



MICHIGAN RESEARCH AND DISCOVERY SCHOLARS
**SPRING RESEARCH
SYMPOSIUM**

WEDNESDAY, APRIL 13, 2022
BIOMEDICAL SCIENCE RESEARCH BUILDING

M | **LSA** MICHIGAN RESEARCH
AND DISCOVERY SCHOLARS
UNIVERSITY OF MICHIGAN



WELCOME TO THE ANNUAL

**MICHIGAN RESEARCH AND DISCOVERY SCHOLARS
SPRING RESEARCH SYMPOSIUM**

Order of Events

6:00–6:45 p.m. Research Poster Presentations, Session I
Atrium

6:55–7:35 p.m. Oral Presentations
Auditorium

7:45–8:30 p.m. Research Poster Presentations, Session II
Atrium

Oral Presentations

Evan Cohen

Interactive Web Application for the COVID-19 Outbreak in India

Research Mentor: Michael Kleinsasser, Applications Programmer Intermediate, Biostatistics

Mariana Fernández Correa

Does Life History Affect Swimming Morphology in Killfish?

Research Mentor: Samuel Borstein, Postdoctoral Fellow, Ecology and Evolutionary Biology

Taylor Stacy

Coverage of Cannabis in Public Health Curricula

Research Mentor: Daniel Kruger, Research Assistant Professor, Institute for Social Research

Poster Presentations

Maneet Angra (Session I-43)

M-STAR: Michigan Sleep Treatment to Avoid Relapse

Research Mentor: J Todd Arnedt, Associate Professor, Psychiatry

Varalakshmi Arul (Session I-6) with Maxwell Iseler (Session I-12), Pedro Lapagesse (Session I-3)

Generative Justice: Cycling Ecology and Social Values

Research Mentor: Ron Eglash, Professor, Information/Art and Design

Mallvika Baheti (Session I-1)

Mechanical design of head mounted guidance system

Research Mentor: James Weiland, Professor, Biomedical Engineering

Flynn Baird (Session II-11)

The Effects of Biden Administration Policies on the Automotive Industry

Research Mentor: Bruce Belzowski, Managing Director: Automotive Futures,
Automotive Futures

Porvesh Balasubramanian (Session I-22) with Jimson Yang (Session I-27)

Follow the Leader? Rethinking Leadership and Hierarchy in the Workplace

Research Mentor: Elizabeth Trinh, Business Administration PhD - Student,
Management and Organizations

Maoz Bareket (Session II-48)

Using CT scanning to peer inside fish skulls

Research Mentor: Matt Friedman, Associate Professor, Museum of
Paleontology/Earth and Environmental Sciences

Emma Baron (Session II-27)

Lobbying on Constitutional Amendments

Research Mentor: Kenneth Kollman, Professor, Political Science/International Institute

Emily Berriman (Session I-38)

Neural Mechanisms of Mindfulness-based Cognitive Therapy (MBCT) for Posttraumatic Stress Disorder (PTSD)

Research Mentor: Jung Park, Clinical Subjects Coordinator, Psychiatry

Elizabeth Cervantes (Session II-43) with Cameron Hempton (Session I-34), Noah Volin (Session I-53)

Roles of KORRIGAN Proteins in Plant Cell Wall Biosynthesis

Research Mentor: Erik Nielsen, Assistant Professor, Molecular, Cellular and Developmental Biology

Shrikar Chakravarthy (Session II-38)

Analysis of Metastatic Niche Microenvironment in Tumor Cell Proliferation and Apoptosis

Research Mentor: Jesus Ramon Ocadiz Ruiz, Research Investigator, Biomedical Engineering

Aaryan Chandola (Session I-49)

What Leads a Restaurant to Partner with a Delivery Service?

