



STUDENT RESEARCH & **CREATIVITY** **SYMPOSIUM**

APRIL 7-8, 2023



PROVOST

Dr. Avinandan “Avi” Mukherjee



Greetings, esteemed attendees of the Second Annual Student Creativity & Research Symposium at Marshall University! It is my privilege to welcome you to this exciting event, where we will come together to celebrate the exceptional talent and innovative spirit of our students. This week, we have the opportunity to showcase the remarkable achievements of more than 130 students who have been working tirelessly to advance their research and creative endeavors.

At Marshall University, we are proud to hold the distinguished R2 status as a research university, recognized by the Carnegie Classification of Institutions of Higher Education. This status represents our commitment to fostering an environment of academic excellence, intellectual curiosity, and innovative problem-solving. Our students play an integral role in this process, as they are the driving force behind the cutting-edge research and creative projects that will be presented.

By participating in this symposium, our students have the opportunity

to share their work with a diverse audience and to engage in meaningful discussions with peers, mentors, and community members. This experience will not only enhance their research skills but will also prepare them for success in their future careers.

I am grateful to the faculty and staff members who have worked so hard to make this event possible and to support our students in their academic journeys. Your dedication and commitment to fostering student scholarship and professional development are truly commendable.

So, let us embrace these two days with excitement and inspiration as we celebrate the achievements of our students and the impact they will have on our communities and the world!

Best regards,
Dr. Avinandan “Avi” Mukherjee
Provost and Senior Vice President
of Academic Affairs
Marshall University



Welcome

Philippe Georgel



Welcome to the 2023 Marshall University Student Research and Creativity Symposium.

After a successful inaugural Symposium in 2022, we faced the challenge of improving the event. So, the Advisory Board and Supporting Committee went to work. We targeted high caliber researchers and creators to be our invited speakers. To our great pleasure, we received positive responses from our potential speakers, as you can see in our program. As we did last year, the Student Research and Creativity Symposium continues to offer a unique opportunity for our students, undergraduate and graduate, to display their contributions to research and their creative activities to our campus and our community. Over the next two days, Marshall University students will present their contributions to the worlds of science, health sciences, medicine, pharmacy, liberal arts, business, engineering, education, and arts and media using various formats. Oral presentations, musical performances, debates, and posters, to name a few formats, will be presented. Note that the musical and dance performances will be held in the 3rd floor atrium of the Drinko Library.

To open and close each day, and during our lunch time, our guest speakers will address various aspects of research and creativity. On Friday afternoon, a wine and cheese gathering will honor the students and their mentors for their participation and input.

A total of 118 oral presentations and posters will be held. Oral presentations will be a combination of face-to-face format and virtual (Teams/Zoom) for off-campus students. Three poster sessions (two sessions for undergraduate students and one for graduate students) are scheduled, as well as artistic performances.

We are looking forward to the celebration of our students' achievements through a great series of inspiring presentations fostered by Marshall University and supported by our local communities. We hope that you will enjoy all aspects of our symposium and we can't wait for you to join us in celebrating research and creativity.

Philippe T. Georgel, Ph.D.
Senior Director of the Office of
Student Research

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023

OVERVIEW

The Student Research and Creativity Symposium at Marshall University is intended to celebrate, promote and recognize undergraduate and graduate research and creativity across all colleges and units.

The two-day event includes a full day for undergraduate students on Friday, April 7th and a full day for graduate students on Saturday, April 8th. Both days include prestigious guest speakers from outside the university, a panel lunch and a selection of presentations from the best student work from each unit.

GOALS

The symposium will:

- Showcase the best student work from across Marshall University to internal and external audiences
- Contribute to the continuing growth of Marshall as a research university
- Demonstrate how student accomplishments can contribute to the economy and quality of life of the surrounding intellectual and business community

IMPACT

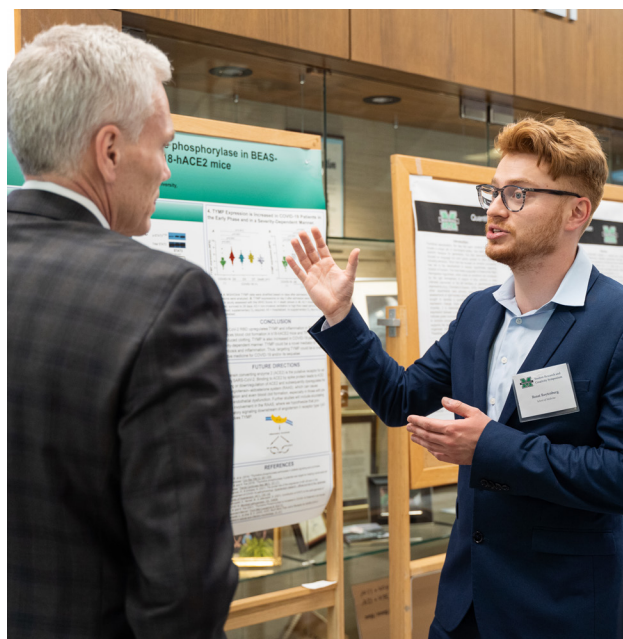
Students who take part in the experience will build their presentation experience and will connect with a broader audience outside of Marshall University. The hope is for younger students to draw inspiration and to aim higher in their endeavors. The event also impacts Marshall University by showcasing the breadth of student achievement to the surrounding community.

PARTICIPATING UNITS

- College of Arts and Media
- Brad D. Smith Schools of Business
- College of Education and Professional Development
- College of Engineering and Computer Sciences
- College of Health Professions
- College of Liberal Arts
- College of Science
- Joan C. Edwards School of Medicine
- School of Pharmacy
- Louis Stokes Alliance for Minority Participation
- Chancellor's Scholars Program

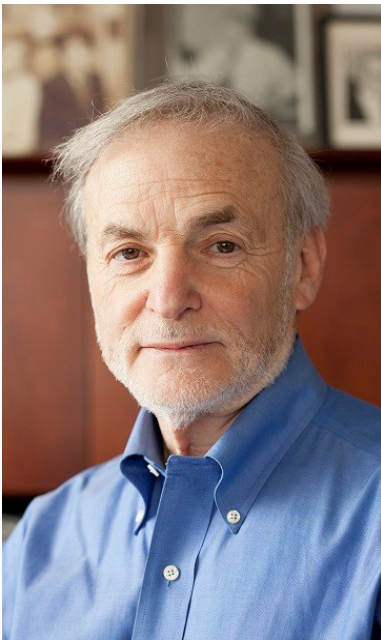


**Scan here to view the
full Book of Abstracts**



STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

Stephen Bruce Baylin, M.D.

The Sidney Kimmel Cancer Research Center at Johns Hopkins

For over 30 years, Dr. Baylin has studied the role of epigenetic gene silencing in the initiation and progression of human cancer. He and his colleagues fostered the concept that DNA hypermethylation of gene promoters, and associated transcriptional silencing, can serve as an alternative to mutations for producing loss of tumor suppressor gene function. They have described some of the classic genes involved, invented approaches to randomly screen the cancer genome for such genes and to demonstrate their functional role in cancer progression. They are helping to unravel the molecular mechanisms responsible for the initiation and maintenance of the gene silencing, and utilized all of their findings for translational purposes. For the latter activity, Dr. Baylin currently co-leads, with Peter Jones, the Van Andel Institute Stand up to Cancer (SU2C), Epigenetic Therapy Team. Baylin has authored or co-authored some 500 full-length publications on the above and other areas of cancer biology.

Dr. Baylin is currently co-Chief of the Cancer Genetics and Epigenetics Program of The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins and is the Virginia and D.K. Ludwig Chair in Cancer Research. Representative honors include: the 2004 National Investigator of the

Year Award from the NCI SPORE program; the 2005 Shubitz Cancer Research Prize from the University of Chicago; the 2009 Kirk A. Landon-AACR Prize for Basic Cancer Research, (with Peter A. Jones); the 14th NCI Alfred G. Knudson Award in Cancer Genetics; and again, with Dr. Jones, the 2011 American Cancer Society's Medal of Honor. He has been elected as a Fellow of the AACR Academy in 2014, to the National Academy of Sciences in 2017 and to the American Association for the Advancement of Science (AAAS) in 2020.

