

Smita Sahay-Kausar

University of Toledo College of Medicine and Life Sciences (UTCOMLS)
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EDUCATION

Doctor of Medicine University of Toledo College of Medicine & Life Sciences, Toledo, OH	Expected May 2027
Doctor of Philosophy, Neuroscience and Neurological Disorders University of Toledo College of Medicine & Life Sciences, Toledo, OH	May 2025
Post Baccalaureate, Biomedical Science California State University, East Bay, Hayward, CA	Aug 2018
Bachelor of Science, Bioengineering: Bioinformatics University of California, San Diego, La Jolla, CA	Jun 2017
High School Diploma Skyline High School, Salt Lake City, UT	May 2012

LICENCING EXAMS AND CERTIFICATIONS

United States Medical Licensure Exam - Step II	Jul 2026
United States Medical Licensure Exam - Step I	Apr 2022
Epilepsy First Aid Certification	Sep 2022
Adult Vision Screener Certification	Sep 2022
Advanced Cardiovascular Life Support (ACLS) Provider Certification	Feb 2022
Basic Life Support (BLS) Provider Certification	Feb 2020

RESEARCH INTERESTS

My research centers on molecular signaling, metabolism, and translational bioinformatics. I am interested in how these pathways intersect with neuropsychiatric diseases, neural dysfunction, and sensory disorders with the goal of integrating computational and translational approaches into clinically meaningful research.

RESEARCH POSITIONS

Graduate Research Assistant: Cognitive Disorders Research Lab University of Toledo College of Medicine & Life Sciences, Toledo, OH Mentors: Robert E. Smith, M.D., Ph.D., Sinead M. O'Donovan, Ph.D.; Department: Neurosciences	May 2022-May 2025
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Investigated metabolic dysfunction, ketogenic interventions, altered kinase networks, purinergic system, and differential gene expression across neuropsychiatric illnesses

Graduate Research Assistant: Cognitive Disorders Research Lab Rotation May 2021-Jul 2021

University of Toledo College of Medicine & Life Sciences, Toledo, OH

Mentors: Robert E. Smith, M.D., Ph.D., Sinead M. O'Donovan, Ph.D.; Department: Neurosciences

Optimized protein activity assays to gain insight into kinase networks in SCZ; Investigated purinergic receptors and downstream inflammation in SCZ; Investigated pathophysiology of MDD

Undergraduate Research Assistant

California State University, East Bay, Hayward, CA

Jan 2018-May 2019

Mentor: Winston Tseng, Ph.D.; Department: Pre-Professional Health Academic Program

Analyzed bacterial data from Illumina sequencers to detect structural variants that lead to antibiotic resistance

Undergraduate Research Assistant

Jun 2016-Jun 2017

WorldCare Technologies, University of California, San Diego, La Jolla, CA

Mentor: David Smith, M.D.; Department: Global Teams in Engineering Service (TIES), Biomedical Engineering

Developed an open viral load (OVL) HIV monitoring prototype for the underserved population in Tijuana;

Designed PCR microwell chips for the OVL-HIV device for blood dilution reactions

Undergraduate Research Assistant

Jan 2016-Jun 2016

University of California, San Diego School of Medicine, La Jolla, CA

Mentors: Joseph Gleeson, M.D., Niema Moshiri, Ph.D.; Department: Neurogenetics

Designed pipelines to detect structural variants in patients with Pontine Tegmental Cap Dysplasia (PTCD)

Undergraduate Research Assistant

Jun 2015-Mar 2016

University of Utah School of Medicine, Salt Lake City, UT

Mentors: Julio Facelli, Ph.D., Dr. Karen Eilbeck, Ph.D.; Department: Biomedical Informatics, Genetics

Investigated compounds that may decrease ATXN2 as a potential therapeutic for Spinocerebellar Ataxia Type 2

(SCA2); Mapped disease terms to Human Phenotype Ontology; Redesigned PhenoTips for clinical data entry

Undergraduate Research Assistant

Sep 2013-Sep 2014

University of California, San Diego, La Jolla, CA

Mentor: Dr. Patricia Jennings, Ph.D.; Department: Chemistry, Biochemistry

Isolated MitoNEET protein; Analyzed iron-sulfur clusters that regulate oxidation in mitochondrial membranes

