

ST. MARY'S UNIVERSITY

RESEARCH SHOWCASE 2024



ADAPTATION AND CHANGE IN THE AGE OF AI

**WEDNESDAY, APRIL 10, AND
THURSDAY, APRIL 11, 2024**



ST. MARY'S
UNIVERSITY

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Dear students, faculty, staff and guests,

We welcome you to our fourth annual Research Showcase event, themed “Adaptation and Change in the Age of Artificial Intelligence.” This year’s event promises to be an exciting exploration of the transformative power of artificial intelligence (AI) and its impact on various facets of our lives and society.

As we navigate through an era marked by rapid technological advancements, AI stands out as a pivotal force reshaping industries, economies and human experiences. From enhancing health care delivery to revolutionizing transportation systems, AI’s influence is pervasive, presenting both unprecedented opportunities and challenges.

Our Research Showcase will feature presentations, panel discussions, and interactive exhibits highlighting innovative research and projects that delve into the theme of Adaptation and Change in the Age of AI. Faculty members, students and staff from diverse disciplines will share their insights, discoveries and initiatives aimed at harnessing AI for societal benefit while addressing ethical, legal and societal implications. Our keynote speaker, Alberto Gomez, Ph.D., CEO of Better Futures Institute, will speak to how the Institute is addressing urban and social challenges in San Antonio through the intersection of technology, data, design, media production and workforce development.

This event offers a unique opportunity to engage with peers, exchange ideas and foster collaborations. Whether you are a seasoned researcher, a curious student or a dedicated staff member, your participation is integral to the success of our Research Showcase.

Join us as we explore the dynamic intersection of AI, adaptation and change, and understand how we can leverage emerging technologies to shape a more resilient and inclusive future.

We look forward to your active participation in this enriching event and thank everyone who helped make this event a success.

Sincerely,

Irene Holguin

Director, Office of Special Projects, Academic Research and Compliance

Melissa Karlin, Ph.D.

Director, Office of Student Research and Inquiry

ST. MARY'S UNIVERSITY CAMPUS MAP



MAP KEY

- | | | |
|---|---|---|
| 39 Adele Hall •▲ | 35 Donohoo Hall •▲ | 2 Reinbolt Hall
<i>Assumption Chapel</i> |
| 31 Albert B. Alkek Business Building | 27 Dougherty Hall •▲ | 22 Richter Math-Engineering Center |
| 43 Alumni Athletics & Convocation Center
<i>Bill Greehey Arena</i> | 28 Drone Lab | 1 St. Louis Hall (Administration)
<i>Business Office
Financial Assistance
Registrar's Office</i> |
| 10 Alumni Pavilion | 46 Founders Hall •▲ | 36 St. Mary's Research Center
<i>National Archives, Marianist Province of the
United States</i> |
| 45 AT&T Center for Information Technology | 34 Frederick Hall •▲ | 18 Treadaway Hall •
<i>Guadalupe Chapel
Recital Hall
University Police</i> |
| 23 Blume Library
<i>Cotrell Learning Commons
Starbucks
The Pub at St. Mary's</i> | 8 Garni Science Hall | 38 University Center
<i>Barnes & Noble at St. Mary's
Campus Life
Diamond Cafe</i> |
| 20 Blank Sheppard Innovation Center
<i>Opening Fall 2024</i> | 24 Law Administration Building
<i>Law Admissions Office</i> | <i>Residence hall •
The Village at St. Mary's ▲</i> |
| 37 Bordeaux Hall •▲ | 25 Law Classrooms Building
<i>Law Courtroom</i> | |
| 30 Casa Maria Marianist Residence | 33 Sarita Kenedy East Law Library
<i>Law Alumni Office
Law Commons</i> | |
| 6 Center for Life Directions | 44 Leies Hall •▲ | |
| 9 Chaminade Hall • | 32 Lourdes Hall •▲ | |
| 3 Chaminade Tower
<i>Admission Office</i> | 12 Marian Hall • | |
| 7 Charles Francis Hall | 11 Marianist Residence | |
| 41 Cremer Hall •▲ | 21 Moody Life Sciences Center | |
| | 56 Périgieux Hall •▲ | |
| | 26 Raba Law Building | |

SCHEDULE OF EVENTS

WEDNESDAY, APRIL 10

NOON TO 1 P.M.

Alumni Panel Lunch Discussion: The Importance of Research in Professional Life
Alumni Athletics & Convocation Center (AA&CC), Movement Studio
Boxed lunch will be provided.

1 TO 4 P.M.

Exhibition Event, Presenter Check-In, Poster Check-In and Registration Table
AA&CC, Auxiliary Gym
Refreshments will be provided. Students are eligible to win a \$50 visa gift card by participating in Wednesday's events.

THURSDAY, APRIL 11

8 A.M. TO 3 P.M.

Refreshments are available outside *University Center, Conference Room A (UC-A)* and outside the *AA&CC, Movement Studio*.

9 TO 9:25 A.M.

Sponsored Projects Oral Presentations
University Center, Conference Room B (UC-B)

9 TO 11 A.M.

Poster Presentations
AA&CC, Bill Greehey Arena

9 A.M. TO 3 P.M.

Research Showcase Theme Oral Presentations:
Adaptation and Change in the Age of AI
UC-A

Faculty and Staff Oral Presentations
UC-B

Student Oral Presentations

AA&CC, Classroom 2155, AA&CC, Classroom 2160, and University Center, Conference Room C (UC-C)

10:30 A.M. TO 3 P.M.

Internal Faculty Research Grant (IFRG) Presentations
AA&CC, Hospitality Suite

11 A.M. TO NOON

Faculty Sabbatical Oral Presentations
University Center, Alumni Conference Room

11:30 A.M. TO 1:30 P.M.

Boxed lunches will be available outside *UC-A* and outside the *AA&CC, Movement Studio*.

NOON TO 1 P.M.

StMU Scholars Panel
Blume Library, Cotrell Learning Commons

NOON TO 3 P.M.

Mexican American Studies Oral Presentations
UC, Alumni Conference Room
Laudato Si' Oral Presentations
AA&CC, Movement Studio

1:20 TO 3 P.M.

Summer Undergraduate Research Fellowship (SURF) Oral Presentations
UC-C

2 TO 3 P.M.

Art Faculty Bi-Annual Exhibition
Blume Library, Second Floor, Art Gallery

3 TO 3:30 P.M.

Networking and Social Reception
UC-A, Lobby

3:30 TO 5:30 P.M.

Keynote Speaker Presentation and Awards Ceremony
UC-A

DETAILED SCHEDULE OF EVENTS

WEDNESDAY, APRIL 10, NOON TO 1 P.M.

ALUMNI PANEL DISCUSSION: THE IMPORTANCE OF RESEARCH IN PROFESSIONAL LIFE ALUMNI ATHLETICS & CONVOCATION CENTER (AA&CC), MOVEMENT STUDIO

Moderator: Teresa Beam, Ph.D., Dean for the School of Science, Engineering and Technology
Boxed lunch will be provided.

ABOUT OUR PANELISTS



Aijalyn Gonzales (B.B.A. '23)

Digital Marketing and Content SEO Specialist, Hometown Hero

During her time at St. Mary's, Aijalyn Gonzales was a member of the Honors Scholars Program and TRiO Student Support Services, two communities that provided invaluable support and guidance to her academic career. She also worked as a Digital Marketing Assistant for TRiO SSS and a Social Media Assistant for the Rattler Success Center.

Gonzales was awarded the Lynda Ellis Outstanding Undergraduate Woman Award in 2022, by the Greehey School of Business and earned her B.B.A. in Marketing in May of last year with a 3.98 GPA.

Her undergraduate internship with digital marketing agency, Dentsu, and fellowship with the Multicultural Advertising Internship Program (MAIP) gave her an in-depth understanding of various fields in digital marketing. Gonzales briefly worked as an Events Marketing Intern with a Students + Startups partner over the summer and has worked as an SEO Manager for Sky Marketing since August of 2023. Her current role as Digital Marketing and Content SEO Specialist allows her to oversee the content and digital marketing strategy of the Austin-based company, Hometown Hero.

Gonzales credits her success to her faith in God, first and foremost, her family, and the support of her mentors and professors at St. Mary's.



Chrissy Barrera (B.S. '20)

Analytical Chemist, CITGO

Chrissy Barrera earned a B.S. in Environmental Science from St. Mary's University, with a focus in Geology and a minor in Energy Science and Policy. Barrera is pursuing a Ph.D. at Texas A&M University-Corpus Christi, specializing in Marine Biogeochemistry in their Coastal and Marine Systems Science Program. Her research focuses on analyzing compound-specific $\delta^{14}\text{N}/\delta^{15}\text{N}$ isotope ratios of amino acids using isotope ratio mass spectroscopy (IRMS) to gain insights into coastal ecosystem dynamics, marine processes, migration patterns and aquatic animals' trophic levels. Alongside

her academic pursuits, Barrera has worked as an analytical chemist for the CITGO Refinery Laboratory for the last two years, focusing on research and developing new analytical methods.



Matthew Howard (J.D. '13)

Director of the District Attorney's Office Conviction Integrity Unity, Bexar County

Matthew B. Howard is the Director of the Bexar County District Attorney's Office Conviction Integrity Unit. He has been with the Bexar County Criminal District Attorney's Office since June 2013. He has tried several dozen misdemeanors and felonies, and is board certified by the Texas Board of Legal Specialization in Criminal Law. Howard joined St. Mary's University School of Law as an Adjunct Professor, discussing wrongful convictions and habeas corpus, in Spring 2024.

Before moving to San Antonio, Howard earned his B.A. in Political Science from Baylor University. He then attended St. Mary's University School of Law, where he earned his J.D. and met his wife, Julie. He was an active member of Phi Delta Phi. He was also active in the Student Bar Association, serving as the SBA Special Prosecutor, and the Innsbruck Program, where he served as the Student Liaison.

Howard has had an active role in over a dozen cases recognized by the National Registry of Exonerations and worked with the Center for Death Penalty Litigation to develop the record and reach an agreement to a reformed sentence for an 11.071 applicant who had originally been sentenced to death. He has also litigated many post-conviction forensics motions, with a focus on post-conviction DNA under Chapter 64 of the Code of Criminal Procedure. He authored "Harnessing DNA's Power: A Comprehensive Discussion of Chapter 64 Motions and Hearings," published by the Texas Forensic Science Commission in November 2023, and was a contributor to the Quattrone Center for the Fair Administration of Justice's "Guidelines for Collaboration and Engagement: Prosecutors and Defense Counsel Working Together in Joint Post-Conviction Investigations," published in 2022.



Juan Valdez, Ph.D. (B.A. '14)

Senior Policy Advisor for the Mayor, City of San Antonio

Juan Valdez serves as a senior policy advisor for Mayor Ron Nirenberg, advising on affordable housing policy. He served as a steering committee member and a co-chair of San Antonio's Strategic Housing Implementation Plan, a \$3 billion affordable housing policy document and roadmap for the City of San Antonio.

Valdez played an integral role in the passage of the city's first-ever \$150 million affordable housing bond, which included funding for housing preservation, new construction and permanent supportive housing. He received his B.A. in Political Science at St. Mary's University and attended the University of Notre Dame, where he received his Ph.D. in Political Science.

WEDNESDAY, APRIL 10, 1 TO 4 P.M.

**EXHIBITION EVENT, PRESENTER CHECK-IN, POSTER CHECK-IN,
AND REGISTRATION TABLE**
AA&CC, AUXILIARY GYM

Refreshments will be provided. Grab a Research Showcase Passport and visit exhibitors to be eligible to win a \$50 visa gift card.

Exhibitors

1. Louis J. Blume Library
2. INSTA
3. Society for the Advancement of Chicanos/Hispanics & Native Americans in STEM (SACNASxSTMU)
4. *The Rattler* Newspaper
5. Department of Industrial/Organizational Psychology
6. Department of Public Health
7. Art Department
8. Department of Exercise and Sport Science
9. Drama Department
10. Office of Sponsored Projects, Academic Research and Compliance (SPARC)
11. Office of the Rector
12. Study Abroad and Exchange Programs
13. Department of Environmental Science and Sustainability
14. Department of Theology
15. Department of Political Science
16. Academic Media Center
17. Graduate English Literature and Language Program
18. McNair Scholars Program
19. Office of Residence Life
20. Office of Admission
21. Sigma Beta Chi
22. Honors Program
23. Campus Recreation
24. Master of Science in Program Evaluation
25. Department of Mathematics
26. Esports
27. Mariachi Cascabel
28. Student Educators Association for Dynamic Leadership (SEAL)
29. Marianist Archives
30. Air Force Manpower Analysis Agency*
31. Texas Biomedical Research Institute*
32. Public History/History
33. Biology Department
34. Communication Studies
35. Signify
36. Spring Research Fellowship
37. Title V BEST Drone Soccer
38. UT Health San Antonio Long School of Medicine MD/MSAI Dual Degree Program

**This group will offer a featured industry speaker at 2 p.m. and 3 p.m.*

THURSDAY, APRIL 11, 9 TO 9:25 A.M.

SPONSORED PROJECTS ORAL PRESENTATIONS
UNIVERSITY CENTER, CONFERENCE ROOM B (UC-B)

Establishing a BASE for Student Success: Harnessing our HSI Identity for Retention, Graduation, and Post-Bacc Success

Betsy Smith, Ph.D., Associate Professor of Political Science and Project Director, Title V BASE Grant

Emelen Cedillo, Assistant Project Director, Title V BASE Grant

Raul Zendejas, High-Impact Practices Specialist, Title V BASE Grant

Victoria Rodriguez, Student Success Support Specialist, Title V BASE Grant

THURSDAY, APRIL 11, 9 TO 11 A.M.

POSTER PRESENTATIONS
AA&CC, BILL GREEHEY ARENA

The annual Research Symposium and Creative Activities Exhibition fosters scholarly dialogue among students and faculty. Presenters at the exhibition display an assortment of projects including scientific investigations, analytical reviews or projects, innovations/inventions, honors theses, senior projects and original works of art, media, poetry or writing. This year we also have guest presenters from John Jay High School and St. Philip's College.