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

Roderick H. Dashwood, Ph.D.

Director, Center for Epigenetics & Disease Prevention

Rod Dashwood received his Ph.D. in 1986 from the University of Portsmouth in the U.K. and earned a postdoctoral appointment at Oregon State University (1986-90) and assistant/associate professor positions at the University of Hawaii (1990-98). He returned to OSU in 1997 as director of the Cancer Chemoprotection Program and Helen Rumbel Professor for Cancer Prevention at the Linus Pauling Institute. In 2013, Dr. Dashwood joined Texas A&M Health as director of the Center for Epigenetics & Disease Prevention and John S. Dunn Chair in Disease Prevention, with tenure as a professor in the School of Medicine's Department of Translational Medical Sciences. With an h-index of 77,

journals such as *Molecular Cancer* and *Cancer Research*. Professional honors include Regents' Medals for Excellence in Teaching (1995) and Research (1997), the Rice University Institute of Biosciences & Bioengineering Medical Innovation Award (2017), and he was named Fellow of the Royal Society of Biology (2017). Dr. Dashwood served as chair of the NIH Cancer Prevention Study Section (2020-2022) and was in the upper quartile of World's Top 2% Scientists 2022, comprising the most-cited authors across all scientific disciplines, according to Stanford University. In 2023, he received the highest recognition afforded to Texas A&M faculty of University Distinguished Professor.

Dr. Dashwood's scholarly activities comprise more than 350 abstracts, book chapters and peer-reviewed publications in respected oncology



STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

John J. Kopchick Ph.D.

Professor, Molecular Biology

Dr. John J. Kopchick is an internationally recognized leader in the growth hormone field. Since 1987, he has been the Goll-Ohio Eminent Scholar and Distinguished Professor of Molecular Biology in The Edison Biotechnology Institute and the Heritage College of Osteopathic Medicine at Ohio University in Athens, Ohio. Dr. Kopchick attended Indiana University of Pennsylvania (IUP) and received his B.S. and M.S. degrees in Biology/Chemistry. His Ph.D. in Biomedical Sciences was awarded in 1980 by the University of Texas Graduate School of Biomedical Sciences at The M.D. Anderson Cancer Center in Houston.

Dr. Kopchick performed postdoctoral studies in molecular virology at the Roche Institute of Molecular Biology in Nutley, New Jersey. Following that, he was a group leader in molecular medicine at Merck & Co., Rahway, N.J. Dr. Kopchick and his group were the first to discover and characterize GH receptor antagonists, an accomplishment for which he and Ohio University were awarded several US and European patents. He also was instrumental in founding a company, Sensus, which applied his research to the development of an FDA approved drug called Somavert (Pegvisomant for injection) which is marketed worldwide for patients with acromegaly who benefit from

treatment. Royalties from the sales of Somavert have yielded ~\$120M to Ohio University, which has led to a Translational Medicine Doctoral Program.

Dr. Kopchick has published more than 430 scientific articles and serves or has served on the Editorial Boards of Endocrinology, Molecular Endocrinology, GH & IGF-1 Research, Pituitary, eLife and The Journal of Biological Chemistry. He is Past-President of the Growth Hormone Research Society and currently an ad hoc member of their Counsel. His international relationships have resulted in many friends and fruitful collaborations. Dr. Kopchick has received numerous awards including the British Endocrine Society Transatlantic Award (2011), the Endocrine Society Laureate Award for Outstanding Innovations (2019) and the title of Ohio University Distinguished Professor. He has advised 33 PhD, 4 DO/PhD, and 14 MS students along with 45 post-doctoral fellows, several visiting professors, and over 300 undergraduate students in molecular aspects of growth, diabetes, cancer and aging.

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

Linda T. Parsons, Ph.D.

Associate Professor, The Ohio State University

Dr. Linda T. Parsons is an associate professor in the Department of Teaching and Learning on the Marion campus of The Ohio State University where she specializes in middle childhood literacy and diverse literature. Her research focuses on the analysis of children's and young adult novels to consider literary constructions of reality and their relationship to lived realities and to consider literature's potential to deconstruct binary thinking. She has served on book committees for the American Library Association and the United States Board on Books for Youth and currently serves on the Outstanding International Books committee.



Guest Speaker

Lisa Pinkerton, Ph.D.

Assistant Clinical Professor, The Ohio State University

Dr. Lisa Pinkerton is the Marie Clay Endowed Chair in Reading Recovery and Early Literacy at The Ohio State University. In her position as assistant clinical professor, she teaches courses on children's and young adult literature and courses on literacy theory and pedagogy. Her research focuses on the role of the creative arts and artistic methodologies in academic writing. She can usually be found recommending books to students and teachers.

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

Steven H. Sheingold, Ph.D.

Director of the Division of Health Financing Policy, Department of Health and Human Services

Steven H. Sheingold, Ph.D. is the Director of the Division of Health Financing Policy, Office of the Assistant Secretary for Planning and Evaluation (ASPE), Department of Health and Human Services (HHS). At HHS, his areas of research and policy analyses include: analysis of Medicare's payment systems, value based purchasing policies, evaluation strategies, analysis of competition in insurance and provider markets, and economic issues related to health care and pharmaceutical markets.

Prior to joining ASPE, Dr. Sheingold held several managerial and senior analyst positions within the Centers for Medicare and Medicaid Services (CMS) and the Congressional Budget Office. As an Adjunct, he has taught classes in health policy,

health services research and statistics at George Mason University and George Washington University. He has published articles concerning: reimbursement systems; technology assessment and cost effectiveness analyses; value based purchasing programs; the use of evidence for health policy making; pharmaceutical markets and the impact of social risk factors on quality of care in Journals such as Health Affairs, New England Journal of Medicine, Medical Care and the Journal of Health Policy, Politics and Law. Dr. Sheingold has co-authored a book titled Evaluation for Health Policy and Health Care: A Contemporary Data-Driven Approach which was published September 2019. He holds a Ph.D. in Economics from the Pennsylvania State University.



STUDENT RESEARCH & CREATIVITY SYMPOSIUM

APRIL 7-8, 2023



Guest Speaker

Jean Watson, Ph.D.

Founder and Director of the Watson Caring Science Institute

Dr. Jean Watson is Distinguished Professor and Dean Emerita, University of Colorado Denver, College of Nursing Anschutz Medical Center campus, where she held the nation's first endowed Chair in Caring Science for 16 years. She is founder of the original Center for Human Caring in Colorado and is a Fellow of the American Academy of Nursing; past President of the National League for Nursing; founding member of International Association in Human Caring and International Caritas Consortium. She is Founder and Director of the non-profit foundation, Watson Caring Science Institute (www.watsoncaringscience.org). In 2013, Dr. Watson was inducted as a Living Legend by the American Academy of Nursing, its highest honor.

She is a widely published author and recipient of many national/international awards and honors, including: The Fetzer Institute Norman Cousins Award, in recognition of her commitment to developing, maintaining and exemplifying relationship-centered care practices; an international Kellogg Fellowship in Australia; a Fulbright Research Award in Sweden; The Hildebrand Center for Compassion in Medicine Award Notre Dame University; Academy Integrative Medicine and Healing Award for pioneering work in Caring Science; Japanese International

Society of Caring and Peace Chair. She holds sixteen (16) Honorary Doctoral Degrees, including 13 International Honorary Doctorates (E. G. Sweden, United Kingdom, Spain, British Colombia and Quebec, Canada, Japan, Turkey, Peru and Colombia, S. America, Ireland).

