



Gates Summer
Internship Program

Summer of 2023 Reflections



Gates Institute

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

The Gates Summer Internship Program (GSIP) encourages outstanding undergraduates to consider careers in biomedical research and regenerative medicine. State-of-the-art training opportunities are provided in the Gates Institute members' laboratories.



SUMMER OF 2023 NINTH YEAR OF GSIP

The arrival of the Gates Summer Internship Program (GSIP) Class of 2023 at the end of May festively capped off a month-long celebration of the launch of the Gates Institute.

Extending the work begun in 2007 by the Gates Center for Regenerative Medicine and its Gates Biomanufacturing Facility (GBF) that opened in 2015, the Gates Institute is a major University of Colorado Anschutz Medical Campus initiative, laser-focused on taking research involving regenerative, cellular and gene therapies from the laboratories to clinical trials. **We are delighted that GSIP will continue to be an important educational component under the Institute's umbrella, dedicated to inspiring the next generation of investigators and clinicians.**

The summer of 2023 marked the ninth year of the program that has now served and followed the progress of 185 outstanding college undergraduates. Initiated by Gates Center members Drs. Neil Box, Tamara Terzian and Enrique Torchia, GSIP was based upon the potential observed in the college interns they regularly hosted in their labs during the summers. Captivated by the hope that such a program would enable the Gates Center to play a formative role in creating a pipeline of researchers and clinicians for the field of regenerative medicine, others jumped in to make that dream possible – then and since. These include the late Peter Grant and his wife Rhondda whose gift in 2014 enabled the program's planning to begin as well as the wonderful, ongoing philanthropic support of those listed at the end of this booklet.

The outstanding members of this class arrived from colleges and universities all over the country. Some came from distant countries – as far away as Kazakhstan. The class included a student who was able to pursue research on a disorder from which he suffers and two students from Berea College with which GSIP enjoys an ongoing summer internship arrangement. Berea is the first college in the Southern United States to be coeducational, racially integrated, and that does not charge tuition.

We hope our students' individual notes and the photos within this booklet provide a lens into their varied experiences working in Gates Institute members' labs, developing their projects, and participating in an array of seminars and events designed to expose them to high-impact opportunities and career paths going forward. This talented group of students excelled in their laboratory placements and developed friendships and connections with their mentors, fellow lab and Gates Institute staff and our speakers. Ultimately, their contributions advanced medical research on the Anschutz Medical Campus – a fertile environment we hope they will return to for additional study or employment.

We join this Class of 2023 and many of the 172 program alumni who note the program's significance in their lives, including one who maintained "GSIP was an essential steppingstone in my knowledge, professional growth, and personal path to finding a career I love!"

We look forward to celebrating the tenth year of the program next summer when we welcome another group of talented interns to conduct research in Gates laboratories and become engaged with the transformative science that occurs at CU Anschutz.

It was an invaluable experience to my development as a scientist. Both my lab and this program have helped me to realize that I do have a place in the world of research and medicine.

Anonymous 2023 Intern Survey Response

2023 GSIP MENTORS

MENTOR	RESEARCH AREA
Michael Alberti, MD, PhD	Pathology
Bruce Appel, PhD	Cell and Developmental Biology
Gana (Dash) Batt, PhD	Biomanufacturing - Protein Development
Ganna Bilousova, PhD	Dermatology
Kristen Boyle, PhD	Nutrition
Joseph Brzezinski, PhD	Ophthalmology
Xiyang Fan, PhD	Dermatology
Miguel Flores-Bellver, PhD	Ophthalmology
Santos Franco, PhD	Pediatrics
Nicholas Jacobson, MDes	3D/Bioprinting/Cardiology
Jeffrey Jacot, PhD	Bioengineering
Chelsea Magin, PhD	Pulmonary Sciences and Critical Care Medicine
Russell Mariani, PhD	Biomanufacturing - Cellular Therapies
Ram Nagaraj, PhD	Ophthalmology
Mi-Hyun Nam, PhD	Ophthalmology
Karin Payne, PhD	Orthopedics
Eric Pietras, PhD	Hematology
Jennifer Richer, PhD	Pathology
Daniel Sherbenou, MD, PhD	Hematology
Lori Sussel PhD	Cell and Developmental Biology
Ronald Vagnozzi, PhD	Cardiology
Natalia Vergara, PhD	Ophthalmology
Lori Walker, PhD	Cardiology
BEREA MENTOR	RESEARCH AREA
Igor Kogut, PhD	Dermatology
Xiyang Fan, PhD	Dermatology

2023 SEMINARS AND WORKSHOPS

Contemporary Bioethics Discussion	Joseph Brzezinski, PhD, and Santos Franco, PhD
Lifelong Learning and Lifelong Leading	Laura Borgelt, PharmD, MBA, Gates Institute COO
How to Read a Scientific Paper	Graduate School in Cell Biology, Stem Cells and Development Program (CSD) Workshop
Gene-modified Cells as Living Drugs	Terry Fry, MD, Executive Director, Gates Institute
Opportunities in the Biotech Industry: Lessons Learned from a CU Graduate	Ryan Crisman, PhD
Medical Careers: Q & A Choices and Strategies	Ella Annest, Ellie Golding, and Wag Schorr, MD
Biomedicine Careers Panel	Graduate School in Cell Biology, Stem Cells and Development Program (CSD) Workshop
Lateral Thinking in Congenital Heart Disease: Lessons from Zebrafish	Christian Mosimann, PhD
Clinical Research and Community Health: Clinic to Population	Marc P. Bonaca, MD, MPH, Executive Director, CPC Clinical Research and Community Health
Poster Design	Graduate Program in Cell Biology, Stem Cells, and Development (CSD) Workshop
Perfecting Your Pitch: Tricks and Tips for Effective Science Communication	Erin Golden, PhD
Applying to Graduate School	Graduate Program in CSD Workshop
Stem Cell and Regenerative Approaches for Treating Eye Diseases	Joseph Brzezinski, PhD
Clinical Research Careers: Q & A	Gates Institute CELLS Team

I thought everyone's unique career path was super interesting and inspiring and showed me there's a lot more careers out there than I thought. I also really enjoyed getting to hear from people in such a wide range of specialties and it exposed me to options I didn't think were possible.

