perovskite LEDs via Dual-Ligand Assisted  
Quasi-2D Layering"



**Third Place (tied) for Oral Presentation  
Graduate STEM category**

**Winner: Ange Benise Niyikiza**

Mentor: Dr. Zhifeng Ren

"Synthesis and Characterizations of Boron



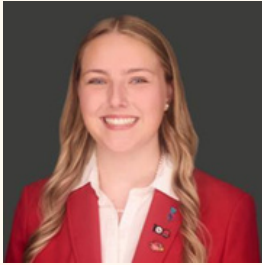
**Third Place (tied) for Oral Presentation  
Graduate STEM category**

**Winner: Iqra Zahid**

Mentor: Dr. C. W. Chu

Department of Physics,  
University of Houston

"The Study of Pressure Effect on Strain-Induced Superconductivity  
in RuO<sub>2</sub> Thin Films on TiO<sub>2</sub> (110) substrate"

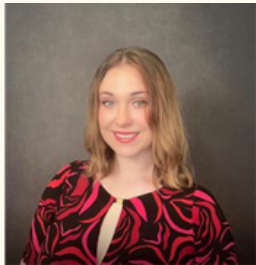


**Winner for Poster Presentation  
Undergraduate HASBSEB category**

**Winner: Mary Wernig**

Mentor: Dr. Karen Whisenhunt-Saar  
Department of Speech and Hearing Sciences,  
Lamar University

“Supporting Roles: Perspectives of Neurotypical Peers' Parents in an Inclusive Theater Program.”



**Runner-up for Poster Presentation  
Undergraduate HASBSEB category**

**Winner: Amy Schwartz**

Mentor: Dr. Kirstie Boyett  
Department of Criminal Justice, Lamar University  
“Health vs. Criminal Framing of Substance Abuse:  
An Experimental Test Among College-Aged  
Individuals.”



**Runner-up for Poster Presentation  
Undergraduate HASBSEB category**

**Winner: Magda Soto**

Mentor: Dr. Raymond Doe  
Department of Psychology, Lamar University  
“Perception of Mental Health in the  
Latinx Community.”



**Winner for Poster Presentation  
Graduate HASBSEB category**

**Winner: Rebecca Jones**

Mentor: Dr. Priyanka Jaisinghani  
Department of Speech and Hearing Sciences,  
Lamar University

“The Role of Cochlear Implant-Hearing Aid  
Performance Disparity in Bimodal Benefit.”



**Winner for Poster Presentation  
Graduate STEM category—Advanced Research Level**

**Winner: Mahesh Babu Polineni**

Mentor: Dr. Rakibul Islam  
Department of Computer Science, Lamar University

“Intelligent Degree Direction: Empowering Academic Advising for  
Student Success at Lamar University.”





**First Place for Poster Presentation**  
**Graduate STEM category—In-progress Research Level**

**Winner: Sima Besharat Ferdosi**

Mentor: Dr. Sushil Doranga

Department of Mechanical Engineering, Lamar University

“Nonlinear System Identification of Electronic Assemblies under the Motion Excitation.”



**Second Place for Poster Presentation**  
**Graduate STEM category—In-progress Research Level**

**Winner: Alice Asamoah**

Mentors: Dr. Thuy Minh Nguyen

Department of Chemistry and Biochemistry, Lamar University

“Does Farnesol Inhibit the Formation of Ergosterol in *Candida tropicalis*?”



**Third Place for Poster Presentation**  
**Graduate STEM category—In-progress Research Level**

**Winner: Nathan Hughes**

Mentor: Dr. Daniel Cherdack

Department of Physics, University of Houston

“Detector Response Matrices for Detector-Independent Neutrino Interaction Model Comparisons”



**Winner for Poster Presentation**  
**Undergraduate STEM category**  
**Early phase Research Level**

**Winner: Lorena Jaquis**

Mentor: Dr. Minkyum Kim

Reese Department of Construction Management, Lamar University

“The Silent Risk in Construction: Mental Health in the Construction Industry”



**Runner-up for Poster Presentation**  
**Undergraduate STEM category**  
**Early phase Research Level**

**Winner: Mary O'Malley**

Mentor: Dr. Sylvestre Twagirayezu

Department of Chemistry and Biochemistry, Lamar University

“Screening of Residual Solvents in Over-the-Counter (OTC) Analgesics by Molecular Rotational Resonance Spectroscopy.”

**Thank you to all who joined us to help make  
EXPO a successful event!**



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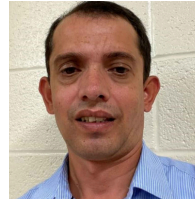
# Office of Undergraduate Research Advisory Board 2025-26



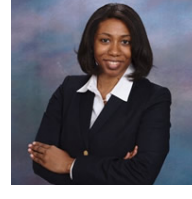
**Cristian Bahrim, Ph.D.**  
Professor  
Department of Physics  
Director of the O.U.R.



**Robert Kelley Bradley, Ph.D.**  
Assistant Professor  
Department of Industrial and  
Systems Engineering



**Sushil Doranga, PhD**  
Assistant Professor  
Department of Mechanical  
Engineering



**Bianca Easterly, Ph.D.**  
Associate Professor  
Department of Political Science



**Casey L. Ford, M.F.A.**  
Assistant Director, Team Lead for  
Faculty Success  
Thesis Reviewer, Center for  
Innovation in Teaching and Learning



**Gina Hale, PhD, RN, CNE**  
Associate Professor  
Associate Dean for Nursing Affairs  
College of Nursing and Health Professions  
JoAnne Gay Dishman School of Nursing



**Matthew P. Hoch, Ph.D.**  
Marine Biology and Biochemistry  
Associate Professor of Aquatic and  
Microbial Ecology  
Department of Biology



**Priyanka Jaisinghani, Ph.D.**  
Assistant Professor  
Department of Speech and  
Hearing Sciences



**Nicki Michalski, Ph.D.**  
Associate Professor  
Chair of the Department of  
Communication & Media



**Millicent Musyoka, Ph.D.**  
Professor  
Department of Deaf Studies  
and Deaf Education



**Elizabeth Sanders, MLIS**  
Director, Learning & Research  
Learning & Research Librarian  
Assistant Professor  
Mary and John Gray Library



**Gevorg Sargsyan, Ph.D.**  
Assistant Professor  
Interim Associate Dean of Administration and  
Undergraduate Programs, Pat Wheat Scholar  
in Academic Development, School of  
Accounting, Finance and Economics



**Thinesh Selvaratnam, Ph.D.**  
Associate Professor  
Department of Civil and  
Environmental Engineering



**Mamta Singh, Ph.D.**  
Professor  
Department of Curriculum & Instruction



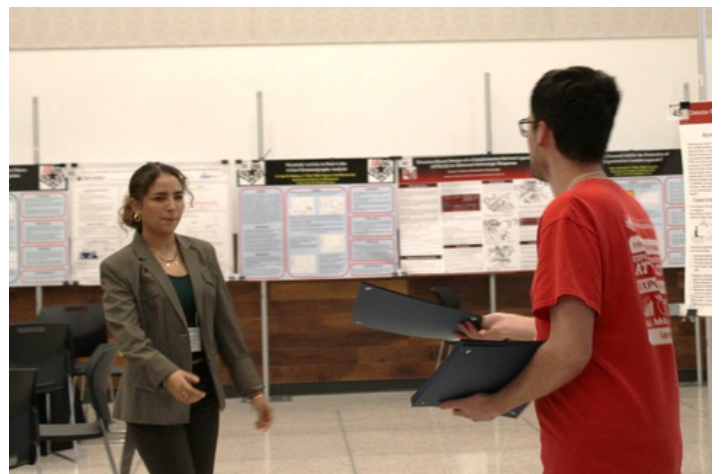
**Sujing Wang, Ph.D.**  
Associate Professor Graduate  
Program Director  
Department of Computer Science



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# Congratulations, SURF Winners!



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# 2026 S.U.R.F. Reviewers

A BIG 'Thank you!' to all Lamar faculty reviewers for their time and effort allocated generously in assessing the 31 qualified S.U.R.F. proposals! Each S.U.R.F. proposal was reviewed by at least four faculty reviewers.

The success of any competitive grant program always starts with running a thorough reviewing process done with an expert opinion on the proposals assessed.