COUNSELING AND HUMAN SERVICES

1 John Baptist

The Relation of Self-Compassion and Sense of Belonging Among Adults from India Living in San Antonio

Research mentor: Dan Ratliff, Ph.D.

2 Alma Guerrero and Velma Torres-Quintana

Empowering Minds: Unleashing the School Counselor's Competence through Professional Development

Research mentor: Dan Ratliff, Ph.D.

3 Jill Nakrani, Anissa Castro and Maria Munoz

College Women's Emotional Outcomes to Causal Sex

Research mentor: Jiyoung Moon, Ph.D.

4 Velma Quintana and Alma Guerrero

Breaking Barriers, Building Bridges: Nurturing Cultural Competency for a Greater Sense of Belonging Proposal

Research mentor: Dan Ratliff, Ph.D.

5 Dan Ratliff, Ph.D., and Jasmine Brown

Evaluating the Potential Utility of ChatGPT in Exam Construction

6 Victoria Yaquian, Wren Hutchinson and Ariel Lemus

Exploring the Influences of Religion on Help-Seeking Behaviors in Latino/as

Research mentor: Jiyoung Moon, Ph.D.

CRIMINAL JUSTICE AND CRIMINOLOGY

- 7 **Sienna Sanchez**
Family Violence
Research mentor: Sue Nash, Ph.D.
- 8 **Kira Taylor**
Radioactivity and Organisms Don't Mix; Clearing up Nuclear Forensics and Radioactivity from Nagasaki to Chernobyl
Research mentor: Janet Armitage, Ph.D.
- 9 **Victoria Velasco**
Uncovering the Realities: How Does a Higher Education Prevent Students from Successfully Achieving their Dream Life?
Research mentor: Janet Armitage, Ph.D.

EXERCISE AND SPORT SCIENCE

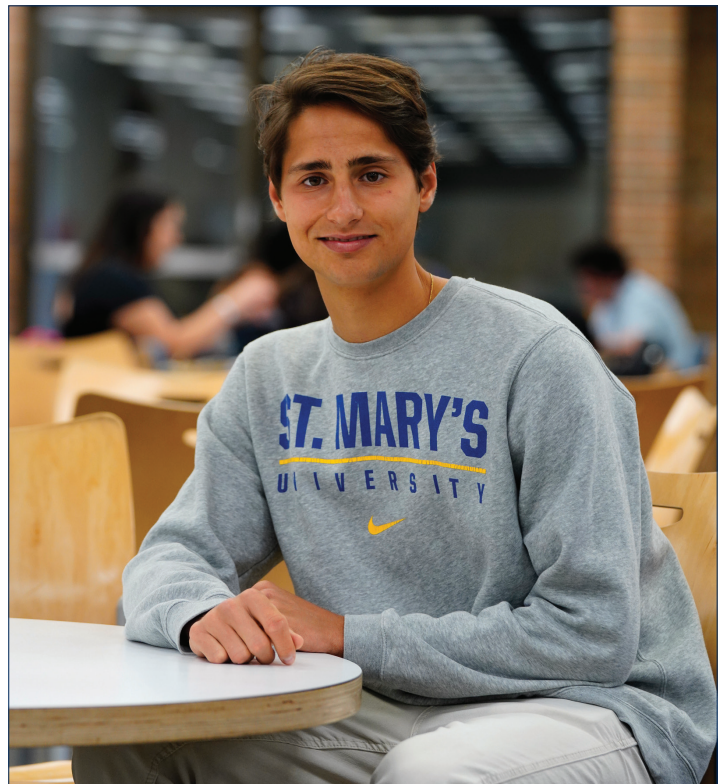
- 10 **Julia Daniel, Katarina Carrizales and Amaryllis Rubalcaba**
The Acute Effects of High-Intensity Functional Training on Inhibitory Control
Research mentors: Kelvin Wu, Ph.D., and Gary Guerra, Ph.D.

INTERNATIONAL STUDIES AND GLOBAL AFFAIRS

- 11 **Mariana Mata, StMU Research Scholar, and JeongHo Lee**
Fahter John Lee: A Civic Leader in Sudan
Research mentor: Céline Jacquemin, Ph.D.

PHILOSOPHY

- 12 **Marie Peterson**
The Virtue of a Marianist University
Research mentor: Andrew Brei, Ph.D.



POLITICAL SCIENCE

- 14 Haley Aleman**
Safe Streets, Secure Futures: Preventing Violent Crime in the United States
Research mentor: Leona Pallansch, Ph.D.
- 17 Sierra Christa**
In God We Trust but Not the US Executive Branch of Government
Research mentor: Leona Pallansch, Ph.D.
- 18 Julieta Cortez, StMU Research Scholar**
Sandra O'Connor Shedding Light on Women in Law
Research mentor: Leona Pallansch, Ph.D.
- 19 Nicole Estrada**
Going Green: Perspectives on State-Level Marijuana Legalization
Research mentor: Leona Pallansch, Ph.D.
- 20 Karicia Gallegos**
Female Labor Force Participation
Research mentor: Leona Pallansch, Ph.D.
- 21 Alex Garcia**
What Factors Impact Hispanic Voting Behaviors?
Research mentor: Leona Pallansch, Ph.D.
- 22 Analyssa Garcia**
Why Classification Matters: Latinos and Arab Americans, a Comparative Analysis
Research mentors: Belinda Román, Ph.D., Arturo Vega, Ph.D., Patricia Jaramillo, Ph.D.
- 23 Esmeralda Gomez**
Immigration
Research mentor: Leona Pallansch, Ph.D.
- 24 Elizabeth Gonzalez**
Civic Engagement Rights and Opportunity
Research mentor: Leona Pallansch, Ph.D.
- 25 Maria Fernanda Guerrero**
Healthcare Budget
Research mentor: Leona Pallansch, Ph.D.
- 26 Daniel Gutierrez**
Court Case Flow Management: Why Do Courts Delay?
Research mentor: Leona Pallansch, Ph.D.
- 27 Anna Herrera, StMU Research Scholar**
Navigating Barriers: Influences on Transgender Medical Care Policies
Research mentor: Leona Pallansch, Ph.D.



28 Jahrid Hollowell
Indigenous Rights Activist
Research mentor: Céline Jacquemin, Ph.D.

29 Amy Hotema
A Country Divided. Factors Contributing to Attitude on Abortions
Research mentor: Leona Pallansch, Ph.D.

30 Christian Lopez
The Dying America Dream
Research mentor: Leona Pallansch, Ph.D.

31 Lorena Maldonado
Why Women and People of Color Have Less Access to Proper Healthcare and Medical Treatment
Research mentor: Leona Pallansch, Ph.D.

32 Gabriela Mejia
Social Media in Politics
Research mentor: Leona Pallansch, Ph.D.

33 Hector Membreno III
Beyond the smoke: The Real Impact of Vaping on Teens
Research mentor: Céline Jacquemin, Ph.D.

34 Andrew Ramon
The Welfare Gauge: A Look into Feelings on Welfare
Research mentor: Leona Pallansch, Ph.D.




35 Joseph Reed, StMU Research Scholar
Trust in Government
Research mentor: Leona Pallansch, Ph.D.

36 Frank Reyna
Shaping Perspectives: Unraveling the Influences on Public Perception of US Foreign Aid to Ukraine
Research mentor: Leona Pallansch, Ph.D.

Promoting Biomedical and Behavioral Sciences Research and Research Careers

U-RISE is an NHI funded training program for students from populations historically underrepresented in STEM. The program provides students majoring in STEM or Behavioral Sciences disciplines opportunities to participate in biomedical research. Undergraduates participating will be provided with research experience, academic, financial and mentorship support to become competitive applicants for Ph.D. programs



 @StMU_URISE
 /in/stmu-urise
 @StMU_URISE

37 Greitin Rodriguez

Freedom of Speech

Research mentor: Leona Pallansch, Ph.D.

38 Gysele Rodriguez

Why Do Attitudes of Women Differ in the United States?

Research mentor: Leona Pallansch, Ph.D.

39 Lauren Sahadi

Climate Change: Who is Responsible for This?

Research mentor: Leona Pallansch, Ph.D.

40 Carollann Serafin

Immigration in America

Research mentor: Leona Pallansch, Ph.D.

41 Alexis Silva, Mikayla Trejo and Julieta Cortez

Sandra Day O'Connor

Research mentor: Céline Jacquemin, Ph.D.

42 Bryan Suarez

The Social and Economic Factors that Impact Student's STAAR Passage Rate

Research mentors: Leona Pallansch, Ph.D., Mona Lopez, Ph.D.

43 Vianna Villarreal, StMU Research Scholar

The Construct of Feminist Culture

Research mentor: Leona Pallansch, Ph.D.

44 Alexis Zepeda

Who Can You Trust?

Explaining What Causes Distrust in the Government

Research mentor: Leona Pallansch, Ph.D.

Building Capacity for Excellence in STEM Education

The Title V grant is creating capacity within the School of Science, Engineering and Technology to better serve not only Hispanic students, but all students, through new and updated Engineering curriculum, faculty development and student programming.

Contact Margaret Alarilla at malarilla@stmarytx.edu, for more information.



PSYCHOLOGY

- 45 Joseliz Andujar-Pimentel**
Imaging in the Fitness Industry: A Connection to Body Dysmorphic Disorder in Men and Women
 Research mentor: Jillian Pierucci, Ph.D.
- 46 Samantha Benitez**
What are the Features of Occupational Therapy Research in Literature?
 Research mentor: Jillian Pierucci, Ph.D.
- 47 Lizbeth Carbajal**
The Impact of Groupthink on the Common Good
 Research mentor: Janet Dizinno, Ph.D.
- 48 Xavier Castillo, StMU Research Scholar, Erika Aguirre and Quinn Gallagher**
Does the Number of Individuals Present in the Water Effect Dolphin Activity Levels?
 Research mentor: Heather Hill, Ph.D.
- 49 Megan E. Davis, Sara Robertson, Nez mari Cuellar and Tesa Mayorga**
Dolphin Dynamics: Analysis of Activity Levels Pre and Post Snorkeling Interactions
 Research mentor: Heather Hill, Ph.D.
- 50 Megan E. Davis and Hannelore Tampipi**
Assessing Bottlenose Dolphins' (Tursiops truncatus) Behavioral Responses to Discriminative Stimulus During Dolphin Interaction Programs
 Research mentor: Heather Hill, Ph.D.
- 51 Abigail Delarosa, Desiree Martinez and Emily Eardley**
Does Field Research Modify Academic Development?
 Research mentor: Heather Hill, Ph.D.
- 52 Sabrina Drouin, Charles Lares and Erika Aguirre**
Is There a Difference in Activity Level During Snorkels Compared to a Swimming Researcher?
 Research mentors: Heather Hill, Ph.D., Melissa Karlin, Ph.D., Kathleen Dudzinski, Ph.D.
- 53 Brianna Erck**
A Descriptive Study of Baseline Activity Levels of Tursiops Truncatus
 Research mentors: Heather Hill, Ph.D., Kathleen Dudzinski, Ph.D.
- 54 Sofia Estrada and Nez mari Cuellar**
The Complex Nature of Traumatized Individuals in Romantic Relationships Portrayed in Media
 Research mentor: Jillian Pierucci, Ph.D.

- 55 **Lyzette Flores**
The Effect of Music on the Cognitive Process of Time and Productivity in Individuals Diagnosed with ADHD
Research mentor: Jillian Pierucci, Ph.D.
- 56 **Alia Hernandez Daraiseh, Felice Freeman, Winter Saldana and Mario Martinez**
There a Difference in Average Dolphin Clustering During Snorkeling Compared to a Swimming Researcher?
Research mentor: Heather Hill, Ph.D.
- 57 **Alia Hernandez Daraiseh, Felice Freeman and Dallasstar Johnson**
Do Interactions with Snorkelers Alter Dolphin Use of Their Lagoon?
Research mentor: Heather Hill, Ph.D.
- 58 **Jadeith Hessbrook**
Intimate Partner Violence Among Refugees and Immigrants
Research mentor: Sue Nash, Ph.D.
- 59 **Aqsa Khan and Pedro Beltran**
A Deeper Dive into the Research Published About Pinnipeds and Cetaceans Using the Five-Domain Model
Research mentor: Heather Hill, Ph.D.
- 60 **Charles Lares**
"I Care About You" A Dangerous Phrase by an Abuser
Research mentor: Janet Armitage, Ph.D.
- 61 **Charles Lares**
HIV/AIDS: Information to Protect Yourself and Others
Research mentor: Sue Nash, Ph.D.

Latin Moses: A Print and Interactive Online Scholarly Edition and Translation of Latin Jubilees and the Testament of Moses

Principal Investigator: Todd R. Hanneken, Ph.D.



This project will produce print and hypertext editions of books attributed to Moses but excluded from the Jewish Bible. The books were written more than two thousand years ago and copied by Christians in the fifth century before being erased in the eighth century. Readers will be able to study the damaged manuscript through multispectral imaging.

