

CENTER FOR TRANSFORMATIONAL
STUDENT EXPERIENCES (CTSE)
**13TH UNDERGRADUATE RESEARCH
SYMPOSIUM**



Research: A Foundation for Innovation and Change

APRIL 18, 2025

Keynote Speaker

DR. MELISSA B. DAVIS

- Director, Institute of Translational Genomic Medicine | Morehouse School of Medicine
- SAMBAI Team Lead, Cancer Grand Challenge Team
- Distinguished Investigator, Georgia Research Alliance
- Professor, Microbiology, Biochemistry, and Immunology (MBI)

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THE OFFICE OF TITTLE III



ALBANY STATE UNIVERSITY UNDERGRADUATE RESEARCH SYMPOSIUM SPONSORS

OFFICE OF INSTITUTIONAL ADVANCEMENT TITLE III PROGRAM

The mission of the Title III program is to facilitate and make available federally funded resources in order to strengthen the academic quality, student services and outcomes, institutional management and fiscal stability of the University. The ASU Title III Program aims to strengthen the infrastructure of the University and to enhance the delivery of academic programs while developing students from freshmen to senior year and beyond graduation by preparing students for career opportunities.

OFFICE OF ACADEMIC AFFAIRS

The Office of Academic Affairs at Albany State University upholds the standards and policies established by the faculty and administration while overseeing all aspects of the University curriculum and encouraging students to become involved global citizens. Also, Academic Affairs provides support to assist administrators, staff, faculty, and students to realize their academic goals in pursuit of high academic achievement. The Office of Academic Affairs at Albany State University oversees services related to the teaching, learning, and research activities on campus.

CENTER FOR TRANSFORMATIONAL STUDENT EXPERIENCES (CTSE)

The mission of the Center for Transformational Student Experiences (CTSE) is to foster transformational and excellent academic quality for student success by engaging them in High Impact Practices (HIPs), such as undergraduate research, global learning via curriculum internationalization, and scholarly fellowships.

OFFICE OF RESEARCH AND SPONSORED PROGRAMS (ORSP)

The mission of the Office of Research and Sponsored Programs is to provide support for the Albany State University community (including faculty, staff, and students) in the acquisition and successful administration of externally funded projects for research, teaching, and service.

DIVISION OF STUDENT AFFAIRS WITH RESIDENCE HALL

COLLEGE OF ARTS AND SCIENCES

COLLEGE OF BUSINESS, EDUCATION AND PROFESSIONAL STUDIES

DARTON COLLEGE OF HEALTH PROFESSIONS

PROGRAM AGENDA

Friday, April 18, 2025

ASU-EAST CAMPUS:

Billy C. Black Building Auditorium

Billy C. Black Building 141 & 143

Fine Arts Building Atrium

Fine Arts Building 203 & 205

Prof. Brandon Henry, Presiding Officer

Dr. Kizzie Donaldson-Richard, Presiding Officer

TIME	EVENT
8:30AM–9:00AM	Symposium Sign-In
9:00AM– 9:15AM	WELCOME & ACKNOWLEDGMENTS ASU Administrators: Dr. Lawrence Drake II, ASU Interim President Dr. Rhonda Porter, Interim Provost Dr. Frank Archer, AVP Inst. Research and Effectiveness Title III Dr. Melanie Hatch, Dean COAS Dr. Peter Ngwafu, Dean CBEP Dr. Sarah Brinson, Dean DCHP Dr. Charles Ochie, Dean, Graduate School Dr. Nneka Nora Osakwe, CTSE Director
9:15AM– 9:20AM	INTRODUCTION OF KEYNOTE SPEAKER
9:20AM–9:50AM	KEYNOTE ADDRESS Dr. Melissa B. Davis Morehouse School of Medicine Director, MSM Institute of Translational Genomic Medicine (ITGM) Executive Director, MSM Center for Genomic Diversity SAMBAl Team Lead, Cancer Grand Challenge Team Professor, Microbiology, Biochemistry, and Immunology
9:50AM–10:00AM	KEYNOTE SPEAKER/QUESTION & ANSWER
10:00AM–10:15AM	INTERMISSION
10:15AM–12:15PM	ORAL PRESENTATIONS Billy C. Black Bldg. 141 & 143 Fine Arts Bldg. 203 & 205
12:15PM– 1:15PM	LUNCH BREAK
1:15PM– 2:25PM	POSTER PRESENTATIONS Fine Arts Atrium
2:25PM– 2:30PM	INTERMISSION
2:30PM– 3:15PM	FINAL JUDGING & TABULATION Judging Committee
3:15PM– 3:45PM	ANNOUNCEMENT OF PLACEMENT & ADJOURNMENT Billy C. Black Auditorium



April 18, 2025

Dear Esteemed Participants,

It is with great pleasure that I welcome you to the 13th Undergraduate Research Symposium at Albany State University. This annual event provides a unique and inspiring opportunity to celebrate the dedication, creativity, and intellectual curiosity of our undergraduate students. It is a privilege to gather with you as we showcase the exceptional scholarly work of students who continue to make significant contributions to the fields of research and innovation.

The theme of this year's symposium, "*Research: A Foundation for Innovation and Change*," highlights the transformative power of inquiry and exploration. As individuals present their oral and poster presentations, they not only demonstrate the depth of their scholarly work but also emphasize the important role that research plays in shaping the future. From uncovering new knowledge to solving complex challenges, their research serves as a testament to the impact that thoughtful, rigorous investigation can have on our communities, industries, and beyond.

We are particularly excited to have students from a variety of institutions participating in this event. The diversity of thought, discipline, and experience represented here today speaks to the vibrant and collaborative nature of academic research. This symposium is not only a platform for sharing ideas but also an opportunity to foster connections, ignite new collaborations, and inspire future innovations.

On behalf of the organizing committee, I extend my congratulations to all of our presenters for their hard work and dedication. Your commitment to academic excellence is truly commendable, and we are proud to support you as you take these important steps in your scholarly journeys. May today's symposium inspire continued curiosity, innovation, and change in the years to come.

Sincerely,

A handwritten signature in cursive script that reads "Lawrence M. Drake II, Ph.D.".

Dr. Lawrence M. Drake II
Interim President



PROVOST & VICE PRESIDENT
FOR ACADEMIC AFFAIRS

April 18, 2025

Dear Albany State University Family,

On behalf of the Office of Academic Affairs, I welcome you to the 13th Annual Undergraduate Research Symposium. This year's theme, Research: A Foundation for Innovation and Change, represents our unwavering support of knowledge development in our undergraduate students to prepare for and create the future. The speaker is Dr. Melissa B. Davis, Director of the Institute of Translational Genomic Medicine (ITGM) and Executive Director of the Center for Genomic Diversity (NHGRI), Morehouse School of Medicine. Dr. Davis' insights will surely inspire and motivate our campus community.

This symposium provides a platform for our undergraduate students from diverse disciplines to showcase their research, engage in scholarly dialogue, and connect with esteemed faculty, peers, and the wider community. Your presence today helps to foster a culture of inquiry and innovation that is vital to the academic spirit of our institution.

For the past 13 years, Albany State University has supported our faculty, students, and staff in efforts to promote scholarship on campus. The students are being prepared for future possibilities in research, in the workforce, or in graduate studies. Faculty and staff are able to remain current and mentor students in their respective fields. Research has become a fiber that permeates throughout the campus as there are numerous avenues for faculty, staff, and students to engage in and share research.

I invite you to explore the presentations, ask questions, and be inspired by the remarkable projects our students have undertaken. Thank you for supporting and being a part of our annual undergraduate research symposium.

Sincerely,

Rhonda C. Porter, Ph.D.
Interim Provost & Vice President of Academic Affairs
Professor of Mathematics Education



Dear ASU Students,

How wonderful it is to be celebrating thirteen years of our Undergraduate Research Symposium at Albany State University! Participating in research activities plays a pivotal role in your educational experience. You are able to pursue topics and questions that can have a significant impact on our institution, our community, and our profession.

Conducting research allows you to test theories and apply the knowledge you gained in the classroom to a real-world issue. The outcome of your work may serve as a starting point for the future work of others which helps to push the boundaries of knowledge. Working through a research project often requires resilience and perseverance as you change direction and work through different results.