Anonymous 2023 Intern Survey Response

CLASS OF 2023 REFLECTIONS



I want to thank everyone who made the GSIP program possible, especially Jill, Jane, Debbie, Joe and our wonderful donors. This was truly an amazing summer, and I am so grateful for all the work that was put in behind the scenes for us. Every lecture I attended, every skill I acquired, and every opportunity that came my way through GSIP is a testament of this program's belief in education and commitment to our futures. I also want to thank my mentors – Ram Nagaraj and Mihyun Nam, as well as the rest of the lab team. My experience would not have been the same without these wonderful and talented people. You all created an environment where I was able to explore my future endeavors, and I hope to see you all soon!



Blake Barron
Davidson College
Mentor: Ram Nagaraj, PhD
Research Poster Title: Preventing Vision Loss in Traumatic Brain Injury

I want to thank GSIP for such a special experience. This community was so supportive and encouraging that even highly esteemed idols in our fields were open to our questions/inputs, rather than being too high up to reach. All of us – professionals and first-timers alike – were part of a team. At first, I was afraid as my predisposition of research was a competitive and convoluted path. Here, I found that we were encouraged to learn, explore, try, fail, and eventually stand on the shoulders of giants as we all reached for a common goal: improving lives by expanding the brink of knowledge. As it should be. Thank you to all the donors, mentors, and speakers who inspired us and made this program what it is today. A special thanks to Matt Seefeldt, PhD, for taking time from his busy director's role to support and encourage the Gates Biomanufacturing Facility (GBF) interns personally; Russell Marians, PhD, for his kindness and mentorship and for allowing me to drive my own ideas on such an impactful project; Jill Cowperthwaite and Jane Rech, PhD, for believing in me and for building such an amazing program; and a huge thank you to Rebecca Mallo, PhD, for teaching me to navigate this new experience and inspiring me to believe in myself.



Catherine Bates
University of Colorado Boulder
Mentor: Russell Marians, PhD
Research Poster Title: The Future of CAR T-cell Cancer Therapy: Innovative Single-Cell Assay for Improvements in Therapy Characterization





I want to thank all of the GSIP staff and generous donors. I want to especially thank my mentor, Dr. Michael Alberti, and his lab member, Claire Ryan, for their continuous support and encouragement. This program was an incredible experience. I learned so much and have a much better understanding of what I would like my career path to look like. This summer provided me with the opportunity to learn invaluable lab and professional skills. I cannot say thank you enough for providing me this opportunity, which helped me grow both personally and academically.



Ilana Baum

Occidental College

Mentor: Michael Alberti, MD, PhD

Research Poster Title: Using CRISPR Artificial Splicing Factors (CASFx) to Reverse Aberrant mRNA Splicing in Myelodysplastic Syndromes (MDS)

I really appreciate all the people in my lab for helping me have a fabulous summer! The freedom, trust, and leadership opportunity were fantastic and greatly helped my growth.

All my colleagues in the program were great people, and I will never forget the time I shared with them. It is such a blessing to make wonderful friendships along the way.

The GSIP team was fantastic, as always: prompt reply to emails, all kinds of fun activities, effort put into everything, and full understanding of our individual circumstances... I cannot thank you more!



Yifei Chen
Johns Hopkins University
Mentor: Ronald Vagnozzi, PhD
Research Poster Title: Defining the Role of STING in the Cardiac Inflammatory Response





I would like to sincerely thank the Gates Institute for this wonderful opportunity. This has been one of the most incredible summers, and I feel very fortunate to have been able to study and learn and meet such inspiring people during its course. I would especially like to thank my mentor, Nick Jacobson, for pushing me to think differently and creatively, for being so kind and patient as I learned new techniques and ideas, and for being someone whom I can turn to with any question. I would also like to thank my lab mates, who welcomed me and taught me so much. It was an absolute pleasure to work with them.

Thank you to the donors for making this program possible, and thank you, of course, to Jill, Jane, and Joe for all their hard work and dedication to the internship and to the students. Without them, this would never be possible.



Anna Gartner
Wake Forest University
Mentor: Nicholas Jacobson, MDes
Research Poster Title: Microstructures and cellular growth: an innovative approach to growing cells in 3D

I am deeply honored and grateful to have been able to participate in GSIP. Along with forging friendships, meaningful mentor relationships, and research and industry connections, I have gained so much insight into future career paths that may be available to me, and I have a greater understanding of the direction I want to go next. This program exposed me to the pace and challenges of academic research in a professional setting and has solidified my desire to pursue a PhD in the biomedical sciences. Thank you to the triple Js – Jill, Jane, and Joe – who as leaders have made this program into an intellectually and emotionally meaningful experience.

And finally, a heartfelt thank you to all the members of the Vergara lab, who welcomed me with open arms, offered incredible mentorship and support, and made me feel like a true member of the team. I never expected to participate in ophthalmology research, but I learned so much in this lab, and I will miss them dearly.