Funding Agency: National Endowment for the Humanities

- 62 Esmeralda Lopez, McNair Scholar**
Where Do I Belong? How Acculturative Stress and Discrimination Influences Hispanic/Latinx
Research mentor: Alan Meca, Ph.D.
- 63 Esmeralda Lopez**
Así Suena la Vida: How the Latino Immigrant Life is Conveyed
Research mentor: Jillian Pierucci, Ph.D.
- 64 Makalah Maicas, Carla Canales and Helena Stina Svilberg**
Investigating the Relationship Between Preferred Learning Styles and Individual Characteristics
Research mentors: Jennifer Zwahr-Castro, Ph.D., Heather Hill, Ph.D.
- 65 Ana Alicia Moreno**
Facing Borderline Personality Disorder: The Frequency of BPD Symptoms in Movies
Research mentor: Jillian Pierucci, Ph.D.
- 66 Ana Ortega**
The Media Portrayal of the Effects of Working as a First Responder
Research mentor: Jillian Pierucci, Ph.D.
- 67 Arianna Ortiz, Morrigan Smith and Paola Medina**
Female Beluga Socio-Sexual During Breeding Season
Research mentor: Heather Hill, Ph.D.
- 68 Carina J. Pawlak and Irene Urbana Zuniga**
Representation of Dissociative Identity Disorder in the Media
Research mentor: Jillian Pierucci, Ph.D.
- 69 Carolina Pinales**
Eye Movement Desensitization and Reprocessing (EMDR) Therapy and its Literary Features
Research mentor: Jillian Pierucci, Ph.D.
- 70 Ambar Rissopatron-Salas and Anya Raynal**
The Demographics and Characteristics of Inmates in Texas: An Examination of Age, Sex and Race in Regard to Sentencing Disparities
Research mentor: Jillian Pierucci, Ph.D.
- 71 Michelle Rodriguez**
Deciding on What Snack to Grab? Consideration of Mexican and Non-Mexican Snacks' Nutritional Value
Research mentor: Jillian Pierucci, Ph.D.
- 72 Elizabeth Santos, U*RISE Scholar and Adelaido Reyna**
Identifying Intervention Services for Children with Developmental Differences in Africa: A Network of Need and Funding Sources
Research mentor: Jillian Pierucci, Ph.D.
- 73 Elizabeth Santos, U*RISE Scholar**
Investigating Changes in Psychosocial Function Across PTSD Outcomes in Military Personnel
Research mentor: Kiara Buccellato, Ph.D.
- 74 Alicia Virthe, Dallasstar Johnson and José Cornejo**
Is There a Difference in Average Dolphin Clustering from Before to After Snorkel Sessions?
Research mentors: Heather Hill, Ph.D., Kathleen Dudzinski, Ph.D., Melissa Karlin, Ph.D.
- 75 Ariah Walker**
"Why Not Me?": A Media Review of How a Lack of Romantic Experience in Adolescence Affects Self-Esteem in Adults
Research mentors: Jillian Pierucci, Ph.D., Jennifer Zwahr-Castro, Ph.D.



SOCIOLOGY

76 Sophia Huerta and José Cornejo

African American Marianists

Research mentors: Janet Armitage, Ph.D., Sue Nash, Ph.D.

ACCOUNTING

77 Ana Loza, Abigail Medlin and Madalyn Trevino

Fraud Detection in Financial Transactions

Research mentor: Ajaya Swain, Ph.D.

FINANCE AND RISK MANAGEMENT

78 Emily Do, Aaron Flores and Jason Sanchez

AI and the Effect on Supply Chain Management

Research mentor: Ajaya Swain, Ph.D.

79 Alvaro Garza, Brian Potter and Richard Moreno

AI in Financial Analysis

Research mentor: Nicole Kirpalani, Ph.D.

80 Noah Herrera

Marketing

Research mentor: Ajaya Swain, Ph.D.



MANAGEMENT AND MARKETING

81 Natalie Amezcuita

Sergio Zyman and His Impact on Soft Drink Marketing

Research mentor: Nicole Kirpalani, Ph.D.

82 Karla Fabian, Rebecca Difronzio, and Lillian Perigrino

Entrepreneurship

Research mentor: Ajaya Swain, Ph.D.

83 Lucero Galvez, McNair Scholar

A Solar Step to an EV Society

Research mentor: Ajaya Swain, Ph.D.

84 Sergio Palacios Wulschner, Lilian Hernandez Peregrino and Adriana Godoy

Innovating Business Models after Product-Market Fit

85 Natalia Ryng

Real Time BI for Fraud Prevention

Research mentor: Ajaya Swain, Ph.D.

211 Sophia Phelan

The Business of Education

Research mentor: Valarie Ballesteros, D.B.A.

BIOLOGY

86 Layla Abdulkaki, Spring Research Fellowship

The Influence of Cytotoxins in Abetting the Virulence of Mycoplasma Pneumoniae

Research mentor: Jesus Segovia, Ph.D.

87 Julieta Alarcon, Biaggini Scholar

cifA and cifB expression in response to Piwi and Aub Knockdown in JW18 D. Melanogaster Cells

Research mentor: Christine Gray, Ph.D.

88 Dylan Andrews, Spring Research Fellowship

Mycoplasma Pneumoniae Cards Toxin

Research mentor: Ahmad Galaldeen, Ph.D.

89 Luis Barco, Sara Ramos and Nathaniel Aguilar

An Examination of Insulin-Like Peptide 1 in D. Novamexicana

Research mentor: Lori Boies, Ph.D.

90 Emma Bazany

St. Philip's Extended Reality Initiative, Developing Grit in Students Through the Use of Virtual Reality (VR)

Research mentor: JoAnn Martinez, Ph.D., St. Philip's College

91 Dimitrios Bourmas and Callah Preti

Solvent-Assisted Ligand Exchange of Metal-Organic Frameworks

Research mentor: Pius Adelani, Ph.D.

JOIN TODAY

UPWARD BOUND PROVIDES OPPORTUNITIES FOR HIGH SCHOOL PARTICIPANTS TO SUCCEED IN THEIR PRECOLLEGE PERFORMANCE AND IN POSTSECONDARY EDUCATION. UPWARD BOUND SERVES LOW-INCOME AND/OR POTENTIAL FIRST-GENERATION COLLEGE STUDENTS. UPWARD BOUND AIMS TO INCREASE THE RATE OF PARTICIPANTS' SECONDARY EDUCATION GRADUATION AND POSTSECONDARY EDUCATION ENROLLMENT/GRADUATION.



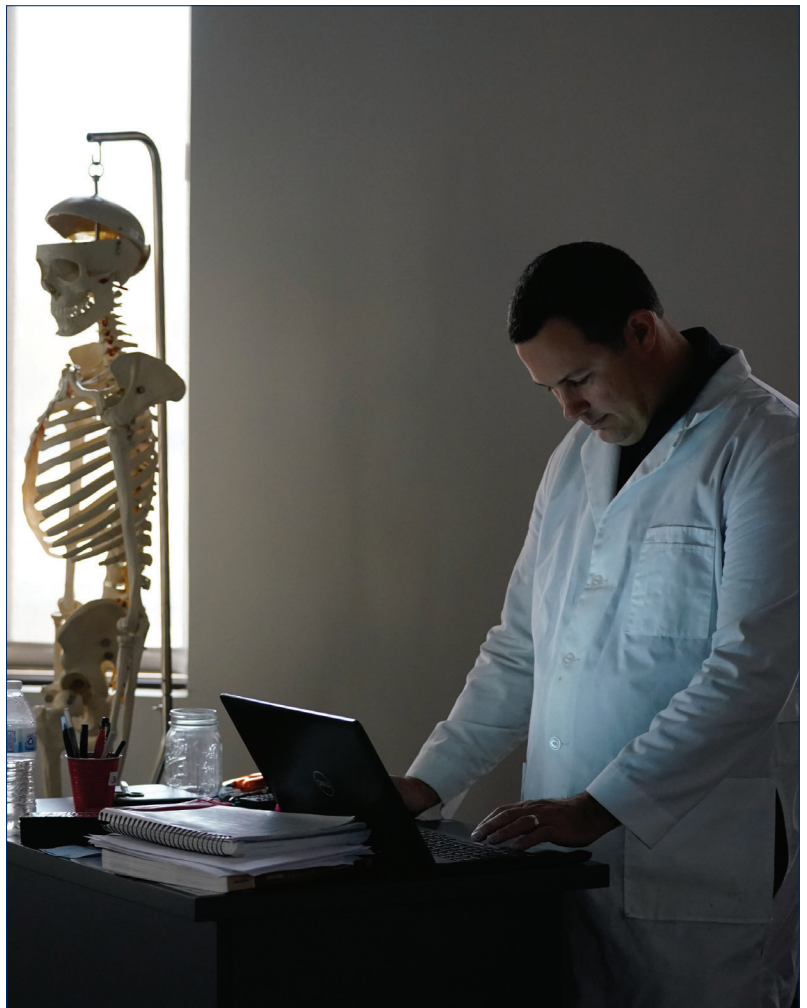
Rick Moreno, Ph.D.

Director of TRiO Upward Bound
Pre-College Program
upwardbound@stmarytx.edu

Scan the QR Code
for more information



- 92 Elias Ciudad, Biaggini Scholar**
*What About the Physician's Partner?
 A Statistical Study on
 Life Satisfaction*
 Research mentor: Lori Boies,
 Ph.D.
- 94 Elias Ciudad, Biaggini Scholar,
 Clarissa Morales and
 Kendra Lancaster**
*Evolutionarily Conservation of the
 Ilp3 gene in Drosophila*
 Research mentor: Lori Boies,
 Ph.D.
- 95 Maria Chiara Cossio,
 McNair Scholar**
*Spiking Frequency Dependence on
 Input Current in Relation with
 the Leaky Integrate-and-Fire
 Neuron Model*
 Research mentor: Fidel
 Santamaria, Ph.D., UT Health
 San Antonio
- 96 Alyssa David, Spring
 Research Fellowship**
*Mycoplasma Pneumonia Effects on
 the Lungs*
 Research mentor: Jesus Segovia,
 Ph.D.
- 97 Jalyn De La Fuente,
 U*RISE Scholar**
*Effects of Mutant CARDS Toxin on
 Alveolar Cell Lines*
 Research mentor: Jesus Segovia,
 Ph.D.
- 98 Joshua Do, Spring Research
 Fellowship, and Rosanna Jeas**
*Tripodal Naphthalene Mono
 Imide Chemosensor for Detection of
 Metal Ions*
 Research mentor: Erendra
 Manandhar, Ph.D.



- 99 Monabelle Elbayeh, Spring Research Fellowship**
The Effects of SOX18 Gene Expression in ES8 (Ewing Sarcoma) Cell Line
Research mentor: Terry Shackleford, Ph.D.
- 100 Maria Gamez**
Analysis of Nile Red and GFP dyed microplastics on C. Elegans
Research mentor: Jennifer Harr, Ph.D.
- 101 Paola Garcia, U*RISE Scholar**
Effects of Microplastic Exposure on C. elegans Brood Size
Research mentor: Jennifer Harr, Ph.D.
- 102 Jaclyn Gonzales**
Comparison of Pattern of Spectra in Automotive Paints By FT-IR Spectroscopy for Forensic Analysis
Research mentor: Susan Oxley, Ph.D.
- 103 Abby Guerrero, Spring Research Fellowship**
The Role of the Diagnostic Amino Acids Present in Teleost Estrogen Receptors in Their Differential Binding to Selective Receptor Modulators
Research mentor: Mary Beth Hawkins, Ph.D.
- 104 Ayesha Hussain, Spring Research Fellowship**
Functions of the Epigenetic Modifications and DNA Damage in Longevity and Cancer Development Seen Through the Comparison of Naked Mole Rats and Mice
Research mentor: Lu Wang, Ph.D., UT Health San Antonio
- 105 Rosanna Jeas, Spring Research Fellowship, and Joshua Do**
Tripodal Naphthalene Mono Imide Chemosensor for Detection of Metal Ions
Research mentor: Erendra Manandhar, Ph.D.
- 106 Sunyte Jordan**
Gene Annotation on Sub Obscura
Research mentor: Lori Boies, Ph.D.
- 107 Sunyte Jordan**
Multi-lingual Science Communication
Research mentor: Jennifer Harr, Ph.D., and David Turner, Ph.D.
- 108 Chiara Angelyn Maldonado, Spring Research Fellowship**
The Effect on Life from What's on Microplastics
Research mentor: Jennifer Harr, Ph.D.
- 109 Jeremy Mares, Spring Research Fellowship**
How Do Vascular Smooth Muscle Cells Handle Varying Amounts of Microplastics?
Research mentor: Verónica Contreras-Shannon, Ph.D.
- 110 Theresa Mayorga**
What are Female Beluga Whales Doing During Breeding Season?
Research mentor: Heather Hill, Ph.D.
- 111 Yairy Mendez, Maria Chiara Cossio and Mary Arden Guillory**
The GEP Pathways Project: Annotation of D. albomicans
Research mentor: Lori Boies, Ph.D.
- 112 Van Nguyen, Spring Research Fellowship, and Amy Torres**
Annotation of Insulin Signaling Pathway Genes in Drosophila
Research mentor: Lori Boies, Ph.D.
- 114 Gina Noriega, Biaggini Scholar, Andrea Paredes and Benjamin T. Enslow**
Effects of adiponectin stimulation on B cell CD36 and T-bet expression
Research mentor: Benjamin T. Enslow, M.D.
- 116 Vanessa Ortiz, Biaggini Scholar**
Optimization of DNA Extraction from Forensic Relevant Samples
Research mentor: Jennifer Harr, Ph.D.
- 117 Michele Oyarzabal, Biaggini Scholar**
Anatomical Description of the Fossil Marsupial Nimbacinus dicksoni Cranial Endocast
Research mentor: Thomas Macrini, Ph.D.
- 118 Andrea Paredes, U*RISE Scholar, Sophia Noriega, Valeriia Klepikova and Alexandria Ho**
Characterizing the Relationship Between T-bet and CD36 in B-Cells
Research mentors: Benjamin T. Enslow, M.D., Terry Shackleford, Ph.D.
- 119 Riya Patel**
Navigating the Flow: An Analysis of Misinformation in Menstrual Health TikToks
Research mentor: Kathleen Vincent, M.D., UT Medical Branch
- 120 Mario Ramirez, U*RISE Scholar**
MRP Inhibition in Macrophages and Smooth Muscle Cells
Research mentor: Verónica Contreras-Shannon, Ph.D.
- 121 Amy Torres, Biaggini Scholar**
Adapting a Novel Fluorescence for Estrogenic Compounds to Investigate Differential Ligands to Estrogen Receptors
Research mentor: Mary Beth Hawkins, Ph.D.
- 122 Jocelyn Torres and Aileen Trevino**
Genetic Mapping of L.4.1 Mutant of Drosophila Melanogaster
Research mentor: Christine Gray, Ph.D.

123 Eugene Tran

The Phenotypic analysis, genetic mapping, and DNA sequence analysis of the L.4.1 mutation in Drosophila melanogaster

Research mentor: Christine Gray, Ph.D.

124 Adrian Velez

Gene Annotation Project of Ilp4 in D. subobscura and D. guanche

Research mentor: Lori Boies, Ph.D.

125 Anna Marie Wojnar, U*RISE Scholar

Mycoplasma Pneumoniae: The Story of a Pathogen that Played its CARDS Right

Research mentor: Jesus Segovia, Ph.D.