I hope the experience has deepened your understanding of your chosen academic discipline and has allowed you the freedom to unleash your creative abilities. Conducting research improves problem-solving skills, enhances critical thinking, and creates intellectual curiosity. Mastering the scientific method gives you skills that are useful in any career path you may take.

Participating in undergraduate research not only provides you with additional specialized knowledge in your field, it also fosters personal growth and a deeper understanding of your own abilities.

Finally, I would like to thank all of the faculty and staff members who have mentored you through this process. We would not be holding this event without their dedication to this work. I know they have invested a great deal of time and effort into this process to help you be the next generation of innovators and leaders.

Sincerely,

Melanie L. Hatch, PhD

Dean, College of Arts and Sciences

WELCOME MESSAGE FROM THE DEAN OF THE COLLEGE OF BUSINESS, EDUCATION & PROFESSIONAL STUDIES

Good Morning.

It is my great pleasure to welcome you to the **2025 Undergraduate Research Symposium at Albany State University**. As Dean of the College of Business, Education & Professional Studies, I am honored to stand before you today to celebrate the spirit of inquiry, innovation, and academic excellence that defines this symposium.

Undergraduate research is more than just an academic exercise; it is a transformative experience that empowers students to think critically, solve real-world problems, and contribute meaningful insights to their respective fields. This symposium is a testament to the dedication and intellectual curiosity of our students, who have invested time, effort, and passion into their research projects.

To our esteemed faculty mentors, thank you for your guidance and commitment to nurturing the next generation of scholars and professionals. Your mentorship has provided our students with the tools and confidence needed to engage in scholarly discourse and make meaningful contributions to their disciplines.

To our student researchers, congratulations on reaching this milestone! Your work represents the very best of ASU's academic community, and we are excited to see how your research will shape the future of your fields and beyond. Whether you are exploring business trends, educational innovations, social justice issues, or scientific discoveries, your contributions are invaluable.

I encourage each of you to engage fully in today's symposium—ask questions, seek feedback, and embrace the opportunity to share knowledge. The connections and insights gained here will undoubtedly enrich your academic and professional journey.

Once again, welcome to the **2025 Undergraduate Research Symposium**. Let us celebrate scholarship, discovery, and the boundless potential of our students.

Thank you.

Peter Ajongwa Ngwafu, PhD

Dean, College of Business, Education & Professional Studies
Albany State University

Greetings to the Undergraduate Research Community,

It is my great pleasure, on behalf of the Graduate School, to extend a warm welcome to all students, faculty, mentors, and guests participating in this year's Annual Undergraduate Research Event at Albany State University.

This event stands as a proud celebration of intellectual curiosity, innovation, and the incredible potential of our undergraduate scholars. It showcases the breadth and depth of student research, reflecting the dedication, creativity, and academic excellence that thrives across our campus.

To the student researchers—congratulations. Your hard work, critical thinking, and scholarly commitment are on full display today. Whether you're presenting your findings, attending your peers' presentations, or engaging in discussion, you are contributing to a vibrant academic culture that defines the heart of our university.

Research is a journey of exploration, one that often continues beyond undergraduate studies. As Dean of the Graduate School, I encourage you to view today's accomplishments not only as a celebration of what you've achieved but as a stepping stone toward deeper inquiry and advanced study. We hope many of you will consider graduate education as a pathway to further hone your passion and expertise.

To our faculty mentors, staff, and organizers—thank you for your invaluable support and guidance. Events like this are only possible through your dedication to fostering academic growth and opportunity.

Let us celebrate the brilliance of our students and the collective effort it takes to nurture such a thriving community of scholars. I wish all of you an inspiring and successful Undergraduate Research Event.

Warm regards,

Charles O. Ochie, Sr., Ph.D.
Dean, Graduate School.



CENTER FOR TRANSFORMATIONAL STUDENT EXPERIENCES (CTSE)

Greetings,

I am extremely pleased to welcome you to ASU 13th Undergraduate Research Symposium hosted by the Center for Transformational Student Experiences(CTSE), a unit of Academic Affairs. I truly appreciate the participation and presence of everyone, the students, faculty, mentors, reviewers, judges, administrators, and esteemed guests. I want to acknowledge the presence of the guest speaker, Dr. Melissa B. Davis, the Director of the Institute of Translational Genomic Medicine, Morehouse School of Medicine. We are honored to have you with us today.

The student-researchers have made it possible for the Undergraduate Research Symposium to be held and I will like to acknowledge them as well as their faculty mentors who worked on various research projects that will be presented today. The intense process of their participation started last fall when these students, with their mentors' advice, articulated and submitted strong proposal applications, which were accepted after a thorough review for the 2025 academic year cohort. Another category of student-presenters worked on various research topics with faculty PIs on grants and faculty course internationalization fellows. I highly appreciate all, including the reviewers, the judges, the committee members, several volunteers, and CTSE staff whose commitment helped immensely in making today's program possible.

The 13th Undergraduate research symposium with the Theme-Research: A Foundation for Innovation and Change showcases the astute outcomes of ASU student-researchers through Oral-PowerPoint presentations and Poster sessions. Students' research experience builds critical thinking, communication, and leadership skills. It has also been established that undergraduate research experience is one the high impact practices in education, which enhance student intellectual independence, resilience, perseverance, retention, and academic success. The students who present in today's symposium, no doubt, will serve as the champion of academic success and hopefully will mentor other students. It is, therefore, very importance to encourage many more students to join in this yearly academic exercise. I trust that more faculty members, administrators, and advisers will join hands in supporting more students to engage in the annual undergraduate research exercise.

I invite everyone to engage fully by participating in all the sessions, which include the opening with the keynote address, the oral and poster presentations. It is needful to ask questions and be present till the awards and conclusion of the program. I strongly trust that today's event will serve to foster collaboration, networking, scholarly dialogue, and academic success. I am grateful to Title III and all the collaborating colleges and departments for the funds and support for the Symposium.

Kind regards,

Dr. Nneka Nora Osakwe

Executive Director, Center for Transformational Student Experiences (CTSE) & Professor of English

Keynote Speaker

Dr. Melissa B. Davis

Melissa B. Davis, PhD is the Director of the Institute of Translational Genomic Medicine at Morehouse School of Medicine, SAMBAI Team Lead for Cancer Grand Challenge Team, and Distinguished Investigator with the Georgia Research Alliance. She also served as Scientific Director of the International Center for the Study of Breast Cancer Subtypes (ICSBCS), Director of Health Equity for the Englander Institute of Precision Medicine, and Associate Professor of Cell and Developmental Biology in the Department of Surgery at Weill Cornell Medicine in New York, NY for several years before joining MSM. While in New York, she served as a Cancer Ethnicity Scholar, co-leading the PolyEthnic-1000 project at the New York Genome Center, where she currently holds an Associate Faculty appointment.



Dr. Davis received her Ph.D. in Molecular Genetics at the University of Georgia (Athens, GA, USA) where she completed groundbreaking work on developmental functions of steroid signaling in model organisms. She completed postdoctoral training in Functional Genomics and Systems Biology at Yale School of Medicine (Human Genetics) and the University of Chicago (Human Genetics and Institute for Genomics and Systems Biology). Her work involved key elements of the ModENCODE project, showing the dynamics of hormone receptor binding, and establishing the distinctions of these functions on a cellular level. Her postdoctoral training in Cancer Health Disparities at the University of Chicago at the Interdisciplinary Center for Health Disparities led to the current trajectory of her work to uncover the biological determinants of cancer health disparities and how they intersect with the marginalization of minoritized populations.

Dr. Davis has published groundbreaking findings that established a new lens to study associations of biological factors in cancer outcomes related to genetic ancestry. Specifically, she has discovered links between African ancestry and tumor burdens that have a disproportionate burden on people across the African diaspora. Dr. Davis is a pioneer in the field of “disparities genomics,” with a specific focus on breast cancer expanding into prostate and gynecological cancers in recent years. Her current findings involve utilizing quantified ancestry to unravel genetic vs environmental influences in tumor biology among race/ethnic groups, including epigenetic cell signaling and immunological responses in the tumor microenvironment and systemic immune regulation. These novel opportunities to develop precision medicine applications in minority populations are part of a concerted effort to increase knowledge of genomic profiles of underrepresented minoritized and under-represented cancer patients. Her work is a prime example of how the inclusion of diverse ethnic groups can empower research designs for the discovery of novel or unique tumor biology.