Amelia Grosskopf
Middlebury College

Mentor: Maria Natalia Vergara, PhD

Research Poster Title: Development of Retinal Abnormalities in Down Syndrome Retinal Organoids





Thank you to everyone who made this program possible! This summer surpassed my expectations, and I learned so much thanks from my mentors, Dylan Sarbaugh, PI, and Lori Sussel, PhD. Also, thanks to Jane, Jill, Joe, Debbie, and everyone else who worked so hard organizing GSIP. I will never forget this experience and will be forever grateful for this opportunity to grow as a scientist and student!



Mary "Claire" Howell

Davidson College

Mentor: Lori Sussel, PhD

**Research Poster Title: Understanding the Interaction
Between CHD4 and NKX2.2 in Pancreatic Beta Cells**



What an unforgettable summer! Thank you GSIP for providing us with a beautiful and supportive environment to grow as scientists. I have learned so much and made lasting relationships along the way. This internship has been everything I envisioned and way more. I am proud to call myself a GSIP alum. Thank you!



Kanita Hrustanovic
Colorado State University
Mentor: Mi-Hyun Nam, PhD
Research Poster Title: Developing an Innovative Cell Therapy for Glaucoma Treatment

I would like to thank my amazing PI, Dr. Miguel Flores-Bellver, the members of the ExoSight lab, and also the ophthalmology department for being patient with me as I learned and for supporting me always. I have learned many new research techniques and skills, but also how to tackle problems as a researcher and a communicator. I am extremely thankful for this!

I appreciate Jill, Joe, Jane, and Debbie for organizing this enriching program, and also the GSIP donors for supporting us throughout the summer. I really enjoyed the weekly seminars and social events, which exposed me to different fields in medicine and research, broadened my network, and helped me make new friends!

My experience with GSIP is truly unforgettable, and thanks to this program, I know I will pursue a career in research.



Leia Jiang

University of Texas at Austin

Mentor: Miguel Flores-Bellver, PhD

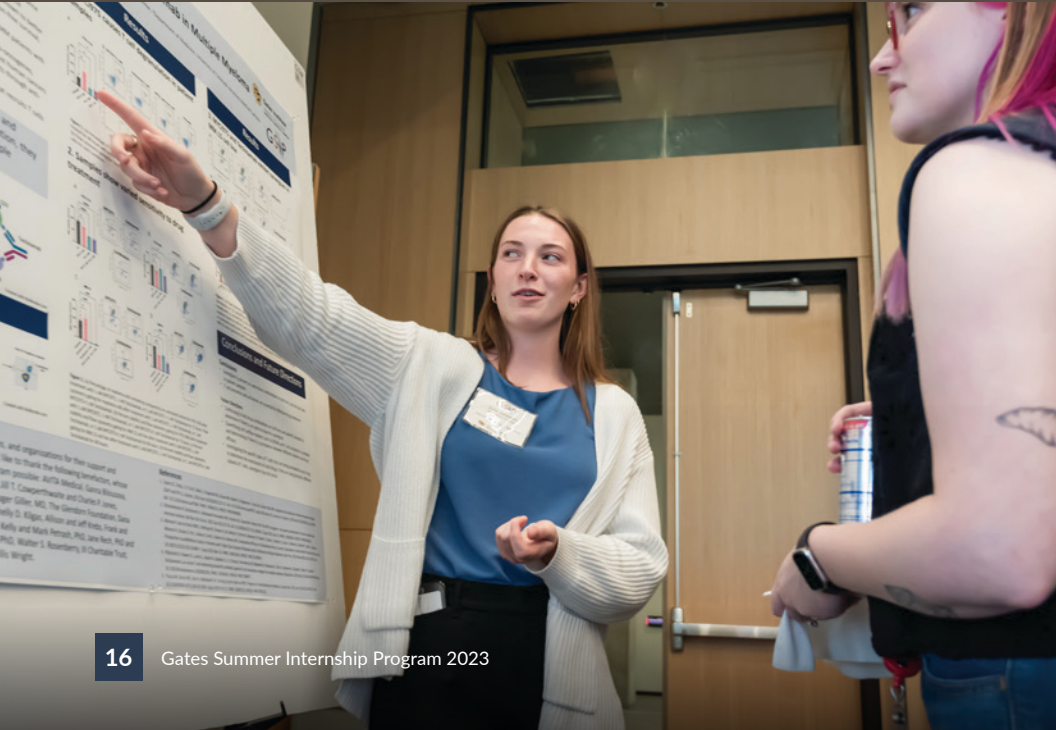
Research Poster Title: Retinal Pigment Epithelium-derived Extracellular Vesicles for Therapeutic Delivery in the Eye



Thank you so much to everyone who worked so hard to make this amazing program possible! Jill, Joe, Jane, and Debbie were so kind and helpful, and I really appreciate all of the work they did this summer to make sure we all had the best experience. I also want to thank all of the donors that support this program. None of us would have been able to have such a great experience without your generosity! I am also so thankful for everyone in the Sherbenou Lab who helped make this summer so great for me! Dan, Lorraine, Zach, Sarah, Alana, Kady, and Emma Grace, I learned so much, loved working with all of you, and am so grateful for my time with each of you! To everyone else involved in the program, thank you so much for everything! I had the most amazing summer, and I am so grateful for my time in GSIP.