Thank you for graciously helping to make the S.U.R.F. 2026 program a success!

**-Cristian Bahrim - Director of the O.U.R.**

|                              |                                 |                                  |
|------------------------------|---------------------------------|----------------------------------|
| <b>Dr. Jim Armacost</b>      | <b>Dr. Priyanka Jaisinghani</b> | <b>Dr. Gevorg Sargsyan</b>       |
| <b>Dr. Bogdana Bahrim</b>    | <b>Dr. Clayton Jeffryes</b>     | <b>Dr. Yasuko Sato</b>           |
| <b>Dr. Paul Bernazzani</b>   | <b>Dr. Komal Karani</b>         | <b>Dr. Sommer Shackelford</b>    |
| <b>Dr. Kelley Bradley</b>    | <b>Dr. Remmy Kasili</b>         | <b>Dr. Thinesh Selvaratnam</b>   |
| <b>Dr. Jimmy Bryan</b>       | <b>Dr. Toni Kemerly</b>         | <b>Dr. Cengiz Sen</b>            |
| <b>Dr. Daniel Chen</b>       | <b>Dr. Jamie Kurash</b>         | <b>Dr. Selahatin Sayil</b>       |
| <b>Dr. Scott Cohen</b>       | <b>Dr. Eujin Kwon</b>           | <b>Dr. Mamta Singh</b>           |
| <b>Dr. Raymond Doe</b>       | <b>Dr. Xianchang Li</b>         | <b>Dr. Maxim Soukhodolets</b>    |
| <b>Dr. Abdelnasser Eldek</b> | <b>Dr. Yueqing Li</b>           | <b>Dr. Bo Sun</b>                |
| <b>Dr. Jennifer Fagen</b>    | <b>Dr. Wen Liu</b>              | <b>Dr. Gleb Tcheslavski</b>      |
| <b>Dr. Xuejun Fan</b>        | <b>Dr. Xingya Liu</b>           | <b>Dr. Tilisa Thibodeaux</b>     |
| <b>Dr. Casey L. Ford</b>     | <b>Dr. Jane Liu</b>             | <b>Dr. Sylvestre Twagirayezu</b> |
| <b>Dr. Margot Gage</b>       | <b>Dr. Elizabeth Long</b>       | <b>Dr. Jose Vega</b>             |
| <b>Dr. Ozge Gunaydin</b>     | <b>Dr. Helen Lou</b>            | <b>Dr. Sujing Wang</b>           |
| <b>Dr. Gina Hale</b>         | <b>Dr. Nicki Michhalski</b>     | <b>Dr. Don Warren</b>            |
| <b>Dr. James Henry</b>       | <b>Dr. Thuy-Minh Nguyen</b>     | <b>Dr. Suying Wei</b>            |
| <b>Dr. Sara Hillin</b>       | <b>Dr. Keili Peterman</b>       | <b>Dr. Vidisha Worley</b>        |
| <b>Dr. Matt Hoch</b>         | <b>Dr. Karen Saar</b>           | <b>Dr. Chun-Wei Yao</b>          |
| <b>Dr. Rakibul Islam</b>     | <b>Ms. Elizabeth Sanders</b>    | <b>Dr. Jenny Zhou</b>            |



OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**



OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

# **2026 S.U.R.F. Kickoff**

**May 27, 2026**

**Galloway — Landes 101 — from 1 to 3 P.M.**

**Dear S.U.R.F. Students and Mentors,**

The 2026 Summer Undergraduate Research Fellowship (S.U.R.F.) program starts today with 16 research projects and eighteen student participants, from all five academic colleges, the Reaud Honors College, and the Texas Academy. This year we have awarded ten STEM and six HASBSEB grants.

The 2026 S.U.R.F. winning projects have been selected from 31 competitive proposals by 57 reviewers, with at least four expert reviews per proposal. The winners scored 86.3% or above, which makes this selection to be the most competitive ever. The warmest congratulations to all S.U.R.F. winners for their exceptionally competitive projects!

Each S.U.R.F. team will receive \$2,700 stipend in two installments (June and August), \$1,400 in research support, \$500 in travel support over summer, as well as free housing in our Cardinal Village.

The findings and results of the S.U.R.F. projects will be presented at the 14th Annual O.U.R. Fall Conference, on November 13, 2026.

The Advisory Board members of the Office of Undergraduate Research and all faculty reviewers wish to the 2026 S.U.R.F. winners and their mentors a successful summer research experience!

**-Dr. Cristian Bahrim, Director of the O.U.R.**



**LAMAR UNIVERSITY**  
MEMBER THE TEXAS STATE UNIVERSITY SYSTEM™





# 2026 S.U.R.F. Kickoff

## College of Education and Human Development

Dean Johnny O'Connor, Ph.D.

1

**Chelsey Gallagher** | Interdisciplinary Studies ELAR 4-8 |

Mentor **Dr. Yan Yan**

HASBSEB Project in the Department of Curriculum and Instruction

*"Effects of AI-Generated Visual Support on Reading Motivation and Comprehension"*

2

**Anna Rodriguez** | Interdisciplinary Studies EC-6 General Education |

Mentor **Dr. Yan Yan** and **Dr. Jill Killough**

HASBSEB Project in the Department of Curriculum and Instruction

*"Summer Nutrition Assistance Programs Impact on Student Outcomes"*

3

**Madison Ridenour** | American Sign Language Teaching |

Mentor **Dr. Millicent Musyoka**

HASBSEB Project in the Department of Deaf Studies and Deaf Education

*"Deaf Individuals' Experiences with Sign Language Interpreters in High Schools"*

## College of Business

Dean Joby John, Ph.D.

4

**Sohanur Rahman** | Management BBA |

Mentor **Mr. Paul E. Howell**

HASBSEB Project in the Department of Management and Marketing

*"Immigration Law Volatility and Educational Access Redistribution: An Empirical Analysis"*



OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

# 2026 S.U.R.F. Kickoff

## College of Engineering

Dean Tracy Benson, Ph.D.

5

**Justin Barrera** | Mechanical Engineering |

Mentors **Dr. Baisravan HomChaudhuri** and **Dr. Wenhao Yang**

STEM Project in the Department of Mechanical Engineering

*"Predictive and Safe Human-Aware Mobile Robot Navigation"*

6

**Carmen Flores** and **Jacob Hardy** | Mechanical Engineering |

Mentor **Dr. Ebrahim Seidi**

STEM Project in the Department of Mechanical Engineering

*"Process Optimization for 3D Printing of Carbon Fiber-Reinforced PPA"*

7

**Alejandra Castro Huerta** | Chemical Engineering |

Mentor **Dr. Sidney Lin**

STEM Project in the Dan F. Smith Department of Chemical and Biomolecular Engineering

*"Graphite-Reinforced Bio-Based Phase Change Inserts Enhancing Thermal Transport in Packaging"*

8

**Kasey Kuch** | Electrical Engineering |

Mentor **Dr. Hassan Zargarzadeh**

STEM Project in the Phillip M. Drayer Department of Electrical and Computer Engineering

*"Comparative Evaluation of Algorithms and Techniques on a Mobile Manipulator"*

9

**Christopher Lowe** | Chemical Engineering |

Mentor **Dr. Cristian Bahrim**

STEM Project in the Department of Physics

*"Interference between two laser beams on a flint glass surface."*

10

**Cole Williams** | Mechanical Engineering |

Mentor **Dr. Baisravan HomChaudhuri**

STEM Project in the Department of Mechanical Engineering

*"Development of Intelligent Lighter-than-Air Indoor  
Soft Unmanned Aerial Vehicles"*

# 2026 S.U.R.F. Kickoff

## College of Arts and Sciences

Dean Rebecca Boone, Ph.D.