ORAL PRESENTATIONS
BCBB ROOM 141
College of Arts and Sciences

TIME	STUDENT & FACULTY RESEARCHERS/MENTORS	TITLE
10:15 AM–10:30 AM	Aaliyah Dargan Dr. Md Niamul Kabir Mentor/Researcher	Persistence and Proliferation of Wild-Type and Pressure-Stressed Non-Typhoidal Salmonella Serovars of Public Health Concern in Distill Water
10:30 AM–10:45 AM	Laila Dowdy Dr. Md Niamul Kabir Mentor/Researcher	Investigating the Synergistic Effect of Citrospet, Citricidal Acid, Carvacrol, Lactic Acid, and Mild Heat Against <i>Staphylococcus aureus</i> Inoculated in Orange Juice
10:45 AM–11:00 AM	Clifford Oliver Dr. Ashok Jain Mentor/Researcher	Developing an Automated Feedstock Delivery Device for Shake Flask Bacterial Cultures
11:00 AM–11:15 AM	Ella Okoro Prof. Jayanti R. Saha Mentor/Researcher	The Shooting Method: An Effective Tool for Boundary Value Problems in Odes
11:15 AM–11:30 AM	Unique Wylene Pierce Dr. Md Niamul Kabir Researcher/Mentor	Comprehensive Study to Compare Traditional Heat-Based Pasteurization to the High-Pressure Process Decontamination Process of <i>E. coli</i> O157:H7 Under Mild Temperature Conditions
11:30 AM–11:45 AM	Romona McLeod Dr. Md Niamul Kabir Researcher/Mentor	Decontamination Efficacy of Listeria Monocytogenes by the Synergistic Effect of Five Different Antimicrobials and High-Pressure Processing at 25°C and 37°C
11:45 AM–12:00 PM	Elyias A. Rivera Bryan I. Vicente Dr. Arun Saha Researcher/Mentor	Operation of a Solar Panel with Maximum Efficiency

ORAL PRESENTATIONS

BCBB ROOM 143

College of Arts and Sciences

TIME	STUDENT & FACULTY RESEARCHER/MENTOR	TITLE
10:15 AM–10:30 AM	Evelyn Redmond Dr. Yong Lee Researcher/ Mentor	Bacterial Water Quality in Drinking Fountains on the Albany State University Campus
10:30 AM–10:45 AM	Mawondē Bangoura Dr. Robert Bennet Researcher/ Mentor	Cross-Cultural Barriers Faced Among Students and Faculty at Albany State University
10:45 AM–11:00 AM	Kyla S. Porter Dr. Jackie Entz Researcher/ Mentor	Geospatial Analysis of Toxic Chemical Releases and Social Determinants of Health in Georgia
11:00 AM–11:15 AM	Selamawit Geddes Prof. Jasmine Smith Researcher/Mentor	Gender Stereotypes and the Challenges Faced by Women in Military Leadership Roles
11:15 AM–11:30 AM	Summer Rivers Cameron Brown Dr. Alex Alochukwu Researcher/ Mentor	Time Series Analysis of Vehicle Production Trends in the U.S. and Japan
11:30 AM–11:45 AM	Za'kya Stokes Dr. Jackie Entz Shores Researcher/ Mentor	The Study of the Behaviors of Lemurs
11:45 AM–12:00 PM	Elijah Dennis Dr. Liqiu Zheng Researcher/ Mentor	Growing Single-crystal CsPbBr ₃ for Solar Applications

ORAL PRESENTATIONS

FINE ARTS ROOM 203

College of Arts and Sciences

&

College of Business, Education and Professional Studies

TIME	STUDENT & FACULTY RESEARCHER/MENTOR	TITLE
10:15 AM–10:30 AM	Tomaj Halley Jordan Boyd Jeniya Lawrence Dr. Alex Alochukwu Researcher/ Mentor	Comparative Analysis of Fraud Rates Across Banking Institutions in the US, UK, and Canada
10:30 AM–10:45 AM	Malaysia Burt Dr. Patrick Whitehead Researcher/ Mentor	Gang Involvement in Adolescents and Identifying Possibilities of Diminishing Gang Activity in Black Communities
10:45 AM–11:00 AM	Yazmine Latimore Adeceia Richardson Chelsea Zeon Dr. Kathaleena E. Monds Researcher/ Mentor	A Case Study: Understanding Interruptions of a Black Woman in STEM
11:00 AM–11:15 AM	Bryce Street II Dr. Amaechi Nwaokoro Researcher/ Mentor	Financial Market Foresight for Linking Asset's Risk to Asset's Return
11:15 AM–11:30 AM	Erica Green Dr. Shohana Huq Researcher/ Mentor	Exploring the use of terrestrial Lidar to Estimate and measure Leaf water Potential (last to present)
11:30 AM–11:45 AM	Brittney Washington Dr. Edwin Nyamwala Researcher/ Mentor	AI in Aviation and its Correlation to Customer Experience and Loyalty Programs
11:45 AM–12:00 PM	Ruth Yussuff Dr. Liqiu Zheng Researcher/ Mentor	A Facile Approach to Single-Crystal CsPbBr ₃ for Solar Applications

ORAL PRESENTATIONS

FINE ARTS ROOM 205

*College of Business, Education and Professional Studies
&
Darton College of Health Professionals*

TIME	STUDENT & FACULTY RESEARCHER/MENTOR	TITLE
10:15 AM–10:30 AM	SaNiya Hunter Dr. Ihuoma Ohamadike Researcher/ Mentor	Exploring the Impact of Social Media on Students at Albany State University
10:30 AM–10:45 AM	Tionni McDaniels Natyanna Pratt Dr. Annalease Gibson Researcher/ Mentor	Exploring Mental Health and Its Connections to Fentanyl and Pain Pill Addiction
10:45 AM–11:00 AM	Wayneisha Wright Prof. Jasmine Smith Researcher/ Mentor	Risky Sexual Behavior Amongst Students at Albany State University and Surrounding Factors
11:00 AM–11:15 AM	Jakobe A. Williams Dr. Edgars Patani Researcher/ Mentor	The Effects of Tax Policy Changes on Business Decisions and Economic Activity
11:15 AM–11:30 AM	Arlexis Farmer Dr. Jim Mayua Mentor/Researcher	The Challenges of Prosecuting and Preventing Cybercrime: the case of United States v. Ogoshi
11:30 AM–11:45 PM	Robert Bryant Tiara Dixon Dr. Balasubramani Paranthaman, Mentor/Researcher	In-Vitro and In-Silico Evaluation of Mitochondrial Protection by Pomegranate (Punica Granatum) Juice

ORAL PRESENTATIONS

BILLY C. BLACK AUDITORIUM
College of Arts and Sciences

TIME	STUDENT & FACULTY RESEARCHER/MENTOR	TITLE
10:15 AM–10:30 AM	Benjamin Trevino Dr. Anthony Owusu-Ansah Mentor/Researcher	In Search of Solutions to Save the World: Houthi Attacks in the Red Sea and its Global Impact
10:30 AM–10:45 AM	Kamron Golden Dr. Anthony Owusu-Ansah Mentor/Researcher	World Hunger and Poverty
10:45 AM–11:00 AM	Devon Dorsey Dr. Anthony Owusu-Ansah Mentor/Researcher	A Global Health Challenge in South Africa
11:00 AM–11:15 AM	Erica Green Dr. Anthony Owusu-Ansah Mentor/Researcher	Addressing Food Insecurity in Kenya- Sustainable solutions for Global Hunger

FINE ARTS CENTER LOBBY

POSTER PRESENTATIONS

COLLEGE OF ARTS & SCIENCES

PRESENTER(S)	TITLE
Aaliyah Dargan	Persistence and Proliferation of Wild-Type and Pressure-Stressed Non-Typhoidal Salmonella Serovars of Public Health Concern in Distill Water
Laila Dowdy	Investigating the Synergistic Effect of Citropet, Citricidal Acid, Carvacrol, Lactic Acid, and Mild Heat Against <i>Staphylococcus aureus</i> Inoculated in Orange Juice
Clifford Oliver	Developing an Automated Feedstock Delivery Device for Shake Flask Bacterial Cultures
Ella Okoro	The Shooting Method: An Effective Tool for Boundary Value Problems in Odes
Unique Wylene Pierce	Comprehensive Study to Compare Traditional Heat-Based Pasteurization to the High-Pressure Process Decontamination Process of <i>E. coli</i> O157:H7 Under Mild Temperature Conditions
Romona McLeod	Decontamination Efficacy of <i>Listeria Monocytogenes</i> by the Synergistic Effect of Five Different Antimicrobials and High-Pressure Processing at 25°C and 37°C
Elyias A. Rivera Bryan I. Vicente	Operation of a Solar Panel with Maximum Efficiency
Caitlyn Ragan Nia Blunt	Price vs. Performance: Unmasking the Truth About Sheet Masks and Skin Hydration
Selamawit Geddes	Gender Stereotypes and the Challenges Faced by Women in Military Leadership Roles
Summer Rivers Cameron Brown	Time Series Analysis of Vehicle Production Trends in the U.S. and Japan
Za'kya Stokes	The Study of the Behaviors of Lemurs

