

# Christal D. Sohl, Ph.D.

## Address:

San Diego State University (SDSU)  
Department of Chemistry & Biochemistry  
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## RESEARCH INTERESTS

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We strive to combat cancer by probing mechanistic questions at the intersection of biochemistry, molecular biophysics, and cell biology. We explore how altered enzyme activity, with a focus on metabolic enzymes, impacts human health using kinetic, structure/function, and cellular studies coupled with collaborative efforts employing proteomic, metabolomic and lipidomic technologies. By understanding the molecular mechanisms of enzyme dysfunction, we can illuminate structure-function relationships, probe cellular consequences of enzyme activity, identify new drug targets, and develop platforms for targeted therapy. I am a fierce advocate for broadening access to STEM and STEM careers – our diversity is our superpower.

## EDUCATION

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Postdoctoral Fellow, Pharmacology, Yale University, New Haven, CT	2010-2015
Ph.D., Biochemistry, Vanderbilt University, Nashville, TN	2005-2010
B.S., <i>summa cum laude</i> , Biochemistry, University of Oklahoma, Norman, OK	2000-2005

## PROFESSIONAL EXPERIENCE

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<b>Director, NIH MARC (Maximizing Access to Research Careers) Program</b> San Diego State University, San Diego, CA	2023-present
<b>Associate Professor of Chemistry and Biochemistry with tenure</b> Department of Chemistry and Biochemistry, San Diego State University, San Diego, CA	2021-present
<b>Member, Moores Cancer Center</b> Cancer Biology and Signaling Program, Moores Cancer Center, UC San Diego, San Diego, CA	2016-present
<b>Assistant Professor of Chemistry and Biochemistry</b> Department of Chemistry and Biochemistry, San Diego State University, San Diego, CA	2015-2021
<b>Postdoctoral Fellowship</b> with Professor Karen S. Anderson Pharmacology Department, Yale University School of Medicine, New Haven, CT	2010-2015
<b>Dissertation Research</b> with Professor F. Peter Guengerich Biochemistry Department, Vanderbilt University School of Medicine, Nashville, TN Dissertation: "Kinetic analysis of the multi-step cytochrome P450 1A2 and 19A1 enzymes."	2005-2010
<b>Undergraduate Research</b> with Professor George B. Richter-Addo Chemistry Department, University of Oklahoma, Norman, OK Honors Thesis: "Synthesis and characterization of C-nitroso compounds of iron porphyrins and the relevance to biology."	2002-2005

## FUNDED GRANTS

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Current funding (direct + indirect) (dates in Mo/Day/Y or Mo/Y)

- 1) **1 T34 GM149430**: "MARC at San Diego State University." NIH T34 Role: PI. \$3,053,972 9/1/2023-5/31/2028
- 2) **2100129**: "Broadening participation and the culture of undergraduate research experiences." NSF ECR-HER Core Research. Role: Co-PI. \$1,288,953 7/15/2021-9/30/2024
- 3) **R35 GM137773**: "Isocitrate dehydrogenase (IDH) mutations as drivers of organelle stress and dysfunction." NIH R35 (NIGMS). Role: PI. \$1,843,375 8/1/2020-6/30/2025

Previous funding (direct + indirect) (dates in Mo/Day/Y or Mo/Y)