Dr. Watson's caring philosophy and Transpersonal Theory of Human Caring, and Caritas Processes of Caring Science are used to guide transformative models of caring education; and professional caring-healing practices for hospitals, nurses and patients alike, in diverse settings worldwide.

At the University of Colorado, Dr. Watson held the title of Distinguished Professor of Nursing; the highest honor accorded its faculty for scholarly work.

As author /co-author of over 30 books on caring, her latest books range from empirical measurements and international research on caring, mindful caring science practices, to new postmodern philosophies of caring and healing, philosophy and science of caring and caring science as sacred science and global advance in caring literacy. Her books have been AJN books of the year awards

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

FRIDAY

April 7th 2023

SCHEDULE

8:00am-8:30am.....Welcome

- o Opening Statement: Dr. Philippe T. Georgel (Office of Student Research)
- o Welcome from Marshall University President Brad Smith and Provost Avinandan Mukherjee

8:30am-9:30am.....Guest Speaker Presentation (MSC, Don Morris Room)

“Origins and Functions of Abnormal DNA Methylation and Chromatin in Cancer”

Dr. Stephen Baylin (Johns Hopkins University, D.K. Ludwig Professor of Oncology and Medicine, Co-Director of the Cancer Biology Division and Associate Director for Research Programs of The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins)

9:45am-10:45am.....Oral Presentations: Sessions 1-A, 1-B, and 1-C

10:00am-11:30am.....Poster Session A

11:00am-12:00pm.....Oral Presentations: Sessions 2-A, 2-B, and 2-C

12:15pm-1:30pm.....Lunch and Guest Speaker Presentation (MSC, Don Morris Room)

“Caring Science and Transpersonal caring theory: Guide to education, practice, research leadership”

Dr. Jean Watson (Distinguished Professor of Nursing, Founder and Director of the Watson Caring Science Institute, former Dean of the University of Colorado College of Nursing)

1:30pm-3:00pm.....Poster Session B

1:30pm-3:00pm.....Oral Presentations: Sessions 3-A, 3-B, and 3-C

3:00pm-3:30pm.....Tea/Coffee Reception

3:45pm-4:45pm.....Guest Speaker Presentation (MSC, Don Morris Room)

“The Synergy of Artistic and Traditional Research Methodologies: A Conversation”

Dr. Linda Parsons (Ohio State University, Associate Professor at OSU, Marion) and Dr. Lisa Pinkerton (Ohio State University, Clinical Professor and the Marie Clay Endowed Chair in Reading Recovery and Early Literacy in the Department of Teaching and Learning)

4:45pm.....Closing Comments

5:00pm-6:00pm.....Wine/Cheese Reception for student mentors and speakers (Drinko Library, Atrium)

STUDENT RESEARCH & CREATIVITY SYMPOSIUM

SATURDAY

April 8th 2023

SCHEDULE

8:00am-8:30am.....Welcome

o Opening Statement: Dr. Philippe T. Georgel (Office of Student Research)

9:00am-10:00am.....Guest Speaker Presentation (MSC, Don Morris Room)

"The Intersection of Basic Science, Drug Development & Pharmaceuticals or Growth Hormone, Mini-Mice, Football, Dirty Shorts, and a New Drug"

Dr. John Kopchick (Ohio University, Distinguished Professor and Goll-Ohio Eminent Scholar, Edison Biotechnology Institute & Heritage College of Medicine)

10:15am-11:00am.....Oral Presentations: Sessions 1-A, 1-B, and 1-C

10:30am-11:45am.....Poster Session

11:15am-12:00pm.....Oral Presentations: Sessions 2-A, 2-B, and 2-C

12:15pm-1:30pm.....Lunch and Guest Speaker Presentation (MSC, Don Morris Room)

"Eat That! Immunoepigenetic Targeting of Your Genes"

Dr. Roderick Dashwood (Texas A&M University, director of the Center for Epigenetics & Disease Prevention at Texas A&M College of Medicine in Houston, John S. Dunn Chair in Disease Prevention)

1:45pm-2:30pm.....Oral Presentations: Sessions 3-A, 3-B, and 3-C

2:45pm- 3:30pm.....Oral Presentations: Sessions 4-A, 4-B, and 4-C

3:30pm-3:45pm.....Tea/Coffee Reception

4:00pm-5:00pm.....Guest Speaker Presentation (MSC, Don Morris Room)

"The Role of Health Research in Health Policymaking"

Dr. Steven Sheingold (Director of the Division of Health Care Financing Policy Finance at the Office of the Assistant Secretary for Planning and Evaluation)

ORAL PRESENTATIONS & PERFORMANCES

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY

Session 1-A: Drinko Library, Atrium (3rd Floor).....9:45am-10:45am

1. Rolf Wilhelm's Euphonium Concertino: Expressivity and Virtuosity
College of Arts and Media.....Undergraduate UGO-1
Presenter: Nate Hunting, hunting3@marshall.edu.....Musical Performance
2. Sacred Music from Baroque to Contemporary
College of Arts and Media.....Undergraduate UGO-2
Presenter: Rachelle Snyder, snyder250@marshall.edu.....Musical Performance
3. Creating a Family Entertainment Center's Branding from Scratch and How to Incorporate Related Media
College of Arts and Media.....Undergraduate UGO-3
Presenter: Jacob Wood, wood233@marshall.edu.....Oral Presentation

Session 1-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....9:45am-10:45am

1. Current Research Methods: Neuromarketing
College of Business.....Undergraduate UGO-4
Presenter: Victoria Blickenstaff, blickenstaf3@marshall.edu.....Oral Presentation
2. Innovating Registration at Marshall University Using Design Thinking
College of Business/ Honor's College.....Undergraduate UGO-5
Presenter: Kristen Clark, clark661@marshall.edu.....Oral Presentation
3. Ethical Analysis of the Pharmaceutical Industry's Role in the Opioid Epidemic and Price Gouging
College of Business.....Undergraduate UGO-6
Presenter: Isabella Schrader, schrader13@marshall.edu.....Oral Presentation

Session 1-C: Memorial Student Center, John Spotts Room (2nd Floor).....9:45am-10:45am

1. Effect of 1-min Spin on Human Endothelial Cells at the Vertical Spin Tunnel
College of Engineering and Computer Sciences.....Undergraduate UGO-8
Presenters: Emma Barrett, barrett79@marshall.edu.....Oral Presentation
Kristen Clark, clark661@marshall.edu ; Maddy Branham, branham53@marshall.edu
2. Development of a Rapid, Portable, and Inexpensive Biosensor Device to Detect Sepsis
College of Engineering and Computer Sciences.....Undergraduate UGO-9
Presenter: Tessa Gardner, gardner85@marshall.edu.....Oral Presentation

Session 2-A: Memorial Student Center, John Spotts Room (2nd Floor).....11:00am-12:00pm

1. Design and Construction of a Hybrid Electric Bicycle
College of Engineering and Computer Sciences.....Undergraduate UGO-10
Presenter: Cameron Nichols, nichols191@marshall.edu.....Oral Presentation

ORAL PRESENTATIONS & PERFORMANCES

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

2. Predicting Timing and Location of HABs on the Ohio River Using Machine Learning
College of Engineering and Computer Sciences.....Undergraduate UGO-11
Presenter: Miranda Simpson, simpson130@marshall.edu.....Oral Presentation
3. The effects of repeated arm elevation on deltoid and infraspinatus activity
College of Health Professions.....Undergraduate UGO-12
Presenter: Dustin Darnell, darnell21@marshall.eduOral Presentation

Session 2-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....11:00am-12:00pm