Julia Johnson
Middlebury College
Mentor: Daniel Sherbenou, MD, PhD
Research Poster Title: Determining Synergism Between MYC1975 and Teclistamab in Multiple Myeloma





This was my second year as a part of the Gates Summer Internship Program, and it was wonderful to be back. I got the chance to go deeper in a field of research and sharpen my understanding and analytical thinking skills. The people I met were wonderful and very supportive.

Thank you to everyone that made this program possible! It was a great experience.



Oreoluwa Ladele
Berea College
Mentor: Xiyang Fan, PhD
Research Poster Title: Exploring the Effects of the Absence of Endoglin on cSCC Cells

Thank you so much for the amazing opportunity this summer! I am very grateful for my mentors Manoel, Suzzi, and Dr. Boyle and all they taught me this summer as well as the generous donors who made my position possible. I learned so many lab skills and also how to be a better scientist. The GSIP program was awesome, and I enjoyed all the different opportunities including the weekly seminars, tours, and opportunities to meet other interns and CU students and faculty. This experience opened my eyes to what's possible in science and medicine and will benefit me for a lifetime!



Taylor LaValley
Miami University
Mentor: Kristen Boyle, PhD
Research Poster Title: The Effect of Maternal Exercise on Infant Metabolic Plasticity using Umbilical Cord-Derived MSCs





Thank you so much to everyone who made this summer internship possible! From the Gates Institute and its donors, to the many PIs and researchers throughout the Anschutz Medical Campus, we are so grateful to you. Jill, Joe, Jane, and Debbie, thank you so much for the hard work you put into planning seminars, field trips, and tours. It was a fantastic experience, and I am honored to have been part of it.



Bailey Leaphart
Davidson College
Mentor: Lori Walker, PhD

Research Poster Title: Investigating small molecule compounds as drivers or inhibitors of cardiomyocyte dedifferentiation

Thank you so much to the entire GSIP team for putting together this opportunity every summer and supporting me and my fellow interns through this experience! Not only did this program teach me an incredible amount of what it's like to be a part of the biological and medical research field, but also allowed me to walk away feeling very fulfilled in what I was able to accomplish. Being a member of this 2023 cohort has truly been an invaluable experience and has ultimately helped set me down a career path that I couldn't be more excited for...



Andrew Lu
Washington University in St. Louis
Mentor: Chelsea Magin, PhD
Research Poster Title: Engineering 3D Lung Models by Aggregation and Embedding of Progenitor Cell Spheroids into Biomaterials





Firstly, I would like to extend my sincere gratitude to the Gates Summer Internship Program, the Gates Institute, as well as our donors, for the opportunity to partake in this amazing program. I would also like to thank my PI, Dr. Bilousova, and my lab mentors, Stefanos and Parker, for their constant support through the entire internship. Finally, I would like to thank Jill, Joe, Debbie, and Jane for all of their hard work in organizing this program. Throughout my time at GSIP, I have been able to hear the teachings of some of the brightest minds in medicine and science alike. This was not only vital to my career aspirations, but much of the advice was also applicable to life. The Gates Summer Internship program was unique in the sense that it allowed us to see the multiple paths that you could take with a STEM career and even how we could carve out our own path. I truly believe that my research experience along with the practical knowledge that we have received from our seminars and field trips, will truly benefit me in whatever career I may embark upon. Thank you again to GSIP for this unforgettable experience!



Jeevan Mann

The University of California, Davis

Mentor: Ganna Bilousova, PhD

Research Poster Title: Exosome mediated delivery of enriched ECM components for the treatment of Hypermobility Ehlers-Danlos Syndrome



Thank you to Gates Institute Donors AVITA Medical; Ganna Bilousova, PhD & Igor Kogut, PhD; Chris & Joe Brzezinski, PhD; Jill T. Cowperthwaite & Charles P. Jones; Davidson College; Yvette & Chris Frampton; Jill & Roger Giller, MD; The Glendorn Foundation; Dana Gordon; Rhondda Grant; Joyce & Wayne Hutchens; Shelly D. Kilgas; Allison & Jeff Krebs; Frank & Monty Kugeler; Penelope H. Lewis; Middlebury College; Kelly & Mark Petrash, PhD; Jane Rech, PhD & Chris Toll; Ann & Kevin Reidy; Betty & Dennis Roop, PhD; Walter S. Rosenberry, III Charitable Trust; Matthew B. Seefeldt, PhD; A. Sheffield Tulp; and Christina & Willis Wright for funding my time in the lab. Thank you to Christina Kearns for setting me up with IACUC and Oscar Mendez for helping me and teaching me throughout the summer and thank you to Bruce Appel for being a supportive and present mentor. Thank you to the Appel lab for helping me throughout the process and showing me how to use software and microscopes, and for answering all of my questions. Thank you to Jane Rech, Jill Cowperthwaite, Joe Brzezinski, and Debbie Lopez for giving me the opportunity to conduct research as a Gates intern and for all the activities and seminars. I am forever grateful for this program.



Amanda "Manna" Morris
University of Colorado Denver
Mentor: Bruce Appel, PhD

Research Poster Title: Effects of immune activation on myelin development

Thank you to everyone at the Gates Institute who made this summer internship possible! Your dedication to making this program a success has truly made this an amazing experience. I absolutely loved attending interesting lectures from top experts in the field, as well as being able to participate in group activities and make connections with other interns. I will always treasure being a part of the Gates Summer Internship Program 2023.

Furthermore, thank you to my mentor, Dr. Jeffrey Jacot, and all of the members of his lab: Dr. Mitchell VeDepo, Dr. Rachel Reeser, Dr. Emily Burch, and Dwane Collard. They welcomed me into their lab and taught me valuable research skills that I will be able to use throughout my future career. They made this experience memorable and have inspired me in so many ways. Thank you all!