EXPLORING THE MARIANIST CATHOLIC RESPONSE TO RACIAL JUSTICE IN THE CONTEXT OF BLACK CATHOLIC PARISH AND COMMUNITY CHANGE

Janet S. Armitage, Ph.D., Sue P. Nash, Ph.D.,
Sister Laura M. Leming, FMI, Ph.D.,
The Rev. Anthony P. Pogorelc, PSS, M.Div., S.T.L., Ph.D.

Eighteen-month exploration of the overlooked Marianist response to mid-20th century U.S. racism towards African Americans in lay and professed lives. We contextualize with U.S. social movements and the body of CST to understand Marianist actions and/or inactions and the importance of underlying influences that shaped racial justice responses aligned with the Marianist charism.

Funded by the Louisville Institute, this is an opportunity for undergraduate students to experience mentored research including presentations and conferences at: The Louisville Institute Winter Seminar Conference (Janet Armitage, 2024), The Conference on Medicine and Religion (Sue Nash, 2024), and The St. Mary's Undergraduate Research Symposium (Sophia Huerta & Jose Cornejo, 2024).

CHEMISTRY AND BIOCHEMISTRY

- 126 Samantha Aragon, U*RISE and Welch Scholar, Franchesca Tinacba and Camille Kwan**

Self-Assembly of Core-Substituted Naphthalene Diimide Based Palladium(II) and Platinum (II) Macrocycles

Research mentor: Erendra Manandhar, Ph.D.

- 127 Alycia Caban-Johnson**

The Quantification of Essential Oils and Bixin in Annatto Seeds

Research mentor: Susan Oxley, Ph.D.

- 128 Cynthia Domergue**

Adhesive Forces of Minerals and Substrates

Research mentor: William Cross, Ph.D., South Dakota School of Mines and Technology

- 129 Cynthia Domergue and Kimberly Hernandez**

The Synthesis of Ugi Adducts of Isatin and Hydrothermal Synthesis of Coordination Polymers

Research mentor: Pius Adelani, Ph.D.

- 130 Malachi Farley**

Trace Metal and Anion Profiling in Local Water Systems: An Analysis using Ion Chromatography and Flame Atomic Absorption Spectroscopy

Research mentor: Susan Oxley, Ph.D.

- 131 Lizana Juarez, U*RISE Scholar**

The Effects of Tubulin Binding Drugs on The Kinetics of Foam Cell Formation

Research mentor: Verónica Contreras-Shannon, Ph.D.

- 132 Valeriia Klepikova, Spring Research Fellowship, Andrea Paredes and Gina Sophia Noriega**

Differential Expression of The Fatty Acid Transporter CD36 in T-bet+ versus T-bet- B cells

Research mentor: Benjamin T. Enslow, M.D.

- 133 Camille Kwan**

Quantification of Caffeine in Tea
Research mentor: Susan Oxley, Ph.D.

- 134 Adriana Rodriguez, Adriana Diane Rodriguez and Elisa Rodriguez**

Hunting the L.4.1 mutant: Between the Dark82 gene and the Ehb1 gene in Drosophila Melanogaster

Research mentor: Christine Gray, Ph.D.

- 135 Daniela Wong**

Quantification of Caffeine and Vitamin B6 in Various Energy Drinks Using HPLC-UV to Analyze Which Could Be Worse for Consumption

Research mentor: Susan Oxley, Ph.D.



COMPUTER SCIENCE

136 Ruben Becerril

Tea Shop Manager

Research mentor: Carol Redfield, Ph.D.

137 Faith Chapman

The Game of Traffic Lights

Research mentor: Carol Redfield, Ph.D.

138 James Clark

Atlas Fitness

Research mentor: Carol Redfield, Ph.D.

139 Bronya Del Carmen

SDC's Doki Doki Literature Club: The True Reality - Expanded and Patched

Research mentor: Carol Redfield, Ph.D.

140 Juni Ejere

Delivered: Mail Delivery Notification App

Research mentor: Carol Redfield, Ph.D.

141 Lauren Escobedo

Chesster

Research mentor: Carol Redfield, Ph.D.

142 Gabriel Fernandez

Attendance Tracker

Research mentor: Carol Redfield, Ph.D.

143 Shyann Francis

Nookipedia

Research mentor: Carol Redfield, Ph.D.

144 Cayden Garcia

Chess.io

Research mentor: Carol Redfield, Ph.D.

145 Josua Hall

Athletia - Sports Event Management Platform

Research mentors: Arthur Hanna, Ph.D., Carol Redfield, Ph.D.

146 Emily Medlin, Ruben Berreil, Joshua Uribe and Sage Vantine

Rattler NoteHub

Research mentor: Carol Redfield, Ph.D.

147 Laura Moralez, Albert Mendez, Carina Vlaun and Feras Rabee

Tech It Out

Research mentor: Carol Redfield, Ph.D.

148 Samson Pullattu and Mohammed Hani Shaik

PinkCat - St. Mary's AMC Website

Research mentor: Carol Redfield, Ph.D.

149 Sara Ramos, Eric Bunn, Gabriel Fernandez and Antonio Vega

Volun-Here!

Research mentor: Carol Redfield, Ph.D.

150 Natalie Rankin

An Analytical Study on Firewalls: Types, Benefits, Drawbacks, and Future Directions

Research mentor: Ayad Barsoum, Ph.D.

151 Eliseo Rico

Hold'em Accountable

Research mentor: Carol Redfield, Ph.D.

152 Jeremiah Rodriguez

Training Mode

Research mentor: Carol Redfield, Ph.D.

153 Ricardo Rodriguez

Air Quality Checker

Research mentor: Carol Redfield, Ph.D.

154 Kylee Smith, Juan Jose Gutierrez Rodriguez and Sergio Pena

Facilities Submission Form

Research mentor: Carol Redfield, Ph.D.

155 Juan Vargas

CNC Sales Management

Research mentor: Carol Redfield, Ph.D.



ENGINEERING

156 Andres Aguirre-Mesa

Drone Soccer

Research mentor: Nicole Kirpalani, Ph.D.

157 Margaret Alarilla, Juan Ocampo, Ph.D., Adrian Roda and Alexis Nunez

Title V BEST - Building Capacity for Excellence in STEM Education

158 Sarah Aldhafeeri, Fillip Cannard, Shea Spellman and Kaitlyn Ledon

*DriverTech
Communication System*

Research mentor: Ben Abbott, Ph.D.

159 Katia Campos, Alfonso Gonzalez and Olivia Rojas

*Finger Contracture Relief
Sensorized Splint*

Research mentor: Juan Ocampo, Ph.D.

160 Aiden Garcia and Christian Garza

*Exploring the Impact of Infill
Pattern on Strength*

Research mentor: Juan Ocampo, Ph.D.

161 Luz Manchego, Spring Research Fellowship

AI domain

Research mentor: Damiano Torre, Ph.D.

162 Elijah McNeil and Jahrid Hollowell

*Low Ambient Heat Pump
Enhancement and Condensate
Management Systems*

Research mentor: Juan Ocampo, Ph.D.



163 Akshay Modi

*Fatigue Analysis of Copper
Alloys Under Air Conditioning
Vibration Environments*

Research mentors:
Juan Ocampo, Ph.D.,
Gopalakrishnan Eswaran,
Ph.D., Winston Erevelles,
Ph.D.

164 Kimberly Tse, Joshua Riojas, Fillip Cannard and Luz Manchego

*Ripples to Coordinates: CNN's for
Radio-Based Localization*

Research mentors: Damiano Torre, Ph.D., Andres Aguirre-Mesa, Ph.D., Ben Abbott, Ph.D.

ENVIRONMENTAL SCIENCE AND SUSTAINABILITY

165 José Cornejo

Beneath the Surface: Exploring the Power of Seagrass in European Marine Rewilding

Research mentor: Melissa Karlin, Ph.D.

166 Julia De La Cruz

Using Non-Invasive Technologies to Measure Coyote Morphology in Support of An Applied Conservation Genetics Project

Research mentor: Melissa Karlin, Ph.D.

167 Ana Diaz

Rewilding the "Wild West": Restoring Bison Populations in the American Prairie

Research mentor: Melissa Karlin, Ph.D.

168 Soojin Luna

Raising Argentine Jaguars to be Wild Again

Research mentor: Melissa Karlin, Ph.D.

169 Antonio Martinez

Rewilding the World: How Rewilding Can Revitalize Ecosystems and Restore Biomes

Research mentor: Melissa Karlin, Ph.D.

170 Evelynn Mitchell, Ph.D.

A CURE Style Geophysics Course to Build Undergraduate Research Skills: Lessons Learned

171 Giuliana Porzio Cuenca

Restoring Nature's Balance: Rewilding in the Central Apennines

Research mentor: Melissa Karlin, Ph.D.

172 Bianca Ramos

Rewilding the Scottish Highlands
Research mentor: Melissa Karlin, Ph.D.

173 Bianca Ramos

Spatial Patterns of Canid Diet and mtDNA Haplotype Grouping in South Texas

Research mentor: Melissa Karlin, Ph.D.

174 Andrea Realyvasquez

Rewilding in North America: How the Disconnect Between the Government and the People Impede Conservation Efforts

Research mentor: Melissa Karlin, Ph.D.



PHYSICS

- 175 Jady Abrego, Chloe Barickman, Julia Daniel, Angelica Garcia, Francisco Garcia, Marian Hernandez, Hailey Lechuga, Addison Mata, Emma Milam, Clarisa Morales, Sophia Noriega, Michele Oyarzabal, Franchesca Tinacba, Hannah Voirin and Margaret Wirebaugh**
Changes in Battery Charge Capacity due to Size of Discharge Current
Research mentors: Sigrid Greene, Ph.D., Patrick Greene, Ph.D.
- 176 Angela Calderon, Katarina Carrizales, Andre Chtata, Alyssa Elizondo, Osvaldo Fajardo, Pamela Jones, Nya Millender, Dasani Olivarez, Eliana Olivas, Cole Pinkerton and Victor Velazquez**
(In)Consistency of Behavior of CR2016 Batteries
Research mentors: Sigrid Greene, Ph.D., Patrick Greene, Ph.D.
- 177 Magnus Ethridge**
Monolayer h-BN Memristor with Asymmetric Metal Electrodes
Research mentors: Hui-Ping Chang, Ph.D., UT Austin, Jean Anne Incorvia, Ph.D., UT Austin

HONORS PROGRAM

- 178 Christa Neumann**
An Exploration of Horror in Franz Kafka's "The Metamorphosis"
Research mentor: Benjamin Doty, Ph.D.
- 179 Bianca Ramos**
Through the Lens of Trauma: Analyzing Narrative Voice in The Handmaid's Tale
Research mentor: Benjamin Doty, Ph.D.
- 180 Brissa Campos Toscano**
Living Motherland: The Life and Experience of German-Peruvian Internees in Crystal City Internment Camp
Research mentor: Teresa Van Hoy, Ph.D.
- 181 Claire Saldana**
Sister Cities International Exchange Project: San Antonio MRC
Research mentors: Betsy Smith, Ph.D., Camille Langston, Ph.D.
- 182 Martin Beirne**
Objective.gg: Uniting Scholastic Esports
Research mentors: Camille Langston, Ph.D., Guillermo Martinez, Ph.D.
- 183 Isaiah Chavez**
The Dynamics of Success: Exploring the Effectiveness of Supranational Organizations on Investment Projects
Research mentors: Camille Langston, Ph.D., Barclay James, Ph.D.
- 184 Nadia Abdalbaki**
Obesity: The Effects on Health and Healthcare
Research mentor: Camille Langston, Ph.D.
- 185 Luis Barco**
Cold Medicine: Potential Gateway Drug?
Research mentor: Lori Boies, Ph.D.
- 186 Rachel Miranda**
Depression and Marijuana Use in Youth and Its Relationship to Utilization of Mental Health Services
Research mentor: Lori Boies, Ph.D.
- 187 Fazila Haque**
Fluorescent Chemosensor Binding to Trivalent Metal Ions
Research mentor: Susan Oxley, Ph.D.
- 188 Ayden Soliz**
Orchestrate
Research mentor: Carol Redfield, Ph.D.
- 189 Kelsey Ann Chorath**
Statistical Analysis of Recent Trends in Nuclear Verdicts
Research mentor: Kaitlin Hill, Ph.D.
- 190 Keily Hart**
Analyzing Trends in Ground-Level Ozone
Research mentors: Kaitlin Hill, Ph.D., Javier Rojo, Ph.D., Indiana University
- 191 Sage Vantine**
Applications of Survival Estimation Under Stochastic Order to Cancer: The Three Sample Problem
Research mentors: Kaitlin Hill, Ph.D., Javier Rojo, Ph.D., Indiana University

JOHN JAY HIGH SCHOOL

- 192 Patrick Amann, John Jay Science and Engineering Academy
- 193 Anthony Castaneda, John Jay Science and Engineering Academy
- 194 Daniel Fletcher, John Jay Science and Engineering Academy
- 195 Joseph Garcia, John Jay Science and Engineering Academy
- 196 Anthony Gil, John Jay Science and Engineering Academy
- 197 Zachary Gomez, John Jay Science and Engineering Academy
- 198 Blade Hart, John Jay Science and Engineering Academy
- 199 Kyle Jackson, John Jay Science and Engineering Academy
- 200 Samuel Jones, John Jay Science and Engineering Academy
- 201 Francisco Martinez, John Jay Science and Engineering Academy
- 202 Kaile Mckinney, John Jay Science and Engineering Academy
- 203 Ellis Meyer, John Jay Science and Engineering Academy
- 204 Victor Moran, John Jay Science and Engineering Academy
- 205 Shuhei Ogasawara, John Jay Science and Engineering Academy
- 206 Victoria Rangel, John Jay Science and Engineering Academy
- 207 Emma Saenz, John Jay Science and Engineering Academy
- 208 Humberto Sanchez, John Jay Science and Engineering Academy
- 209 Advait Sunilkumar, John Jay Science and Engineering Academy
- 210 Cyrus Tashvighi, John Jay Science and Engineering Academy



THURSDAY, APRIL 11, 9 TO 3 P.M.