11

**Gabriel Kalala** | Computer Science & Mathematics |

Mentor **Dr. Iván Ojeda-Ruiz**

STEM Project in the Department of Mathematics

*"Low-Rank Truncation in Dynamic Mode Decomposition for Stock Market Analysis."*

12

**Homero Tijerina\*** | Biochemistry |

Mentors **Dr. Susantha Gangamage** and **Dr. Ashwini Kucknoor**

STEM Project in the Department of Chemistry and Biochemistry

*"An advanced analog of epinephrine for optimized stress performance"*

13

**Adam Tsan** | Computer Science |

Mentor **Dr. Tauhidul Alam**

STEM Project in the Department of Computer Science

*"Small Language Model Planning for Safe Natural-Language Robot Navigation"*

14

**Chloe Wallace** | Political Science |

Mentor **Dr. Bianca Easterly**

HASBSEB Project in the Department of Political Science

*"Women's Political Participation and Abortion Restrictions in the United States"*

15

**Carina Wyman%** | Biochemistry |

Mentor **Dr. Shannon Jordan**

STEM Project in the Department Health and Kinesiology

*"Atopic Dermatitis: Exploration of Common Symptoms for Effective Medical Care"*

## College of Nursing and Health Professions

Dean Joseph W. Tacy, Ph.D., RN, CNE

16

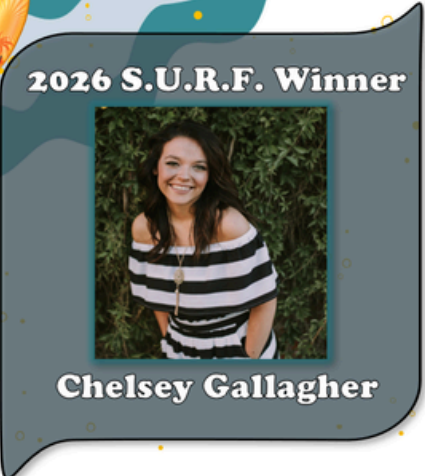
**Natalie Bean** and **Kelly So** | Nursing |

Mentor **Dr. J.T. Seaman**

HASBSEB Project in the JoAnne Gay Dishman School of Nursing

*"Implications of Generative Artificial Intelligent in Mental Healthcare"*





**2026 S.U.R.F. Winner**

**Chelsey Gallagher**



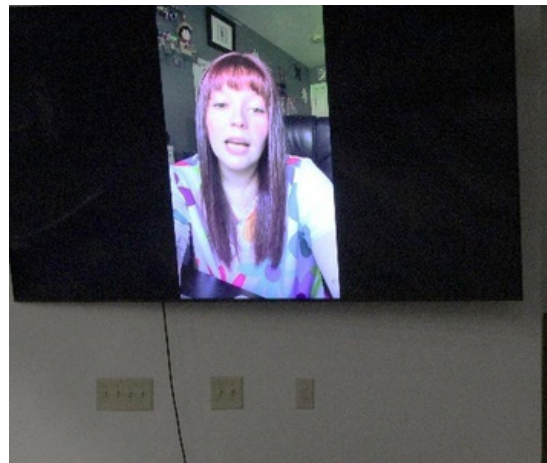
OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

**Major:**  
**Interdisciplinary Studies ELAR 4-8**

**Mentor: Dr. Yan Yan**  
Associate Professor in the  
Department of Curriculum & Instruction

2026 S.U.R.F. winner with the HASBSEB project

Effects of AI-Generated Visual Support on Reading  
Motivation and Comprehension



### **Testimonial:**

*AI has changed the way that students approach reading and how they complete assignments. While it can provide students with quick explanations and help them better understand challenging material, it can also make students less willing to struggle through a text on their own. I think AI is most beneficial when teachers guide students in using it responsibly. However, students should still be encouraged to read carefully, think critically, and develop their own understanding before turning to AI for assistance."*



**2026 S.U.R.F. Winner**



**Anna Rodriguez**



OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

**Major: Interdisciplinary Studies**  
**EC-6 General Education**

**Mentors: Dr. Yan Yan**  
Associate Professor of Education  
**Dr. Jill Killough**  
Associate Dean of Academic Affairs and Assessment

**2026 S.U.R.F. winner with the HASBSEB project**

**"Summer Nutrition Assistance Programs Impact on Student Outcomes."**



### Testimonial:

*The SURF program at Lamar has given me a significant opportunity to research something I am passionate about. The debate around the cost of school lunch has been ongoing for many years now and has been even more prevalent in recent years. I decided to research this topic to help add to the knowledge of the importance of free school lunch for students especially in the summer months when the food at summer school, may be the only food a student gets. Having the great opportunity to research this topic is all thanks to the Office of Undergraduate Research, the SURF Grant, and Dr. Yan, my professor and mentor.*





**2026 S.U.R.F. Winner**

**Madison Ridenour**



**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major:**  
**American Sign Language Teaching**

**Mentor: Dr. Millicent M. Musyoka**  
**Professor in the Department of Deaf Studies and Deaf Education**

**2026 S.U.R.F. winner with the HASBSEB project**

**"Deaf Individuals' Experiences with Sign Language Interpreters in High Schools"**



### Testimonial:

*Being a part of the S.U.R.F program was the best experience of my college years, I have deepened my understanding of my major, collaborated with fellow students, and have made connections I didn't even know I would be able to make!*





**2026 S.U.R.F. Winner**



**Sohanur "Sohan" Rahman**



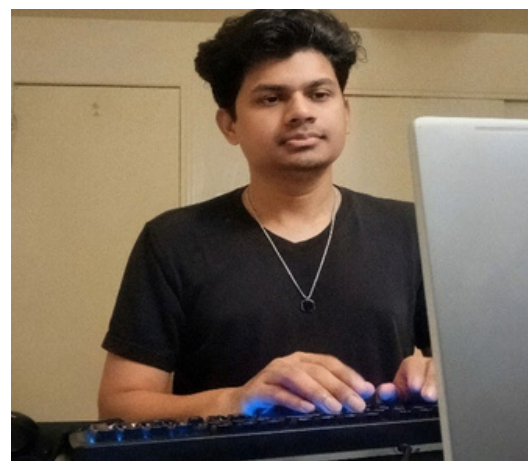
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major: Management**

**Mentor: Mr. Paul Howell**  
Instructor of Management in the  
School of Accounting, Management  
and Economics

**2026 S.U.R.F. winner with the HASBSEB project**

**"Immigration Law Volatility and Educational Access Redistribution: An Empirical Analysis."**



### Testimonial:

*The opportunity to conduct interdisciplinary research on immigration law volatility, educational access, and institutional decision-making has strengthened my passion for interdisciplinary scholarship and reinforced my curiosity to explore complex societal challenges through evidence-based inquiry. It has provided invaluable mentorship and allowed me to integrate law, public policy, higher education, and data analysis into one meaningful project, an experience I hope to carry into my future legal studies. I am grateful for the opportunity to contribute knowledge with real-world impact while continuing to grow as a researcher. Thank you for this incredible opportunity.*





**2026 S.U.R.F. Winner**

**Justin Barrera**



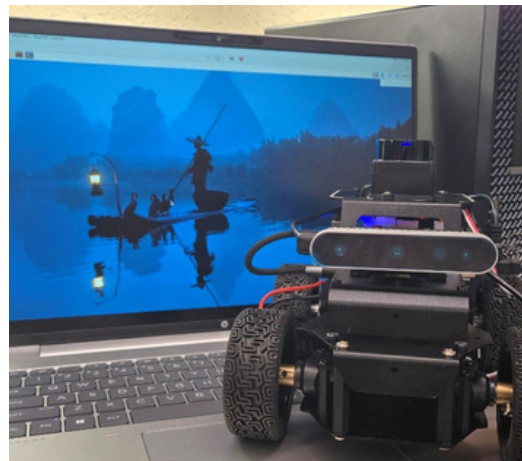
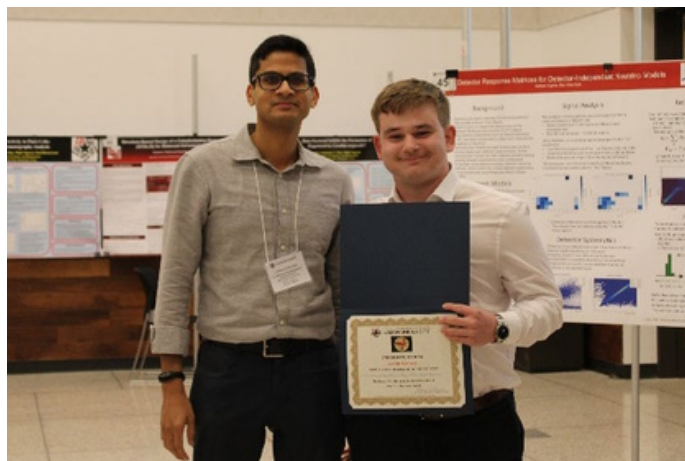
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major: Mechanical Engineering**