1. The Effects on Arm Elevation on Trunk Rotation
College of Health Professions.....Undergraduate UGO-13
Presenter: Riley Elk, elk3@marshall.edu.....Oral Presentation
2. Infraspinatus Activity during Maximal External Rotation Trials in Three Different Conditions
College of Health Professions.....Undergraduate UGO-14
Presenter: Seth Jude, jude68@marshall.edu.....Oral Presentation
3. The Desire to Be Truly Recognized: How Incels, Don't Worry Darling, and The Stepford Wives Exemplify the Master-Slave Dialectic
College of Liberal Arts.....Undergraduate UGO-15
Presenter: Abigail Cunningham, cunningha218@marshall.edu.....Oral Presentation

Session 2-C: Memorial Student Center, 2W16B (2nd Floor).....11:00am-12:00pm

1. Shielded Support: Marshall's Unique Ability to Leverage Seeming Setbacks to Create Pro-Trans Change
College of Liberal Arts.....Undergraduate UGO-16
Presenter: Zoe Davin, davin4@marshall.edu.....Oral Presentation
2. The Evolution of Marxism: From Genocide to Freedom.
College of Liberal Arts.....Undergraduate UGO-17
Presenter: Ashlea Krasnansky, simmers2@marshall.edu.....Oral Presentation
3. Body Image, Social Media Use, and Mental Health
College of Liberal Arts.....Undergraduate UGO-18
Presenter: Emilee Pugh, pugh57@marshall.edu.....Oral Presentation

Session 3-A: Memorial Student Center, John Spotts Room (2nd Floor).....1:30pm-3:00pm

1. Valuing the Unwritten: Navigating Oral History Methods and a Call for Cross-Disciplinary Collaboration
College of Liberal Arts.....Undergraduate UGO-19
Presenter: Emma Rau, rau@marshall.edu.....Oral Presentation

ORAL PRESENTATIONS & PERFORMANCES

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

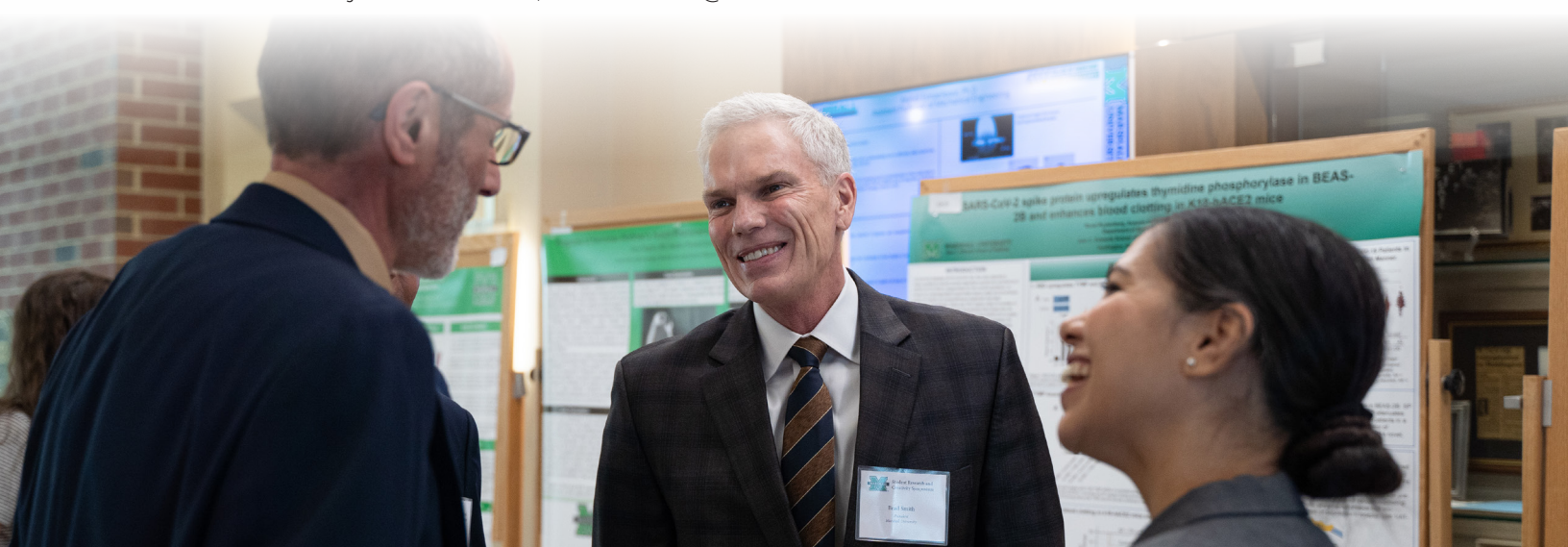
2. Rare Earth Element and Yttrium Concentrations in Coal Refuse, Shales, and Fireclays
College of Science.....Undergraduate UGO-20
Presenter: Alyssa Blevins, blevins176@marshall.edu.....Oral Presentation
3. Characterization Of 4-Pyrone Thermal Decomposition Products Via Matrix-Isolation FT-IR
College of Science.....Undergraduate UGO-21
Presenter: Khaled El-Shazly, elshazly1@marshall.edu.....Oral Presentation

Session 3-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....1:30pm-3:00pm

1. Effect of Nothing by Mouth (NPO) On Cases of Cardiac Catheterizations
College of Science.....Undergraduate UGO-22
Presenter: Isabella Gharib, gharib4@marshall.edu.....Oral Presentation
2. Histone 3.3 Genes Regulate Telomere Length Homeostasis in the Model Plant Arabidopsis thaliana.
College of Science.....Undergraduate UGO-23
Presenter: Ethan Lilly, lilly267@marshall.edu.....Oral Presentation
3. Protection Of Renal Damage Mediated By Reactive Oxygen Species Generated By Cancer
Chemotherapy Agents
School of Medicine.....Undergraduate UGO-24
Presenter: Alexis Buckley, Buckley31@marshall.eduOral Presentation

Session 3-C: Memorial Student Center, 2W16B (2nd Floor).....1:30pm-3:00pm

1. Physics Labs and the “Fun Factor”: A Study on Student Dispositions towards Physics and Labs
College of Education and Professional Development.....Undergraduate UGO- 25
Presenter: Elijah Williamson, williamso211@marshall.edu.....Oral Presentation



ORAL PRESENTATIONS & PERFORMANCES

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY

Session 1-A: Drinko Library, Atrium (3rd Floor).....10:15am-11:00am

1. An exploration of American composer, Gwyneth Walker, as heard in the Song Cycle Mornings Innocent.
College of Arts and Media.....Graduate GO-1
Presenter: Renee Knapp, knapp57@marshall.edu.....Musical Performance
2. The Effects of Cumulative and Anticipatory Grief as seen in Gustav Mahler's Kindertotenlieder
College of Arts and Media.....Graduate GO-2
Presenter: Cadence Weaver, weaver122@marshall.edu.....Oral Presentation

Session 1-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....10:15am-11:00am

1. Do Effective Management Control Systems (MCS) Unlock Increased Profitability on Bank
Technology Investments?
College of Business.....Graduate GO-3
Presenter: Marjorie Abney, abney6@marshall.edu.....Online Presentation
2. CSR-contingent executive compensation incentives link to real earnings management as moderated
by board gender diversity.
College of Business.....Graduate GO-4
Presenter: Rachel Brassine, brassine@marshall.edu.....Online Presentation

Session 1-C: Memorial Student Center, 2W16B (2nd Floor).....10:15am-11:00am

1. Mapping Health Inequities: The Case for Investing in Spatial Epidemiology and Analysis in Rural
Healthcare during the Post-COVID Era
College of Business.....Graduate GO-5
Presenter: Paris Johson, johnson10802marshall.edu.....Oral Presentation
2. Impact Of Covid-19 On Routine Childhood Immunizations In The United States
College of Business.....Graduate GO-6
Presenter: Patricia Lewis, hurley23@marshall.edu.....Online Presentation

Session 2-A: Memorial Student Center, John Spotts Room (2nd Floor).....11:15am-12:00pm