Research Mentor: Christine Choi, Business Administration PhD - Student, Ross/Strategy

Aishani Chatterjee (Session II-22)

Navigating Statistical and Scientific Reasoning

Research Mentor: Audrey Michal, Assistant Research Scientist, Psychology

Benny Cho (Session I-17) with Jake Downey (Session II-33)

TAPHONOMY OF MOUNTAIN-PROXIMAL VERTEBRATE MICROFOSSIL BONEBEDS FROM THE EARLY PALEOCENE DENVER FORMATION OF THE DENVER BASIN (EL PASO COUNTY, COLORADO)

Research Mentor: Lucas Weaver, Postdoctoral Research Fellow, Ecology and Evolutionary Biology

Yohyun Cho (Session I-28)

Analyzing the quality of preprints in biomedical literature

Research Mentor: Yulia Sevryugina, Chemistry Librarian/Senior Associate Librarian, Library

Henry Dai (Session II-44)

Longitudinal Analysis of Human Pancreatic Cancer Biospecimens

Research Mentor: Eileen Carpenter, Clinical Instructor, Division of Gastroenterology

Kevin Dancey (Session II-32)

Studying the Corticotropin-releasing hormone (CRH) Stress Response

Research Mentor: Audrey Seasholtz, Professor/Research Professor, Molecular and Behavioral Neuroscience Institute

Ongkon Deb (Session I-33)

Whole Health Educational Resource Development and Evaluation for Veterans and VA Staff

Research Mentor: Dr. Nikhil Parekh, National VA Whole Health Educator, VA Ann Arbor Whole Health Director, VA Ann Arbor Healthcare System

Carter DeRosia (Session I-39)

Comparison of Traditional and Adjustable Transfemoral Prosthetic Sockets

Research Mentor: Deanna Gates, Associate Professor, Movement Science

Matteo Di Mario (Session II-23)

Follow the Leader? Rethinking Leadership and Hierarchy in the Workplace

Research Mentor: Elizabeth Trinh, Business Administration PhD - Student,
Management and Organizations

Jake Downey (Session II-33) with Benny Cho (Session I-17)

*TAPHONOMY OF MOUNTAIN-PROXIMAL VERTEBRATE MICROFOSSIL
BONEBEDS FROM THE EARLY PALEOCENE DENVER FORMATION OF THE
DENVER BASIN (EL PASO COUNTY, COLORADO)*

Research Mentor: Lucas Weaver, Postdoctoral Research Fellow, Ecology and
Evolutionary Biology

Sriamsha Dubbaka (Session II-39)

*Effect of loss of Mll4 on recovery from pancreatitis and Mll4's role in
cancerous pancreatic tumor initiation in mice models.*

Research Mentor: Jiaqi Shi, Associate Professor, Pathology

Emanuele Ermini (Session II-17)

Innovation in the satellite industry

Research Mentor: Yue Zhou, Associate Professor, Strategy

Megan Fan (Session II-6)

*Building an online portal for community engagement with local health
research*

Research Mentor: Daniel Kruger, Research Assistant Professor, Institute for Social
Research

Jaslin Garcia-Morales (Session I-2)

*Medical image classification based on physics-constrained dictionary
learning*

Research Mentor: Yanglong Lu, Postdoctoral Fellow, Radiology

Roman Gaskey (Session II-28)

Partisanship and Election Administration in the United States

Research Mentor: Phoebe Henninger, Political Science PhD - Student, Political Science

Jakob Gorisek-Gazze (Session I-7)

The Resilience Project: Urban Flood Trends and their Impacts in the Northeast United States

Research Mentor: Ben van der Pluijm, Professor, Earth and Environmental Sciences

Autumn Graham (Session I-40)

Measuring and manipulating brain networks in the human motor system

Research Mentor: Michael Vesia, Assistant Professor, Kinesiology

Andrea Hassig (Session I-18)

Body shape evolution in piranhas

Research Mentor: Matthew Kolmann, Postdoctoral Researcher, Museum of Paleontology