Mawondē Bangoura	Cross-Cultural Barriers Faced Among Students and Faculty at Albany State University
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Tomaj Halley Jordan Boyd Jeniya Lawrence	Comparative Analysis of Fraud Rates Across Banking Institutions in the US, UK, and Canada
Malaysia Burt	Gang Involvement in Adolescents and Identifying Possibilities of Diminishing Gang Activity in Black Communities
Kyla S. Porter	Geospatial Analysis of Toxic Chemical Releases and Social Determinants of Health in Georgia
Erica Green	Exploring the use of terrestrial Lidar to Estimate and measure Leaf water Potential (last to present)
Ruth Yussuff	A Facile Approach to Single-Crystal CsPbBr ₃ for Solar Applications
Benjamin Trevino	In Search of Solutions to Save the World: Houthi Attacks in the Red Sea and its Global Impact
Kamron Golden	World Hunger and Poverty
Devon Dorsey	A Global Health Challenge in South Africa
Erica Green	Addressing Food Insecurity in Kenya- Sustainable solutions for Global Hunger
Isaiah Johnson	The Yemen Water Crisis: Causes, Impact and Solutions
Colin Loeffler	Deforestation in Brazil: A Global Crisis
Naima Sylvester	The Impact of the Russian-Ukraine War on Global Society
Cierra Dugar	Russia and its influence on Global Politics
Dedrick Johnson	Trade Wars: The Global Impact and Solutions

Jamaya Credle Mykayla Eckler Kimberly Whiter	Evaluation of Aspirin Brands for Effectiveness by Determining Acetylsalicylic Acid Content
Seven Card Caitlyn Ragan Maurianna Thomas	Simulation of Electrolyte Impact on Drug Delivery
Makenzie Baugh Aanijah Bryant Nevaeh McCluster	Water Quality Analysis: A Study of pH, Nitrates, and Hardness
Madison Cobb Jade Easley Zhanae Jenkins Nina Reyes	The Effect of pH On Vitamin C Stability in Fruit Juice Over Time
Elijah Dennis	Growing Single-crystal CsPbBr ₃ for Solar Applications

POSTER PRESENTATIONS

*College of Business, Education and Professional Studies
&
Darton College of Health Professionals*

PRESENTER(S)	TITLE
Bryce Street II	Financial Market Foresight for Linking Asset's Risk to Asset's Return
Brittney Washington	AI in Aviation and its Correlation to Customer Experience and Loyalty Programs
SaNiya Hunter	Exploring the Impact of Social Media on Students at Albany State University
Tionni McDaniels Natyanna Pratt	Exploring Mental Health and Its Connections to Fentanyl and Pain Pill Addiction

Wayneisha Wright	Risky Sexual Behavior Amongst Students at Albany State University and Surrounding Factors
Yazmine Latimore Adeceia Richardson Chelsea Zeon	A Case Study: Understanding Interruptions of a Black Woman in STEM
Jakobe A. Williams	The Effects of Tax Policy Changes on Business Decisions and Economic Activity
Arlexis Farmer	The Challenges of Prosecuting and Preventing Cybercrime: the case of United States v. Ogoshi
Robert Bryant Tiara Dixon	In-Vitro and In-Silico Evaluation of Mitochondrial Protection by Pomegranate (Punica Granatum) Juice

UPLIFT | National Science Foundation (NSF) Grant

Dr. Kathaleena E. Monds

Title - A Case Study: Understanding Interruptions of a Black Woman in STEM

Yazmine Latimore, Adeceia Richardson, and Chelsea Zeon, Student Researchers
Dr. Kathaleena E. Monds, Faculty Researcher/Mentor

College of Business, Education and Professional Studies

NSF Grant by Dr. Lyons-PI, Dr. Jones and Dr. Wrensford-CO-PIs

Technically Speaking Research Project Presentations

Title	Group members
Evaluation of aspirin brands for effectiveness by determining acetylsalicylic acid content	Jamaya Credle Mykayla Eckler Kimberly Whitters
Simulation of electrolyte Impact on drug delivery	Seven Card Caitlyn Ragan Maurianna Thomas
Water Quality Analysis: A study of pH, nitrates, and hardness	Makenzie Baugh Aanijah Bryant Nevaeh McCluster
The effect of pH on Vitamin C stability in fruit juice over time	Madison Cobb Jade Easley Zhanae Jenkins Nina Reyes

Research Student Participants of Internationalized Course:
Current World Problems-POLS 1105
Dr. Owusu Ansah-Faculty Internationalization Fellow for Student Global Learning

Benjamin Trevino - "In Search of Solutions to Save the World: Houthi Attacks in the Red Sea and its Global Impact"

Kamron Golden: "World Hunger and Poverty"

Devon Dorsey: "A Global Health Challenge in South Africa"

Erica Green: "Addressing Food Insecurity in Kenya- Sustainable solutions for Global Hunger"

Isaiah Johnson: "The Yemen Water Crisis: Causes, Impact and Solutions"

Colin Loeffler: "Deforestation in Brazil: A Global Crisis"

Naima Sylvester: "The Impact of the Russian-Ukraine War on Global Society"

Cierra Dugar: "Russia and its influence on Global Politics"

Dedrick Johnson: "Trade wars: the global impact and solutions"

Student Research Presenters

College of Arts and Sciences

Summer Rivers

Cameron Brown

Dr. Alex Alochukwu (Research Mentor)

My name is Summer Rivers. I was born and raised right here in Albany, GA. I'm a junior majoring in biology, with a minor in military leadership. During my sophomore year of high school, I decided that my career path would revolve around the medical field. I'd choose to become an anesthesiologist in the near future. The thought of putting a person to sleep while undergoing minor or major surgeries intrigued me. I am eager to combine my medical aspirations with the discipline and structure I'll gain from my military leadership studies to ensure a successful future.

My name is Cameron Brown, and I am a senior at Albany State University, majoring in Computer Science with a concentration in Information Assurance. I have a strong interest in working with data, databases, and cybersecurity. Upon graduation, I hope to secure a job related to data analysis or cybersecurity.



Title

Time Series Analysis of Vehicle Production Trends in the U.S. and Japan

Abstract

This study examines automotive production trends in the United States and Japan over the past two decades using data from the International Organization for Motor Vehicle Manufacturers (OICA). By analyzing total production, commercial vehicles, and passenger cars, the research compares production patterns and forecasts future trends. Time-series graphs were generated in Excel, and forecasting models, including ARIMA and Exponential Smoothing, were applied using R. The findings indicate that Japanese manufacturers are likely to maintain their current production ratios, while American production is projected to focus more on commercial vehicles and less on passenger cars, with overall production levels remaining stable. These insights offer valuable implications for the global automotive industry, highlighting regional shifts in production focus and strategic trends for the coming years.

Za'kya Stokes
Dr. Jackie Entz Shores (Research Mentor)

Biology Major

I come from Albany Georgia and my career goal is a biotechnologist. I want to become a scientist who applies biological principles to develop products and technologies that improve human health, agriculture, and industry. They use techniques from genetics, microbiology, and biochemistry to manipulate living organisms or their components for practical purposes. I have a passion for improving human health. I also want to help to advance technologies. I always wanted to help people out in their human health. I feel like being a biomedical engineer to also advance medicine to help patients with health.