1. Investigation of the Influence of Nylon-6 and Nylon-66 on the Mechanical Performance of Composite
Bone Scaffolds
College of Engineering and Computer Sciences.....Graduate GO-8
Presenter: Brandon Coburn, coburn30@marshall.edu.....Oral Presentation
2. Investigation of the Mechanical Properties of 3D-Microfabricated PLGA-CPO Bone Tissue Scaffolds
College of Engineering and Computer Sciences.....Graduate GO-9
Presenter: Ethan OMalley, omalley9@marshall.edu.....Oral Presentation

ORAL PRESENTATIONS & PERFORMANCES

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY

(CONTINUED)

Session 2-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....11:15am-12:00pm

1. Neonatal Abstinence Syndrome: An Update On The Cost And Length Of Stay Associated With Available Treatment Options
College of Business.....Graduate GO-7
Presenter: Patricia Lewis, hurley23@marshall.edu.....Online Presentation
2. Dry Needling with Electrical Stimulation vs. Transcutaneous Electrical Stimulation in Quadriceps Delayed Onset Muscle Soreness
College of Health Professions.....Graduate GO-10
Presenter: Chibuike Obinnakwelu, obinnakwelu@marshall.edu.....Oral Presentation

Session 2-C: Memorial Student Center, 2W16B (2nd Floor).....11:15am-12:00pm

1. Characterizing the Unexplainable: Examinations of Trauma in Once There Were Wolves
College of Liberal Arts.....Graduate GO-11
Presenter: Britney Cox, cox297@marshall.edu.....Oral Presentation
2. Investigation of Morphological Differences Between Tardigrade Cryptobioses Using Scanning Electron and Confocal Microscopy
College of Science.....Graduate GO-12
Presenter: Brendin Flinn, flinn9@marshall.edu.....Oral Presentation

Session 3-A: Memorial Student Center, John Spotts Room (2nd Floor).....1:45pm-2:30pm

1. Visualization of Ignitable Liquid Residues on Burned Substrates Using the Foster+Freeman Crime-lite® AUTO
College of Science.....Graduate GO-13
Presenter: Kaylee Morton, morton66@marshall.edu.....Oral Presentation

Session 3-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....1:45pm-2:30pm

1. Vaping Flavoring Agents Induce Cellular Stress Responses in Human Proximal Tubule Epithelial Cells
School of Medicine.....Graduate GO-15
Presenter: Ashley Cox, saunders29@marshall.edu.....Oral Presentation
2. Identification And Analysis Of Antimicrobial Compounds From A Model Moss Ceratodon Purpureus
School of Medicine.....Graduate GO-16
Presenter: Ashley Dague, dague3@marshall.edu.....Oral Presentation

ORAL PRESENTATIONS & PERFORMANCES

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY

(CONTINUED)

Session 3-C: Memorial Student Center, 2W16B (2nd Floor).....1:45pm-2:30pm

1. Thymidine phosphorylase is a potential target for reducing SARS-CoV-2-associated thrombosis and inflammation
School of Medicine.....Graduate GO-17
Presenter: Renat Roytenberg, roytenberg@marshall.edu.....Oral Presentation
2. New insights into the role of the IGF-1 pathway in diet-induced bone elongation
School of Medicine.....Graduate GO-18
Presenter: Cassandra White, song27@marshall.edu.....Oral Presentation

Session 4-A: Memorial Student Center, John Spotts Room (2nd Floor).....2:45pm-3:30pm

1. Western Diet Induces Bone Marrow Cytokine Signatures That Increase Cell Frequency In MDS-susceptible Mice
School of Pharmacy.....Graduate GO-19
Presenter: Meredith Kesler, kesler10@marshall.edu.....Oral Presentation
2. Increasing the efficacy of actinomycin D with resveratrol
School of Pharmacy.....Graduate GO-20
Presenter: Raji Lukmon, rajil@marshall.edu.....Oral Presentation

Session 4-B: Memorial Student Center, Shawkey Dining Room (2nd Floor).....2:45pm-3:30pm

1. Pharmacodynamic Interactions of Vancomycin and Disulfiram (Antabuse®) in Staphylococcus aureus
School of Pharmacy.....Graduate GO-21
Presenter: Yogesh Meka, meka3@marshall.edu.....Oral Presentation
2. Effects of Disulfiram on the Metabolome of MRSA
School of Pharmacy.....Graduate GO-23
Presenter: Surya Teja Naidu, naidu@marshall.edu.....Oral Presentation

Session 4-C: Memorial Student Center, 2W16B (2nd Floor).....2:45pm-3:30pm

1. On 2-Primitive Triangle Decompositions of Cocktail Party Graphs
College of Science.....Graduate GO-24
Presenter: Ian Waddell, waddell20@marshall.edu.....Oral Presentation

POSTER PRESENTATIONS

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY

Poster Session A: Memorial Student Center, Don Morris Room (2nd Floor).....10:00am-11:30am

Poster Current Research Methods: Neuromarketing
College of Business.....Undergraduate UGP-1
Presenter: Victoria Blickenstaff, blickenstaf3@marshall.edu.....Poster

Utilizing High School Factors to Predict the Probability of Pursuing a STEM Major
College of Education and Professional Development.....Undergraduate UGP-3
Presenter: Bella Vint, vint6@marshall.edu.....Poster

Physics Labs and the "Fun Factor": A Study on Student Dispositions towards Physics and Labs
College of Education and Professional Development.....Undergraduate UGP-4
Presenter: Elijah Williamson, williamso211@marshall.edu.....Poster

Whole transcriptome RNA-seq. of the human brains: hydrocephalus vs. Alzheimer's disease
College of Engineering and Computer Sciences.....Undergraduate UGP-5
Presenter: Emma Barrett, barrett79@marshall.edu.....Poster

Effect of Ellagic acid and retinoic acid on collagen and Elastin production by Human Dermal Fibroblasts
College of Engineering and Computer Sciences.....Undergraduate UGP-6
Presenter: Chloe Duckworth, duckworth27@marshall.edu.....Poster

Exploring the effect of alternating current (AC) electrical stimulation on Chondrogenesis of Mesenchymal Stem cells
College of Engineering and Computer Sciences.....Undergraduate UGP-7
Presenter: Joshua Conrad, conrad62@marshall.edu.....Poster

Wearable Sensor Devices for Construction Site Safety: A Literature Review
College of Engineering and Computer Sciences.....Undergraduate UGP-8
Presenter: Alannah Hall, hall950@marshall.edu.....Poster

Modeling Aortic Phantoms and Lynch Coils in 3-Dimensional Experimental and Computational Domain
College of Engineering and Computer Sciences.....Undergraduate UGP-9
Presenter: Raegan Halley, halley28@marshall.edu.....Poster

Design and Implementation of a very Low Power and High Voltage AC Power Supply for Biomedical Applications
College of Engineering and Computer Sciences.....Undergraduate UGP-10
Presenter: Alexa Hoffman, hoffman118@marshall.edu.....Poster

Introducing Youth to Computer Science through Drone Programming
College of Engineering and Computer Sciences.....Undergraduate UGP-11
Presenter: Emily Kisor, kisor5@marshall.edu.....Poster

POSTER PRESENTATIONS

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

Facial Recognition based Semi-autonomous Robots for Healthcare Industry
College of Engineering and Computer Sciences.....Undergraduate UGP-12
Presenter: Julian Lahdelma - Sanderson, lahdelmasand@marshall.edu.....Poster

The Password Dungeon Delver
College of Engineering and Computer Sciences.....Undergraduate UGP-13
Presenter: Rick LeMaster, lemaste82@marshall.edu.....Poster

Marshall's NSF S STEM Website Renovation
College of Engineering and Computer Sciences.....Undergraduate UGP-14
Presenter: Lentison, lentison@marshal.edu.....Poster

Use of Machine Learning in Cybersecurity Education
College of Engineering and Computer Sciences.....Undergraduate UGP-15
Presenter: Neil Loftus, loftus6@marshall.edu.....Poster