**Mentors:**  
**Dr. Baisravan Homchaudhuri**  
**Dr. Wenhao Yang**  
**Assistant Professors in the Department  
of Mechanical Engineering**

**2026 S.U.R.F. winner with the STEM project**

**"Predictive and Safe Human-Aware Mobile Robot  
Navigation"**



### Testimonial:

*My experience with the SURF program has been overwhelmingly positive. Everyone involved is so supportive and passionate about what they are doing. I have learned about so much that I would likely never even have heard of without the wonderful support from the program, and I am proud to be called a SURF fellow. The SURF program is by far the best program that I have been blessed to be a part of, and I wish that everyone at Lamar knew about it.*





**2026 S.U.R.F. Winners**

**Carmen Flores (left)  
& Jacob Hardy (right)**

**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Majors: Mechanical Engineering**

**Mentor: Dr. Ebrahim Seidi**  
Assistant Professor of the  
Department of Mechanical Engineering

**2026 S.U.R.F. winner with the STEM project**

**"Process Optimization for 3D Printing of Carbon  
Fiber-Reinforced PPA."**



### Testimonial:

*This journey has been a valuable experience to learn and investigate 3D printing process and parameters. All of this is possible thanks to our mentor, Dr. Seidi, and his two graduate students because they have been so supportive to this research. We are still working hard on this project and are certain that we are going to finish successfully this research.*







**2026 S.U.R.F. Winner**

**Alejandra Castro**



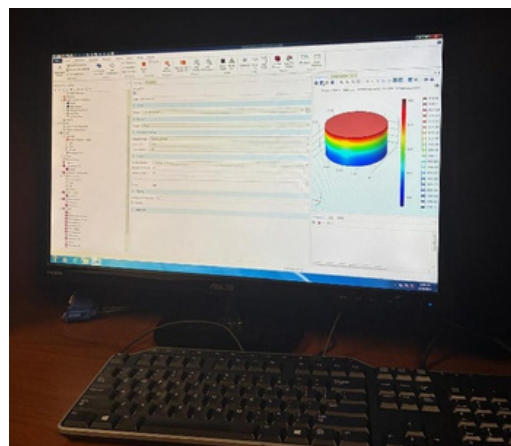
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major:**  
**Chemical Engineering & Chemistry**

**Mentor: Dr. Sidney Lin**  
Associate Professor in the Department of  
Chemical & Biochemical Engineering

**2026 S.U.R.F. winner with the STEM project**

**"Graphite-Reinforced Bio-Based Phase Change Inserts  
Enhancing Thermal Transport"**



### Testimonial:

*My SURF research experience gave me the chance to grow both technically and professionally in ways I hadn't anticipated. Working under Dr. Lin's mentorship was especially impactful, his guidance taught me how to design experimental procedures, and it strengthened my confidence in navigating the research process from start to finish.*

*SURF deepened my passion for research and reinforced my commitment to pursuing scientific discovery. It's an experience I'll continue to draw on for years to come.*



**2026 S.U.R.F. Winner**



**Kasey Kuch**





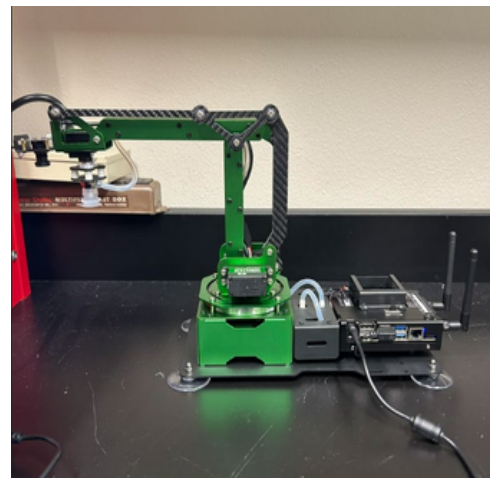
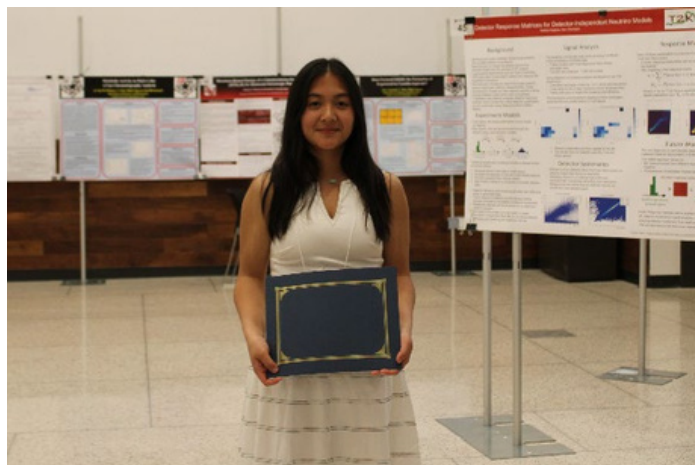
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major: Electrical Engineering**

**Mentor: Dr. Hassan Zargarzadeh**  
Associate Professor in the  
Department of Electrical & Computer  
Engineering

**2026 S.U.R.F. winner with the STEM project**

**"Comparative Evaluation of Algorithms and  
Techniques on a Mobile Manipulator."**



### Testimonial:

*Participating in the Summer Undergraduate Research Fellowship at Lamar University gave me the opportunity to gain real hands-on experience with robotics research. I am currently working with a mobile manipulator system and am learning so much about navigation, perception, and algorithms that perform under different conditions. Moreover, this fellowship strengthened my interest in robotics and allowed me the opportunity to gain valuable skills that I can continue using in future engineering and research opportunities.*







**2026 S.U.R.F. Winner**

**Christopher Lowe**



OFFICE OF UNDERGRADUATE RESEARCH  
**LAMAR UNIVERSITY**

**Major: Chemical Engineering**

**Mentor: Dr. Cristian Bahrim**  
University Professor of the  
Department of Physics

**2026 S.U.R.F. winner with the STEM project**

"Interference between two laser beams on a flint glass surface."

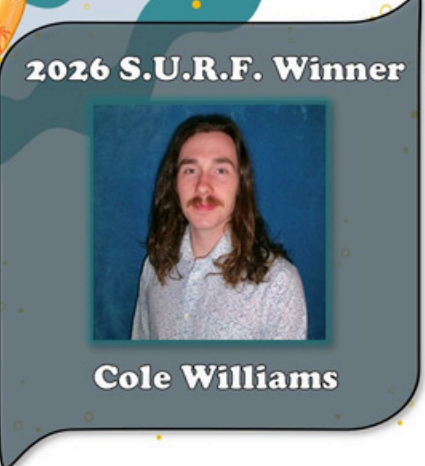


### Testimonial:

*Participating in the Summer Undergraduate Research Fellowship (SURF) has been an incredibly fulfilling experience. Since starting as a student at Lamar, I have always had an interest in pursuing research. Having worked with Dr. Bahrim on light-matter interaction research before and taking his Optics course, I felt confident that I could contribute to another project. The entire SURF experience has greatly enriched my understanding of Optics and developed competencies I can apply in any role in the future.*







**2026 S.U.R.F. Winner**

**Cole Williams**



**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major: Mechanical Engineering**

**Mentor: Dr. Baisravan HomChaudhuri**  
Associate Professor in the  
Department of Mechanical Engineering

**2026 S.U.R.F. winner with the STEM project**

**"Development of Intelligent Lighter-than-Air  
Indoor Soft Unmanned Aerial Vehicles"**



**Lab Materials for LTA UAV**

### **Testimonial:**

*Researching Lighter - than - Air Unmanned Aerial Vehicles this summer provided a great introduction to unconventional robotics. This project allowed me to apply skills from my Lamar University coursework to real-world engineering challenges. Working with Dr. HomChaudhuri has solidified my passion for robotics and mechatronics. Because of this experience, my goal is to continue pursuing robotics and focus on this field as I look toward my future career.*