Kyle Heard (Session I-45)

Role of the transcription factor HHEX in adrenal cell function and ACTH-induced hyperplasia

Research Mentor: Gary Hammer, Millie Schembechler Professor of Adrenal Cancer, Internal Medicine MEND

Cameron Hempton (Session I-34) with Elizabeth Cervantes (Session II-43), Noah Volin (Session I-53)

Investigating the roles of KORRIGAN endoglucanases during cellulose synthesis in plants

Research Mentor: Erik Nielsen, Assistant Professor, Molecular, Cellular and Developmental Biology

Elise Hocking (Session I-29)

Metabolism after bariatric surgery

Research Mentor: Nadejda Bozadjieva Kramer, Research Assistant Professor, Surgery

Morgan Horvath (Session II-45)

Comparing Two Approaches to Measuring Children's Jump Performance

Research Mentor: Leah Robinson, Associate Professor, Kinesiology

Dominick Hosner (Session II-34)

Tuning Reactivity of MnO₂ Electrocatalysts for Alcohol Oxidation Using Strategic Defects: Oxygen Vacancies

Research Mentor: Bart Bartlett, Associate Professor, Chemistry

Kobe Howcroft (Session II-7)

Triangulating Shape: Assembling a Shape-Diverse Covalent Ligand Library

Research Mentor: Brittany Morgan, May-Walt Life Sciences Postdoctoral Fellow, Life Sciences Institute

Prema Immadisetty (Session II-40)

Aortopathy Research - Distal Aortic Progression of Fenestration and Stenting

Research Mentor: Bo Yang, Assistant professor, Cardiac surgery

Maxwell Iseler (Session I-12) with Varalakshmi Arul (Session I-6), Pedro Lapagesse (Session I-3)

Generative Justice: Cycling Ecological and Social Value

Research Mentor: Ron Eglash, Professor, Information/Art and Design

Zara Jacob (Session II-29)

Racial and Gender Differences in The Managerial Labor Market

Research Mentor: Jinting Zhou, Research Staff, Strategy

Ronald Jamieson (Session II-12)

Nubia: Listening otherwise

Research Mentor: Amal Fadlalla, Professor, Afroamerican and African Studies/Women's and Gender Studies/Anthropology

Nidhi Kandi (Session I-30)

Engaging Young Men in Reproductive Sexual Health: A Community Based Participatory Project

Research Mentor: Jade Burns, Assistant Professor, Nursing - Division of Health Behavior & Biological Sciences

Iaroslav Kovalchuk (Session I-13)

Lithium ion battery data analytics and modeling

Research Mentor: Andrew Weng, Mechanical Engineering PhD - Student, Mechanical Engineering

Terra Lafreniere (Session II-2)

Hollywood's Lost Celebrities: Live Performance in Classical Era Movie Theaters

Research Mentor: Vincent Longo, Research Associate II/Doctoral Candidate, Film, Television, and Media

Pedro Lapagesse (Session I-3) with Varalakshmi Arul (Session I-6), Maxwell Iseler (Session I-12)

Generative Justice, Cycling Ecological Values

Research Mentor: Ron Eglash, Professor, Information/Art and Design

Brooke Lavoie (Session I-35)

Creation of Stabilin-2 Polymorphism A1996V Identified in Patients with Deep Vein Thrombosis

Research Mentor: Karl Desch, Associate Professor of Pediatrics, Pediatrics

Nikita Lebedz (Session II-35)

Modeling Thoracic Aortic Aneurysm with Primary Smooth Muscle Cells

Research Mentor: Bo Yang, Assistant professor, Cardiac surgery

James Leung (Session I-8)

Matching Humans with Tour Guide Robots and Simultaneously Routing Under Time Uncertainty

Research Mentor: Maani Ghaffari Jadidi, Assistant Professor, Naval Architecture and Marine Engineering/Robotics

Gordon Lim (Session II-13)