PEER-REVIEWED PUBLICATIONS

01. **Sahay S.**, Kao D., Batey K., Van Horn A.; Pediatric Occult Esophageal Foreign Body. Otolaryngology-Head and Neck Surgery. *Under review.*
02. **Sahay S.**, Butler A.R., McKenney S.G., Vergis J., Rowland L.M., McCullumsmith R.E.; Brain Bioenergetic Dysfunction in Neuropsychiatric Illnesses: The Five Fates of Glucose. Molecular Psychiatry. *Under review.*

03. Labilloy G., Funk A.J., **Sahay S.**, Reigle J., Alnafisah R., Golchin H., Heaven M.R., Roberts R.C., Shamsaei B., Greis K.D., Meller J., McCullumsmith R.E.; Region-Specific PSD-95 Interactomes Contribute to Functional Diversity of Excitatory Synapses in Human Brain. *Journal of Proteome Research*. *Under review*.
04. Imami A.S., **Sahay S.**, Creeden J.F.; [drugfindR: Investigate iLINCS for candidate repurposable drugs](#). Bioconductor open-source software for bioinformatics (2026).
05. Ryan W.G., **Sahay S.**, Vergis J., Weistuch C., Meller J., McCullumsmith R.E.; [Pathway Analysis Interpretation in the Multi-Omic Era](#). *BioTech* 2025, 14(3), 58;.
06. Siciliano B., Henkel N.D., Ryan W.G., Imami A.S., Vergis J.M., Xu C., Arvay T.O., **Sahay S.**, Pulvender P., Hamoud A., Hales C., McCullumsmith R.E., Wen Z.; [Pro-inflammatory transcriptomic and kinomic alterations in astrocytes derived from patients with familial Alzheimer's Disease](#). *Brain, Behavior, and Immunity*. 2025; Volume 47, 101044.
07. **Sahay S.**, Wen, J., Scoles D.R., Simeonov A., Jadhav A., Pulst S.M., Facelli J.C., Jones D.E.; [Identifying Molecular Properties of Ataxin-2 Inhibitors for Spinocerebellar Ataxia Type 2 utilizing High-Throughput Screening and Machine Learning](#). *Biology*. 2025; 522 (14).
08. **Sahay S.**, Rami Reddy M.V.S.R., Lennox C., Wolinsky E., McCullumsmith R.E., Singh T.; [Harnessing Neuroimaging-Guided Transcranial Magnetic Stimulation for precision therapy in Substance Use Disorders](#). *Molecular Psychiatry*. 2025.
09. Lee C.-M., Nguyen J., Pope B., Imami A.S., Ryan W.G., **Sahay S.**, Mathis V., Pulvender P., Eby H., Arvay T., Alganem K., Wegmen-Points L., McCullumsmith R.E., Yuan L.; [Functional kinome profiling reveals brain protein kinases signaling pathways and gene networks altered by acute voluntary exercise in rats](#). *PLoS ONE* 20(4): e0321596.
10. Brenner M.J *, **Sahay S. ***, Silveira R.M., Moser C., Morrison M.E., Zeitler N.K., Yang C.J., Colandrea M.T., McElroy K., Pandian V., (* co-first authors); [Addressing Education and Care Gaps in Tracheostomy Management: Insights from a Multi-Stakeholder Global Survey](#). *Tracheostomy Journal*. 2025;2(1):15-28.
11. **Sahay S.**, Lundh A.E., Sirole R.P., McCullumsmith R.E., O'Donovan S.M.; [Purinergic System Transcript Changes in the Dorsolateral Prefrontal Cortex in Suicide and Major Depressive Disorder](#). *International Journal of Molecular Sciences*. 2025; 26(5): 1826.
12. Devine E., Imami A.S., Eby H., **Sahay S.**, Hamoud A., Golchin H., Ryan W., Shedroff E.A., Arvay T., Joyce A.W., Asah S.M., Consuelo W.B., O'Donovan S.M., McCullumsmith R.E.; [Neuronal alterations in AKT isotype expression in schizophrenia](#). *Molecular Psychiatry*. 2024; 1-12.
13. Hamoud A., Alganem K., Hanna S., Morran M., Henkel N., Imami A., Ryan W., **Sahay S.**, Pulvender P., Kunch A., Arvay T., Meller J., Shukla R., O'Donovan S., McCullumsmith R.; [Illuminating the Dark Kinome: Utilizing Multiplex Peptide Activity Arrays to Functionally Annotate Understudied Kinases](#). *Cell Communication and Signaling*. 2024; 22(1):501.
14. **Sahay S.**, Devine E., Vargas C.A.V., McCullumsmith R.E., O'Donovan S.M.; [Adenosine Metabolism Pathway Alterations in Frontal Cortical Neurons in Schizophrenia](#). *Cells*. 2024; 13(19):1657.
15. **Sahay S.**, Vargas C.A.V., Hoar S.C., Choi J., O'Donovan S.M.; [The Effects of the COVID-19 Pandemic on Mental Health among College Students in the United States](#). *Translation JMS*. 2024; 12(5):15.