**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**



**2026 S.U.R.F. Winner**

**Gabriel Kalala**



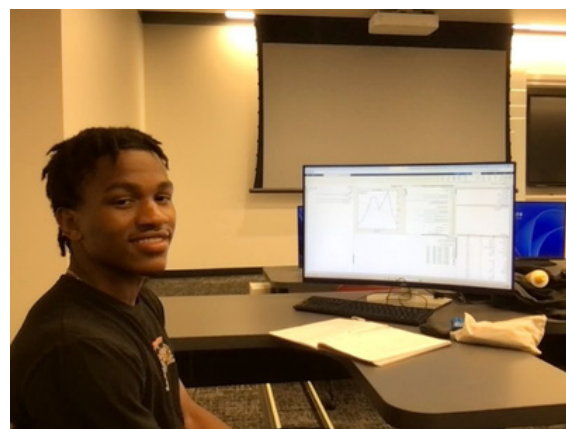
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major:**  
**Computer Science & Mathematics**

**Mentor: Dr. Iván Ojeda-Ruiz**  
**Assistant Professor in the**  
**Department of Mathematics**

**2026 S.U.R.F. winner with the STEM project**

**"Low-Rank Truncation in Dynamic Mode  
Decomposition for Stock Market Analysis"**



### Testimonial:

*My research in Dynamic Mode Decomposition (DMD) has strengthened my foundation in computational mathematics, numerical linear algebra, and scientific programming. By implementing DMD algorithms, analyzing dynamic systems, and interpreting computational results, I developed practical experience translating mathematical theory into computational solutions and technical skills. The project cultivated disciplined problem-solving, attention to reproducibility, and the ability to communicate complex findings effectively. This experience solidified my commitment to pursuing graduate study, where I hope to further explore computational mathematics, machine learning, and data-driven scientific modeling through rigorous research.*







**2026 S.U.R.F. Winner**

**Homero A. Tijerina**



**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

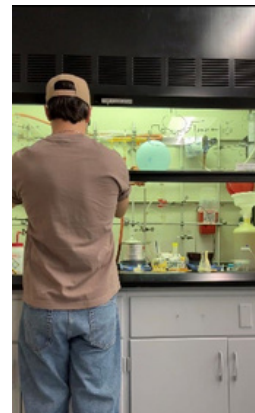
**Major: Biochemistry**

**Mentors: Dr. Ashwini Kucknoor**  
Professor of Biology

**Dr. Susantha Ganegamage**  
Assistant Professor of Chemistry

**2026 S.U.R.F. winner with the STEM project**

"An advanced analog of epinephrine for optimized stress performance."



### Testimonial:

*The SURF experience has been an incredible experience. If I had to describe it in one word, it would be refinement. I conducted a project for a little over a year. However, progress was not moving as quickly as I would have liked due to the demands of coursework, work, and life outside the laboratory. Receiving a SURF fellowship not only provided me the funding necessary to continue advancing my project but also gave me the opportunity to present my research to my peers and share both my passion and the purpose behind my work on a larger stage. I have also been blessed to work under the mentorship of Dr. Ganegamage and Dr. Kucknoor, who not only encourage the pursuit of knowledge, but also help me to develop the skills and mindset necessary to become a better scientist.*







**2026 S.U.R.F. Winner**

**Adam Tsan**



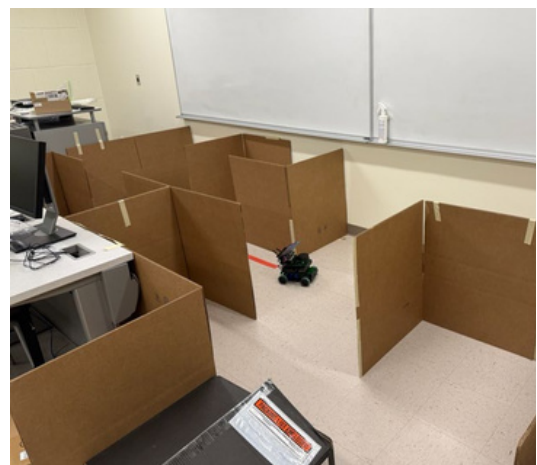
**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

**Major: Computer Science**

**Mentor: Dr. Tauhidul Alam**  
Assistant Professor in the  
Department of Computer Science

**2026 S.U.R.F. winner with the STEM project**

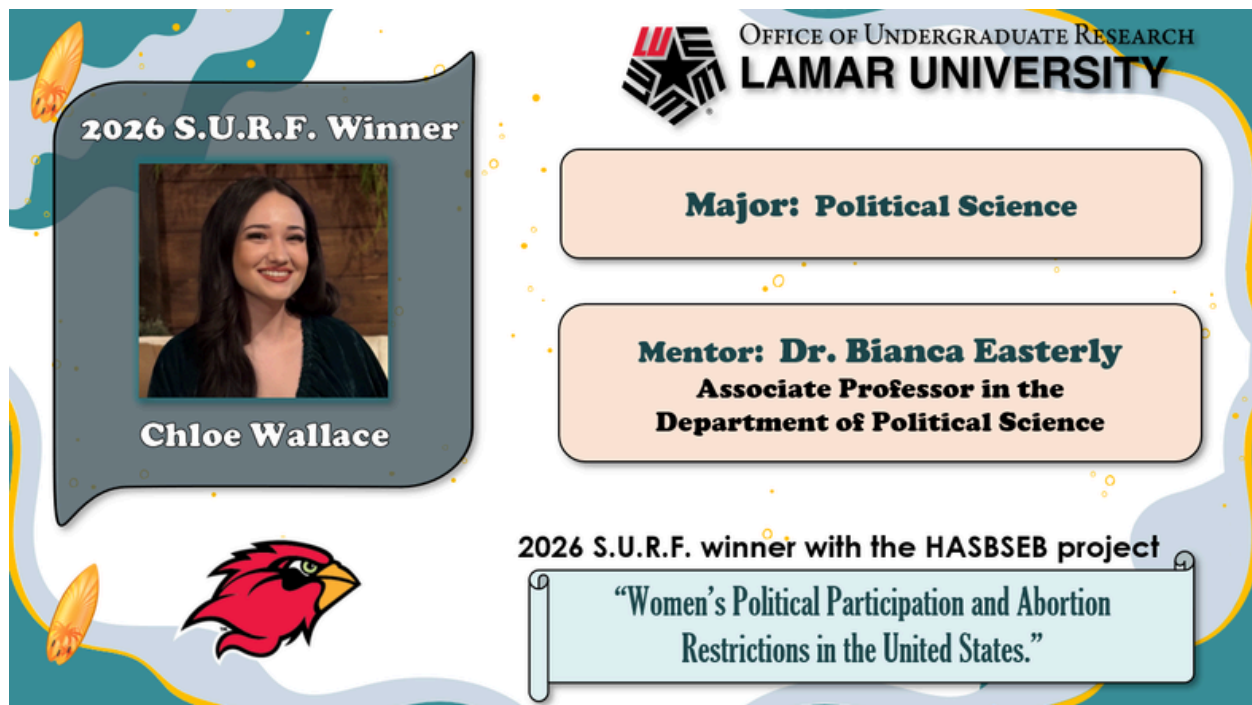
"Small Language Model Planning for Safe Natural-Language Robot Navigation."



### Testimonial:

*Being a part of the SURF program has been a great experience. I am able to explore two topics I am deeply interested in, robotics and artificial intelligence, as well as take my first step into the world of research. Although research may have seemed daunting just a year prior, the OUR and Dr. Bahrim have been extremely welcoming and helpful, which has allowed me to focus completely on my research. I am also backed by a great mentor, Dr. Alam, who is always open to providing guidance and advice. Overall, I am excited to see what opportunities this experience will bring.*





2026 S.U.R.F. Winner



Chloe Wallace

**Major: Political Science**

**Mentor: Dr. Bianca Easterly**  
Associate Professor in the  
Department of Political Science

2026 S.U.R.F. winner with the HASBSEB project

“Women’s Political Participation and Abortion  
Restrictions in the United States.”

The graphic features a blue and yellow wavy background with a red cardinal logo at the bottom left. The text is arranged in a clean, modern layout with a mix of bold and regular fonts.