- 1) **133484-RSG-19-075-01-TBE**: "Mechanisms of isocitrate dehydrogenase variants in cancer." American Cancer Society Research Scholar Grant. Role: PI. \$792,000 7/1/2019-6/30/2023
- 2) **Summer Undergraduate Research Program**: "The effects of prune extract on cellular models of bone cancer." San Diego State University. Role: PI. \$6,000 5/24/2021-8/19/2021
- 3) **SDSU/UCSD Cancer Center Comprehensive Partnership research grant program**: "The role of metabolic dehydrogenases in driving non-small-cell lung cancer." NIH U54 (NCI). Role: Lead PI (with collaborator Christian Metallo, UCSD). \$200,000 9/12/2018-8/31/2020
- 4) **R00CA187594**: "The molecular mechanism of isocitrate dehydrogenase (IDH) mutations in cancer." NIH R00 (NCI). Role: PI. \$692,926 9/1/2015-8/31/2018
- 5) **Summer Undergraduate Research Program**: "The role of IDH in driving reductive metabolism in the cancer environment." San Diego State University. Role: PI. \$6,000 5/1/2018-8/17/2018
- 6) **CSUPERB Faculty Travel Grant**. The California State University CSUPERB. Role: PI. \$1,500 1/2018
- 7) **CSUPERB New Investigator Grant**: "Navigating genotoxicity: mechanistic studies with pol epsilon in carcinogenic environments." The California State University CSUPERB. Role: PI. \$15,000 6/1/2016-11/30/2017
- 8) **University Grants Program (UGP)**: "The many paths to genome instability: multiple mechanisms of pol epsilon infidelity." San Diego State University." Role: PI. \$9,858 2/1/2016-6/30/2017
- 9) **Cancer Biology and Signaling Program Pilot Grant**: "Altered lipid metabolism in IDH1-driven glioma." UCSD Moores Cancer Center. Role: PI. \$2,254 4/2017
- 10) **Research and Creative Endeavors Proposal**: "The role of TEK kinase in Vascular abnormalities and cancer." San Diego State University. Role: PI. \$11,893 3/1/2016-2/28/2017
- 11) **Summer Undergraduate Research Program**: "The role of IDH in cancer." San Diego State University. Role: PI. \$6,000 5/23/2016-8/19/2016
- 12) **K99CA187594**: "The molecular mechanism of isocitrate dehydrogenase (IDH) mutations in cancer." NIH K99 (NCI). Role: PI (Yale University). \$113,932 7/7/2014-8/31/2015
- 13) **F32GM992892**: "Kinetics of DNA polymerase gamma upon mutation and nucleoside analog exposure." NIH F32 (NIGMS). Role: PI (Yale University). \$147,516 9/1/2011-7/6/2014
- 14) **T32ES007028**: "Training program in environmental toxicology." NIH T32 (NIEHS). Role: TA (Vanderbilt University). 2006-2009

Declined funding due to overlap (dates in Mo/Day/Y or Mo/Y)

- 1) **R01GM138426**: "Metabolic enzymes as drivers of disease" NIH R01 (NIGMS) Role: PI. Declined due to overlap with NIGMS R35. 8/1/2020-7/31/2025

## HONORS AND AWARDS

- Presidential Research Fellowship Award, SDSU 2022
- Nominee from SDSU: Outstanding Faculty Innovator in Student Success, Wang Family Excellence Award, Cal State system (award not received) 2022
- Outstanding Teacher, College of Sciences, SDSU 2021
- Most Influential Faculty Member, College of Sciences, SDSU 2021
- Certificate of Merit for becoming a first PI of a major research grant on cancer, Moores Cancer Center Delivering Discoveries Scientific Retreat 2019
- Poster Session Award of Excellence, Moores Cancer Center Delivering Discoveries Scientific Retreat 2019
- Outstanding Faculty member, Chemistry Department, SDSU 2017

- GREW Fellow, SDSU 2015
- Women in Cancer Research (WICR) Scholar Award 2015
- Poster Presentation 1<sup>st</sup> prize, Yale University Pharmacology Retreat 2011
- Cunningham Award, Vanderbilt University 2008
- American Society of Biochemistry and Molecular Biology Travel Award grant 2008
- Vanderbilt University Director's Award Scholarship 2005-2006
- Yamanouchi Pharma, Inc. Scholarship 2004
- Outstanding Senior Award, Dept. Chemistry and Biochemistry, University of Oklahoma 2004
- Goldwater Scholarship Honorable Mention 2004
- Outstanding Junior Award, Dept. Chemistry and Biochemistry, University of Oklahoma 2003
- Phi Kappa Phi Award, University of Oklahoma 2003
- Honors Scholar Scholarship, University of Oklahoma 2000-2004

## LEADERSHIP AND SUPPORT/ALLYSHIP/ADVOCACY TRAINING AND CERTIFICATIONS

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*(Dates in Mo/Day/Year or Mo/Year)*