16. **Sahay S.**, Pulvender P.G., Rami Reddy M.V.S.R., McCullumsmith R.E., O'Donovan S.M.; [Metabolic insights into Neuropsychiatric Illnesses and Ketogenic Therapies: A Transcriptomic View](#). International Journal of Molecular Sciences. 2024; 25(15): 8266.
17. **Sahay S.**, Hamoud A., Osman M., Pulvender P., McCullumsmith R.; [Expression of WNT Signaling Genes in the Dorsolateral Prefrontal Cortex in Schizophrenia](#). Brain Sciences. 2024; 14(7):13.
18. **Sahay S.**, Devine E., McCullumsmith R.E., O'Donovan S.M.; [Adenosine Receptor mRNA Expression in Frontal Cortical Neurons in Schizophrenia](#). Cells. 2024; 13(1):32.
19. **Sahay S.**, Henkel N.D., Vargas C.A.V., McCullumsmith R.E., O'Donovan S.M.; [Activity of Protein Kinase A in the Frontal Cortex in Schizophrenia](#). Brain Sciences. 2024; 14(1):13.
20. Alganem K.*, Imami A.S.*, **Sahay S.***, Eby H., Arvay T.O., Abel M., Zhang X., McIntyre, W.B., Lee J., Au-Yeung C., Asgariroozbehani R., Panda R., Shukla R., O'Donovan S., Hahn M., Meller J., McCullumsmith R., (* co-first authors); [Kaleidoscope: A Bioinformatics Web Application for In Silico Exploration of Omics Data](#). Journal of Bioinformatics and Systems Biology. 2023; 6(4):12.

BOOK CHAPTERS

01. Eby H.*, Imami A.S.*, Ryan W.G.*, **Sahay S.**, Vergis J., Nguyen J.H., Arvay T.O., Pulvender P., Henkel N.D., McCullumsmith R.E.; [What is the Best Evidence for Bioenergetic Abnormalities in Severe Mental Illness? 2025, Metabolic Neuropsychiatry](#). Online ISBN: 978-3-032-05630-6.

ORAL PRESENTATIONS

01. **Sahay S.**, Tapescu I.; *"Version 9 Staging for Salivary Gland Carcinoma"* University of Michigan Medical School. Jul 2026.
02. **Sahay S.** Bhatt A., Carpenter M., Miller R.; *"Reactive Thrombocytosis in Iron Deficiency Anemia"* UTCOMLS. Apr 2026.
03. **Sahay S.**, Shabpiray H., *"Clinical Management of Acute Pancreatitis"* UTCOMLS. Nov 2025.
04. **Sahay S.**, Kelly, V., *"Differentiating Malingering vs. Conversion Disorder"* UTCOMLS. Oct 2025.
05. **Sahay S.**, O'Donovan S.M., McCullumsmith R.E., *"Metabolic Perturbations in Severe Mental Illnesses / Doctoral Defense"* UTCOMLS. Mar 2025.
06. **Sahay S.**, *"Examining Purinergic Dysfunction in the Brain"* UTCOMLS. Jan 2025.
07. **Sahay S.**, Burkett J., *"Polished, Persuasive, Professional: Conference Presentation Success"* UTCOMLS. Nov 2024.
08. **Sahay S.**, Giovannucci D., *"Metamodulation of Glutamate Exocytosis"* UTCOMLS. Feb 2024.
09. **Sahay S.**, Potter D., McCullumsmith R.E., *"Bioenergetic Dysfunction in Schizophrenia: Novel Findings & Treatment Approaches"* CURESZ Foundation. University of Cincinnati. Feb 2024.
10. **Sahay S.**, McCullumsmith R.E., O'Donovan S.M., *"Purinergic System Perturbations in Schizophrenia"* UTCOMLS. Feb 2024.