### Testimonial:

*The SURF program has been the most incredible experience I have had at Lamar. The support from the university and my professors throughout this program has made me proud of both myself and my school. This research has expanded my skills, and I have benefitted from it immensely. SURF is a program that all undergraduate students should pursue if they want the opportunity to learn and grow even more during their time at Lamar. I am incredibly grateful to have had this opportunity.*









**2026 S.U.R.F. Winners**

**Natalie Bean (left) & Kelly So (right)**



**OFFICE OF UNDERGRADUATE RESEARCH  
LAMAR UNIVERSITY**

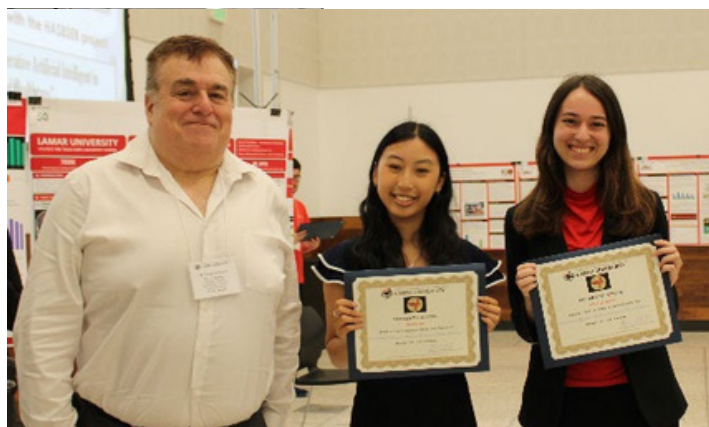
**Majors: Kelly – Nursing  
Natalie – Nursing with Minor in Honors Studies**

**Mentor: Dr. J.T. Seaman**  
Assistant Professor in the JoAnne Gay Dishman School of Nursing



**2026 S.U.R.F. winners with the HASBSEB project**

**"Implications of Generative Artificial Intelligent in Mental Healthcare"**



### Testimonials:

*"SURF has been a great opportunity for deeply exploring my interests! I have grown academically and developed as a leader this summer. By being in SURF I have gained more confidence as a researcher."*

*-Natalie Bean*

*"SURF has given me the opportunity to do things I never would have had the courage to try on my own. The constant support has helped me grow in confidence and skill."*

*-Kelly So*



# SURF Participation at NSO



SURF 2026 Fellows welcomed freshmen and transfer students to Lamar University at New Student Orientation Organization Fairs at the Setzer Student Center in June and July.



# **SURF Participation at the STEM Summer Camp directed by Dr. Sujing Wang**



SURF 2026 Fellows shared their experiences at Lamar University with middle school students at LU STEM Summer Camps in the Computer Science lab of the Maes Building in July.



# O.U.R. Research Impact

## Nirbhik Neupane – Computer Science Major

**24<sup>th</sup> IEE/ACIS International Conference on Software Engineering Research, Management, and Applications – Towson, Maryland, May 27-29, 2026**

My rich research experiences here at Lamar have completely transformed my time and priorities. The SURF 2025 program started all. It gave me the foundation which I needed. But receiving an URG in Fall 2025 allowed me to take my research on Software and Large Language Models to the next level. The absolute highlight for my research journey was taking the findings to the SERA Conference in Towson, Maryland. Getting to present to industry experts and external researchers was an unforgettable experience that built so much confidence in me and my work. I want to give a huge thanks to the Office of Undergraduate Research, Dr. Bahrim, and my mentor Dr. Islam for making this possible for me. They have given me so much more than just funding the projects; they gave me the platform to step out of the classroom and actually share our work with the world.



-Nirbhik Neupane



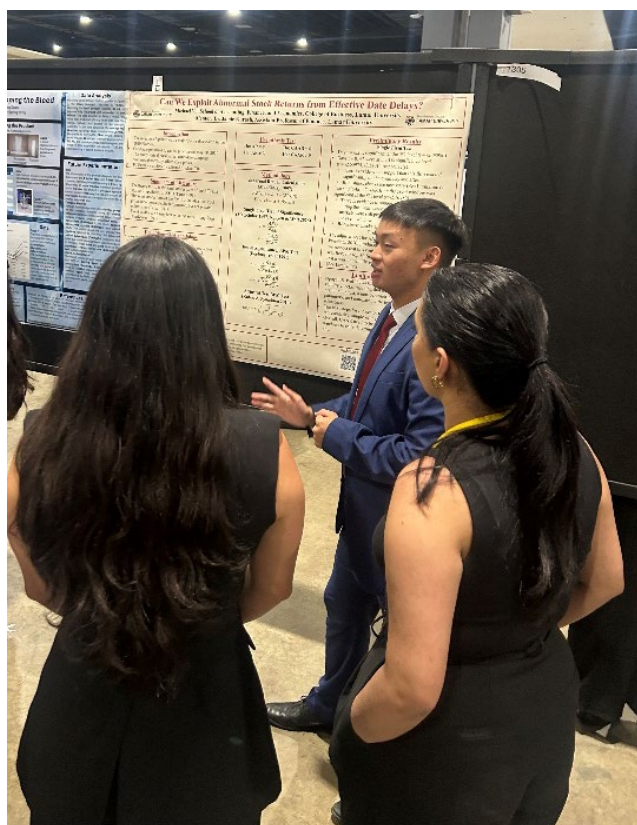
# O.U.R. Research Impact

## Michael Vu – Business Administration Major

National Conference on Undergraduate Research

Richmond, Virginia, April 13-15, 2026

Presenting at the National Conference for Undergraduate Research, NCUR 2026, held in Richmond Virginia on April 13-15, 2026, was a wonderful experience! I was able to obtain great feedback from other researchers and got to network with several participants across the nation at this annual showcase of undergraduate research on national scale. I had the great opportunity to explore other research projects! Additionally, I had a wonderful time exploring the Virginia State Capitol in my free time, looking at the history of our country and Virginia state, and seeing the culture of the city of Richmond.



Thank you, the Office of Undergraduate Research, the School of Accounting, Finance & Economics, as well as the Reaud Honors College's McMaster Grant for supporting my travel! The project presented was part of my undergraduate research grant developed during this university year.

-Michael Vu





# O.U.R. Research Impact

## Michael Vu – Business Administration Major

Discover Day, Baton Rouge, Louisiana, April 17, 2026

On April 17, I presented my URG project at the Louisiana State University's Discover Day, which is an annual undergraduate research conference. My mentor, Dr. Jamie Kurash, is an alumna of the LSU, and she encouraged me to present to this year's event (see our photo). With her assistance, I got to connect with the LSU faculty and to learn about possibilities of obtaining a Ph.D. degree in business at this prestigious school. This is my academic goal. During my presentation, the judges asked thoughtful questions, which helped me to get a new perspective on my project.



With this occasion, I had the opportunity to demonstrate my knowledge about the foundations of my theory, the Efficient Market Hypothesis, and to show how this framework could possibly be applied in the modern political economies. One cool sightseeing experience was getting to visit Mike the Tiger, which is the LSU mascot!

Overall, this trip was a wonderful experience for me, due to the networking opportunities, sightseeing, and learning about the possible ways to further my research and education.

-Michael Vu



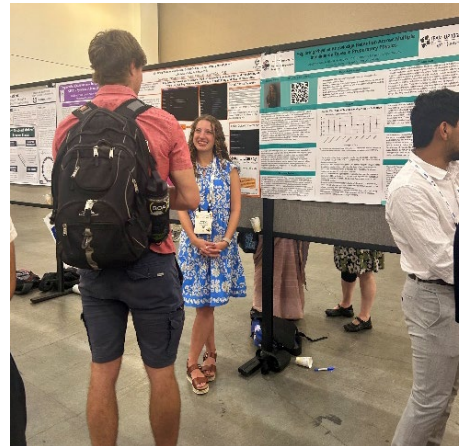
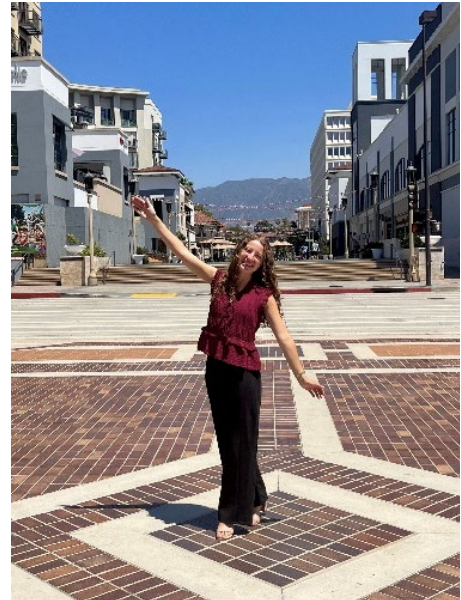
# O.U.R. Research Impact

## Abigayle Welch – Mechanical Engineering & Physics Major

**The American Association of Physics Teachers (AAPT) Summer Conference & The Physics Educators Researchers (PER) Conference  
Pasadena, California, July 19-24, 2026**

I had an incredible time presenting at the AAPT and PER conferences, held in Pasadena, California, this year. I enjoyed connecting with researchers of my age as well as learning from physics professors who have been researching for many years. It was such an amazing community, and it was so inspiring to hear how passionate they are about helping students. I also loved exploring Pasadena and Los Angeles. It was so incredible to see the culture difference and explore something so unique and beautiful.