- Advancing Inclusive Mentoring (AIM) training, a California State University AIM program through SDSU. This program provides 12+ hours of content and discussion about positive and inclusive mentoring practices and requires the creation of a mentor mentee compact, a best practice in mentoring students. Spring 2024
- CIMER (Center for the Improvement of Mentored Research Experiences in Research) Trained Facilitator 2023-present
- CIMER Facilitator Workshop: Learn to Implement Mentor Training, Madison, WI 7/24-25/2023
- Ableism 101, 102, SDSU Spring 2023
- Facilitating DEI Conversations, SDSU Spring 2023
- Building with Inclusive Leadership Institute participant, CSU 5/23-24/2021
- Implicit Bias Training and Equity Minded Hiring Training, SDSU 12/10/2021
- (Re)Frame: Anti-Oppression Work Across Disciplines, SDSU 9/17/2021
- Motivating Learners course participant, CSU 2021
- ECRT (Economic Crisis Response Team) Advocacy training, SDSU 4/26/2021
- Adult Mental Health First Aid (MHFA) Certification, National Council for Behavioral Health 4/13/2021
- Dismantling White Supremacy Workshop, SDSU 10/7/2020
- Implicit Bias and Microaggressions, SDSU 2/12/2020
- Implicit Bias in Hiring, SDSU 9/9/2019
- Military Ally Training, SDSU 11/16/2018
- Culturally Competent Mentoring: Providing Tools to Mentor Student Researchers, CSUPERB 1/7/2016

## MEDIA INTERVIEWS

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- 1) "Cancer Research at SDSU." SDSU's President de la Torre's Fireside Charla. 1 Feb. 2020. [https://president.sdsu.edu/from-the-president/podcasts/014\\_cancer\\_research\\_at\\_sdsu](https://president.sdsu.edu/from-the-president/podcasts/014_cancer_research_at_sdsu)
- 2) "Research horizons: the quest to cure cancer." SDSU NewsCenter. 24 April 2019. [http://newscenter.sdsu.edu/sdsu\\_newscenter/news\\_story.aspx?sid=77611&utm\\_campaign=Oktopost-Research&utm\\_medium=social&utm\\_source=twitter](http://newscenter.sdsu.edu/sdsu_newscenter/news_story.aspx?sid=77611&utm_campaign=Oktopost-Research&utm_medium=social&utm_source=twitter)
- 3) "Suds & Science: An evening of thinking and drinking." News8 Morning show. 10 July 2017. [http://www.cbs8.com/story/35850624/suds-science-an-evening-of-thinking-and-drinking?utm\\_source=dvr.it&utm\\_medium=twitter](http://www.cbs8.com/story/35850624/suds-science-an-evening-of-thinking-and-drinking?utm_source=dvr.it&utm_medium=twitter)
- 4) "Cutting Edge of Discovery: New hire Christal Sohl is bringing world-class research -- and student research opportunities -- to SDSU." SDSU NewsCenter. 4 March 2016. [http://newscenter.sdsu.edu/sdsu\\_newscenter/news\\_story.aspx?sid=76062](http://newscenter.sdsu.edu/sdsu_newscenter/news_story.aspx?sid=76062)
- 5) "Spotlight on Scientists: Profiles in Cancer Research." NIH National Cancer Institute. 22 December 2015. <http://www.cancer.gov/research/nci-role/spotlight/profiles/christal-sohl>

