

SALONI DIXON

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EDUCATION

Indiana University School of Medicine (IUSM) <i>NIH Post-Baccalaureate Research Education Program (iPREP)</i>	Indianapolis, IN Jun 2024 – Present
Indiana University – Indianapolis (IUI) B.S. in <i>Biomedical Informatics</i> Minor: Creative Writing GPA: 3.526/4.0	Indianapolis, IN Aug 2020 – May 2024

RESEARCH EXPERIENCE

Robinson Lab <i>NIH iPREP Research Fellow, Microbiology & Immunology</i>	Indianapolis, IN Jun 2024 – Present
<ul style="list-style-type: none">Designed and conducted computational analyses to predict immunogenic CD8+ T cell epitopes in Coxsackievirus B3 (CVB3), evaluating peptide-MHC class I binding affinities using advanced bioinformatics tools such as IEDB and PSSMHCpan.Identified and characterized novel epitopes, enhancing understanding of host-pathogen interactions and CD8+ T cell-mediated immune responses to CVB3.Developed data visualizations in Python and R to interpret immune response data, contributing to actionable insights into viral immunology.Engaged in NIH iPREP workshops on ethics, scientific communication, and graduate study preparation, advancing skills in professional development and interdisciplinary collaboration.	
Roper Lab <i>Undergraduate Research Assistant, Biology</i>	Indianapolis, IN Jan 2024 – Jun 2024
<ul style="list-style-type: none">Utilized functional enrichment and network analysis to uncover novel pathways linked to neurodevelopmental disorders, enhancing understanding of <i>Dyrk1a</i>'s role in Down syndrome.Performed RNA-Seq analysis on femurs of Ts65Dn mouse models of Down syndrome to investigate gene expression dysregulation associated with skeletal deficits.Hypothesized that dysregulation of Dyrk1a and related signaling pathways contributes to skeletal anomalies; identified differentially expressed genes and analyzed their functional enrichment in bone metabolism pathways, including JAK/STAT and PI3K/AKT signaling.Conducted network analyses using STRINGdb and Cytoscape to identify protein-protein interaction targets linked to bone density and structure.	

- Strengthened expertise in RNA-Seq data preprocessing, pathway analysis, and translational genetics while providing critical insights into Down syndrome-associated skeletal biology.

Indiana University School of Medicine

Indianapolis, IN

Stem Cell Lab Assistant, Medical & Molecular Genetics

Jun 2022 – Aug 2023

- Managed daily lab operations, including stem cell culture maintenance, sample collection, inventory, and data entry, supporting translational research in disease models.
 - Assisted with the development of novel protocols for cell culture growth media, improving cell viability by 15%.
- Conducted quality control checks on biological samples, ensuring adherence to research standards and improving overall lab efficiency.

Roper Lab

Indianapolis, IN

NSF IN LSAMP Undergraduate Research Scholar, Biology

Jun 2021 – Aug 2021

- Investigated the role of *Dyrk1a* in axonal growth of dorsal root ganglia (DRG) in Ts65Dn mouse model of Down syndrome, hypothesizing that elevated *Dyrk1a* expression impairs axonal growth, contributing to skeletal deficits through disrupted peripheral innervation.
- Applied immunohistochemical staining and advanced quantification techniques to analyze axonal growth in response to nerve growth factor (NGF), revealing significantly reduced axonal growth in trisomic DRG cells compared to euploid controls.
- Produced findings that clarified neurodevelopmental mechanisms underlying skeletal abnormalities in Down syndrome, enhancing skills in tissue culture, cellular staining, and quantitative data analysis.

Eli Lilly & Company

Indianapolis, IN

Summer Experience Student, Clinical Design, Data, & Analysis

Jun 2021 – Dec 2021

- Developed and implemented VBA macros to streamline clinical system integration, achieving a 20% improvement in data management efficiency.
- Collaborated with cross-functional teams on clinical trial data analysis, supporting regulatory submissions for ongoing pharmaceutical studies.
- Analyzed clinical data sets and generated reports that informed key decisions, ensuring compliance with regulatory standards.

PROFESSIONAL EXPERIENCE

IUI Luddy School of Informatics, Computing, and Engineering

Indianapolis, IN

Student Ambassador

Aug 2022 – May 2024

- Led campus tours, events, and student panels, enhancing prospective student interest and applications through engaging and informative outreach.
- Created outreach materials and social media content that improved the school's visibility, attracting a diverse cohort of students to the program.