11. **Sahay S.**, O'Donovan S.M., McCullumsmith R.E., "Metabolic Dysregulation across Neuropsychiatric Illness" UTCOMLS. Jul 2023.
12. **Sahay S.**, "Pathophysiology of Subarachnoid Hemorrhages" UTCOMLS. Jun 2023.
13. **Sahay S.**, McCullumsmith R.E., O'Donovan S.M. "Gender Influencing Student Experiences in M.D.-Ph.D. Training" UTCOMLS. Mar 2023.
14. **Sahay S.**, Giovannucci D., "Effects of beta-hydroxybutyrate on MK-801 induced schizophrenia-like behavior in mice" UTCOMLS. Feb 2023.
15. **Sahay S.**, Hamoud A., McCullumsmith R.E., "Data Fabrication and Scientific Misconduct in Alzheimer's Research" UTCOMLS. Sep 2022.
16. **Sahay S.**, "Environmental Toxins: Ending the use of Agent Orange" UTCOMLS, Aug 2022.
17. **Sahay S.**, "Gastrointestinal Pathophysiology: Acute Cholecystitis" UTCOMLS. Nov 2021.
18. **Sahay S.**, Sinclair D., Lundh A.E., Rethman J.B., Kakrecha O., O'Donovan S.M., "The Neurobiology of MDD." UTCOMLS. Jun 2021.
19. **Sahay S.**, McCullumsmith R.E., O'Donovan S.M., "Gaining Insight into P2X Receptors and NLRP3 Inflammasome in SCZ Patients" UTCOMLS. Jun 2021.
20. **Sahay S.**, Henkel N.D., Kandimalla P., McCullumsmith R.E., "Optimizing Protein Kinase A Activity Assay and H-89 Inhibitor" UTCOMLS. Jun 2021.
21. **Sahay S.**, Alnafisah R.S., Wu X., Sinclair D., Kakrecha O., Lundh A.E., Bates E.A., O'Donovan S.M., "The pH Meter and Spectrophotometer" UTCOMLS. May 2021.
22. **Sahay S.**, Jones D.E., Wen J, Facelli J.C., "SCA2 Drug Repurposing" University of Utah School of Medicine, Salt Lake City, UT, Aug 2015.

ABSTRACTS AND CONFERENCE PROCEEDINGS

01. **Sahay S.***, Brenner M.J *, Silveira R.M.*, Moser C., Morrison M.E., Zeitler N.K., Yang C.J., Colandrea M.T., McElroy K., Pandian V.; Global Disparities in Tracheostomy Care Delivery and Education. *RUSH Otolaryngology Global Health Symposium*. Chicago, IL. May 2026.
02. Imami A.S., Hamoud, A., **Sahay S.**, McCullumsmith R.E.; Connecting the Dots: Understanding the Relationship Between Social Determinants and Schizophrenia. *Bioinformatics Symposium*. Toledo, OH, May 2023. [Translation. 2025; 14\(S2\)](#).
02. Imami A.S., **Sahay S.**, Hamoud A., McCullumsmith R.E., Sex-Based Variations and Metabolic Patterns in Mental Health Disorders: Findings from MIMIC-IV. *Society of Biological Psychiatry Annual Meeting*. Toronto, ON. Apr 2025.
03. **Sahay S.**, Pulvender P., Rami Reddy M.V.S.R., McCullumsmith R.E., O'Donovan S.M.; Molecular Signatures of Metabolic Stress and Ketogenic Therapies in Severe Mental Illness. *Society of Biological Psychiatry Annual Meeting*. Toronto, ON. Apr 2025.
04. **Sahay S.**, Rami Reddy M.V.S.R., McCullumsmith R.E.; Transcranial Magnetic Stimulation for Substance Use Disorders. *Neuroscience and Psychiatry Symposium*. Toledo, OH. Feb 2025.
05. **Sahay S.**, Pulvender P., Rami Reddy M.V.S.R., McCullumsmith R.E., O'Donovan S.M.; Metabolic Insights into Neuropsychiatric Illnesses and Ketogenic Therapies: A Transcriptomic View. *Society for Neuroscience Annual Meeting*. Chicago, IL. Oct 2024.