Evaluating Out-of-Distribution Performance in RVL-CDIP Document Classification

Research Mentor: Stefan Larson, Senior Machine Learning Engineer, SkySync

Joshua Lin (Session I-41)

Treatment for Mild Cognitive Impairment: tDCS & MST

Research Mentor: Benjamin Hampstead, Professor, Psychiatry

James Lovering (Session I-14)

Building a database of material properties for irradiated metals

Research Mentor: Todd Allen, Professor, Nuclear Engineering and Radiological Sciences

Jazzmyn Loyd (Session II-14)

Camera Protocols and Black Employees' Racial Codeswitching Behaviors

Research Mentor: Myles Durkee, Assistant Professor, Psychology

Analeigh Majewski (Session I-50)

Evaluating Polymer Membranes in Flow Reactors

Research Mentor: Nirala Singh, Assistant Professor, Chemical Engineering

Justin Mason (Session II-8)

Museums and Publics: Engaging Detroit, Berlin, and the Future of the City

Research Mentor: Damani Partridge, Associate Professor,
Anthropology/Afroamerican and African Studies

Brittany Mauridi (Session II-41)

Targeting DNA Repair in Human Neural Crest Development and in Neuroblastoma

Research Mentor: Erika Newman, Assistant Professor, Pediatric Surgery

April Merriweather (Session I-24)

The diversity and multidimensionality of parenting stress experiences under the Covid-19 lockdowns of Spring 2020

Research Mentor: Anne Blumenthal, Social Work & Sociology PhD - Student, Joint Program in Social Work & Sociology

Sasha Mittal (Session II-3)

Standardization of Gait Data for Biomechanics Using a Structured Machine Learning Data Schema

Research Mentor: Robert Gregg IV, Associate Professor, Electrical Engineering and Computer Science

Katherine Morrissey (Session II-50)

Chloride Mediated Oxidation of Ethanol on Cadmium Sulfide Photocatalysts

Research Mentor: Bart Bartlett, Associate Professor, Chemistry

Leela Mukherjee (Session I-46)

Design and Implementation of a Pneumatic Actuation Platform for Soft Robots

Research Mentor: Abdon Pena-Francesch, Assistant Professor, Materials Science and Engineering

Andrea Negron (Session II-46)

Molecular markers of BAV-associated aortic aneurysms

Research Mentor: Bo Yang, Assistant professor, Cardiac surgery

Milo Neirink (Session I-51)

Evolutionary Patterns of Phenotypic Disparity in Neotropical Fishes

Research Mentor: Samuel Borstein, Postdoctoral Fellow, Ecology and Evolutionary Biology

Natalie Oliven (Session I-36)

Exploring the Gravitational Wave Universe

Research Mentor: Mark Reynolds, Associate Research Scientist, Astronomy

Jonah Parkes (Session I-15) with Shrey Patel (Session I-9)

Heart Failure Prediction Using Physiological Data Extracted from Commercial Wearables

Research Mentor: Sardar Ansari, Research Assistant Professor, Michigan Center for Integrative Research in Critical Care, Emergency Medicine

Shrey Patel (Session I-9) with Jonah Parkes (Session I-15)

Heart Failure Prediction Using Physiological Data Extracted from Commercial Wearables

Research Mentor: Sardar Ansari, Research Assistant Professor, Michigan Center for Integrative Research in Critical Care, Emergency Medicine

Camila Quintero Diaz (Session I-42)

Molecular and cellular mechanisms that underlie brain defects in Down syndrome

Research Mentor: Bing Ye, Professor, Life Sciences Institute

Adithya Raman (Session II-15)

Creating write-code and parsons problems for the Python interactive ebook

Research Mentor: Barbara Ericson, Assistant Professor, Computing

Joshua Ramnarace (Session II-9)

Advancing the state of advanced manufacturing

Research Mentor: Kira Barton, Associate Professor, Mechanical Engineering

Grace Randolph (Session II-30)