IUI Luddy School of Informatics, Computing, and Engineering Indianapolis, IN
FYS Mentor Aug 2021 – Dec 2021

- Mentored first-year students, providing academic and social support that enhanced student retention and success during the transition to university life.
- Assisted in organizing and facilitating freshman orientation programs, improving student satisfaction and engagement.

POSTERS & PRESENTATIONS

1. Dixon, S. (2024, November). *Predicting Immunogenic CD8+ T Cell Epitopes in Coxsackievirus B3 Using Advanced Computational Algorithms*. Poster presented at the Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS). Pittsburgh, PA.
 2. Dixon, S. (2024, April). *RNA-Seq Analysis of Ts65Dn Femurs: Identifying Dysregulated Protein Networks*. Poster presented at Luddy School of Informatics, Computing, and Engineering Capstone Showcase. Indianapolis, IN.
 3. Dixon, S. (2023, September). *Diversity, Equity, and Inclusion in Action: Examining Intersectionality in Leadership*. Presented at the 2nd Annual USG Leadership Conference. Indianapolis, IN.
 4. Dixon, S. (2023, April). *The Censorship of African American Education in America*. Presented at the 2023 Tunnel of Oppression. Indianapolis, IN.
- Dixon, S. (2022, October). *Determining the role of Dyrk1a in axonal growth of dorsal root ganglia in response to nerve growth factor in a mouse model of Down syndrome*. Poster presented at the IUI Center for Research and Learning (CRL) Summer Research Symposium. Indianapolis, IN.

PUBLICATIONS

1. Dixon, S. (2024). *No Dinner*. Tributaries: A Journal of Creative Arts. Indiana.
2. Dixon, S. (2024). *Pondering a Black Girl's Suicide*. genesis: Literary & Art Magazine, Indiana.
3. Dixon, S. (2024). *The Lynching*. Genesis: Literary & Art Magazine. Indiana.

HONORS & AWARDS

1st Place Poetry Award 2024

Winner, Tributaries: A Journal of Creative Arts

- First-place recognition for the poem "No Dinner," published in Tributaries: A Journal of Creative Arts, honoring excellence in creative writing.

RJE Knoll Scholarship 2024

Recipient, Luddy School of Informatics, Computing, and Engineering

- Supports career-focused development in informatics and computing fields. Provides financial assistance to students pursuing internships and practical experiences that align with their academic and career goals.

Social Justice Award 2024

Awardee, IUI Multicultural Program

- Acknowledged for leadership and contributions to promoting diversity, equity, and inclusion within the academic community.

Breaking Barriers to Achieve Social Justice Award 2024

Awardee, IUI Multicultural Program

- Recognized for challenging social injustices and advocating for systemic change within the academic and broader community.

Dean's List 2020, 2021, 2023, 2024

Luddy School of Informatics, Computing, and Engineering

- Awarded for academic excellence, maintaining a GPA of 3.5 or higher during each academic year.

Kababayan Award 2023

Awardee, Filipinx Student Association

- Honored for outstanding leadership, service, and advocacy for cultural awareness within the Filipinx community.

Outstanding Leadership Award 2021

Awardee, Luddy School of Informatics, Computing, and Engineering

- Recognized for exemplary leadership in student organizations and contributions to student life and engagement.

Jaguar Excellence Scholarship

2021

Awardee, Indiana University Indianapolis

- Awarded to entering freshmen with a high school GPA of at least 3.75 and a minimum SAT score of 1200 or ACT score of 26. Renewable with a minimum 3.0 GPA.

IUI 99th Biannual Speech Night Competition 2020

Winner, IUI Speaker's Lab

- First-place awarded in IUI's Biannual Speech Night Competition, recognized for excellence in public speaking and persuasive communication out of 200+ students in introductory speech course.

LEADERSHIP & SERVICE

Board of Advisors, Midwest Association of Filipino Americans Aug 2024 – Present

- Mentor and provide strategic guidance to the Executive Board, supporting MAFA's mission and helping to achieve organizational goals.
- Coordinate and engage with the MAFA Alumni Network, fostering mentorship opportunities and strengthening community ties.

Undergraduate Panelist, *Social Justice Symposium*

Mar 2024

- Participated in the closing panel of the 2024 Social Justice Symposium, offering reflections and insights on the day's discussions surrounding diversity, equity, and inclusion.
- Engaged in dialogue with other panelists and the moderator, Dr. Stephan Viehweg, to provide thoughtful responses based on personal experience in social justice advocacy.
- Contributed to a community-focused discussion on how social justice education impacts academic and societal change.