Anna Pocsi

University of Colorado Boulder

Mentor: Jeffrey Jacot, PhD

Research Poster Title: Characterization of iPSC Derived Endocardial Cells from Patients with Down Syndrome

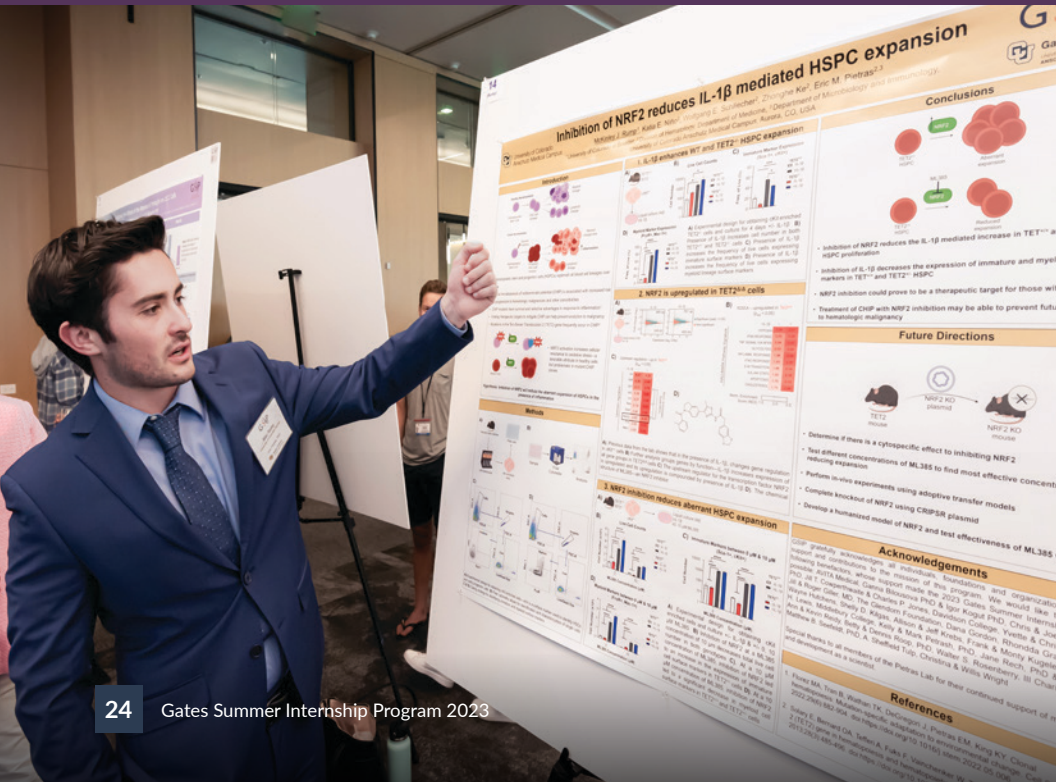


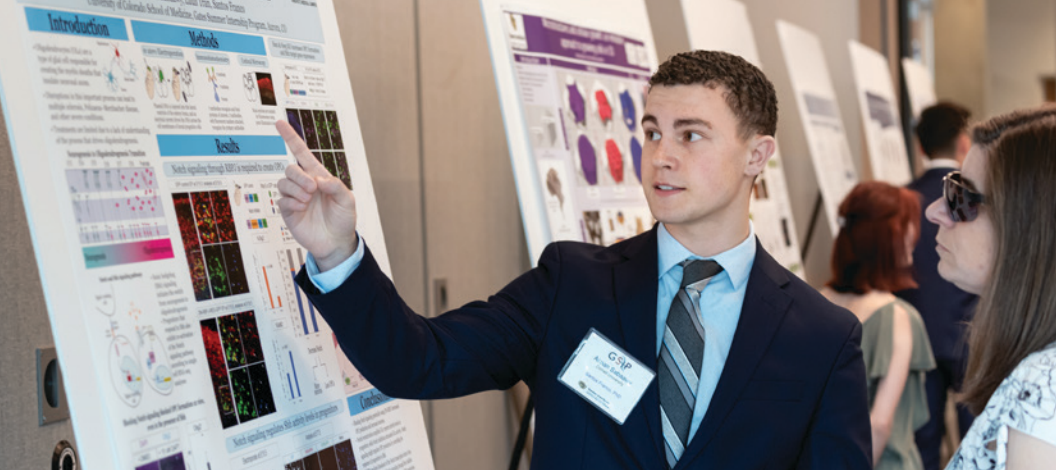
Thank you to all who made the 2023 GSIP program possible. A tremendous thank you to the directors, Jane, Jill, Joe, and Debbie for organizing the program and to the donors for supporting this experience. The seminars and guest speakers made the summer incredibly special. Being a part of this program was a wonderful experience and solidified my love of science and clinical medicine.

I also want to extend a special thank you to all members of the Pietras Lab for their continued support of my research and growth as a scientist. I am incredibly grateful for their kindness and encouragement during my time in the lab.



McKinley Rump
University of Colorado Boulder
Mentor: Eric Pietras, PhD
Research Poster Title: Inhibition of NRF2 reduces IL-1 β mediated HSPC expansion





Thanks to everyone who makes GSIP possible, and especially the directors who help it run so smoothly! The seminars and trips that they organized were fun, informational, and helpful in starting to think about future career directions. I am grateful that I got to be involved in such an interesting project, and that the program gave me the opportunity to make some great friends!