Thank you so much to the Office of Undergraduate Research, the Reaud Honors College, and the College of Arts and Science for supporting my travel and sponsoring my participation to this event! My research presentation was based on what I learned during my O.U.R grant in Spring 2026. It truly was an incredible experience, and I am so thankful for this opportunity.



-Abigayle Welch





# External Summer Research Experience

**Homero Tijerina – Biochemistry Major**

**2026 Beck Fellow**

**Roswell Park Comprehensive Cancer Center, Buffalo, NY**

Participating in the Beck Fellowship at Roswell Park Comprehensive Cancer Center was one of the most meaningful and transformative experiences of my undergraduate education. As a Biochemistry student on the path to becoming a Physician Assistant, I have always been intrigued by how scientific discovery and patient care correlate together. This fellowship allowed me to experience that connection firsthand by working in an outstanding cancer research environment and contributing to a project focused on understanding the molecular mechanisms that drive tumor survival.

During my fellowship, I worked under the mentorship of Dr. Mukand Seshadri and his team, where I investigated the potential role of adrenergic receptor antagonists in regulating tumor angiogenesis in head and neck squamous cell carcinoma (HNSCC). The



goal was to determine whether adrenergic receptor blockers such as propranolol, labetalol, and tamsulosin could inhibit signaling pathways that contribute to the production of vascular endothelial growth factor (VEGF), a key driver of blood vessel formation within tumors. Because tumors often experience hypoxic conditions, they activate molecular pathways that promote angiogenesis to increase oxygen and nutrient delivery. However, the blood vessels that form are hastily and improperly made, leading to several issues.

The project focused on understanding whether adrenergic signaling plays a role in these processes and if blocking specific adrenergic receptors could reduce the activation of pro-angiogenic pathways. Through this work, I gained a much deeper appreciation and





understanding of the complexities of the biology of cancer and the many intricate signaling networks that monitor cellular behavior. Prior to this fellowship, many of the pathways I had learned about existed mainly as diagrams in lecture slides and were simply memorized for an exam. At Roswell Park, I had the opportunity to study these pathways in a real world setting and understanding that these pathways are crucial to comprehend how to create treatments to help people.

At Roswell Park I learned how to think more critically as a scientist. Research involves unexpected results, troubleshooting experiments, and adapting to new information. Throughout the fellowship, I participated in discussions regarding experimental design, data interpretation, and the biological significance of our findings. The fact that scientific

progress rarely occurs in a straight line was made a mantra in my mind. Scientific discovery requires patience, persistence, and a willingness to continue asking questions. These experiences helped me become more comfortable with uncertainty and strengthened my ability to analyze problems from multiple perspectives.

The fellowship also provided exposure to an environment dedicated to Translational research. Roswell Park is home to researchers, clinicians, and healthcare professionals who share the common goal of improving outcomes for cancer patients. Being surrounded by individuals committed to this mission was both inspiring and motivating. Their guidance helped me develop not only technical laboratory skills but also professional habits that will benefit me throughout my career. I observed the importance of collaboration, communication, organization, and scientific integrity. It reminded me that every experiment, every data point, and every research question ultimately carry the potential to impact real person. In realizing this it reinforced my desire to pursue a career in healthcare and reinforced my appreciation for translational research.

As I prepare for a future career as a Physician Assistant, I believe the Beck Fellowship has provided me with a unique perspective that will enhance my ability to serve patients. Understanding the scientific processes that drive medical advancements allows me to better appreciate how new treatments are developed and evaluated. The experience taught me to approach problems analytically, interpret evidence critically, and remain committed to lifelong learning, qualities that are essential for both researchers and healthcare professionals.





The Beck Fellowship was far more than a summer research experience. It was an opportunity to challenge myself intellectually, develop meaningful scientific skills, and contribute to research aimed at addressing one of the most significant health challenges facing society. Through this experience, I gained a deeper understanding of cancer biology, molecular signaling pathways, and translational research while also growing personally and professionally. I am incredibly grateful for the support provided by the David J. Beck Fellowship and for the opportunity to conduct research at Roswell Park Comprehensive Cancer Center. The knowledge, skills, and experiences I gained will continue to influence my academic journey and future career, and I am forever thankful for this opportunity to learn and grow as a student, but also as a person.

-Homero Tijerina



# External Summer Research Experience

**Sneha Jobby – Biology Major**

**2026 Beck Fellow**

**New England College of Optometry, Boston, MA**

The opportunities, encounters, and memories I experienced as a 2026 David J. Beck Fellow are unforgettable! This summer, I interned in the lab of Dr. Ananya Datta, PhD, at the New England College of Optometry, the oldest continuously operating optometry school in the United States, and the first established formal program for optometric training in America, located in Boston, Massachusetts. During my internship, I had the opportunity to undergo skills training, contribute to laboratory projects, and partake in seminars and presentations hosted by NECO's NIH/NEI-funded T35 Summer Research Training Program.



When I first arrived at NECO, I had little experience in animal research. Consequently, much of my first few weeks in Boston involved reading academic articles and training in handling mice, with the goal of familiarizing myself with recent research in the field and preparing me to handle more complex tasks. My first tasks inside the lab included practicing hands-on skills such as anesthesia, staining, and positioning mice for imaging. As my internship progressed, I also learned to collect tear fluid, interpret staining results, do tear ferning, assess blood glucose levels, conduct euthanization, enucleation, immunohistochemistry, and more.

Through NECO's Summer Research Training Program, I attended weekly seminars on topics ranging from "Introduction to Biostatistics" to the "Principles of Effective Science Presentations". As part of the program, I presented both poster and oral



presentations and am currently in the process of writing a manuscript. Being trained in how to analyze literature, navigate IRB and IACUC, and prepare effective poster and oral presentations contributed immensely to my development as a student researcher.

Some of the most valuable aspects of my internship have been the relationships



that I've been able to build with my mentor, Dr. Datta, and two graduate students in the lab, Joseph Carew (OD29) and Zoe Liu (OD29). From offering career guidance and professional development to connecting me with other faculty and students, I was able to form several positive connections due to the Beck fellowship. I had the opportunity to observe and learn imaging techniques from Dr. Datta and Joseph at the Harvard Center for Biological Imaging (Harvard CBI).

My experiences with the Office of Undergraduate Research prepared me well for my Beck Fellowship summer experience. Many of the skills I learned in Dr. Kucknoor's lab through the Undergraduate Research Grant program served as a strong foundation for the new skills I learned in Boston, and I am immensely grateful to Dr. Kucknoor, Dr. Bahrim, and the several faculty and programs at Lamar that have invested time and resources into my development as a student researcher. I'm so grateful for the Beck Fellowship and encourage all students to apply for the 2027 Beck Fellowship!

- Sneha Jobby



# External Summer Research Experience

**Isabella Tran – Biology Major**

**2026 Beck Fellow**

**Academia Sinica, Taipei, Taiwan**

I truly had the summer of a lifetime in Taiwan thanks to the Beck Fellowship! I had the wonderful opportunity to work alongside so many amazing individuals in Dr. Che-Ming (Jack) Hu's lab at Academia Sinica, all of whom were eager to share their projects and give me a behind-the-scenes look at the research being conducted in the fields of cancer biology and immunology. As a biology student with a goal to pursue an MD-PhD, this experience really allowed me to delve deeper into my interest in research, especially in fields that are becoming increasingly important, such as immunology.