Featured Speaker, *Flyover*

Nov 2023

- Participated in the Flyover podcast, sharing personal experiences on navigating the intersectionality of being queer, Black, and Filipino in Indiana's Catholic school system.
- Discussed the impact of racial and gender identity on mental health, education, and community engagement, offering insights into the lack of education on race, gender, and sexuality in Indiana.
- Highlighted the importance of representation and advocacy for marginalized communities in the Midwest.

Featured Guest, *Philippine Cultural Community Center*

Sept 2023

- Engaged in a discussion on the Blasian Identity podcast, sharing personal reflections on navigating life as a mixed-race Black and Filipino individual in Indiana.
- Explored the challenges of reconciling multiple cultural identities, addressing personal experiences with racism, identity crises, and the complexities of belonging in both the Black and Filipinx communities.
- Offered insights on how these experiences shaped leadership roles, including serving as President of the IUI Filipinx Student Association, and the importance of representation and cultural understanding in marginalized communities.

President, *IUI Filipinx Student Association (FSA)*

Aug 2021 – Apr 2023

- Revitalized the organization post-pandemic, increasing membership by 40% and fostering collaboration with Butler University's Filipinx community.
- Revived *Philippine Culture Night (PCN)* after a 3-year hiatus, overseeing a team of 50+ participants and attracting an audience of over 300 attendees.
- Reestablished partnerships with local and Midwest Filipino businesses, securing over \$10,000 in sponsorships and donations for cultural events and student initiatives.
- Directed 10+ cultural workshops, resulting in a 30% increase in member engagement and heightened awareness of Filipinx identity and social issues.

Philippine Culture Night Director & Playwright, *IUI FSA*

Apr 2023

- Wrote and directed a theatrical play exploring the intersectionality of Filipinx-American identity, receiving praise for its cultural relevance and impact.
- Secured \$8,500 in funding to cover production costs, including venue, costumes, and props, ensuring a successful large-scale event.

Master of Ceremonies, APIDA Heritage Celebration**Mar 2022**

- Facilitated the APIDA Heritage Celebration, introducing speakers and performers while promoting cultural awareness and engagement within the community.
- Highlighted keynote speaker Rais Bhuiyan, who shared a message on transforming hatred into compassion through his non-profit, World Without Hate.
- Engaged the audience in discussions on empathy, storytelling, and disrupting cycles of violence, fostering a sense of unity within the APIDA community.

Undergraduate Panelist, Profiles of Learning for Undergraduate Success**Aug 2022**

- Participated in a student panel discussing the intersection of student achievement and the Profiles of Learning for Undergraduate Success at Indiana University.
- Shared personal insights on the role of innovation and community contribution in shaping academic and personal growth.
- Engaged in discussions with peers, reflecting on diverse experiences and the power of student voices in driving change and success.

Tinikling Performer, Philippine Cultural Community Center**Mar 2021**

- Performed traditional Filipino folk dance, *tinikling*, sharing Filipino cultural heritage with a local audience.
- Educated attendees on the significance of tinikling, connecting it to the Philippines' values of nature, life, and agriculture.
- Assisted in the collection of donations for the Southeast Asian Mission Outreach (SEAM), supporting education in rural areas of the Philippines.

PROFESSIONAL AFFILIATIONS

Midwest Association of Filipino Americans (MAFA)	July 2023 – Present
Alpha Lambda Delta Phi Eta Stigma	Jan 2021 – Present
Filipinx Student Association (FSA)	Mar 2021 – May 2023
TRIO Student Support Services (SSS)	Jan 2021 – May 2024
Social Justice Education Program (SJED)	Aug 2022 – May 2024

TECHNICAL SKILLS

Laboratory Techniques:

- PCR (Polymerase Chain Reaction)
- Gel Electrophoresis
- Immunohistochemistry
- Flow Cytometry
- Cell Culture

Computational & Bioinformatics Tools:

- IEDB
- PSSMHCpan
- RNA-Seq Analysis
- Python

- R
- Linux/Unix
- Bioconductor

Data Analysis & Machine Learning:

- Machine Learning Algorithms
- Data Visualization
- High-Throughput Sequencing Analysis
- Statistical Analysis

Research & Documentation Tools:

- Git
- GitHub
- EndNote
- Zotero

REFERENCES

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