Aiman Sabaawy
Cornell University

Mentor: Santos Franco, PhD

Research Poster Title: Investigating the role of Notch signaling in Shh-mediated oligodendrocyte fate specification

This program was incredibly beneficial... I finally got real lab experience, with a purpose I found meaningful and exciting. I have tried hard with the limited time I had left to graduate after switching majors to find research I loved and to have the opportunity to explore it. Thank you for giving me the opportunity to finally do that.

Anonymous 2023 Intern Survey Response

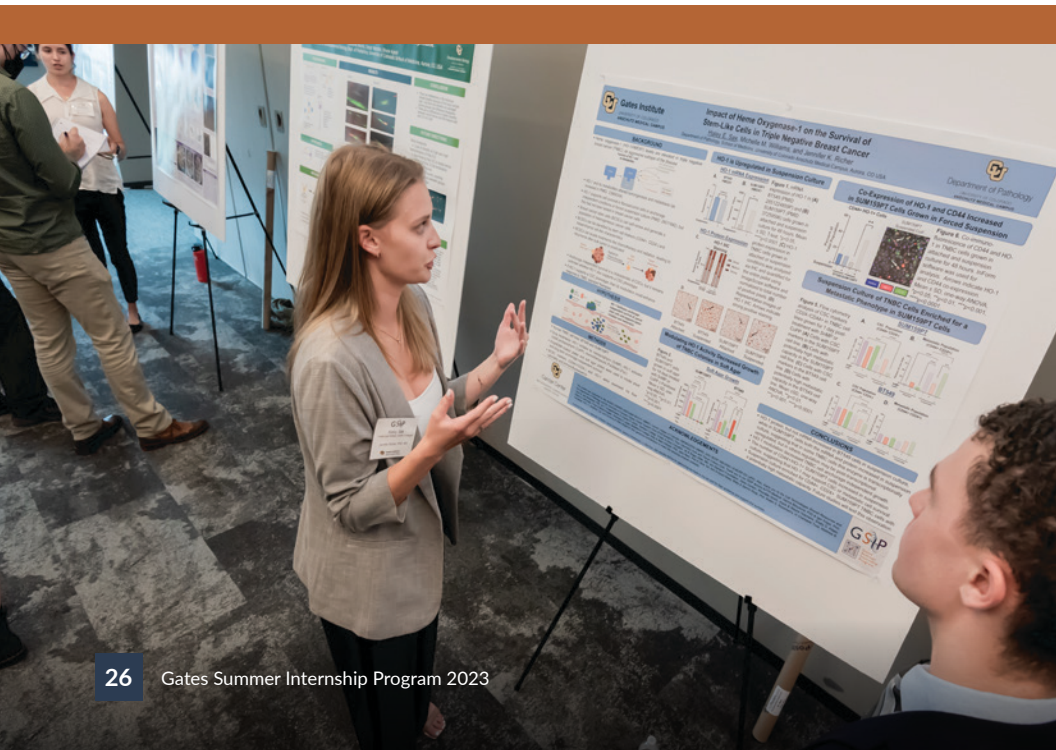
I am grateful for the opportunities that I've had to learn both in and out of the lab this summer. The GSIP program is a unique opportunity to learn about research at the intersection of academics and industry and explore future career options. I now have a better sense of my career goals and what I'm most passionate about.

Thank you to Dr. Richer for having me back to the lab this summer, Michelle Williams for her amazing daily mentorship, and the rest of the Richer lab for making me feel welcome and always being willing to answer questions and teach me new techniques.

Thank you to Jane, Jill, Joe, and Debbie for everything that you've done for us this summer, and to the donors for making this program possible!



Haley Sax
Hobart and William Smith Colleges
Mentor: Jennifer Richer, PhD
Research Poster Title: Impact of Heme Oxygenase-1 on the Survival of Stem-Like Cells in Triple Negative Breast Cancer





I want to thank the Gates Biomanufacturing Facility for providing me such an amazing learning opportunity. I would like to specially thank Dr. Gana Batt, Dr. Saumya De Silva, Aashrit Donthi, Casey Johnson, Robert Byrd, Kayla Marshall, and Caitlynn Pine for all their support throughout the summer. Working at the GBF with some of the best mentors I've ever had was truly a meaningful experience. I would also like to thank the GSIP team, Jill, Jane, and Joe for their constant encouragement and support. They truly made this a memorable summer!