**RESEARCH SHOWCASE THEME ORAL PRESENTATIONS:
ADAPTATION AND CHANGE IN THE AGE OF AI**

UC-A

9 TO 9:25 A.M.

The Future of Aerospace Structural Integrity in the Age of AI

Juan Ocampo, Ph.D., Department Chair and Associate Professor of Engineering

9:30 TO 9:55 A.M.

Computers in Fiction: Can We Do the AI?

Carol Redfield, Ph.D., Department Chair and Professor of Computer Science

10 TO 10:15 A.M.

Characterization of Transmission Gratings in Photorefractive Materials

Diego Figueroa, Applied Physics major

Research mentors: Austin Scott, Ph.D., and Partha Banerjee, Ph.D., University of Dayton

10:20 TO 10:35 A.M.

Role of Quantum Processes in Artificial Intelligence

Muntakim Haque, Computer Science graduate student

Research mentor: Arthur Hanna, Ph.D.

10:40 TO 10:55 A.M.

Immersive Impetus: A Study of Native-Speaker Simulations and Virtual Reality in Spanish Courses

Amy Hardy, Business major, St. Philip's College

Research mentor: Spencer Galvan, St. Philip's College

11 TO 11:15 A.M.

Generative AI and the Creative Potential of Machines

Aaron Flores, Finance and Risk Management major

Emily Do, Management and Biology double major

Research mentor: Ajaya Swain, Ph.D.

11:20 TO 11:35 A.M.

Finance and Risk in Operations Management

Richard Moreno, Finance and Risk Management major

Alvaro Garza, Finance and Risk Management major

Brian Potter, Management major

Research mentor: Ajaya Swain, Ph.D.

11:40 TO 11:55 A.M.

Evaluating the Impact of Technology Integration on Operational Performance in Marketing Campaigns

Sherisa Orozco, International Business and Marketing double major

Cassandra M. Cardenas-Torres, International Business major

Research mentor: Ajaya Swain, Ph.D.



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THE EQUIPMENT GRANT PROGRAM THROUGH THE WELCH FOUNDATION SUPPORTS THE ACQUISITION OF IMPEDANCE ANALYZER WITH TEMPERATURE AND HUMIDITY-CONTROLLED CHAMBER, VACUUM OVEN, AND ANALYTICAL CELL KIT. THESE PIECES OF EQUIPMENT ARE HOUSED IN THE DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY (STMU) TO SUPPORT ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY (EIS) AND CYCLIC VOLTAMMETRY (CV) STUDIES.

Interested students should contact the PI for (a) Chemical Research Course (CH4125 & CH4325), (b) Course-based Undergraduate Research Experiences (CUREs Lab - CH3440), and (c) Summer Undergraduate Research Fellowship (C-SURF).



12:20 TO 12:30 P.M.

Break

Refreshments are available outside UC-A and outside the AA&CC, Movement Studio.

12:30 TO 12:55 P.M.

The Limits of Legal Practice as a Justification for Legal Pedagogy: The Case of Generative AI

Michael Smith, J.D., Assistant Professor of Law

1 TO 1:25 P.M.

The Opacity of Expert Systems and the Challenge of Values Alignment

Edward Epsen, Ph.D., Visiting Assistant Professor of Theology

1:30 TO 1:55 P.M.

AI Music Platforms: Royalty-Free Music at Your Fingertips

Michael Gomez, Adjunct Professor of Music Production

2 TO 2:25 P.M.

AI Love You: What Science Fiction Teaches Us About Imaginary Friends, Digital Lovers, and the Future of Companionship in the Age of AI

Josh Doty, Ph.D., Department Chair and Associate Professor of English Literature and Language

2:30 TO 2:55 P.M.

AI at St. Mary's: Results from the Faculty and Student Surveys

Angeli Willson, Ph.D., Department Chair and Associate Professor of Education

Jeff Schomburg, Executive Director of Academic Technology Services

THURSDAY, APRIL 11, 9:30 A.M. TO 3 P.M.

FACULTY AND STAFF ORAL PRESENTATIONS

AA&CC, MOVEMENT STUDIO, AND UC-B

9 TO 9:25 A.M.

Vulva Centric Femvertising: A Case from Malaysia

Siti Aqilah Binte Jahari, Ph.D., FHEA, Assistant Professor, Department of Management and Marketing

Shafiullah Anis, Ph.D., Monash University Malaysia

Juliana French, Ph.D., Monash University Malaysia

AA&CC, Movement Studio

NOW RECRUITING

Collaborative Research: REU Site: STEM Research for Social Change

Funded by the National Science Foundation the University of Dayton, Central State University and StMU's collaborative REU emphasize interdisciplinary STEM research for social change to address United Nations' Sustainable Development Goals.

This project will provide underrepresented first through third-year science and engineering students a research experience that nurtures their:



Knowledge and understanding of science and engineering research that meaningfully transforms communities and society



Personal and professional networks for STEM research careers



Scientific and professional skills to prepare them for graduate school



Sense of belonging, identity formation, and self-efficacy with STEM research

For more information, contact
Melissa Karlin, Ph.D. at mkarlin@stmarytx.edu
or scan the QR code.



9:30 TO 9:55 A.M.

Populism's "Interference Capacity" and Investment Project Distress in Developing Countries

Barclay James, Ph.D., Associate Professor of International Business

AA&CC, Movement Studio

9:30 TO 9:55 A.M.

Shifting the Teaching and Learning Paradigm: Lessons from a Course-Based Undergraduate Research Experience (CURE) in an Upper-Level Biology Course

Christine Gray, Ph.D., Professor of Biological Sciences

UC-B

10 TO 10:25 A.M.

Accounting Students' Perceptions of Teaching Methods and Assessment Methods

Teri Grimmer, D.B.A, Assistant Professor of Accounting

UC-B

10 TO 11:25 A.M.

Theatrical Viewing: My Body is Not a Prayer Request

Adapted by Bernadette Hamilton-Brady, M.F.A., from the book by Amy Kenney, Ph.D.

Directed by Bernadette Hamilton-Brady, M.F.A., Professor of Drama

AA&CC, Movement Studio

10:30 TO 10:55 A.M.

Reflections on Implementing Specifications Grading in Analytical Chemistry and Instrumental Analysis

Susan Oxley, Ph.D., Professor and Chair, Department of Chemistry and Biochemistry

UC-B



11 TO 11:25 A.M.

Of Presidents, Protests and Performances: The January 6 Speech of Donald Trump as Prologue

Mary Lynne Gasaway Hill, Ph.D., Professor of English Literature and Language

UC-B

11:30 TO 11:55 A.M.

A Theatrical Adaptation of Amy Kenny's MY BODY IS NOT A PRAYER REQUEST: Staging and Upstaging Disability in the Church and Beyond

Bernadette Hamilton-Brady, M.F.A., Professor of Drama
AA&CC, Movement Studio

11:30 TO 11:55 A.M.

Born Innocent: Collective Intergenerational Responsibilities

Michael Sullivan, Ph.D., Associate Professor of Graduate International Relations

UC-B

NOON TO 12:25 P.M.

Rethinking Human Creation: Embracing AI in Languages and the Humanities

Spencer Galvan, Spanish Discipline Lead, St. Philip's College
Amy Hardy, St. Philip's College

UC-B

12:30 TO 12:55 P.M.

Entering the Scene. New Music for Solo Euphonium in Jazz Quartet

Matthew Mireles, D.M.A., Chair of the Department of Music and Professor of Euphonium

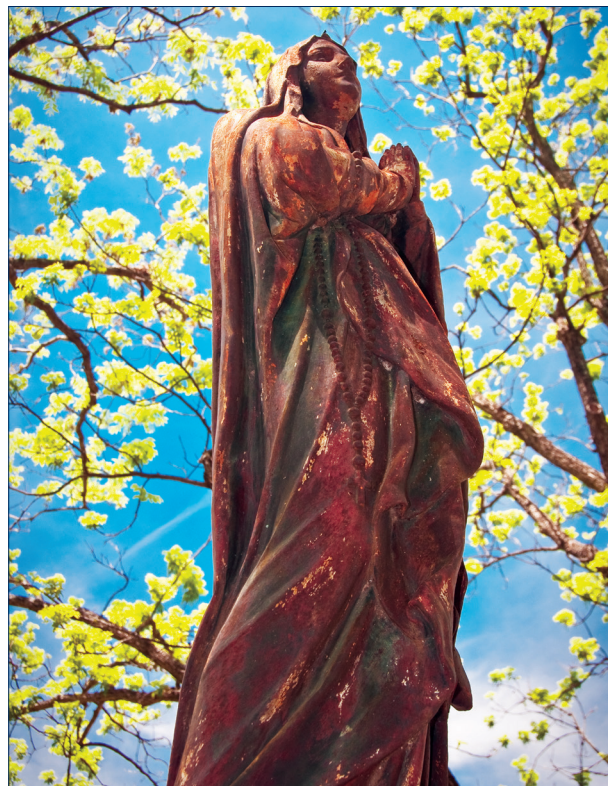
UC-B

1 TO 1:25 P.M.

Research Assistance and Resources Through Blume Library

Katie Thonen, Electronic Resources and Serials Librarian
Diane Dueterhoeft, Professor and Reference/Instruction Librarian
Anacely Murphy, Digital Literacy and Reference Librarian
Elizabeth Goode, Cataloging and Metadata Librarian

UC-B



2 TO 2:25 P.M.

Library Crime

Michael Smith, J.D., Assistant Professor of Law

UC-B

2:30 TO 2:55 P.M.

Finding the Performance: Script Analysis and the Read Aloud Experience

Katie Thonen, Electronic Resources and Serials Librarian

UC-B

THURSDAY, APRIL 11, 9 A.M. TO 3 P.M.

STUDENT ORAL PRESENTATIONS

AA&CC, CLASSROOM 2155, AA&CC, CLASSROOM 2160, AND UC-C

9 TO 9:15 A.M.

How Do Gender and Geographical Location Impact Sentencing Reform?

Martina Flores Guillen, International and Global Studies major

Research mentor: Céline Jacquemin, Ph.D.

AA&CC, Classroom 2160

9:20 TO 9:35 A.M.

Denied History: Afro-Ecuadorian Women Political Participation

Savannah Torres, International and Global Studies major

Martina Flores Guillen, International and Global Studies major

Luis Ramirez, International and Global Studies major

Research mentor: Claudia Donoso, Ph.D.

AA&CC, Classroom 2160

9:40 TO 9:55 A.M.

The United States Supreme Court's Interpretation of the "Establishment Clause" and How It Has Impacted Texas Politics Today

Rebecca Castro, Political Science major

Research mentor: Sonia Garcia, Ph.D.

AA&CC, Classroom 2160

10 TO 10:15 A.M.

Kinetic Neighbors: Strengthening Democracy in Our Community

Isaac Fellows, Political Science major

Research mentor: Céline Jacquemin, Ph.D.

AA&CC, Classroom 2160

10:20 TO 10:35 A.M.

Gun Violence: In Resurgence or Remission?

Jonathan Flores, Political Science major

Research mentor: Leona Pallansch, Ph.D.

AA&CC, Classroom 2160

10:40 TO 10:55 A.M.

Abortion Policy Regarding Health Care

Osondra Fournier-Colon, Political Science major

Research mentor: Leona Pallansch, Ph.D.

AA&CC, Classroom 2160

St. Mary's University Research Scholars

The StMU Research Scholars Project is a collaboration project of faculty and students at St. Mary's University giving students real-world experience working to research, write and publish scholarship in academic disciplines across the University.

All students and faculty are welcome to participate in the project with their own research and writing. Professors from all disciplines are welcome to join the project with their students.

For students and faculty interested in learning more about the project and how to participate, contact one of our faculty consultants by visiting www.stmuscholars.org or scan the QR code.



11 TO 11:15 A.M.

What Is the Future of Corporate Firms and Investment Portfolios Incorporating Environmental, Societal, and Governance Investing?

Juan Castro, Finance and Risk Management major

Research mentor: Bonita Dattner Pfeifer, Ph.D.

AA&CC, Classroom 2155

11 TO 11:15 A.M.

Civic Engagement Infographic of Young Civic Activists

Jamison Holder, Political Science major

Research mentor: Céline Jacquemin, Ph.D.

AA&CC, Classroom 2160

11:20 TO 11:35 A.M.

An Analysis of the Effects of Soft Power on Foreign Direct Investment Projects

Kelly Montemayor, International Business major

Research mentor: Barclay James, Ph.D.

AA&CC, Classroom 2155

11:20 TO 11:35 A.M.

The Man Who Desegregated Texas — Gus Garcia

Eduardo Saucedo Moreno, Political Science major

Daniel Gutierrez, Political Science major

Research mentor: Céline Jacquemin, Ph.D.

AA&CC, Classroom 2160



11:20 TO 11:35 A.M.

Fashion and Feminism

Madeline Emke, History major

Research mentor: Bradley Root, Ph.D.

UC-C

11:40 TO 11:55 A.M.

StMU Sustainable Community Transport

Lucero Galvez, International Business major

Research mentor: David Turner, Ph.D.

AA&CC, Classroom 2155

11:40 TO 11:55 A.M.

The Power of Female: The Representation of Female Composers through a Senior Flute Recital

Savannah Palmer, Music Education major

Research mentor: Camille Langston, Ph.D.

UC-C

11:40 TO 11:55 A.M.

What is the Biggest Factor That Influences One's Political Ideology?

Mikayla Trejo, Political Science major

Research mentor: Leona Pallansch, Ph.D.

AA&CC, Classroom 2160

NOON TO 12:15 P.M.

The Neuropenitentiary

Kai Solonka, Philosophy major

Research mentors: James Greenaway, Ph.D., and Frederick Culverhouse, Ph.D., University of Incarnate Word

AA&CC, Classroom 2155



NOON TO 12:15 P.M.

Targeting SOX18 with shRNA: Disrupting Rhabdomyosarcoma Biology, Unraveling Invasion, Metastasis, and Colony Formation

Chloe Barickman, Biology major

Maria Victoria Watson, Biology major

Research mentor: Terry Shackelford, Ph.D.

AA&CC, Classroom 2160

NOON TO 12:15 P.M.