Virtual Reality Museum Application for the Arts
College of Engineering and Computer Sciences.....Undergraduate UGP-16
Presenter: Joshua Maddy, maddy15@marshall.edu.....Poster

Detecting Birds with Real Time Image Processing for Drone Safety
College of Engineering and Computer Sciences.....Undergraduate UGP-17
Presenter: Cade Parlato, parlato2@marshall.edu.....Poster

Solar-Tracking Photovoltaic Panel
College of Engineering and Computer Sciences.....Undergraduate UGP-18
Presenter: Gavin Richardson, richardso191@marshall.edu.....Poster

Web Application for Marshall University Gen Cyber Competition
College of Engineering and Computer Sciences.....Undergraduate UGP-19
Presenter: Dakota Pruett, pruet10@marshall.edu.....Poster

A Phishing Campaign Guideline for Organizations to Effectively Assess their Employees' Phishing Awareness
College of Engineering and Computer Sciences.....Undergraduate UGP-20
Presenter: Ethan Tabata, Bailey605@marshall.edu.....Poster

Characterization of the Functional Properties of 3D-Microfabricated Bone Scaffolds Synthesized Based on Novel Biomaterial Formulations
College of Engineering and Computer Sciences.....Undergraduate UGP-21
Presenter: Ryan Webb, webb342@marshall.edu.....Poster

Pet Therapy Effects on Anxiety in Pediatric Patients
College of Health Professions.....Undergraduate UGP-22
Presenter: Kyle Allen, allen439@marshall.edu.....Poster

POSTER PRESENTATIONS

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

The Effect of Head Rotation on Scapular Kinematics
College of Health Professions.....Undergraduate UGP-23
Presenter: Faith Auvil, auvill6@marshall.edu.....Poster

Acromial Humeral Distance during shoulder external rotation maximal voluntary isometric contraction
College of Health Professions.....Undergraduate UGP-24
Presenter: Hunter Copley, copley180@marshall.edu.....Poster

The effects of repeated arm elevation on deltoid and infraspinatus activity
College of Health Professions.....Undergraduate UGP-25
Presenter: Dustin Darnell, darnell21@marshall.edu.....Poster

The Effects on Arm Elevation on Trunk Rotation
College of Health Professions.....Undergraduate UGP-26
Presenter: Rileigh Elk, elk3@marshall.edu.....Poster

Type II Diabetic Patient Exercise and Diet Adherence: A National Sample Comparing Rural and Urban
Communities
College of Health Professions.....Undergraduate UGP-27
Presenter: Todd Gambill, gambill14@marshall.edu.....Poster

Poster Session B: Memorial Student Center, Don Morris Room (2nd Floor).....1:30pm-3:00pm

Innovating Registration at Marshall University Using Design Thinking
College of Business/ Honor's College.....Undergraduate UGP-2
Presenters: Emma Barrett, barrett79@marshall.edu.....Oral Presentation
Kristen Clark, clark661@marshall.edu ; Maddy Branham, branham53@marshall.edu

Investigating the Variant and Invariant Differences in the Biomechanics of a Jump Shot in Different Locations
College of Health Professions.....Undergraduate UGP-28
Presenter: Ethan Hahn, Hahn14@marshall.edu.....Poster

Forearm Pronation Reduces Glenohumeral External Rotation
College of Health Professions.....Undergraduate UGP-29
Presenter: Brettina Jeffers, jeffers68@marshall.edu.....Poster

Infraspinatus Activity during Maximal External Rotation Trials in Three Different Conditions
College of Health Professions.....Undergraduate UGP-30
Presenter: Seth Jude, jude68@marshall.edu.....Poster

A Connection between Religious Involvement and Mental Health
College of Health Professions.....Undergraduate UGP-31
Presenter: Michaela Marshall, michaela.marshall@marshall.edu.....Poster

POSTER PRESENTATIONS

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

Biomechanical variables of disc golf driving technique to optimize distance and accuracy
College of Health Professions.....Undergraduate UGP-32
Presenter: Christopher Pinkerton, pinkerton15@marshall.edu.....Poster

Norman Bates No Longer Exists: Or, How I Learned To Stop Worrying and Love the Bomb
College of Liberal Arts.....Undergraduate UGP-33
Presenter: E.T. Bowen, bowen214@marshall.edu.....Poster

Braided and Experimental Forms in Creative Nonfiction
College of Liberal Arts.....Undergraduate UGP-34
Presenter: Abigail Cardwell, cardwell27@marshall.edu.....Poster

Subtitled or dubbed: Learning Japanese culture through anime in the U.S.
College of Liberal Arts.....Undergraduate UGP-35
Presenter: Ryan Green, green305@marshall.edu.....Poster

Violence Against Anthropomorphic Characters Increasing Aggression in Children
College of Liberal Arts.....Undergraduate UGP-36
Presenter: Celeste Maddy, maddy14@marshall.edu.....Poster

Equality Throughout a Nation: The Equal Rights Amendment is the Key to Protect All Citizens
College of Liberal Arts.....Undergraduate UGP-37
Presenter: Nico Raffinengo, raffinengo@marshall.edu.....Poster

The Influence of Sensory Sensitivity on Visual Perception
College of Liberal Arts.....Undergraduate UGP-38
Presenter: Nathan Stump, Stump78@marshall.edu.....Poster

Transcription and Digitization Initiatives at the Marshall University Herbarium (MUHW)
College of Science.....Undergraduate UGP-39
Presenter: Erica Edinger, edinger6@marshall.edu.....Poster

Multilayered Metal Oxide Approach to Infrared Light Absorption
College of Science.....Undergraduate UGP-40
Presenter: Jacob Lee, lee395@marshall.edu.....Poster

Determination of the Intracellular Location of MT5-MMP in in vitro Cellular Models
College of Science.....Undergraduate UGP-41
Presenter: Nicole Liang, liangn@marshall.edu.....Poster

The Role of Peroxiredoxin (PRDX6) in Cannabinoid-Induced Antinociception
College of Science.....Undergraduate UGP-42
Presenter: Courtney Lulek, lulek@marshall.edu.....Poster

POSTER PRESENTATIONS

FRIDAY

April 7th 2023

UNDERGRADUATE RESEARCH & CREATIVITY (CONTINUED)

Antibacterial Activity From a Model Moss *Ceratodon Purpureus*
College of Science.....Undergraduate UGP-43
Presenter: Natalie McCann, mccann33@marshall.edu.....Poster

Hate Crime: The Origins and Impacts
College of Science.....Undergraduate UGP-44
Presenter: Benjamin McElroy, mcelroy19@marshall.edu.....Poster

Using Unmanned Aerial Vehicles (UAV) to More Efficiently Estimate Above Ground Biomass (AGB)
College of Science.....Undergraduate UGP-45
Presenter: Sam McGrath, Mcgrath11@marshall.edu.....Poster

Functionalization of Polycarbonate Membranes with Anionic Azo Dyes
College of Science.....Undergraduate UGP-46
Presenter: Alan Messinger, messinger29@marshall.edu.....Poster

Using Agnew's General Strain Theory to Examine Gendered Differences in Addiction in Appalachia
College of Science.....Undergraduate UGP-47
Presenter: Zoe Pearson, pearson77@marshall.edu.....Poster

Investigating the Presence of Rare Earth Element and Yttrium Minerals Using a Scanning Electron
Microscope.
College of Science.....Undergraduate UGP-48
Presenter: Anna Perella, perella@marshall.edu.....Poster

Silver Nanoparticle Exposure Increases Abnormally Hyperphosphorylated Tau Tangles in Striatum of Rats
College of Science.....Undergraduate UGP-50
Presenter: Rianna Smith, smith2720@marshall.edu.....Poster

Na/K-ATPase α 1 is required for human cardiac myocyte hypertrophic remodeling
College of Science.....Undergraduate UGP-51
Presenter: Sidney Strause, strause@marshall.edu.....Poster