Exploring the interactions of obesity and pneumonia through gene expression

Research Mentor: Benjamin Singer, Assistant Professor, Internal Medicine / Pulmonary and Critical Care Medicine

Nur Muhammad Renollet (Session I-47)

The Role of BMI1 in Acinar to Ductal Metaplasia in the Pancreas

Research Mentor: Joyce Thompson, Postdoctoral fellow, Surgery

Annabelle Rollins (Session II-36) with Prashanti Donthireddy (UROP)

Utility of Metabolomics to Study the Impact of Salt on the Human Body

Research Mentor: Brian Byrd, Assistant Professor, Internal Medicine

Subhamitra Banerjee Roychoudhury (Session I-31)

Elections Around the World: The Constituency Level Election Archive

Research Mentor: Allen Hicken, Professor, Political Science

Saksham Sadh (Session I-10)

Adding problems to interactive ebooks

Research Mentor: Barbara Ericson, Assistant Professor, Computing

Azeem Saifee (Session I-37)

Understanding a novel family of UBQLN2 interactors

Research Mentor: Henry Paulson, Professor, Neurology

Kritika Sethi (Session II-51)

Climate Change, Health and Environmental Justice

Research Mentor: Peter Larson, Postdoctoral Research Fellow, Institute for Social Research/School of Public Health

Neel Shah (Session II-18)

Curricular Change in Instrumental Music Teacher Education

Research Mentor: Colleen Conway, Professor, Music Education

Sajiv Shah (Session II-24)

Gig Work, Wellbeing, and Financial Crises: A Machine Learning Approach

Research Mentor: Joelle Abramowitz, Assistant Research Scientist, Institute for Social Research

Alankar Shende (Session I-25)

Financial Portfolio Replication Using Optimal Transport Theory

Research Mentor: Florian Gunsilius, Assistant Professor, Economics

Jessica Siegal (Session I-19)

Assessing US Police Officers' Education and Training

Research Mentor: Matthew Alemu, Public Policy & Sociology PhD - Student, Sociology

Owen Sims (Session I-52)

Stewardship As Ownership

Research Mentor: De Yi, Lecturer/Research Fellow, Architecture

Aditya Singhvi (Session I-4)

Automated Sleep-State Classification Using Neural Data

Research Mentor: Omar Ahmed, Assistant Professor, Psychology

Gabriel Smith (Session I-16)

Ray Tracing for Visualization

Research Mentor: Venkat Raman, Professor, Aerospace Engineering

Park Szachta (Session II-4) with Clara Wolff (Session I-36)

MyVoice- Real-time Text Messaging Polling to give Adolescents a Voice

Research Mentor: Tammy Chang, Assistant Professor, Family Medicine

Amy Tan (Session II-47)

Impact of Increased Risk for Adversity Exposure on Adolescent to Adult Neural Development

Research Mentor: Christopher Monk, Professor, Psychology

Colton TerHaar (Session II-25)

Sustainable Development in Morocco

Research Mentor: Adam Simon, Arthur F. Thurnau Professor of Earth and Environmental Sciences, Earth and Environmental Sciences

Elizabeth Troia (Session II-16)

Electrochemical Deposition of Germanium on Soda-Lime Glass

Research Mentor: Stephen Maldonado, Professor, Chemistry

Hanna Tuoriniemi (Session II-19)

Sustainable Development at a Non-Profit Foundation in Morocco

Research Mentor: Adam Simon, Arthur F. Thurnau Professor of Earth and Environmental Sciences, Earth and Environmental Sciences

Andres Velasco (Session II-31)

Sustainable Development in Morocco

Research Mentor: Adam Simon, Arthur F. Thurnau Professor of Earth and Environmental Sciences, Earth and Environmental Sciences

Parvin Virdee (Session II-52)