“A Little Monster Music”: History, Future and Analysis of Tuba-Euphonium Ensemble Music

Jacob Rodriguez, Music Performance major

Research mentor: Matthew Mireles, D.M.A.

UC-C

12:20 TO 12:35 P.M.

The Essentiality of the Interior

Kira Johnson, Communication Studies major

Research mentor: Jason King, Ph.D.

AA&CC, Classroom 2155

12:20 TO 12:35 P.M.

Surveying Bird Diversity at St. Mary’s University Via a Course-Based Citizen Science Project

Neomi Gutierrez, Biology major

Research mentor: Mary Beth Hawkins, Ph.D.

AA&CC, Classroom 2160

12:20 TO 12:35 P.M.

GNN Link Prediction Index for LLM Referrals. Social Network Tools for the Acceleration/Diversification of Procurement and Prospecting

James Hodge, MBA student

Thomas Alcala, EEVET, Inc.

Research mentor: Alex Massey, Ph.D., Chief Data Scientist, EEVET, Inc.

UC-C

12:40 TO 12:55 P.M.

Marianist Reflection: Family Spirit

Arianna Yates, Management major

Research mentor: Jason King, Ph.D.

AA&CC, Classroom 2155

12:40 TO 12:55 P.M.

Effects of Microplastic Concentrations on Foam Cell Formation in Vascular Smooth Muscle Cells

Kenya Rosas, Biochemistry major

Research mentor: Verónica Contreras-Shannon, Ph.D.

AA&CC, Classroom 2160

12:40 TO 12:55 P.M.

Creation and Use of 3D Images for Educational Purposes

Derrick McIntyre, Web and Mobile Developer major, St. Philip's College

Research mentor: Jo Dee Duncan-Mosier, Ph.D., St. Philip's College

UC-C

1 TO 1:15 P.M.

CRISPR Knockdown of MMP9 Reduces Invasion, Metastasis and Colony Formation in Ewing Sarcoma

Evan Villarreal, Biology major

Research mentor: Terry Shackelford, Ph.D.

AA&CC, Classroom 2160

1 TO 1:15 P.M.

Linear Dimensionality Reduction of Large Datasets

Manuel Calvillo, Mathematics major

Malak Abdalla, Mathematics major, University of Wisconsin-Madison

Research mentor: Javier Rojo, Ph.D., Indiana University

UC-C

1:20 TO 1:35 P.M.

Recognizing Bonds and Attachment Relations in One Beluga Whale (*Delphinapterus leucas*) Mother-Calf Pair

Carolina Pinales, Psychology major

Research mentor: Heather Hill, Ph.D.

AA&CC, Classroom 2155

1:20 TO 1:35 P.M.

In Our Blood: U.S.-International Fentanyl Crisis

Soojin Luna, Environmental Science and English double major

Research mentor: Céline Jacquemin, Ph.D.

AA&CC, Classroom 2160

1:40 TO 1:55 P.M.

Borderline Personality Disorder and Organizational Outcomes

Mary Sommer, Psychology major

Brook McKenzie, Industrial/Organizational Psychology graduate student

Research mentor: Cody Cox, Ph.D.

AA&CC, Classroom 2155

2 TO 2:15 P.M.

Does Religion Affect Intimate Partner Violence on PTSD? Exploring the Role of Divine Control on Those with PTSD as a Result of Partner Violence

Lonni Garcia, Forensic Science-Criminology major

Research mentor: Colton Daniels, Ph.D.

AA&CC, Classroom 2155



2 TO 2:15 P.M.

Trash Collection Device and Water Quality Sampling Device

Maria Moreno, Engineering Science major
Briley Perkins, Mechanical Engineering major
Aaron Rodriguez, Mechanical Engineering major
Jose Canas, Mechanical Engineering major
Kyndall Quiroz, Mechanical Engineering major
Research mentor: Juan Ocampo, Ph.D.

AA&CC, Classroom 2160

2:20 TO 2:35 P.M.

Drug Abuse and the Drug Courts: A Solution to a Prevalent Problem or a Broken and Outdated System

Nicole Robles, Forensic Science-Criminology major
Research mentor: Janet Armitage, Ph.D.

AA&CC, Classroom 2155

2:20 TO 2:35 P.M.

Filtration Systems on Microplastics

Paloma Soforo Grelier, Industrial Engineering major
Research mentor: Juan Ocampo, Ph.D.

AA&CC, Classroom 2160

2:40 TO 2:55 P.M.

Depression, Anxiety, PTSD and Anger: Outcomes of Sex Crimes in Relation to Drug Abuse

Jacob Silva, Criminology and Psychology double major
Research mentor: Colton Daniels, Ph.D.

AA&CC, Classroom 2155

2:40 TO 2:55 P.M.

Design and Fabrication of Microfluidic Device from Low-Cost PDMS for Integration with Photonic Chip

Juan Gauna, Mechanical Engineering major
Jianhao Shen, University of Dayton
Asela Perera, University of Dayton
Research mentor: Swapnajit Chakravarty, Ph.D., University of Dayton

AA&CC, Classroom 2160



THURSDAY, APRIL 11, 10:30 A.M. TO 3 P.M.

INTERNAL FACULTY RESEARCH GRANT (IFRG) ORAL PRESENTATIONS
AA&CC, HOSPITALITY SUITE

10:30 TO 10:55 A.M.

Usability of Pose Estimation for Clinical Prosthetics and Orthotics

Gary Guerra, Ph.D., Assistant Professor of Exercise and Sport Science
Sarahi Fernandez, Exercise and Sport Science major

11 TO 11:25 A.M.

The Relationship Between High-Intensity Functional Training and Cognitive Function

Kelvin Wu, Ph.D., Associate Professor and Chair of Exercise and Sport Science
Gary Guerra, Ph.D., Assistant Professor of Exercise and Sport Science

11:30 TO 11:55 A.M.

Intimate Partner Violence, Religion, and Health Among College Students

Colton Daniels, Ph.D., Assistant Professor of Criminal Justice and Criminology

NOON TO 12:25 P.M.

Developing a Better Understanding of Employee Resource Groups in Industry

Lesly Krome, Ph.D., Program Director and Assistant Professor of Industrial/Organizational Psychology
Cody B. Cox, Ph.D., Associate Professor of Industrial/Organizational Psychology and Organizational Behavior

12:30 TO 12:55 P.M.

Gender Violence: Why Women Resist and Perpetuate Inequality

Amanda Stephens, J.D., Assistant Service Professor in Law, Office of Law Success

1 TO 1:25 P.M.

Ego-Network Analysis to Identify Innovation Eco-System for Vaccine Development in case of a Pandemic

Momtaz Khanam, Ph.D., Assistant Professor of Engineering Management
Aqsa Khan, Psychology major
Savannah Youngblood, Mechanical Engineering major

1:30 TO 1:55 P.M.

Self-assembly of Core-substituted Naphthalene-diimide Based Macrocycles

Erendra Manandhar, Ph.D., Assistant Professor of Chemistry and Biochemistry

Samantha Aragon, Biochemistry major

Camille Kwan, Chemistry major

Franchesca Tinacba, Biology major

Joshua Do, Biology major

2 TO 2:25 P.M.

Extra! Extra! Hear All About It! Building a Science Communication Curriculum to Help Students Tell the Story of Science

Jennifer Harr, Ph.D., Assistant Professor of Biological Sciences

David Turner, Ph.D., Professor of Environmental Science

ST. MARY'S UNIVERSITY TECH CAMPS

2024 School of Science, Engineering and Technology Tech Camps offer 10 free week-long summer camps held on the St. Mary's campus for 180 high school students in June and July.

Explore topics in computer science and engineering:
PYTHON | CYBERSECURITY | ROBOTICS

Tech Camps are free to students with \$524 scholarships from the Texas Workforce Commission through the Governor's Summer Merit Program.

More than 900 middle and highschoolers have participated in St. Mary's Tech Camps through these grants for summer camps since 2010.

Visit www.stmarytx.edu/tech-camps or contact Dawn Morales at dmorales26@stmarytx.edu.



2:30 TO 2:55 P.M.

ESG Practices and Corporate Financial Performance: Investigating the Mediating Role of Risk Management with Evidence from the Airline Industry

Jialin Zhao, Ph.D., Associate Professor of Quantitative Management

Sang Baum Kang, Ph.D., Illinois Institute of Technology

Yao Xie, Ph.D., Georgia Institute of Technology



THURSDAY, APRIL 11, 11 A.M. TO NOON

FACULTY SABBATICAL ORAL PRESENTATIONS

UC, ALUMNI CONFERENCE ROOM

11 TO 11:25 A.M.

Military Women in World Cinema: A 20th Century History and Filmography

Stacy Fowler, M.L.S., Professor and Technical Services Librarian, Sarita Kenedy East Law Library

Deborah A. Deacon, Ph.D., Arizona State University

11:30 TO 11:55 A.M.

Fetal Positions: Imagining the Fetus in Ancient Judaism

Sara Ronis, Ph.D., Associate Professor of Theology

THURSDAY, APRIL 11, NOON TO 1 P.M.

StMU SCHOLARS PANEL
BLUME LIBRARY, COMMONS

From Billboards to Tweets: A Study of Traditional Marketing's Shift to Social Media

Savannah Dupre, Marketing major



Death Before Dishonor: The Last Stand of Takamori Saigō

Nikko Montenegro, Finance and Risk Management major

Atahualpa and Huáscar: The Cataclysm of the Inca Civilization 1529-1532

Gonzalo Izquierdo Mori, International and Global Studies major

Queen Mary Tudor: England's Road to Catholicism

Julianne Pena, Psychology major

The Black Death: A Pale Horse

Joseph Reed, History and Political Science double major

My Very Dear Wife: The Struggle Between Patriotism and the Home

Madison Vale, Psychology major

THURSDAY, APRIL 11, NOON TO 3 P.M.

MEXICAN AMERICAN STUDIES ORAL PRESENTATIONS

UC, ALUMNI CONFERENCE ROOM

NOON TO 12:25 P.M.

Latino St. Mary's: Integration, Segregation and Americanization, 1852-1927

Gerald Poyo, Ph.D., O'Connor Chair in the History of Hispanic Texas and the Southwest

12:30 TO 12:55 P.M.

Navarros & Slavery: Students Stage a Juneteenth “Reveal”

Teresa Van Hoy, Ph.D., Professor of History

1:20 TO 1:35 P.M.

Casa Navarro film

Daniel Dorgan, Political Science major

Research mentor: Teresa Van Hoy, Ph.D.

1:40 TO 1:55 P.M.

Role of Mexican Methodist Women in Education and Health Along the Border

Eugenio Gonzalez, Political Science major

Research mentor: Belinda Román, Ph.D.

2 TO 2:25 P.M.

Geospatial Insights: ZIP-Code Level Analysis of Industry Output and Knowledge Dynamics in San Antonio, Texas

José Chaman, Academic Adviser, Student Success Center

Belinda Román, Ph.D., Associate Professor of Economics

BECOME AN LSAMP SCHOLAR

The Alliance is comprised of three Hispanic-serving institutions (HSI) and an emerging HSI, all primarily undergraduate institutions (PUI), that will leverage our shared location in a city with a majority Latinx population, combined resources, and collective strengths to address underrepresented minority (URM) STEM student retention and graduation rates of socially and economically marginalized student populations.

Interested? Find out more and apply,
by scanning the QR Code



2:30 TO 2:55 P.M.

Diabetes and Workforce Participation in San Antonio

Belinda Román, Ph.D., Associate Professor of Economics

Janet Armitage, Ph.D., Chair and Professor of Sociology

Sue Nash, Ph.D., Associate Professor of Sociology

Lori Boies, Ph.D., Assistant Professor of Biological Sciences and Sociology

Luisa Blanco Raynal, Ph.D., Pepperdine University

THURSDAY, APRIL 11, NOON TO 3 P.M.

LAUDATO SI' ORAL PRESENTATIONS

AA&CC, MOVEMENT STUDIO

NOON TO 12:25 P.M.

Towards Sustainable Living: Nudging Consumer Behavior in Light of *Laudato Si'*

Nicole Kirpalani, Ph.D., Lecturer of Marketing

12:30 TO 12:55 P.M.

Stochastic Optimization of Transition Paths in a Conceptual Model of Arctic Sea Ice Loss

Kaitlin Hill, Ph.D., Assistant Professor of Mathematics

1 TO 1:25 P.M.

Leadership in Energy and Environmental Design (LEED):

How Can Gold & Blue Go Green?

Ana Diaz, Environmental Science major

José Cornejo, Environmental Science major

Andrea Realyvasquez, Environmental Science major

Gisele-Elizabeth Perez, Environmental Science major

Giuliana Porzio Cuenca, Environmental Science major

Antonio De Jesus Martinez De La Rosa, Environmental Science major

Research mentor: David Turner, Ph.D.

1:30 TO 1:55 P.M.

Education for Adaptation and Change: Integrating Environmental Principles into Zaragoza

Ana Diaz, Environmental Science major
Julia De La Cruz, Environmental Science major
Andrea Realyvasquez, Environmental Science major
Gisele-Elizabeth Perez, Environmental Science major
Soojin Luna, Environmental Science and English double major
Carolina Wieman, Environmental Science major
Research mentor: Evelyn Mitchell, Ph.D.

2 TO 2:25 P.M.

From City Skylines to Starry Nights

Bianca Ramos, Environmental Science and English double major
Fernando Jaime Sepulveda, Engineering Science major
Isabella Lopez, Environmental Science major
Julia De La Cruz, Environmental Science major
Carolina Wieman, Environmental Science major
Sophia Rodriguez, Criminology major
Research mentor: David Turner, Ph.D.

2:30 TO 2:45 P.M.

A Technological World Without Humanity

Soojin Luna, English and Environmental Science double major
Research mentor: David Turner, Ph.D.

THURSDAY, APRIL 11, 1:20 TO 3 P.M.

SUMMER UNDERGRADUATE RESEARCH FELLOWSHIP (SURF) ORAL PRESENTATIONS

UC-C

1:20 TO 1:35 P.M.

Milton Holland: A Texan Liberator in North Carolina

Patrick Coan, History major
Research mentor: Teresa Van Hoy, Ph.D.



1:40 TO 1:55 P.M.