Title

The Study of the Behaviors of Lemurs

Abstract

Lemurs, a diverse group of primates endemic to Madagascar, exhibit a wide range of behaviors influenced by their social structures, ecological niches, and evolutionary history. They are predominantly arboreal, using their strong limbs and tails for agility in trees. Many species, such as ring-tailed lemurs are highly social, living in matriarchal groups and engaging in behaviors like grooming and vocal communication to reinforce social bonds. The more solitary and use unique foraging strategies, such as percussive tapping, to locate insect larvae. Lemurs rely on vocalizations, scent marking, and body language for communication, with territorial and reproductive behaviors varying across species. Their behaviors are heavily influenced by environmental factors, including seasonal food availability, which affects their activity patterns and diet. Understanding lemur behavior provides insight into primate evolution, social dynamics, and conservation strategies critical for their survival in the wild.

Mawondē Bangoura
Dr. Robert Bennet (Research Mentor)

My name is Mawondē Bangoura, and I am a psychology major originally from Guinea, West Africa, by way of Stone Mountain, Georgia. My dream career is to become a school psychologist, helping children navigate their emotional and psychological challenges. I am passionate about making a positive impact on young lives by providing the support and guidance they need to thrive. Through my studies and future professional experiences, I aim to create a nurturing environment that fosters growth, healing, and resilience in children.



Title

Cross-Cultural Barriers Faced Among Students and Faculty at Albany State University

Abstract

Cross-cultural barriers can significantly impact communication, social interactions, and academic experiences within diverse university settings. This study examines the social impact of cross-cultural barriers on students and faculty at Albany State University using a quantitative approach. Data will be collected through structured interviews & surveys distributed to students and faculty from various cultural backgrounds. The survey will assess key challenges such as language differences, non-verbal communication, cultural values, stereotypes, and ethnocentrism. Descriptive statistical analyses will be used to identify trends and correlations in the data. The findings will

provide insight into how these barriers affect academic performance, social integration, and faculty effectiveness. The study aims to offer recommendations for fostering a more inclusive and culturally aware campus environment, contributing to broader discussions on diversity and inclusion in higher education.

Ella Okoro
Prof. Jayanti Saha (Research Mentor)

My name is Ella Okoro, and I am a senior Computer Science major at Albany State University, graduating in May 2025. My academic interests include software development, data structures, and mathematics, and I have earned IBM badges in Data Science, Cybersecurity, and AI. I am passionate about problem-solving and technology, which has led me to pursue research and hands-on projects. Recently, I accepted a Software Test Engineer position at Medtronic, where I will apply my technical skills in a professional setting.



Title

The Shooting Method: An Effective Tool for Boundary Value Problems in Odes

Abstract

The shooting method is a numerical approach used to solve boundary value problems (BVPs) for ordinary differential equations (ODEs). It works by converting a BVP into an initial value problem (IVP), allowing the use of established IVP solvers like the Euler method or the Runge-Kutta method to iteratively find solutions. The process started with an initial guess for the derivative at one boundary, followed by solving the IVP and adjusting the guess based on how the computed solution aligns with the desired boundary condition at the other end. This undergraduate research project discussed the theoretical foundations and practical implementation of the shooting method using the Euler method.

Elyias A. Rivera
Bryan I. Vicente
Dr. Arun Saha (Research Mentor)

Bryan I. Vicente

I am a sophomore, pre-engineering major with plans to pursue a career in robot engineering at Georgia Tech after completing my time her at Albany State University. Outside of school, I participate in robotic events such as First Lego League (F.L.L.).

Title

Operation of a Solar Panel with Maximum Efficiency



Abstract

A solar panel cannot deliver power to unlimited number of consumers and on the other hand if the consumers are too less in numbers, then also cannot run efficiently. Therefore, there is always an optimum number of consumers or load that can be connected to a given solar panel in order to operate the panel at its maximum efficiency for cost saving purpose. The maximum efficiency point of a solar panel is the point at which the product of current and voltage is at its maximum. In this project, the optimum load of a given solar panel was determined by measuring output voltage, current and power with various external load resistances and observed the optimum load condition at which maximum power could be delivered. According to the observation, the output power of the given solar panel increased with the increase of external load resistance, reached to a maximum and then decreased again.

Aaliyah Dargan
Dr. Md Niamul Kabir (Research Mentor)

My name is Aaliyah Dargan. I am a 21-year-old senior from Decatur, Georgia, majoring in Biology. As the oldest and only female member of my family, I am a first-generation college student who has consistently maintained a 3.0 GPA or higher since my enrollment. Currently, I am a Certified Nursing Assistant employed at Phoebe Putney Memorial Hospital's oncology unit. My academic pursuits have led me to pursue a degree in Biology with the ultimate goal of becoming a Physician Assistant specializing in Obstetrics.



Title

Persistence and Proliferation of Wild-Type and Pressure-Stressed Non-Typhoidal Salmonella Serovars of Public Health Concern in Distill Water

Abstract

The safety of water supplies has been an integral part of public health practices around the globe. As the leading cause of foodborne hospitalization and death in the United States, non-typhoidal Salmonella serovars are capable of proliferation capability and enhance their persistence and response to environmental stressors. The current study investigated the persistence of wild-type and pressure-stressed non-typhoidal Salmonella enterica serovars in distill water stored aerobically for up to 21 days at 5, and 37 °C. We observed that the survival and persistence of both wild-type and pressure-stressed Salmonella serovars remained identical to that observed at day 0. This finding suggests that the occurrence of contamination could facilitate the prolonged survival of these microorganisms in low-nutrient environments. Our study underscores the importance of preventive measures, such as those outlined in the Produce Safety Rule of the U.S. Food Safety Modernization Act, to mitigate the risk of Salmonella contamination and enhance food safety.

Unique Wylene Pierce
Dr. Md Niamul Kabir (Research Mentor)

My name is Unique Wylene Pierce. I am a 23 year old senior biology major from Lawrenceville, Georgia. I chose biology due to my interest in understanding the "why" pertaining to the world around me, especially when it comes to the human body. I chose Albany State University initially due to the fact that it is the only HBCU in Georgia with a nursing degree program, and even though I did not stay on that career pathway the school began to feel like home over time thus leading me to stay--pursuing a degree in biology. My plans after graduation involve obtaining a masters degree in either business or education, and continue working in housing/residence life. I am grateful to Albany State University, the Center for Transformational Student Experiences, and my mentor Dr. MD Niamul Kabir for this opportunity to grow professionally as well as personally.



Title

Comprehensive Study to Compare Traditional Heat-Based Pasteurization to the High-Pressure Process Decontamination Process of *E. coli* O157:H7 Under Mild Temperature Conditions

Abstract

Foodborne pathogens such as *Escherichia coli* O157:H7 pose significant risks to public health, highlighting the need for more effective food preservation techniques. While conventional thermal pasteurization is widely used for microbial inactivation, it can negatively impact product quality. High-pressure processing (HPP) has emerged as a non-thermal alternative that may offer better microbial reduction while preserving sensory and nutritional properties. This study evaluates the effectiveness of HPP compared to traditional heat-based pasteurization by measuring *E. coli* reduction in apple juice under different conditions. At 25°C, treatment with 400 MPa of pressure reduced bacterial levels from 6.58 to 4.69 log CFU/mL within 3 minutes, further decreasing to 3.10 log CFU/mL after 5 minutes. At 45°C, bacterial levels initially declined from 6.68 to 2.84 log CFU/mL within 3 minutes but slightly increased to 3.60 log CFU/mL after 5 minutes. These findings suggest that HPP, especially at moderate temperatures, is an effective method for microbial inactivation in liquid foods and may serve as a viable alternative to conventional pasteurization techniques. Future research should continue to evaluate these effects to establish comprehensive protocols that ensure the safety and quality of fresh produce while supporting its consumption.

Romona McLeod

Dr. Md Niamul Kabir (Research Mentor)

I am a senior biology pre-med major at Albany State University. I am a member of the Velma Fudge Grant Honors Program, Alpha Kappa Alpha Sorority Inc., and the Albany State Softball Team. I am passionate about women's health, and I plan to attend medical school to become an OB/GYN.