Analysis of Battery-Swapping vs. Fast-Charging on LDV Shuttles

Research Mentor: Anna Stefanopoulou, Professor, Mechanical Engineering

Noah Volin (Session I-53) with Elizabeth Cervantes (Session II-43), Cameron Hempton (Session I-34)

Roles of KORRIGAN Proteins in Plant Cell Wall Biosynthesis

Research Mentor: Erik Nielsen, Assistant Professor, Molecular, Cellular and Developmental Biology

Emanuel Vordonis (Session I-32)

War & Military Occupations Data Set (Russian Intervention in Persia 1907-1917)

Research Mentor: Anthony Marcum, Lecturer III, Program in International and Comparative Studies

Zihao Wang (Session II-10)

Design of Low Strength Uniform Magnetic Field Environment Generator

Research Mentor: Timothy Chupp, Professor, Physics

Isabella Wash (Session I-20)

Exploring Microbial Variability in Seasonal Succession in Lake Michigan

Research Mentor: Vincent Deneff, Associate Professor, Ecology and Evolutionary Biology

Vincent Wei (Session I-5)

Characteristics of COVID-AKI Associated Patients

Research Mentor: Fadhl Alakwaa, Research investigator, Internal Medicine

Clara Wolff (Session I-26) with Park Szachta (Session II-4)

MyVoice- Real-time Text Messaging Polling to give Adolescents a Voice

Research Mentor: Tammy Chang, Assistant Professor, Family Medicine

Nathan Wu (Session I-11)

Follow the Leader? Rethinking Leadership and Hierarchy in the Workplace

Research Mentor: Elizabeth Trinh, Business Administration PhD - Student,
Management and Organizations

Verena Wu (Session II-53)

Social intelligence and cooperation in paper wasps

Research Mentor: Emily Laub, Ecology and Evolutionary Biology PhD - Student,
Ecology and Evolutionary Biology

Shosei Yamane (Session II-26)

*The Growth of Online Communities: An Experiment on the Reddit Social
Networking Site*

Research Mentor: Justin Huang, Assistant Professor, Marketing

Jimson Yang (Session I-27) with Porvesh Balasubramanian (Session I-22)

Follow the Leader? Rethinking Leadership and Hierarchy in the Workplace

Research Mentor: Elizabeth Trinh, Business Administration PhD - Student,
Management and Organizations

Nehemiah Yu (Session II-5)

*Deep Learning Super Resolution Generative Adversarial Networks For
Microscopy*

Research Mentor: Dawen Cai, Associate Professor, Cell and Developmental
Biology/Biophysics

Hasan Zengin (Session II-20)

*Global Cooperatives in Changing Markets: The Case of Fishery Cooperatives
in Mexico*

Research Mentor: Steven Samford, Assistant Professor, Organizational Studies

Katherine Zhao (Session I-21)

Examining Fentanyl Analogs

Research Mentor: Jessica Anand, Research Faculty, Pharmacology

Ziyang Zhao (Session I-48)

Machine Learning Classification and Regression of SCA3 Molecular Signatures

Research Mentor: Hayley McLoughlin, Assistant Professor, Neurology

Shirley Zheng (Session II-21)

BMI-1 Regulates Cancer Stem Cell Phenotype in Head and Neck Squamous Cell Carcinoma

Research Mentor: Jacques Nor, Chair and Professor, Cariology, Restorative Sciences, and Endodontics

Zoe(Zhiyi) Zheng (Session II-42)

Digital Intimacies

Research Mentor: Li Cornfeld, Postdoctoral Fellow, Digital Studies Institute

**MICHIGAN RESEARCH AND
DISCOVERY SCHOLARS STAFF**

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JANAE' COLLIER, PH.D.
ASSOCIATE DIRECTOR

OLIVIA CALLAHAN
GRADUATE PROGRAM ASSISTANT

SARA JOHNSON ROMEO
ADMINISTRATIVE ASSISTANT

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