Bueno, Bonito y Barato: A Study of Native and Exotic Plant Communities in the St. Mary's University Campus for Suitable Landscapes

José Cornejo, Environmental Science major
Research mentor: David Turner, Ph.D.

2 TO 2:15 P.M.

A Model to Predict Future Greenhouse Emissions

Fernanda Moreno, Engineering Science major
Research mentor: Rafael Moras, Ph.D.

2:20 TO 2:35 P.M.

Weibull Analysis and Failure Theory for Aircraft Structures

Gianluca Porzio Cuenca, Mechanical Engineering major
Research mentor: Juan Ocampo, Ph.D.

2:40 TO 2:55 P.M.

The Assessment of Dolphin Responses to Human-Dolphin Interactions in Managed Care

Alicia Virthe, Psychology major
Research mentor: Heather Hill, Ph.D.



THURSDAY, APRIL 11, 2 TO 3 P.M.

ART FACULTY BI-ANNUAL EXHIBITION

BLUME LIBRARY, SECOND FLOOR, ART GALLERY

Featuring the following art faculty:

Brian St. John, Chair and Professor
James Joffe, Assistant Professor
Christina Ramsey, Adjunct Lecturer
Kemp Davis, Adjunct Lecturer
Armando Ramos, Blume Library staff
Brother Brian Zampier, S.M., Marianist Archivist

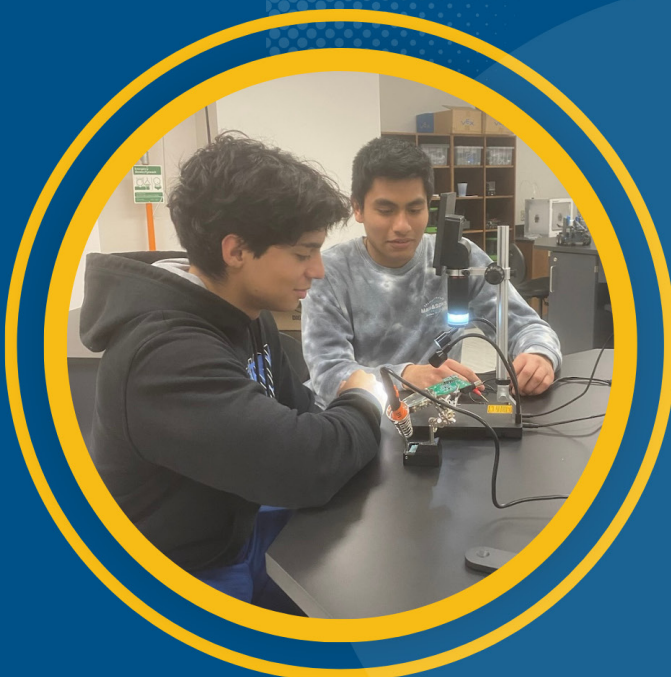
THURSDAY, APRIL 11, 3 TO 3:30 P.M.

NETWORKING AND SOCIAL RECEPTION

UC-A, LOBBY

Make new professional connections and enjoy complimentary beverages and light appetizers.

Beer and wine will be available for guests 21 and over. Valid ID is required.



TITLE V CURE

Funded by the Department of Education, this program is dedicated to increasing student success among Hispanic and low-income students with a course-based Undergraduate Research Experience (CURE) approach in Chemistry, Physics, and Environmental Science. With improved infrastructure, access to tutoring, peer mentoring, financial literacy materials, and financial wellness website.

For more information contact, Celeste Cavazos at 210-436-6750 or ccavazos@stmarytx.edu.

THURSDAY, APRIL 11, 3:30 TO 5:30 P.M.

KEYNOTE SPEAKER AND AWARDS CEREMONY

UC-A

INVOCATION

The Rev. William Meyer, S.M., D.Min., Rector, St. Mary's University

WELCOME REMARKS AND INTRODUCTION OF KEYNOTE SPEAKER

Jason Pierce, Ph.D., Provost and Executive Vice President for Academic Affairs, St. Mary's University

2024 KEYNOTE SPEAKER



Alberto Gómez, Ph.D.

Chief Executive Officer, Better Futures Institute

Alberto Gómez, Ph.D., is the CEO of the Better Futures Institute, an organization advancing a culture of innovation and civic engagement through technology, research and storytelling. Gómez co-founded Irys, an innovative software technology company focused on artificial intelligence and data analytics for infrastructure and team communication management.

His influential contributions to the World Economic Forum and his innovative approach in this field have earned him recognition, including the McArthur Foundation Innovation Award. As a Fellow at the Aspen Institute's Center for Urban Innovation, Gómez continues to shape the landscape of urban development and technology. His work with Irys garnered the Smart 50 Award and led to his exclusive invitation to present at the United Nations COP26 in Glasgow, representing American interests and innovations on the global stage.

Faculty, Staff, and Student Awards, announced by Tyler Davis, Ph.D. (SPARC), and Melissa Karlin, Ph.D. (OSRI) Each award will be presented by the respective dean.

FACULTY, STAFF AND STUDENT AWARDS

Tyler Davis, Ph.D., Office of Sponsored Projects,
Academic Research and Compliance

GREEHEY SCHOOL OF BUSINESS

Dean Rowena Ortiz-Walters, Ph.D.

SCHOOL OF LAW

Dean Patricia Roberts, J.D.

SCHOOL OF SCIENCE, ENGINEERING AND TECHNOLOGY

Dean Teresa Beam, Ph.D.

COLLEGE OF ARTS, HUMANITIES AND SOCIAL SCIENCES

Dean Nancy LaGreca, Ph.D.

OTHER UNITS

Jason Pierce, Ph.D., Provost

CLOSING REMARKS

Jason Pierce, Ph.D., Provost

FISCAL YEAR 2023-2024 FACULTY AWARDS OF EXTRAMURAL FUNDING

Belinda Román, Economics

Impact of Enhanced Healthcare on Labor Market Participation

September 1, 2023 – August 31, 2026

\$553,930

Mark Lokensgard, Languages

Educating the Future Workforce of Underrepresented Students in International Agriculture

September 15, 2023 – September 14, 2027

\$994,955

Melissa Karlin, Environmental Sciences

Research Experiences for Undergraduates (REU): STEM Research for Social Change

September 15, 2023 – August 31, 2026

\$177,272

Jennifer Harr, Biological Sciences

A whole animal model for investigation of ingested nanoplastic mixtures and effects on genomic integrity and health

September 1, 2023 – July 31, 2027

\$669,951

Todd Hanneken, Theology

Latin Moses: A Print and Interactive Online Scholarly Edition and Translation of Latin Jubilees and the Testament of Moses

July 1, 2024 – June 30, 2025

\$99,960

Carol Redfield, Computer Science

Governor's Summer Merit Program

March 1, 2024 – August 31, 2024

\$94,297

Morgan Bruns, Mechanical Engineering

Guided Uncertainty Reduction Utilities (GURU) for Integrated Improvement of Flammability Data and Fire Models

October 1, 2023 - September 30, 2026

\$181,284

Karen Kelley, Center for Legal and Social Justice

Interest on Lawyers' Trust Accounts (IOLTA)

September 1, 2023 – August 31, 2025

\$349,069

Karen Kelley, Center for Legal and Social Justice

Crime Victims Civil Legal Services (CVCLS)

September 1, 2023 – August 31, 2024

\$59,662

Saul Polanco, University Ministry

Big Bend Wilderness Retreat

March 1, 2024 – September 1, 2025

\$40,200



FY 2024-2025 INTERNAL FACULTY RESEARCH GRANT RECIPIENTS

Andrew Brei, Philosophy

Ethics for Engineers: Toward Ethical Behavior within Engineering Organizations

Erendra Manandhar, Chemistry and Biochemistry

Self-assembly of core-substituted naphthalene-diimide based palladium and platinum metallocycles and cages

Ying “Caroline” Chen, Accounting

Analyzing the Impact of Director Blockholders on Earnings Using Benford’s Law

Jillian Pierucci, Psychology

International early intervention services for children in low- and middle-income countries

Denada Ibrushi, Finance and Quantitative Management

Navigating Challenges and Seizing Opportunities: The Transformative Impact of AI on Business Education and Teaching Strategies

Richard Lombardini, Physics

Implementation and Optimization of Quantum Electrodynamics in Relativistic Magnetic Reconnection Simulations



OTHER PROGRAM INFORMATION

UNIVERSITY RESEARCH COUNCIL

The University Research Council (URC) promotes, encourages and supports faculty and student research, creative, and scholarly activities as a primary mission of the University and an essential component of quality undergraduate and graduate education. In the context of an active learning community with regional leadership and a global perspective, the URC nourishes all research, scholarship, professional and creative activities that stimulate ideas and disseminate knowledge.



Mary Chacko
Industrial/Organizational
Psychology graduate student



Kaitlin Hill, Ph.D.
Assistant Professor of
Mathematics, School of
Science, Engineering
and Technology



Irene Holguin
SPARC Director



Melissa Karlin, Ph.D.
Professor of Environmental
Science, School of Science,
Engineering and Technology



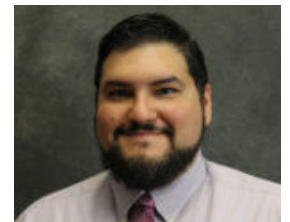
Ramona Lampley, J.D.
Associate Dean for Academic
Affairs, School of Law



Zecong Ma, Ph.D.
Assistant Professor of
Marketing, Greehey School
of Business



Juan Ocampo, Ph.D.
Associate Professor of
Engineering, School of
Science, Engineering
and Technology



Jesus Segovia, Ph.D.
Assistant Professor of
Biological Sciences, School of
Science, Engineering
and Technology



Katie Thonen
Electronic Resources and
Serials Librarian



Carolyn Tubbs, Ph.D.
Vice Provost for Academic
Affairs, College of Arts,
Humanities and
Social Sciences



Lindsey Wieck, Ph.D.
Associate Professor of
History, College of Arts,
Humanities and
Social Sciences



Chien-Ting "Kelvin"
Wu, Ph.D.
Chair and Associate Professor
of Exercise and Sport
Science, College of Arts,
Humanities and
Social Sciences

OFFICE OF SPONSORED PROJECTS, ACADEMIC RESEARCH AND COMPLIANCE

The Office of Sponsored Projects, Academic Research and Compliance (SPARC) promotes transformational learning through its support of research, creative and scholarly activities at St. Mary's University. Research enhances critical thinking skills and provides hands-on experience for students entering the job market or advanced degree programs. When involved in research, creative, and scholarly activities, students enjoy positive, life-changing relationships with Faculty Mentors. Below is a summary of the programs, resources, and services provided by the SPARC Office for the growth and development of scholarly and creative activities.

INTERNAL FACULTY RESEARCH GRANTS (IFRG)

Internal Faculty Research Grants (IFRG) are awarded by the university to support the development of faculty scholarships in the areas of teaching, discovery, integration, and application. Grants can be used to fund a process or activity that supports the creation of a scholarly or creative product (e.g., a research project, proposal, peer-reviewed publication, a book or artistic creation) or prepares the faculty member for such a contribution. Full-time faculty are eligible for the grant and up to 10 are selected annually to receive an award up to \$5,000 each. Visit the SPARC website for past IFRG recipients, to learn about the submission process and the next funding cycle.





RESEARCH DEVELOPMENT WORKSHOPS

Research Development workshops inform faculty and staff of university resources to support and strengthen their research and grant development. Different topics are addressed each month, varying from how to collect institutional data, student research experiences, and to grant stewardship, etc. Contact the SPARC notice to be notified of upcoming workshops.

GRANT WRITING COHORT

The purpose of the cohort is to help faculty with the grant-writing process. Faculty and staff are invited to attend monthly meetings as we break down the various components of the grant writing process and application with the assistance of experienced principal investigators, program officers and SPARC staff. The program is designed for those new to grant development and seeking communal support. Participants in the next cohort will receive sponsorship to attend the two-day grant development training workshop hosted by Grant Training Center®. The group will be led by Carolyn Tubbs, Vice Provost for Academic Affairs. Submit a letter of interest to the SPARC Office by April 30, 2023, to join next year's cohort.

MANUSCRIPT WRITING COHORT

The purpose of the manuscript writing cohort is to provide support, motivation and accountability as faculty are working on their manuscript. Monthly meetings are held across campus during the academic year. Heather Hill, Professor of Psychology, leads the group forum. All faculty are welcome to attend.

ONE-ON-ONE FACULTY CONSULTATIONS

The SPARC office provides faculty and staff consultations to discuss research interests and/or grant development. Contact SPARC to learn how they can support your research endeavors.

Contact the SPARC Office at research@stmarytx.edu for additional information and/or to be added to the listserv for upcoming events and notifications. Information can also be found on the SPARC Gateway page.

OFFICE OF STUDENT RESEARCH AND INQUIRY (OSRI)

The mission of the Office of Student Research and Inquiry (OSRI) at St. Mary's University is to facilitate and increase the use of research as a teaching and mentoring tool by promoting high-quality undergraduate and graduate student-faculty collaboration and scholarship.

SUMMER UNDERGRADUATE RESEARCH FELLOWSHIPS (SURF)

SURF provides funds for undergraduate students to participate with faculty mentors in an intensive eight-week scholarly activity during the summer. Each fellowship provides a \$2,500 student stipend, a \$1,000 faculty stipend and up to \$500 in materials. Students are expected to give their final oral presentations at the spring Annual Research Symposium and Creative Activities Exhibition.

STUDENT TRAVEL AWARDS

Public communication of research findings and sharing of ideas with others is an important aspect of participating in academic research. The OSRI Student Travel Awards enable students to extend their research experience by contributing to important discussions of current research at professional conferences. These travel awards support participation in conferences and other academic venues for research by providing funding (maximum \$300 per student) toward travel expenses and registration fees. All students who have a paper, poster or scholarly creative work accepted for professional presentation are encouraged to apply for an award. Applications are accepted on a continuing basis and will be reviewed as they are received.