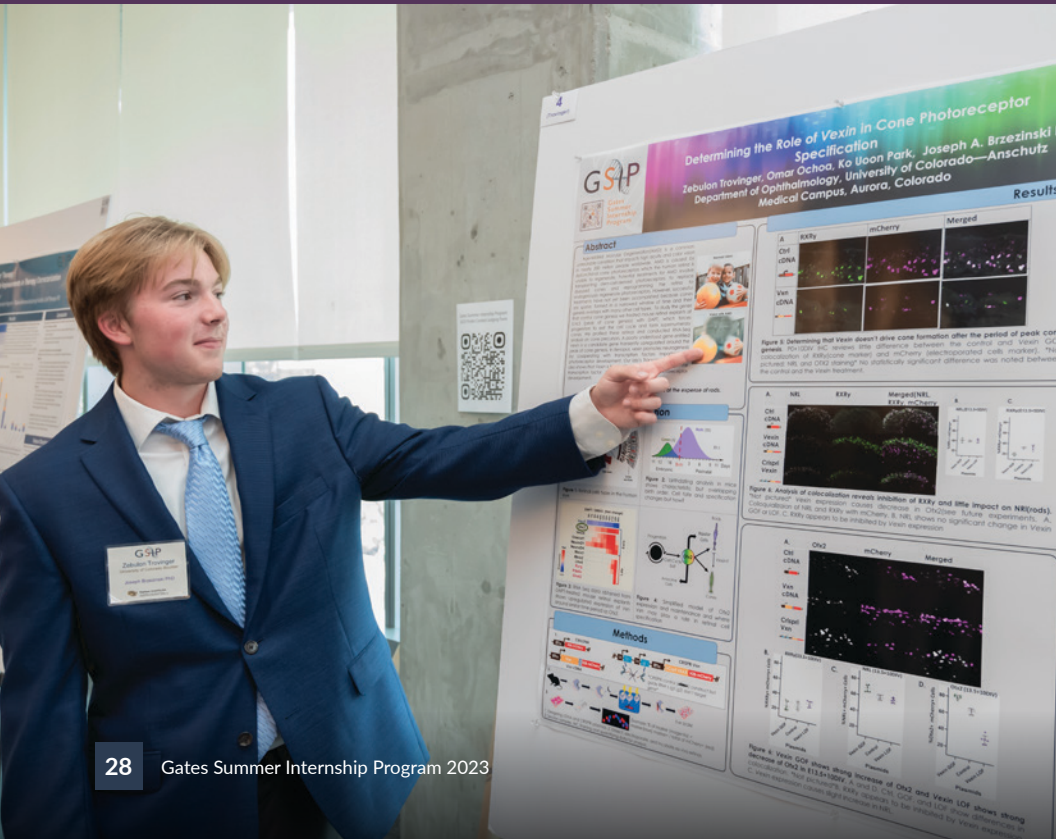


Ananya Talanki
Emory University
Mentor: Gana (Dash) Batt, PhD
Research Poster Title: Optimization of Protein Purification via Hydrophobic Interaction Chromatography for Glioblastoma Therapeutic Protein

I would like to thank everyone who supports the Gates Summer Internship Program. Your support and dedication to the next generation of scientists is remarkable, and I got to see firsthand just how much everyone cares at Anschutz. The expertise and passion that I got the privilege to see from others this summer will hold a rippling impact on my career, and I'll forever look back with gratitude at the environment I got to grow within and the relationships I got to develop. Thank you for such a valuable experience.



Zebulon Trovinger
University of Colorado Boulder
Mentor: Joseph Brzezinski, PhD
Research Poster Title: Determining the Role of Vexin in Cone Photoreceptor Specification





I would like to thank my mentor Dr. Karin Payne and all the members of the Payne Lab. I truly enjoyed my time in the Orthopedics Department, and I want to express my heartfelt gratitude for the incredible opportunity to be a part of the Gates Summer Internship Program. The experience of participating in research related to regenerative medicine and acquiring new wet lab skills has been nothing short of transformative. This internship has not only deepened my understanding of the field but has also ignited a passion within me to pursue further exploration in medicine. The guidance and mentorship provided by the experienced professionals during my time in the program have been invaluable. Moreover, the collaborative and inclusive environment fostered by the program allowed me to connect with fellow interns. Once again, thank you for believing in my potential and providing me with this exceptional platform for growth.



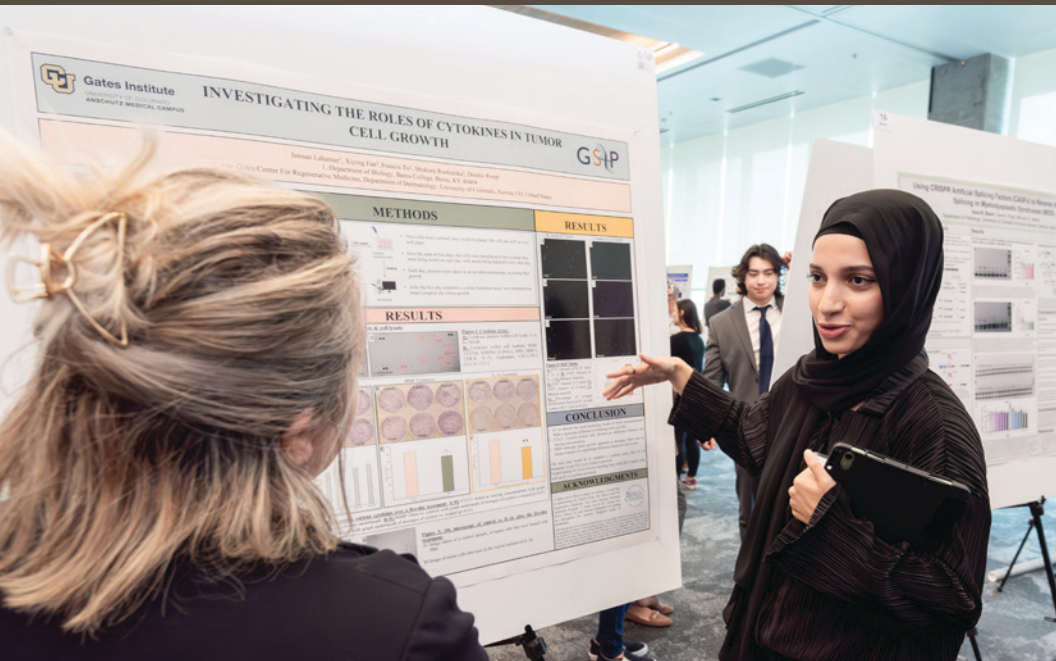
Emily Xie

University of California, Berkeley

Mentor: Karin Payne, PhD

Research Poster Title: Investigating the Role of Cx3cr1+ Macrophages in Bony Bar Formation: Insights from the Development of a New Mouse Model

BEREA 2023 INTERNS



Thank you to GSP for taking me under their wing and guiding me throughout the summer! I had a wonderful time working within the lab, learning many hands-on skills, and making connections with many mentors and other interns. This summer was amazing, and I just want to thank everyone who was able to make this possible – giving so many students the internship of a lifetime!