Visible Light Photocatalyst for Water Purification
College of Science.....Undergraduate UGP-52
Presenter: Bryan Vance, vance339@marshall.edu.....Poster

Protection Of Renal Damage Mediated By Reactive Oxygen Species Generated By Cancer Chemotherapy
Agents
School of Medicine.....Undergraduate UGP-53
Presenter: Alexis Buckley, Buckley31@marshall.edu.....Poster

Investigations Into Sex-Differentiated Astrocytic Regulation of Synaptogenesis
School of Medicine.....Undergraduate UGP-54
Presenter: James (Clinton) Williamson, williamso219@marshall.edu.....Poster

POSTER PRESENTATIONS

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY

Poster Session: Memorial Student Center, Don Morris Room (2nd Floor).....10:30am-12:00pm

History of Independence in the Accounting Profession
College of Business.....Graduate GP-1
Presenter: Annika Behnke, behnke5@marshall.edu.....Poster

Examining Issues Related to Celebrity Athlete Endorsements: A Review of the Literature
College of Business.....Graduate GP-2
Presenter: Evan Beretta, beretta@marshall.edu.....Poster

Examining the Benefits of Collegiate Branding through Sports: A Review of the Literature
College of Business.....Graduate GP-3
Presenter: Christian Kenworthy, kenworthy1@marshall.edu.....Poster

Teacher-Child Interaction Therapy: Marshall University's Sear Grant Program, A Data Analysis
College of Education and Professional Development.....Graduate GP-4
Presenter: Andrea Efaw, barrows2@marshall.edu.....Poster

Dry Needling with Electrical Stimulation vs. Transcutaneous Electrical Stimulation in Quadriceps Delayed Onset Muscle Soreness
College of Health Professions.....Graduate GP-5
Presenter: Chibuike Obinnakwelu, obinnakwelu@marshall.edu.....Poster

Perception and Consumption of True Crime Content
College of Liberal Arts.....Graduate GP-6
Presenter: Lily Billiter, billiter5@marshall.edu.....Poster

Are Your Favorite YouTubers Encouraging Cult-Like Tendencies?
College of Liberal Arts.....Graduate GP-7
Presenter: Rhiannon Brewer, brewer123@marshall.edu.....Poster

Marxism as Represented Through Science Fiction
College of Liberal Arts.....Graduate GP-8
Presenter: Duncan Crowley, crowley4@marshall.edu.....Poster

Microaggressions and Resiliency of Women of Orthopedic Disability
College of Liberal Arts.....Graduate GP-9
Presenter: Rachael Englund, englund2@marshall.edu.....Poster

Species Limits and Systematics of Asiatic White-eyes (Zosterops spp.)
College of Science.....Graduate GP-10
Presenter: Madeline Boyd, boydm@marshall.edu.....Poster

POSTER PRESENTATIONS

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY (CONTINUED)

Excitons and Trions in Semiconductors

College of Science.....Graduate GP-11

Presenter: Jayden Leonard, leonard57@marshall.edu.....Poster

On 2-Primitive Triangle Decompositions of Cocktail Party Graphs

College of Science.....Graduate GP-12

Presenter: Ian Waddell, waddell20@marshall.edu.....Poster

Type 2 Diabetes Changes Systemic Dissemination of Salmonella

School of Medicine.....Graduate GP-13

Presenter: Cecilia Sierra, sierra3@marshall.edu.....Poster

What makes walking behavior 'naturalistic'? Feedback signaling the rate of change of force (dF/dt)

School of Medicine.....Graduate GP-14

Presenter: Sumaiya Chaudhry, chaudhry3@marshall.edu.....Poster

Vaping Flavoring Agents Induce Cellular Stress Responses in Human Proximal Tubule Epithelial Cells

School of Medicine.....Graduate GP-15

Presenter: Ashley Cox, saunders29@marshall.edu.....Poster

The Effects of Blast Traumatic Brain Injury on the Development of Pain and Affective Behavior

School of Medicine.....Graduate GP-16

Presenter: Kayla DeSchepper, deschepper@marshall.edu.....Poster

Adverse Childhood Experiences in Obese/Overweight patients compared to patients with Substance Use Disorder

School of Medicine.....Graduate GP-17

Presenter: Joshua Galbraith, galbraith7@marshall.edu.....Poster

Chronic Intestinal Inflammation Downregulates Apical Na-bile Acid Co-transporter (ASBT) in Crohn's Ileitis Mouse Model

College of Science, School of Medicine.....Graduate GP-18

Presenter: Maafi Islam, islam8@marshall.edu.....Poster

Thymidine phosphorylase is a potential target for reducing SARS-CoV-2-associated thrombosis and inflammation

School of Medicine.....Graduate GP-19

Presenter: Renat Roytenberg, roytenberg@marshall.edu.....Poster

Mechanism of stimulation of Na glutamine co transporter, BOAT1, in high fat diet induced obesity.

School of Medicine.....Graduate GP-20

Presenter: Vivian Wellington, wellington3@marshall.edu.....Poster

POSTER PRESENTATIONS

SATURDAY

April 8th 2023

GRADUATE RESEARCH & CREATIVITY (CONTINUED)

New insights into the role of the IGF-1 pathway in diet-induced bone elongation
School of Medicine.....Graduate GP-21
Presenter: Cassaundra White, song27@marshall.edu.....Poster

Trends and Opportunities in Rural Healthcare
School of Pharmacy.....Graduate GP-22
Presenter: Sohini Bose, bose4@marshall.edu.....Poster

Trends and Opportunities in Rural Healthcare
School of Pharmacy.....Graduate GP-23
Presenter: Holly Corsaro, corsaro@marshall.edu.....Poster

Western Diet Induces Bone Marrow Cytokine Signatures That Increase Cell Frequency In MDS-susceptible Mice
School of Pharmacy.....Graduate GP-24
Presenter: Meredith Kesler, kesler10@marshall.edu.....Poster

Western Diet Influences Hematopoietic Stem and Progenitor Cell Dynamics and Microenvironment Following Influenza Immunization
School of Pharmacy.....Graduate GP-25
Presenter: Lahari Kondeti, kondetil@marshall.edu.....Poster

Western diet induces early myeloid skewing, accelerating disease initiation in Myelodysplastic Syndromes-susceptible mice.
School of Pharmacy.....Graduate GP-26
Presenter: Esther Mensha, mensah3@marshall.edu.....Poster

HPV-Day at Marshall University School of Pharmacy (MUSOP)
School of Pharmacy.....Graduate GP-27
Presenter: Lyndsey Riffe, pauley265@marshall.edu.....Poster

Role of the pharmacist in decreasing health disparities in rural Appalachia
School of Pharmacy.....Graduate GP-28
Presenter: Andrew Woford, woford52@marshall.edu.....Poster

Identification And Analysis Of Antimicrobial Compounds From A Model Moss Ceratodon Purpureus
School of Medicine.....Graduate GP29
Presenter: Ashley Dague, dague3@marshall.edu.....Poster

Long-term effects of Fire Frequency on Floral Abundance and Bumblebee Abundance
College of Science.....Graduate GP-30
Presenter: Moses Shafer, shafer47@marshall.edu.....Oral Presentation