FACULTY RESEARCH MENTORING AWARDS

The Faculty Research Mentoring Awards are granted to faculty members who mentor undergraduates inside and outside of the classroom and who are committed to undergraduate research. The selection committee defines mentored research as faculty members advising and working one-on-one with students on personalized, creative, enriching projects. The Junior Faculty Research Mentoring Award and the Senior Faculty Research Mentoring Award are intended to recognize demonstrated excellence in supporting undergraduate researchers, to encourage mentoring relationships with undergraduate students, and to convey the campus' high regard for such contributions made by the faculty of the academic community.

ANNUAL RESEARCH SYMPOSIUM AND CREATIVE ACTIVITIES EXHIBITION

The Annual Research Symposium and Creative Activities Exhibition is a wonderful opportunity for St. Mary's students to enhance our heritage of academic excellence and encourage innovation in education by presenting various forms of scholarship. Posters or exhibits that provide an overview of a study or project and the resulting data and conclusions will be included at the symposium, just as researchers do at national and international conferences. This event takes place every spring and students are invited to present posters or oral presentations.

Contact OSRI at osri@stmarytx.edu for additional information. Information can also be found on the OSRI Gateway page.

RESEARCH AND SPONSORED PROJECTS HIGHLIGHTS



NEW GRANT TO HELP ST. MARY'S STUDY HOW DIABETES AFFECTS THE WORKFORCE

The three-year project creates interdisciplinary cooperation

The National Science Foundation has awarded a grant of more than \$550,000 to St. Mary's University, helping fund research on how diabetes affects workforce participation in San Antonio.

The \$553,900 grant will fund the three-year research project, which will continue through August 2026.

Associate Professor of Economics Belinda Román, Ph.D., will lead a research team that includes faculty from Biology and Public Health programs at St. Mary's, and an expert from Pepperdine University in California. The work of the grant will also partner with community organizations, including Bexar County Community Health Collaborative, Young Women's Christian Association (YWCA) of Greater San Antonio and CommuniCare.

The research will focus on the correlation between people's well-being, its effect on the economy and the consequences of diabetes on work and earnings. Román will look at Mexican Americans and migrants in San Antonio, populations with some of the highest diabetes rates nationally.

Román said it's important to think about how your health and job relate to each other.

"Your job is so important, and so is your quality of life and health," Román said. "Yet we don't look at it that way. We look at health, and we look at employment, but they go together because one depends on the other."

Román said her conversations with St. Mary's students who care for family members with diabetes inspired the concept for the grant, and she incorporated opportunities for students to gain hands-on research experience into the project's scope. Román hopes this sort of research will not only help the community, but also help students studying Biology, Economics and Public Health to transition into the workforce.

The study's results from can then be used to see how communities in San Antonio are affected and what resources might be beneficial.

"Once we finish the research, we can turn to the City of San Antonio and say, 'This is how the resources might be better used,'" she said. "This kind of a project just goes straight to the heart of what St. Mary's does, which is help the community and get students involved."

WALL STREET JOURNAL RECOGNIZES ECONOMICS PROFESSOR FOR ACCURATE 2023 PREDICTIONS

It would be easy to say Belinda Román, Ph.D., had a crystal ball for predicting the future, but she'll tell you all she is doing is following the trends.

The Wall Street Journal recognized the Associate Professor of Economics at St. Mary's University this week for being the most accurate of 71 business, academic and financial economists from around the country in their predictions of what would happen to the U.S. economy in 2023.

Instead of relying solely on models, Román said she also looked at historical trends — such as employment bumps during the holiday season or during Fiesta in San Antonio — when gauging the different economic indicators.

Most importantly, she added, it's about remembering each number behind a statistic is built around humans.

“People are out there doing these things,” she said. “And those numbers represent us in our actions and activities.”

Participating in the newspaper's quarterly forecasts, Román suggested a 2.8% growth for the gross domestic product in 2023 and was closest to the 3.1%, as reported by the U.S. Department of Commerce. She also predicted an unemployment rate of 3.4%, which was closest to the reported 3.7%.

Román's laser-sharp predictions outdid economists for Decision Economics, Santander US Capital Markets and Goldman Sachs.

Though most focused on a slowdown in spending from funds issued during the COVID-19 pandemic and higher inflation, Román's forecast included more room for growth than her peers. The threat of a slower economy did not stop Americans from flocking to concerts and theaters.

Román highlighted events, such as Taylor Swift's The Eras Tour, Beyoncé's Renaissance World Tour, and the dual summer release of the films Barbie and Oppenheimer, as examples of how spending can bring joy as the world emerges into a post-pandemic routine.

“It doesn't have to be extravagant like Super Bowl tickets because those are thousands of dollars,” Román said, adding she contributed by watching Godzilla Minus One in theaters. “But we're the ones buying T-shirts and hats, and that's where some people are finding their happiness.”

Looking at how to serve and inform the public is something that Román has been doing since her childhood in El Paso. The daughter of a physician, Román also has a brother who followed in their father's footsteps and others who became engineers and lawyers. The family was also involved in charity work, focusing on helping lower-income Hispanic populations.



Starting college at Texas Christian University as a Chemistry major, Román's plan was to eventually go into the medical field. A summer Economics class helped her see she could still make a difference in people's lives through policy changes.

"It all just clicked for me that I was going to still be able to make a difference in people's lives," said Román, who went on to earn a doctorate from University of Western Ontario in Canada and a Master in Philosophy from the London School of Economics before her time working at St. Mary's. In September, the National Science Foundation awarded Román a grant of \$553,900 for a three-year research project on how diabetes affects workforce participation in San Antonio.

Román leads a research team that includes faculty from the Biology and Public Health programs at St. Mary's, and an external expert from Pepperdine University to study how diabetes affects the economy via work and earnings.

She also oversees the Mexican American Studies program at St. Mary's, which launched in Fall 2021 and offers a 15-hour certificate and 18-hour minor.

Chair of the Department of Economics and Associate Professor Steve Nivin, Ph.D., said the job can feel like that

of a weather person: updates are being made as data changes.

To come out on top of a forecast against lead economists across the country, especially during a time of uncertainty is a testament to Román's abilities, Nivin said.

"It's a challenging time to just make an accurate forecast," Nivin said. "To be top among that type of panel is pretty remarkable."

As Román prepares to participate in the Wall Street Journal's next survey in April, she said she hopes the public, especially her students, remember the economy is more than just numbers on a page.

"I hope they take away that economics is much bigger than just supply and demand curves in the free market," she said. "Whether those students end up focusing on business or philosophy in their careers, I hope they realize that we at St. Mary's tried to show them the bigger picture."



ENVIRONMENTAL SCIENCE AND ENGLISH MAJOR STUDIES COYOTE-RED WOLF LINK

Growing up, Bianca Ramos loved playing with stuffed animals. Through her education at St. Mary's University, Ramos has begun turning her childhood fascination with cuddly stuffed creatures into a research career with a real-world impact on wildlife populations.

Originally from Juarez, Mexico, Ramos joined the St. Mary's community, eager to explore her passion for sharing the wonders of the natural world with others. A double major in English and Environmental Science, she joined the Maximizing Access to Research Careers Undergraduate Student Training in Academic Research (MARC U*STAR) Program, which supports students from underrepresented backgrounds pursuing careers in science, technology, engineering or math.

"I've come to appreciate that research is a labor of passion," Ramos said of the program. "I've learned that, as a researcher, if you care about something, you're willing to put the hours, time and effort into your work."

The MARC U*STAR program has allowed Ramos to present research on different types of desert soils at a national biomedical conference for minority students. During the Spring 2023 semester, the program also enabled the senior to research the genetic link between the coyote and red wolf populations with Melissa Karlin, Ph.D., Associate Professor of Environmental Science at St. Mary's.

Red wolves are extinct in the wild and only exist in a non-essential experimental population in North Carolina after being removed from their historic range, which included Texas. By analyzing the genetic data of canids in Texas, Ramos and Karlin can better understand if red wolf DNA still exists in this population and learn more about their diet.

"Red wolves deserve to be protected," Ramos said. "They play an important role in the ecosystem. This project can better understand their current status in the wild to, ultimately, extend protections to them."

Ramos spent a semester analyzing scat samples in the lab with Karlin to extract and analyze their DNA. She'll soon be visiting 11 research sites and collecting samples herself.

"Her work ethic is impeccable," Karlin said. "She has always been the top-performing student in every class of mine. She is always eager to learn new skills."

Outside of her research, Ramos is also the Vice President of the Women's Affairs Council registered student organization. She coordinates service projects and educates students on issues affecting women and marginalized populations.

While aware of a lack of female representation in research and STEM fields, Ramos said she hopes her work will help pave the way for other Latinas pursuing research careers.

"I hope that one day I can inspire other women to follow in my footsteps," she said. "I want to show women, 'You can do it!' There's potential in all of us, and you can accomplish anything you want."

Ramos will be one of a handful of students joining Karlin on a study-abroad trip to the United Kingdom later in 2023 to learn about environmental research and conservation-related issues abroad. After graduation, she hopes to pursue a master's degree in wildlife conservation or ecology.

"How could I resist wanting to learn more about animals?" Ramos said.



ST. MARY'S UNIVERSITY JOINS NATIONAL SCIENCE FOUNDATION SUSTAINABILITY PROJECT

St. Mary's is one of three institutions taking part in the \$526,630 grant

St. Mary's University is among three schools to which the National Science Foundation awarded \$526,630 to create research experiences for undergraduates studying STEM with a focus on social change as defined by the United Nations' Sustainable Development Goals.

Led by faculty at the University of Dayton in Ohio, Central State University in Ohio and St. Mary's University, students in the 10-week summer program will explore responsible production and consumption of goods, including ways to reuse or recycle; access to affordable, reliable, sustainable and modern energy for all; technologies that provide an inclusive, equitable education; and using materials to treat contaminated water.

"This grant allows our students and faculty mentors to engage in collaborative, interdisciplinary research with not only students and faculty across multiple institutions and subject areas, but with different social partners," said Melissa Karlin, Ph.D., St. Mary's Professor of Environmental Science. "The experience will bridge connections between STEM research and education with real-world needs identified by the United Nation's Sustainable Development Goals. Through this opportunity, we are preparing our students to go out into this world, reflecting on the St. Mary's mission with an education in service, justice, peace, adaptation and change."

Open to undergraduate students nationwide studying science, technology, engineering and math, the program provides a \$6,000 stipend, housing and meals at the campus hosting that summer's session; professional development workshops on laboratory safety, research ethics, creating résumés, applying to graduate school, effective scientific communication, research skills and community engagement; and networking opportunities.

"Our goal is to mentor the next generation of STEM professionals to foster their STEM identity development and research skills to create positive social change," said Kenya Crosson, Associate Dean for Faculty and Staff Affairs and Research at the University of Dayton's School of Engineering, who will lead the project. "In addition to the faculty at the schools, students in the program will work with organizations that advance scientific discovery, knowledge and technology to achieve the U.N.'s sustainable development goals." The University of Dayton will host in Summer 2024 before going to Central State University in 2025 and St. Mary's University in 2026. Visit the program's webpage for more information and to apply. Applicants must be full-time students majoring in a STEM field or can be an undeclared science or engineering major in some cases, and not have completed their third year in college.



\$2.1M GRANT FUNDS ST. MARY'S UNIVERSITY PROGRAM TO TRAIN THE NEXT GENERATION OF BIOMEDICAL SCIENTISTS

The funding will help local high schools access scientific experts and support undergraduate research

The National Institutes of Health have awarded a grant of \$2.1 million to enable St. Mary's University to train the next generation of biomedical scientists.

The Undergraduate Research Training Initiative for Student Enhancement (URISE) program at St. Mary's will build the pool of students interested in research by exposing high school students to research in STEM fields. The grant will also provide St. Mary's students with more opportunities to participate in biomedical research with faculty mentors. Additionally, the grant will fund training for a cohort of students intent on pursuing a Ph.D. in biomedical sciences.

"The first aim is high school outreach to plant the seed that you can be a scientist," said Verónica Contreras-Shannon, Ph.D., Professor of Biological Sciences and the grant's director. "Most high schoolers know what a doctor, nurse or dentist is because they've interacted with them. They don't necessarily think about becoming a scientist because they've never met one."

URISE will offer an ambassador program to high schools in San Antonio so that if a high school teacher needs to know something about a scientific topic, like genetics or microbiology, they can tap into the St. Mary's University faculty or URISE scholars for expertise.

The NIH grant builds on a similar program at the University — called Maximizing Access to Research Careers (MARC) Undergraduate Student Training in Academic Research (U*STAR) — with a 40-year legacy of preparing students from historically underrepresented populations to enter professional schools. Historically underrepresented groups in biomedical research are defined by NIH as individuals with disabilities; those from disadvantaged backgrounds; those who identify as Hispanic, African American, American Indian, Alaska Native, Native Hawaiian or other Pacific Islander; and particularly women from those backgrounds.



Statistics show students who participate in undergraduate research at St. Mary's have improved graduation statistics, Contreras-Shannon said.

"The sooner students start doing research, when they get to our campus, the more likely they are to graduate in four years," she said. "That's because they're developing critical thinking skills, time management skills, confidence and self-efficacy."

She said nearly all students in the MARC U*STAR program since 2000 gained acceptance into graduate school, and 78% have received a Ph.D. or are in a Ph.D. program, which could add greater diversity among the future ranks of professors.

"If we want to innovate science, we need to have a lot of diversity in ability and thought" to solve the challenges of the future, Contreras-Shannon said.

The URISE Program objectives include:

- Building the interest of St. Mary's students in research careers in the biomedical sciences and pursuing a Ph.D. degree in biomedical sciences through early outreach and interactions with local high schools.
- Implementing a research track curriculum designed to mentor, train and engage students in biomedical research (including community college transfer students) and increase the number of students interested in research careers.
- Recruiting and preparing a diverse pool of URISE scholars who complete their baccalaureate degree; complete biomedical, research-focused higher degree programs (e.g., Ph.D. or M.D./Ph.D.); and pursue biomedical research careers

Students in the URISE program receive \$16,000 in tuition assistance, a monthly stipend, research opportunities, information about what it means to go to graduate school, help with building up their curriculum vitae with technical and professional skills, and building their career network.



UNIVERSITY MISSION

St. Mary's University, as a Catholic Marianist University, fosters the formation of people in faith and educates leaders for the common good through community, integrated liberal arts and professional education, and academic excellence.



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