06. **Sahay S.**, Imami A.S., O'Donovan S.M.; Sex-Specific Treatment of Major Depressive Disorder using Transcriptomic Profiling and LINCS Analysis. *Great Lakes Bioinformatics Annual Meeting*. Pittsburgh, PA. May 2024.
07. **Sahay S.**, Imami A.S., Hamoud A., McCullumsmith R.E., O'Donovan S.M.; Towards timely Alzheimer's diagnosis: a clinical data-driven approach to biomarker discovery. *American Academy of Neurology Annual Meeting*. Denver, CO. Apr 2024. [Neurology. 2024; 102\(17\)](#).
08. **Sahay S.**, Devine E., McCullumsmith R.E., O'Donovan S.M.; Purinergic System Perturbations in Schizophrenia. *Graduate Research Forum*. Toledo, OH. Mar 2024. [Translation. 2024; 12\(3\)](#).
09. **Sahay S.**, Imami A.S., Hamoud A., McCullumsmith R.E., O'Donovan S.M.; Advancing the detection of early Alzheimer's disease via clinical data mining. *Neuroscience and Psychiatry Symposium*. Toledo, OH. Jan 2024. [Translation. 2024; 13\(S1\)](#).
10. **Sahay S.**, Dougherty D.M., Menon B.; Revamping the MMI: Enhancing Objectivity through Integration of AAMC Core Competencies. *AAMC Annual Meeting, Learn Serve, Lead*. Seattle, WA. Nov 2023.
11. **Sahay S.**, Devine E., McCullumsmith R.E., O'Donovan S.M.; Cell-Subtype changes in Adenosine Receptor Expression in Schizophrenia. *Ohio Physiological Society Annual Meeting*. Perrysburg, OH, Oct 2023.
13. Imami A.S., Shedroff E.S., Joyce A.W., **Sahay S.**, Alganem K., Ryan W., Henkel N.D., McCullumsmith R.E.; Perturbation of Cell-Subtype Specific Active Kinome Networks in Schizophrenia. *Society for Neuroscience Annual Meeting*. Chicago, IL, Nov 2021.
14. Kandimalla P., Henkel N.D., **Sahay S.**, McCullumsmith R.E.; Protein Kinase A Expression and Activity in Schizophrenia. *Society for Neuroscience Annual Meeting*. Chicago, IL, Nov 2021.
15. **Sahay S.**, Moshiri N.; Variant Calling in *E. coli*. *Post-Baccalaureate Symposium*. Hayward, CA, May 2019.
16. Chong H., Hutchinson K., **Sahay S.**, Smith D.; A Platform for Detecting HIV via Viral Load Testing in Tijuana, Mexico. *Undergraduate Research Symposium*. La Jolla, CA, Mar 2017.
17. Jones D.E., Wen J, **Sahay S.**, Scoles D.R., Dexheimer T., Hongmao S., Maloney D., Simeonov A., Jadhav A., Pulst S.M., Facelli J.C.; Identifying Candidate Ataxin-2 Inhibitors in High Throughput Screening Data using Molecular Descriptors. *AMIA Translational Summit*. San Francisco, CA, Jun 2015.

OTHER PUBLICATIONS

01. [Metabolic Perturbations in Severe Mental Illnesses](#). Doctoral Dissertation. Mar 2025.
02. [The power struggle in our brain: Energy imbalance in mental health](#). Toledo Blade. Dec 2024.
03. [Health in the co-RONA 20s](#). Way To Goal. Jan 2021.