April 8th 2023

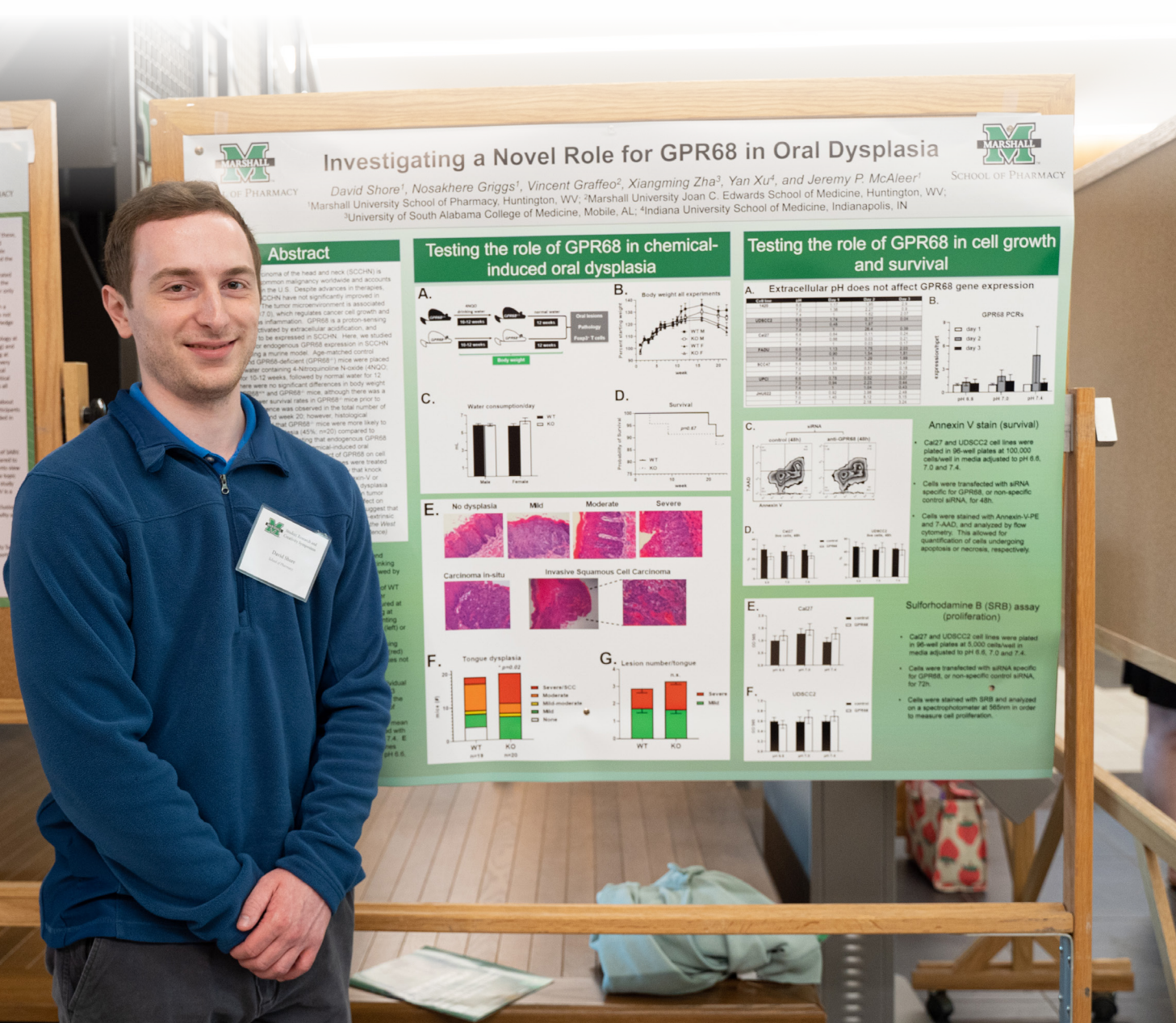
GRADUATE RESEARCH & CREATIVITY (CONTINUED)

Investigating a Novel Role for GPR68 in Oral Dysplasia
School of Pharmacy.....Graduate GP-31
Presenter: David Shore, shore1@marshall.edu.....Poster

Lisinopril: The Ace of Heart Medications
School of Pharmacy.....Graduate GP-32
Presenter: Ali Alzaidi, alzaidi@marshall.edu.....Poster

Exenatide: Determining The Best Use For Patient Convenience
School of Pharmacy.....Graduate GP-33
Presenter: Carley Carter, carter336@marshall.edu.....Poster

Generation of bioluminescent *Serratia marcescens*
College of Science.....Undergraduate UGP-49
Presenter: Kate Perkins, perkins135@marshall.edu.....Poster



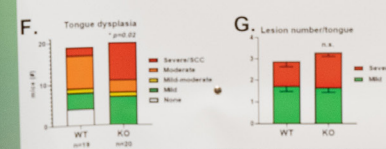
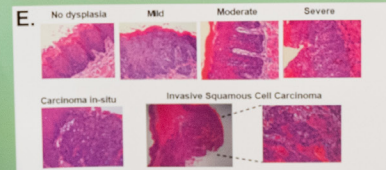
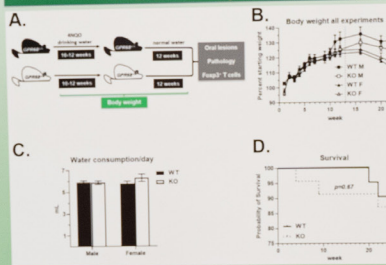
Investigating a Novel Role for GPR68 in Oral Dysplasia

David Shore¹, Nosakhare Griggs¹, Vincent Graffeo², Xiangming Zha³, Yan Xu⁴, and Jeremy P. McAleer¹
¹Marshall University School of Pharmacy, Huntington, WV; ²Marshall University Joan C. Edwards School of Medicine, Huntington, WV; ³University of South Alabama College of Medicine, Mobile, AL; ⁴Indiana University School of Medicine, Indianapolis, IN

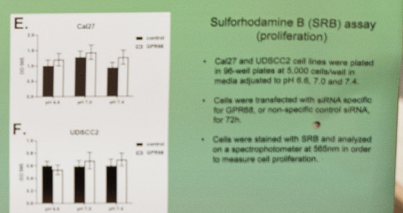
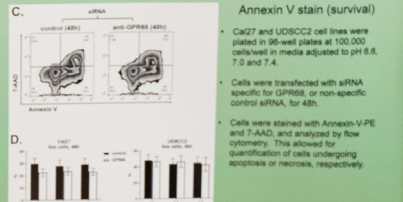
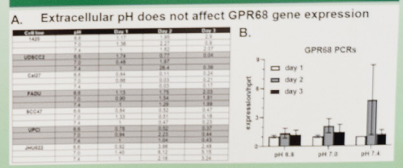
Abstract

Oral dysplasia of the head and neck (SCCHN) is a common malignancy worldwide and accounts for 10% of all cancer deaths in the U.S. Despite advances in therapies, SCCHN have not significantly improved in survival. The tumor microenvironment is associated with hypoxia, which regulates cancer cell growth and inflammation. GPR68 is a proton-sensing GPCR that is activated by extracellular acidification, and is highly expressed in SCCHN. Here, we studied the role of endogenous GPR68 expression in SCCHN using a murine model. Age-matched control mice and GPR68-deficient (GPR68^{-/-}) mice were placed in a water bottle containing 4-Nitroquinoline N-oxide (4NQO) for 10-12 weeks, followed by normal water for 13 weeks. There were no significant differences in body weight, tumor incidence, or survival rates in GPR68^{-/-} mice compared to WT mice, although there was a significant increase in the total number of tumors observed in GPR68^{-/-} mice (p < 0.05). However, histological analysis of GPR68^{-/-} mice were more likely to show severe dysplasia (43%, n=20) compared to WT mice (20%, n=20). These results suggest that endogenous GPR68 expression is important for the development of oral dysplasia. Our findings suggest that GPR68 is a potential therapeutic target for the treatment of oral dysplasia.

Testing the role of GPR68 in chemical-induced oral dysplasia



Testing the role of GPR68 in cell growth and survival



Special Thanks to the members of the supporting committee
for the symposium's preparation:

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Dr. Vicki Stroehler

College of Business:

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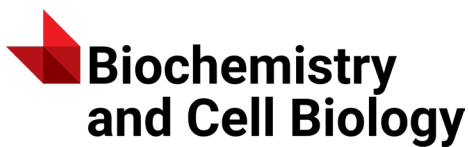
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