Title

Decontamination Efficacy of *Listeria Monocytogenes* by the Synergistic Effect of Five Different Antimicrobials and High-Pressure Processing at 25°C and 37°C

Abstract

Since fresh produce is usually eaten raw and receives little preparation, the growing consumption of this product presents a health concern from microbial infection. Outbreaks associated with these foods have led to an upsurge in foodborne illnesses because microbial contamination can happen at any point from farming to consumer consumption. Some sub-lethal bacteria may return during storage, even though high-pressure processing (HPP) increases food safety and prolongs the shelf life of food products. HPP may have a synergistic impact against bacteria when combined with natural antimicrobial substances to increase its preservation effect. Some natural bioactive chemicals may be viable substitutes, offering the extra guarantee of HPP. The current study examines the synergistic effects of HPP and natural antimicrobials, including citrospet, citric acid, carvacrol, lactic acid, and citric acid, on the inactivation of *Listeria monocytogenes*. For 0, 3, and 5 minutes at 25°C, a constant inoculum of 10^7 CFU/ml was subjected to 400 MPa of pressure intensity along with 0.01% antimicrobial additives. With a decrease of 3-4 log CFU/ml for *L. monocytogenes* in comparison to the control, our results show that caprylic acid and lactic acid were the most effective in deactivating *Listeria*. According to these study results, HPP can greatly lower foodborne infections when paired with natural antimicrobials, providing a substantial technological leap in food safety. Further research is needed to refine these methods and develop comprehensive protocols to ensure consistent and effective microbial control in food products.

Evelyn Redmond
Dr. Yong Lee (Research Mentor)

Hailing from Riverdale, GA, Evelyn Redmond is a graduating forensic science senior at Albany State University. She has had the opportunity to conduct research at Indiana University, where she found an interest in toxicology and environmental health. After graduation, she aims to take some time to focus on research before attending medical school for her M.D./Ph.D.



Title

Bacterial Water Quality in Drinking Fountains on the Albany State University Campus

Abstract

Issues such as faulty water treatment systems, polluted storm water runoff, and inadequate sewage systems can contaminate water sources by introducing microbial contamination in drinking water sources. Such contamination in the drinking water system can cause health concerns, including gastrointestinal illnesses. In this study, a total of 11 water samples were collected in a 1-liter polypropylene bottle from 6 drinking fountains in Billy C. Black and 5 in the Fine Arts Center. Approximately, 100 ml of water samples were filtered using a cellulose filter membrane with the pore size of 0.45 mm. The filter was then placed on a mEI agar plate, and the plates were incubated at 41 °C for 24 hours. The remaining ~900mL of water was filtered through a polycarbonate filter membrane with the pore size of 0.22 mm filter for DNA extraction. The filter was placed in a 5-ml tube for molecular assays. No enterococci were detected in any mEI plates, showing good water quality in drinking fountains on campus. This result was also confirmed by PCR assays using source-specific primer sets. This study indicates that the drinking water on the ASU campus is safe for consumption although a regular monitoring is necessary for ensuring water quality in drinking fountains on campus.

Laila Dowdy
Dr. Md Niamul Kabir (Research Mentor)

My name is Laila Dowdy, and I am a 21-year-old from Atlanta Ga. My major is biology, with a concentration in biotechnology. I chose to pursue a degree in biology, and specifically biotechnology because it is a passion of mine and plan one day become a mission specialist at NASA then eventually get my postdoctoral to open my own research facility where I can build a strong team of compassionate ethical leaders where we focus our research on immunology and STEM cells through medicinal herbs and more. This passion in me has driven me to develop my leadership skills as an aspiring scientist. Reflecting on my upbringing, I observed a persistent cycle of health issues linked to poor dietary choices and over-reliance on medication. I believe that food is one of the most critical and valuable resources for all living beings, making it a “natural medicine” and that poor eating habits can result in long-term health challenges.



Title

Investigating the Synergistic Effect of Citrospect, Citricidal Acid, Carvacrol, Lactic Acid, and Mild Heat Against Staphylococcus Aureus Inoculated in Orange Juice

Abstract

Staphylococcus aureus is a gram-positive bacterium associated with a wide range of foodborne illnesses. This bacterium is a leading cause of foodborne intoxication globally. Traditional heat-based decontamination methods for foodborne pathogens may adversely affect the nutritional quality and sensory attributes of food products. In contrast, non-thermal food processing techniques, such as High-Pressure Processing (HPP), effectively eliminate harmful foodborne bacteria while preserving the freshness of the food. This study investigates the synergistic effects of elevated hydrostatic pressure, caprylic acid, carvacrol, citropet, citricidal, lactic acid, and mild heat to enhance the decontamination of *S. aureus*. This study used a constant inoculum of 10^7 CFU/ml, exposed to 400 MPa pressure intensity, with 0.01% antimicrobial additives, for 0, 3, and 5 minutes at 25°C and 37 °C. Our findings demonstrate that Caprylic acid and Carvacrol were most effective in deactivating *S. aureus* with or without HPP treatment. The results indicated that, compared to the control group, there was no significant log CFU/mL reduction at the different pressure intensities tested. Therefore, additional trials are necessary to identify the optimal pressure level for the effective decontamination of *S. aureus*. The findings of this work can be helpful in building a good food safety system.

Caitlyn Ragan

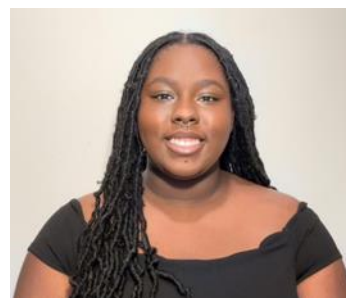
Nia Blunt

Dr. Anta'Sha Jones (Research Mentor)

Caitlyn Ragan is a Biology major, with a minor in Spanish and, from Nashville “Music City,” Tennessee. Albany State University, a HBCU located in Southwest Georgia, has become her home base because of the amount of support they offered before she even stepped on campus. This along with the research capabilities available to students struck her as important. Ragan strives for an undergraduate career full of resume-building experiences and networking. As, coming from a low-income background, these opportunities were not always accessible. To fulfill her goals, she has partnered with Dr. Jones and Nia Blunt to craft a research project catered to her career in Dermatology. She knows that just having the degree isn’t enough for her next step. Medical schools will be looking at the experiences she has gathered while in her undergraduate career. Fortunately, this project has shown to be a perfect opportunity to build her STEM research network with her peers and professors.



Nia Blunt is a second-year student majoring in Forensic Science at Albany State University, with a strong passion for research and science. Having developed a deep interest in the application of scientific methods to real-world problems, Nia Blunt is committed to advancing knowledge in both the fields of science and medicine. With plans to attend medical school after graduation, she is focused on gaining valuable research experience that will support future academic and professional goals. For the current research project, she is investigating the relationship between the price of facial masks and their moisture retention and delivery capabilities for individuals with normal and dry skin. This study aims to provide insights into the efficacy of facial masks, contributing to both consumer knowledge and industry practices. She is dedicated to exploring innovative solutions and looks forward to applying their research findings to the fields of dermatology and medical science.



Title

Price vs. Performance: Unmasking the Truth About Sheet Masks and Skin Hydration

Abstract

Achieving healthy, radiant skin is a primary objective for a significant portion of the American population, with hydration being a vital aspect of this goal. Among the various methods for enhancing skin hydration, sheet masks have gained considerable popularity as an effective and economical option. These masks not only offer a chance for relaxation and self-care but also deliver targeted treatments that address a range of dermatological concerns, thereby facilitating visible

improvements in skin hydration. However, the vast array of sheet masks available at differing price points raises questions about the influence of cost on their efficacy in moisture delivery. This study aims to explore the relationship between the price of facial masks and their moisture retention and delivery capabilities for individuals with normal and dry skin. The methodology will employ a skin hydrometer to quantitatively measure moisture levels, supplemented by descriptive statistical analysis and a T-test to compare various sheet masks categorized by price range and moisture delivery. The research seeks to determine whether higher-priced masks provide superior moisture delivery compared to their more affordable counterparts. The anticipated findings of this study may offer valuable insights for consumers seeking effective yet budget-friendly skincare solutions, while also contributing to a deeper understanding of the relationship between cost and product performance within the skincare industry.

Darton College of Health Professionals

Robert Bryant

Tiara Dixon

Dr. Balasubramani Paranthaman (Research Mentor)

My name is Robert Bryant and I am a 23-year biology senior from Richmond, California. I want to pursue a career in the medical field as a Plastic Surgeon focusing on Reconstruction. Eventually I want to own my private practice.