PEER REVIEW

Translation Journal of Medical Sciences

Jun 2022-Present

Editorial Board Member and Student Reviewer, UTCOMLS

Review 4-6 manuscripts per year for this academic, peer-reviewed journal

ADMINISTRATIVE AND LEADERSHIP ACTIVITIES

Inclusion & Opportunity Committee, Neurosciences and Psychiatry Sep 2022-Present
Committee Member, UTCOMLS

Integrate initiatives and ensure accountability on activities promoting inclusion and opportunities

MD Admissions Committee Oct 2021-Present
Committee Member, UTCOMLS

Primary Review Subcommittee: Conduct primary evaluations and vote on inviting applicants for an interview

Final Review Subcommittee: Conduct interviews, final evaluations, and vote on prospective medical students

Otolaryngology Student ENTerest Group (OSEG) Aug 2020-Present
Vice President and Student Member, UTCOMLS

Aided students interested in otolaryngology match with physicians in the community for observership opportunities; Currently organize panels, suturing events, and learning opportunities for medical students

Multiple Mini Interview (MMI) Committee: Student Lead Jul 2022-Jul 2024
Student Lead, UTCOMLS

Enhanced MMI interview process using AAMC standardization and a mission-oriented approach

College of Biomedical Graduate Studies Jul 2022-May 2024
Executive Board Member, UTCOMLS

Acted as a contact point and liaison for M.D./Ph.D. students; organized career fairs and team-building events

TEACHING EXPERIENCES

Pacific Preparatory (Tutor Corps) Sep 2018-May 2024
Instructor and Private Tutor, San Francisco, CA

Specialized in STEM and English instruction, standardized test preparation, study organization, and coaching through college admissions process; Developed novel STEM curriculum; Worked with students who had learning differences or came from underserved communities

Pleasanton Reads Jan 2019-Jul 2020
English as a Second Language (ESL) Volunteer Tutor, Pleasanton, CA

Worked with underserved residents in the community to improve written and conversational English literacy

California State University, East Bay Sep 2017-Aug 2018
Graduate Teaching Assistant, Hayward, CA

Helped teach graduate level science courses such as epidemiology and advanced biochemistry

Reality Changers Jan 2015-Nov 2017
Volunteer Tutor, San Diego, CA

Mentored over 25 students from low socioeconomic backgrounds in ELA and STEM subject areas who aspired and achieved their goal to become first-generation college students

MENTORSHIP AND OUTREACH

Cognitive Disorders Research Laboratory

May 2021-Present

Research Advisor in Basic and Translational Sciences, UTCOMLS

Aidan Butler and Selah McKenney (medical students)

Jan 2025-Present

Project and skills: five fates of glucose; manuscript preparation

Madhu Rami Reddy (medical student)

Jan 2024-Apr 2025

Projects and skills: neuroimaging-guided transcranial magnetic stimulation and metabolic transcriptomics; abstract and manuscript development

Roshan Sirole (undergraduate student)

Jan 2024-Feb 2025

Project and skills: purinergic signaling in suicide; qPCR, data analysis, manuscript preparation

Priyanka Pulvender (medical student)

Jun 2023-Mar 2025

Projects and skills: metabolic, transcriptomic, and kinomic studies in neuropsychiatric disease; abstract and manuscript development, scientific communication

Christina Flora-Annabelle Vargas (undergraduate student)

Dec 2022-Mar 2025

Projects and skills: PKA and adenosine signaling in schizophrenia; qPCR, data analysis, manuscript preparation, scientific communication

Ojal Kakrecha (medical student)

May-Aug 2021; May-Aug 2024

Project and skills: pathophysiology of major depressive disorder; immunostaining and scientific writing

Sophia Hoar and Jae Choi (undergraduate students)

May 2023-Dec 2023

Project and skills: COVID-19 and mental health; immunostaining

Insiya Rasheed and Annika Padhye (undergraduate students)

Aug 2022-Mar 2023

Project skills: primer design, Western blotting, and qPCR

Anna Lundh and Jake Rethman (medical students)

May 2021-Aug 2021

Project and skills: neurobiology of major depressive disorder; qPCR and scientific writing

Department of Neurosciences Summer Lab Camp

Jul 2023, Jul 2024

Camp Instructor and Mentor, UTCOMLS

Created material and instructed regional high school students in wet-lab techniques and bioinformatics

Research Experience & Awareness of Clinical Health (REACH) Program

Jun 2022, Jun 2023

High School Student Mentor, UTCOMLS

Introduced underrepresented students to STEM and clinical research through panels, activities, and presentations