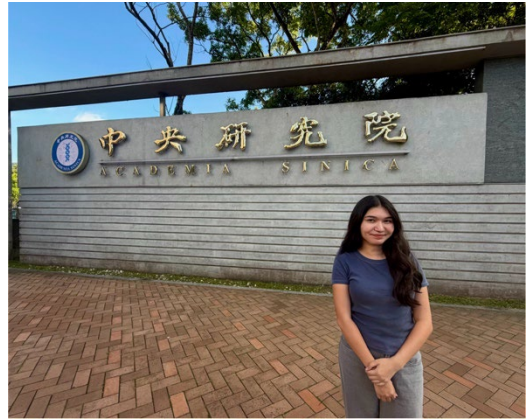
During my time in Dr. Hu's lab, I was put under the mentorship of a PhD student named Trang Nguyen. Her project focused on using the cells that the lab developed, called gelated cells. What makes these cells such a breakthrough is that they turn the inside of the cell into a gel while the outer part of the cell remains the same. This allows the cells to be locked into place for research, especially as live cells are vulnerable and do not live long outside the body. Trang is using these groundbreaking cells in her project



to measure immunopeptides with mass spectrometry more accurately than with normal cells. Mass spectrometry is known to be destructive to the sample, so using normal cells can mix the peptides we are looking for with all the other contents inside the cell. In comparison, gelated cells lock the inside of the cell in place, reducing interference during the detection of peptides and enhancing the results. Getting to learn, observe, and take part in the project allowed me to really apply what I knew before I first set foot in the lab.



Not only did I get the chance to learn about my mentor's project, but I also had many opportunities to be involved in the other projects that members of the lab were working on. All of the members were so eager to share details about their projects and ask me if I wanted to learn new skills, such as plasmid transduction, TCR therapy, immunoprecipitation, flow cytometry, injecting mice, and so much more that they were conducting for their projects. One of my favorite parts of the week was Friday, as the whole lab had



a three-hour meeting where some of the members discussed their projects and we read an article that one of the members found fascinating and thought could give a new perspective on their project. The meetings were really a chance to become more informed not only about the projects in the lab, but also about how to effectively present your research, as Dr. Hu always made sure to emphasize this during each meeting.



Beyond the research itself, one of my favorite parts of the internship was getting to know everyone in the lab. We ate lunch almost every day, and through those conversations, I learned so much about each person and their culture while building meaningful relationships! Before my internship ended, everyone in the lab had a lab outing. We met up with Dr. Ian Lian, my professor and mentor here at Lamar University, and had a teppanyaki lunch. It was such a memorable

moment, as it was really one of the last times I got to talk with the lab members before I left.

Outside of the lab, I made it my goal to explore as much of Taiwan as possible, as it was my first time abroad in Asia. I visited many places throughout Taipei and tried countless delicious foods that already make me want to book another flight back! I also ventured beyond the city and discovered a passion for hiking and nature. Visiting Yangmingshan during hydrangea season and hiking through Alishan while watching local tea farmers harvest leaves in the mountains were unforgettable experiences. I also explored Houtong Cat Village, Shifen, Jiufen, Sun Moon Lake, and several other beautiful destinations. If I had to choose one travel highlight from the entire trip, it



would be traveling to Kaohsiung during the Dragon Boat Festival holiday. Experiencing a city with such a different atmosphere from Taipei was incredible, from the black sand beaches to Lotus Pond with its Dragon and Tiger Pagodas. What made the experience truly unforgettable, though, was witnessing the Dragon Boat Festival races for the first time. Thousands of people gathered along the water to cheer on their family and friends, creating an electric atmosphere. I even met another traveler at my hostel who had come to Kaohsiung to compete in the races herself. It was such a unique cultural experience, and I feel incredibly fortunate to have been there to witness it.



As I go on to finish my degree and pursue a career in the medical field, I will take all that I have learned this summer through the Beck Fellowship and carry it all with me. The fellowship provided me with exposure to fascinating research and individuals that have given me a different perspective than before. I was not only able to gain new skills in the lab, but being in a lab in a different country, surrounded by people with a different culture and lifestyle, really allowed me to broaden my perspective, become more open-minded, and have a chance to grow both personally and professionally.



My experience could not have been possible without David J. Beck, Dr. Che-Ming (Jack) Hu, all of the members of his lab, and Dr. Ian Lian. I am also truly grateful to Dr. Zhifo Guo and the Office of Undergraduate Research for building my foundation in research and investing their time and support in my endeavors. I highly encourage students to apply to the Beck Fellowship, as it truly is an experience of a lifetime to learn, grow, and explore!

-Isabella Tran





# 2026 David J. Beck Fellows

## Making Connections at Partner Institutions



Sneha with Dr. Ananya Datta and peers at the New England College of Optometry's Summer Research Training Program.



Homero with Dr. Mukand Seshadri and his team at Roswell Park Comprehensive Cancer Center in Buffalo, New York.



Isabella at a teppanyaki lunch with Dr. Ian Lian (first row at the very right), Isabella's mentor at Lamar University, and Dr. Che-Ming (Jack) Hu's group from the Academia Sinica, Taipei, Taiwan.

# 2026-27 L.U.R.A. Officers



**President:**

**Priya Rathore**

Majors: Biology & Physics  
(Pre-Medicine)



**Event Coordinator:**

**Ashley Beavers**

Major: Psychology



**Vice-President:**

**Layali Abuselah**

Major: Chemical  
Engineering  
Minor: Business



**Recruitment**

**Director:**

Natalie Bean  
Major: Nursing  
Minor: Honors Studies



**Treasurer:**

**Saad Mohamed**

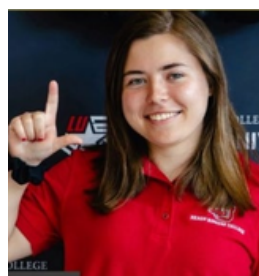
Major: Biology  
Minor: Chemistry  
(Pre-Medicine)



**Secretary:**

**Carina Wyman**

Major: Biochemistry  
(Pre-Medicine)

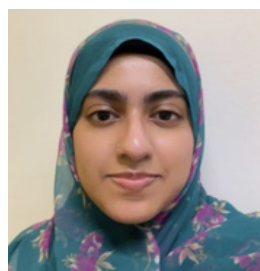


**Communications**

**Director:**

**Kayla McKinley**

Major: Exercise Science  
(Pre-Physical Therapy)



**SGA**

**Representative:**

**Ayna Arif**

Major: Psychology  
Minors: Chemistry &  
Biology (Pre-Medicine)



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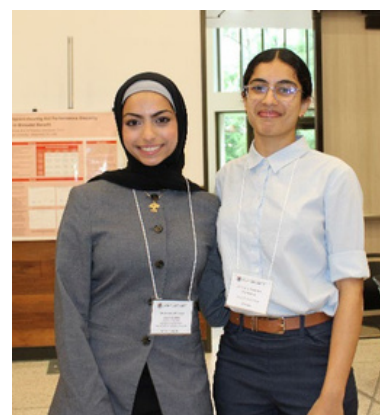
## Join our Student Organization!

The Lamar University Research Association (L.U.R.A.) was founded in Fall 2019 to give undergraduate students a community to connect, collaborate, and learn how to conduct research. With the growing quality and volume of research at Lamar, L.U.R.A. has become a key resource for building the next generation of student researchers.

L.U.R.A. connects students of all levels, from freshmen to seniors, with professors, mentors, and peers across the nation.

### L.U.R.A. offers

- Research opportunities at Lamar and beyond
- Tips for presenting research through posters and talks
- Peer mentoring and collaboration
- Workshops and panel discussions on various topics, including how to successfully apply to graduate schools



### Support & Contact

L.U.R.A. is supported by the Office of Undergraduate Research.

Follow us on Instagram or find us on LU Hub for more information.

**Instagram:** @LamarResearch

**Dr. Cristian Bahrim - Director of O.U.R.**

**Office:** Archer 100-D

**E-Mail:** cbahrim@lamar.edu



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