Title

In-Vitro and In-Silico Evaluation of Mitochondrial Protection by Pomegranate (Punica Granatum) Juice

Abstract

Mitochondrial dysfunction is a key contributor to various degenerative diseases, necessitating the search for natural compounds that offer mitochondrial protection. Pomegranate (*Punica granatum*) juice is rich in polyphenols with potent antioxidant properties. This study investigates its mitochondrial protective effects through in-vitro and in-silico approaches. In-vitro DNA protection assay was conducted using plasmid DNA subjected to oxidative stress, and UV treatment. This assay was performed to evaluate the ability of pomegranate juice to mitigate oxidative damage to mitochondrial DNA (mtDNA). The results indicated significant protection against oxidative and UV stress-induced DNA damage, with reduced DNA fragmentation and enhanced DNA integrity. In-silico analysis was performed using molecular docking and dynamics simulations to assess the interaction of pomegranate-derived phytochemicals with key mitochondrial protection pathways. Complete list of Pomegranate juice metabolites was obtained from the Plant Comparative Metabolome Database (PCMD). About six metabolites with potential to protect mitochondria based on published literature was shortlisted and subjected to further analysis using Swiss-Prot target prediction and were validated with KEGG Pathway analysis. Targets involved in oxidative stress regulation, including superoxide dismutase (SOD), peroxiredoxin, and PGC-1 α and pathways involved in mitochondrial homeostasis was used for analysis. Computational results demonstrated strong binding affinities of pomegranate juice phytochemicals to the potential targets, suggesting their role in mitochondrial defense mechanisms. The findings provide evidence that pomegranate juice exerts mitochondrial protective effects by reducing oxidative stress and preserving DNA integrity, supported by both experimental and computational approaches. This study highlights its potential as a dietary intervention for degenerative and age-related diseases.

College of Business, Education, and Professional Studies

Selamawit Geddes

Prof. Jasmine Smith (Research Mentor)

Selamawit Geddes was born in Debrezeit, Ethiopia but was raised primarily in the United States. She is a sophomore majoring in Health and Human Performance with a minor in Military Science. Enrolled in the Emergency Medical Service Program, she is completing EMT and AEMT this semester and during the summer and pursuing paramedic school next fall. Determined to combine her medical passion with military service, Selamawit plans to commission into the U.S. Army as a Second Lieutenant upon graduation and join the Medical Corps Branch.



Title

Gender Stereotypes and the Challenges Faced by Women in Military Leadership Roles

Abstract

“Half of people worldwide still believe men make better political leaders than women, and more than 40 per cent believe men make better business executives than women,” according to the UN Development Programme (UNDP) in its latest Gender Social Norms Index (GSNI) report. This research explores the multifaceted challenges that women face in achieving leadership roles within the military, focusing on the stereotypes, organizational biases, and institutional barriers. We decipher these leadership traits in segments of intelligence, self-confidence, determination, integrity, sociability, and emotional intelligence. “Legislation formally allowing women into the military was passed in 1948 (even though tens of thousands had served in both world wars, and women like Harriet Tubman and Mary Walker had served in the Civil War as nurses, spies, and even soldiers disguised as men). Women first entered the military service academies in the 1970s and were only allowed to fly combat missions or serve on Navy combat ships in the 1990s.” stated by Robinson, L., & O'Hablon, M. E. (2020). *Women Warriors* The ongoing story of integrating and diversifying the American armed forces. The Brookings Institution. Despite significant progress in gender equality, women in military leadership continue to confront entrenched cultural norms, gendered expectations, and discriminatory practices that impede their professional advancement. Biases are also reflected in the severe underrepresentation of women in leadership. On average, the share of women as heads of State or heads of government has remained around 10 per cent since 1995 and in the labor market women occupy less than a third of managerial positions (Human Development Report Office using data from the World Values Survey). The perception of women as “weaker” than men has deep historical and cultural roots that are tied to traditional gender roles, stereotypes, and social structures rather than inherent biological differences in strength or capability. This study examines how these obstacles manifest in recruitment, promotion, and retention, and it highlights the impact of gendered stereotypes on the leadership development of women in the military. By analyzing personal narratives, military policies, and leadership structures, the research sheds light on the unique hurdles women face while striving for positions of power and influence in historically male-dominated environments. Ultimately, this study advocates for systemic reforms to address gender inequality and ensure that women have equitable opportunities for leadership in the military. Drawing from qualitative interviews, policy analysis, and case studies, the study examines the ways in which gender oppression manifests within military institutions, influencing the careers of women at various stages of their service.

Wayneisha Wright **Prof. Jasmine Smith (Research Mentor)**

My name is Wayneisha Wright, I am a sophomore majoring in Healthcare Administration, and I am from Jacksonville Florida.

Title

Risky Sexual Behavior Amongst Students at Albany State University and Surrounding Factors

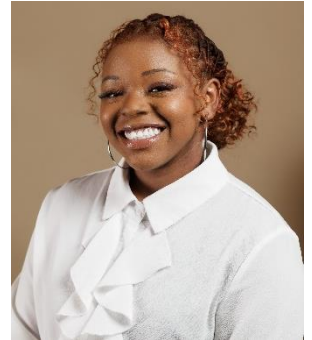
Abstract

This study analyzes risky sexual behavior and the factors influencing such behaviors among students at Albany State University through an anonymous survey. The primary objective is to raise awareness about safe sex practices, highlight the high rates of STD transmission in Albany, and advocate for increased and more frequent STD testing on campus. A total of 201 students participated in the survey, which included 22 questions about demographics and sexual behaviors. The findings revealed that 27% of students engaged in risky sexual activity, with 83% identifying as Christian, and 63% being female. Notably, 41% of students reported testing for STDs with their sexual partners, and 7% had contracted an STD. The study concludes that females exhibited higher rates of risky sexual behavior than males, and students from two-parent households were less likely to engage in such behaviors. Additionally, students reported being influenced by factors such as relationship satisfaction, infatuation, and emotional comfort when making decisions about sex.



**Yazmine Latimore
Chelsea Zeon
Adeceia Richardson
Dr. Kathaleena E. Monds (Research Mentor)**

Yazmine Latimore is a graduating senior from Columbia, South Carolina, earning a degree in Biology with a minor in Military Leadership. She has been actively involved with the Center for Educational Opportunity, where she documented the experiences of Black women in STEM. Additionally, she participated in a National Science Foundation REU Internship, focusing on molecular interactions, and completed a research internship with the U.S. Food and Drug Administration, analyzing data to prevent toxic exposures. After graduation, Yazmine will be attending the Medical University of South Carolina (MUSC) to pursue a Master of Physician Assistant Studies (PA). She will also be receiving a commission as a Second Lieutenant (2LT) in the Georgia Army National Guard as a 74A Chemical Officer.



My name is Chelsea Zeon. I am a senior, majoring in Forensic Science. My goal is to be a special agent for the Georgia Bureau of Investigations.



Title

A Case Study: Understanding Interruptions of a Black Woman in STEM

Abstract

This case study is an exploration of the interruptions of one Black woman majoring in STEM at a historically black college located in rural Southwest Georgia. Analysis of more than 150 audio diaries submitted by this participant over a three-year period will be presented in order to understand five specific themes that emerge. A case study provides the opportunity for the researchers to focus on a specific participant's interruptions in order to gain an understanding of complex issues that might exist in a real-life context. The need for college graduates in science, technology, engineering and mathematics (STEM) disciplines continues to rise, yet about one-third of Black female students depart from STEM while in college (Chen, 2013). Understanding Persistence through the Lens of Interruption: A Framework for Transformation (UPLIFT) posits that the lack of progression for Black women in STEM is based upon continual and progressively more damaging interruptions, which could impact their economic potential as they opt out of STEM-related careers. Findings from this study will help understand interruptions of one student which may be applied to broader experiences of other Black women in STEM.

Tionni Mcdaniels
Natyanna Pratt
Dr. Annalease Gibson (Research Mentor)

I'm Tionni Mcdaniels, a senior social work major at Albany State University from Chicago, Illinois. Growing up in a city affected by mental health disparities and systemic injustice fueled my passion for advancing social work through meaningful research. I aspire to become a Licensed Clinical Social Worker, specializing in behavioral health for adults in diverse communities. My research group is exploring the connection between mental health disorders and fentanyl and pain pill addiction among young adults aged 18-25. Our goal is to discover the role that adverse childhood experiences (ACEs) play in the development of opioid addiction and mental health conditions.