American Medical Student Association (AMSA) Mentorship Program

May 2021-May 2023

Pre-Medical Student Mentor, UTCOMLS

Sophia Durham (current position: undergraduate student)

Jul 2022-May 2023

Joseph Raimonde (current position: medical student)

May 2021-Jul 2022

Rita Kamoua (current position: medical student)

May 2021-Jul 2022

SERVICE and OUTREACH

Hope Clinic, ENT Free Clinic

Feb 2026-Present

Medical Student Volunteer, Ann Arbor, MI

Perform interviews and physical exams on patients under the supervision of otolaryngologists; Provide audiograms, endoscopies, ear procedures, and biopsies of cancerous lesions for underserved, uninsured patients

CommunityCare Clinics

Jul 2022-Present

Medical Student Volunteer, Toledo, OH

Perform interviews and physical exams on patients under the supervision of physicians; Provide vision screenings, PAP smears, and medications for underserved, uninsured patients through the largest free clinic in the country

CommunityCare Vaccine Clinics

Aug 2020-May 2021

Medical Student Volunteer, Toledo, OH

Administered COVID-19 vaccines to members of the Greater Toledo and Northwest Ohio communities

Scripps Ximed Surgery Center

Jan 2015-Dec 2017

Undergraduate Student Volunteer, La Jolla, CA

Assisted the post-operative team to ensure patients were stable before being released from the hospital; Trained and onboarded volunteers on the workflow of the surgery center from medical charting to post-operative services

WORK EXPERIENCE**Way To Goal Business Insights**

May 2020-Aug 2021

Healthcare Data Research Analyst, Phoenix, AZ

Collected and analyzed data in a variety of therapeutic areas across many stages of the product development cycle; Conducted research studies that offered marketing insights to biomedical companies

Allied Pain and Spine Institute

Aug 2017-Aug 2018

Medical Assistant, San Jose, CA

Assisted physicians with in-office procedures, instructed patients about high-risk procedures, managed physicians' schedules, acted as liaison with insurance companies and clinics

BioVision Incorporated

Jan 2014-Jun 2015

Healthcare Marketing Intern, Milpitas, CA

Provided local research laboratories with information about BioVision brand technology and products via informational seminars and tabletop presentations

GRANTS**National Library of Medicine (T15-LM007124-18)**

Jun 2015

Short-term Fellowship Research Training Grant (T15-LM007124-18)

In silico investigation of chemical properties of a potential Spinocerebellar Ataxia Type II therapeutic

AWARDS and HONORS**M.D./Ph.D. Dean's Scholarship**

Jul 2021-Apr 2022, Jun 2025-Present

UTCMLS, Toledo, OH

M.D./Ph.D. Graduate Scholarship

May 2022-May 2025

UTCMLS, Toledo, OH

Second Place Poster Presentation for Adenosine Dysregulation in Schizophrenia

Oct 2023

The Annual Ohio Physiological Society Meeting, Perrysburg, OH

First Place Poster Presentation for Variant Calling in *E. Coli*

May 2019

Genetics Subdivision at Post Baccalaureate Research Symposium, Hayward, CA

Merit Scholarship

Sep 2017-Aug 2018

California State University, East Bay, *Hayward, CA*

First Place and \$25K Grand Prize for Open Viral Load Model

Jul 2017

Global Grand Challenges Summit: Model and Poster Competition, Washington, D.C.

Provost's Honors

Sep 2016-Jun 2017

University of California, San Diego, *La Jolla, CA*

PROFESSIONAL ASSOCIATIONS AND ORGANIZATIONS

American Association for the Advancement of Science

American Physician Scientists Association

American Medical Association

College of Biomedical Graduate Studies

Graduate Student Association

University of Michigan Medical School ENT Interest Group

UTCOMLS Otolaryngology Student ENTerest Group

TECHNICAL SKILLS

Data Analysis: R, GraphPad Prism, Statistica, WEKA

Bioinformatics: Transcriptomic and pathway analysis, NCBI tools

Laboratory: RT-qPCR, RNA isolation, immunohistochemistry, laser-capture microdissection, protein quantification and activity assays, immunoblotting, cryostat sectioning

LANGUAGES

English, Hindi, Urdu