Jennan "Jeny" Lahamer

Berea College

Mentor: Xiying Fan, PhD

Research Poster Title: Investigating the Roles of Cytokines in Tumor Cell Growth

I am so grateful for this summer I spent as a GSIP intern in Colorado! I could never imagine that one day I would have a chance to work in a research lab and contribute to science and medicine. I learned so much during these three months that I can confidently step into the science world and know that I have the skills to grow further. I am endlessly thankful to my lab supervisor, Parker Jesberg, who guided me through the internship. I learned from everyone I met along the way.



Aikhan Tugambekova

Berea College

Mentor: Igor Kogut, PhD

Research Poster Title: Enhanced Homing of Mesenchymal Stem Cells by Upregulation of CXCR4



ACKNOWLEDGMENTS

Since its inception in 2015, the Gates Summer Internship Program has been made possible by generous philanthropic support from the following individuals, foundations and organizations:

Avita Medical
The Bawmann Group Inc.
Ganna Bilousova, PhD, and Igor Kogut, PhD
Christine and Joseph Brzezinski, PhD
Jill T. Cowperthwaite and Charles P. Jones
Davidson College
Paula and Jack Crowley
Yvette and Chris Frampton
Deborah Froeb and the late Timothy Gardner
Jill and Roger Giller, MD
The Glendorn Foundation
Dana Gordon
Rhonda Grant and the late Peter Grant
Joyce and Wayne Hutchens
Shelly D. Kilgas
Allison and Jeff Krebs
Monty and Frank Kugeler
Penelope H. Lewis
Middlebury College
Kelly and Mark Petrash, PhD
Jane Rech, PhD, and Chris Toll
Ann and Kevin Reidy
Betty and Dennis Roop, PhD
Walter S. Rosenberry, III Charitable Trust
Brianna Seefeldt, DO, and Matthew B. Seefeldt, PhD
A. Sheffield Tulp
Christina and Willis Wright

TO LEARN MORE ABOUT HOW YOU MIGHT PLAY A ROLE

in making the Gates Summer Internship Program possible through philanthropic gifts, contact

Allison Krebs,
Office of Advancement at
303.724.5704 or
allison.krebs@cuanschutz.edu

or scan the QR Code to access our website.



We want also to thank Edward DeCroce of DeCroce Photography for his thoughtful expertise and patience in creating headshots for each of our 2023 interns.

2023 GSIP TEAM



I want to thank everyone that supports the Gates Summer Internship Program. Your support allows me to host fabulous undergraduate students in my laboratory every year. These students push our science forward and are a joy to mentor and watch grow after they leave the lab. In my role as co-director of the program, I also have the privilege of seeing the growth of the entire class of interns each summer.

Thanks again for your support – we can't do it without you.

Joseph Brzezinski, PhD

Co-Director

joseph.brzezinski@cuanschutz.edu



I am inordinately proud to have been asked to be a part of GSIP four years ago, as the program is clearly playing a profound role in exposing exceptional students to the rich and intriguing world of biomedical research and regenerative medicine. I can't think of anything in our world much more thrilling and heartening than helping ignite and advance the hopes and dreams of such bright, diligent, and thoughtful young people. Hearing from our 2023 interns and those who have preceded them about the impact GSIP has had on expanding their horizons and focusing their aspirations makes me ever so grateful to those whose various efforts and support have made this program possible.

Jill Cowperthwaite

Co-Director

jill.cowperthwaite@cuanschutz.edu



I am the newest member of the Gates Institute's GSIP team, so working with the Class of 2023 was my first introduction to GSIP. I found our team to be passionate, dedicated, and inspiring and greatly enjoyed all we did to prepare for and support the talented interns we serve. Going forward, I look forward to helping advance, improve and sustain this obviously successful program for classes to come!

Debbie Lopez
Program Associate
debbie.t.lopez@cuanschutz.edu

Once again, we had brilliant and professional interns. They were diligent, thoughtful, respectful, driven, and a pleasure to have in the lab.

Anonymous 2023 Mentor Survey Response



Thank you to the caring and generous community that originally created GSIP and continues to sustain this impactful educational initiative of the Gates Institute. Working with the brilliant and dedicated faculty and staff within the Gates Institute and across the Anschutz Medical Campus is a privilege and challenges each of us to provide the best possible experience for our interns. In turn, it is a thrill to witness this internship transform and ignite the career pathways and choices of these exceptional students.

Jane Rech, PhD
Program Coordinator
jane.rech@cuanschutz.edu

**View from above the Grants' family home in
Estes Park, Colorado, at which our interns
hiked, picnicked and were photographed on
June 26, 2023 (see back cover)**

**We hope what our GSIP interns saw and
experienced during the summer of 2023
inspires them to great heights!**





Gates Institute

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS



**Gates Summer
Internship Program**

Gates Institute - CU Anschutz

1890 North Revere Court

Mailstop L606

Aurora, CO 80045

P: 303.724.1494 | gates.cuanschutz.edu

See our **GSIP** website (scan QR code)
or contact Jill Cowperthwaite at **303.724.1494**
or jill.cowperthwaite@cuanschutz.edu
with any questions.