Hello, I'm Na'Tyanna Pratt, a proud Social Work major. I grew up in Albany, GA, and chose Albany State University because of its outstanding reputation. Having practiced with alumni for several years, I have firsthand experience of the school's impact. My career goal is to establish my own private practice, focusing on helping individuals with specific mental illnesses. I am passionate about improving mental health care, which is often undervalued. Social work is my ideal path, allowing me to make a meaningful difference in people's lives.



Title

Exploring Mental Health and Its Connections to Fentanyl and Pain Pill Addiction

Abstract

The opioid epidemic has disproportionately affected young adults in the United States, particularly those with co-occurring mental health disorders and histories of adverse childhood experiences (ACEs). This study explores the relationship between ACEs, opioid misuse, and mental health disorders among young adults aged 18-25 at Albany State University, with a focus on Albany, Georgia, a rural area facing significant barriers to treatment. Grounded in trauma and psychodynamic theory, this research examines how early-life trauma contributes to maladaptive coping mechanisms, increasing the risk of opioid dependence. Existing literature highlights the intersection of substance use disorders (SUDs), anxiety, and mood disorders, emphasizing the need for integrated, trauma-informed treatment approaches. However, limited research specifically addresses the unique challenges young adults in underserved communities face. This study seeks to fill that gap by analyzing the behavioral and psychological factors driving opioid addiction. Through identifying key barriers and motivators, our research will inform the development of targeted, trauma-focused interventions that promote resilience, rehabilitation, and the adoption of healthy coping mechanisms. Findings will contribute to social work best practices, advocating for improved access to comprehensive mental health and addiction services.

Sa'Niya Hunter
Dr. Ihuoma Ohamadike (Research Mentor)

My name is Sa'Niya Hunter, a senior social work major at Albany State University. I am 22 years old and I am from Eatonton, Georgia. After graduation I plan to get my master's degree in social work and become a medical social worker. During my free time I like to work out and spend time with family and friends.

Title

Exploring the Impact of Social Media on Students at Albany State University

Abstract

The emergence of numerous social media apps, including TikTok, Instagram, Twitter, Facebook, and Snapchat, affects how college students manage their well-being and mental health, particularly as they navigate the challenges of academic pressure, social relationships, and personal development. While these popular apps serve as primary sources for communication, networking, news engagement, and marketing, they also have positive

and negative influences on college students. The quest to determine the effects these apps have on Albany State University Students prompted researching factors that mitigate the adverse effects of social media on students' mental health, the impact of social media content on students' mood and overall well-being, and the correlation of frequency of social media use and their level of anxiety and depression. In addition to an extensive review of existing literature, a non-probability sampling method was employed to collect data from 35 students through structured face-to-face interviews and video call sessions. The data was analyzed using Microsoft Excel spreadsheet to reach findings and conclusions. In conclusion, the impact of social media on students' mental health is contingent upon their ability to effectively apply time management skills, build strong social support networks, engage in offline activities, establish a consistent sleep routine, and maintain a positive mindset.

Appendix 1

CENTER FOR TRANSFORMATIONAL STUDENT EXPERIENCES (CTSE)

ACADEMIC AFFAIRS

UNDERGRADUATE RESEARCH PROGRAM

SPRING 2025 WORKSHOP SERIES

WORKSHOP ACTIVITY	DATE
Workshop #1 "Putting Quality into Qualitative Research" Facilitator: Dr. Patrick Whitehead Social Sciences	February 5, 2025
Workshop #2 "Using AI to Ethically Spark Research Topics" Facilitator: Dr. John L. Williams Natural Sciences	February 6, 2025
Workshop #3 "Humanizing Human Research Data" Facilitator: Dr. Tiffany Pogue Academic Affairs	February 11, 2025
Workshop #4 "Research Process and Data Collection" Facilitator: Prof. Jayanti Saha Mathematics, Computer Science, and Physics	February 18, 2025
Workshop #5 "Using Case Studies in Research" Facilitator: Dr. Melanie Hatch College of Arts and Sciences	February 19, 2025
Workshop #6 "Undergraduate Research in the Era of Artificial Intelligence (AI): The Infusion of AI" Facilitator: Dr. Vijay Kunwar Mathematics, Computer Science, and Physics	February 25, 2025
Workshop #7 "Research Questions, Hypothesis, Methodology, and Results" Facilitator: Dr. Zephyrinus Okonkwo Mathematics, Computer Science, and Physics	February 27, 2025
Workshop #8 "Making It Make Sense" Facilitator: Dr. Kenya Lemon Biological Sciences	March 4, 2025
Workshop #9 "Writing Effective Research Abstracts" Facilitator: Dr. Nneka Nora Osakwe Arts and Humanities Academic Affairs	March 19, 2025
Workshop #10 "Looking Ahead: The Symposium & Program Wrap-up" Facilitator: Dr. Yemisi Milledge Academic Affairs	April 3, 2025

Acknowledgments

The organizing committee would like to express its appreciation to all colleges, department, organizations, and individuals who provided support for the 13th UNDERGRADUATE RESEARCH SYMPOSIUM. Some of these include the following:

Dr. Lawrence Drake II, Interim President, Albany State University (ASU), Georgia (GA)
Dr. Rhonda Porter, Interim Provost and Vice President for Academic Affairs
Dr. Wendy Wilson, Vice President for University Relations and Chief of Staff
Dr. Terry Lindsay, Vice President of Student Affairs
Dr. Melanie Hatch, Dean, College of Arts and Sciences
Dr. Peter Ngwafu, Dean, College of Business, Education and Professional Studies
Dr. Sarah Brinson, Dean, Darton College of Health Professions
Dr. Jason Armstrong Interim Associate, Academic Affairs & Professor of Criminal Justice
Dr. Tiffany Pogue, Assistant Vice President of Academic Affairs
Dr. Charles Ochie, Dean of Graduate School
Dr. John Williams, Chair of Natural Sciences
Dr. Louise Wrensford, Executive Director, Office of Research and Sponsored Programs.
Dr. Robert Owor, Executive Director, Center for Innovation and
Dr. Patrick Ibe, Chair of Criminal Justice
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Dr. Tonya Anglon, Chair, Health Sciences
Dr. Dan Land, Chair, Department of Health and Human Performance
Mr. Antonio Leroy, MPA, Director of Residence Life, Housing & Community Engagement
Mr. Phillip Davis, IT Integration Specialist
Connie Williams, Director of ASU Broadcast Center Mass Communication
Undergraduate Research Committee Members:
ASU- Marketing & Communication Team
ASU Aladdin Services
CTSE Staff: Mr. Israel Peter, Graduate Assistant; Ms. Monica Reed, Admin & Data Specialist; Dr. Yemisi Milledge, Assistant Director; and Dr. Nneka Nora Osakwe, Executive Director

Thank You Moderators, Reviewers, and Judges

Dr. JoAnn McCrary- Coordinator

Dr. Bettie Stafford Teacher Education	Dr. Alex Alochukwu Mathematics, Computer Science and Physics
Prof. Jim Mayua Criminal Justice	Dr. James Maku Natural Sciences
Dr. Cajetan Ihe Criminal Justice	Prof. Anthony Cooper Natural Sciences
Dr. Matthew Dolloff English and Modern Language	Dr. Richard Foreman Natural Sciences
Dr. Kizzie Donaldson-Richard Criminal Justice	Dr. Kathleen Monds Business/Management
Dr. Devi Akella Business	Dr. Yong Lee Natural Sciences
Prof. Jayanti Saha Mathematics, Computer Science and Physics	Dr. Mark Thomas Social Sciences
Dr. Veronica Adams-Cooper Public Administration	Dr. Liqui Zheng Mathematics, Computer Science and Physics
Dr. Md Niamul Kabir Biology	Dr. Amaechi Nwaokoro Business/Economics
Dr. Vijay Kunwar Mathematics, Computer Science and Physics	Dr. Anta' Sha Jones Natural Sciences
Prof. Kristina Schimmels English and Modern Language	Dr. S.P. Bali Natural Sciences
Dr. Rondrea Danielle Mathis English and Modern Language	Dr. Wanjun Hu Mathematics, Computer Science and Physics
Dr. Balasubramani S Paranthaman Biology	Prof. Keyanna Davis Mathematics, Computer Science and Physics
Dr. Anthony Owusu-Ansah Education	Dr. Victor Williams Business/Education
Dr. Hema O. Davis Social Sciences	