## TEACHING

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- Course Instructor, CHEM 560: Biochemistry, SDSU (**course significantly modified**) Fall 2024
- Course Instructor, CHEM 765: Molecular Mechanisms of Human Disease, SDSU Fall 2023  
*Assessment:* overall mean 4.88 (scores out of 5.00, 10/17 responses)  
Mentored an IRACDA (Institutional Research and Academic Career Development Fellow, Alexis Reyes)
- Course Instructor, CHEM 160, Introductory Biochemistry, SDSU (**course significantly modified**) Fall 2023  
*Assessment:* overall mean 4.33 (scores out of 5.00, 16/60 responses)  
Mentored an IRACDA (Institutional Research and Academic Career Development Fellow, Amanda Brambila)
- Online Course Developer, BIOL40357: Biochemistry, UCSD College of Extended Studies (**new course developed**) Launched Fall 2023
- Course Instructor, CHEM 362: Confronting Cancer, SDSU (**new course developed**) Spring 2022
- Course Instructor, CHEM 765: Molecular Mechanisms of Human Disease, SDSU Fall 2021  
*Assessment:* mean 4.92, median 5.00 (scores out of 5.00, 7/11 responses)
- Course Instructor, CHEM 160, Introductory Biochemistry, SDSU (**course significantly modified**) Fall 2020  
*Assessment:* mean 4.68, median 5.00 (scores out of 5.00, 65/89 responses)  
*Course taught fully online due to Covid-19 pandemic*
- Course Instructor, CHEM 765: Molecular Mechanisms of Human Disease, SDSU Fall 2020  
*Assessment:* mean 4.95, median 5.00 (scores out of 5.00, 14/19 responses)  
*Course taught fully online due to Covid-19 pandemic*
- Course Instructor, CHEM 365, Biochemistry, Cell & Molecular Biology, SDSU Spring 2020  
*Assessment:* mean 4.70, median 5.00 (scores out of 5.00, 130/164 responses)  
*Covid-19 outbreak-courses moved to fully online mid-semester*
- Course Instructor, CHEM 765: Molecular Mechanisms of Human Disease, SDSU Fall 2019  
*Assessment:* mean 4.96, median 5.00 (scores out of 5.00, 16/24 responses)
- Course Instructor, CHEM 365, Biochemistry, Cell & Molecular Biology, SDSU Spring 2019  
*Assessment:* mean 4.19, median 5.00 (scores out of 5.00, 112/145 responses)  
Mentored an IRACDA (Institutional Research and Academic Career Development Fellow, Rachael Berry (UCSD, now faculty at UCI))
- Course Instructor, CHEM 100: Introduction to Chemistry, SDSU Fall 2018  
*Assessment:* mean 3.58, median 4.00 (scores out of 5.00, 337/470 responses)
- Course Instructor, CHEM 365: Biochemistry, Cell & Molecular Biology, SDSU Spring 2018  
*Assessment:* mean 4.50, median 5.00 (scores out of 5.00, 141/169 responses)
- Course Instructor, CHEM 695: Graduate Education in Chemistry, SDSU. *Assessment:* mean 4.94, median 5.00 (scores out of 5.00, 8/12 responses) Fall 2017
- Course Instructor, CHEM 765: Molecular Mechanisms of Human Disease, SDSU (**new course developed**). *Assessment:* mean 4.95, median 5.00 (scores out of 5.00, 12/17 responses) Fall 2017
- Course Instructor, CHEM 763/750: Cell Regulation and Bioanalytical Methods, SDSU (**course significantly modified**). *Assessment:* mean 4.95, median 5.00 (scores out of 5, 12/17 responses) Spring 2017
- Course Instructor, CHEM 365: Biochemistry, Cell & Molecular Biology, SDSU Fall 2016  
*Assessment:* mean 4.22, median 5.00 (scores out of 5.00, 147/182 responses)
- Course Instructor, CHEM 365: Biochemistry, Cell & Molecular Biology, SDSU (course significantly modified). Fall 2015  
*Assessment:* mean 4.29, median 5.00 (scores out of 5, 141/195 responses)
- Teaching Assistant, MCDB 630: Biochemical and Biophysical Approaches and Cellular Biology, Yale University 2013-2015
- Teaching Assistant, IMED 680: Topics in Human Investigation, Yale University 2011-2015
- National Academies Summer Institute on Undergraduate Education, Education Fellow 2015

## STUDENT MENTORING

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Graduate Students and Postdoctoral trainees in the Sohl Lab

1) Darius Hyde, MS student, SDSU Biochemistry	2024-present
2) Aaron Le, MS student, SDSU Biochemistry	2024-present
3) Nino Mamasakhlisi, PhD student, SDSU Biochemistry	2024-present
4) Ashfeen Nawar, MS student, SDSU Biochemistry	2021-2024
5) Brittany Bermoy, PhD student, SDSU Biochemistry	2021-present
6) Mowaffaq Adam, Postdoctoral trainee, SDSU Biochemistry	2021-2024
7) Isaac Marquez, MS student, SDSU Biochemistry	2020-2022
8) Elene Albekioni, PhD student, SDSU Biochemistry	2020-present
9) Grace Chao, PhD student, SDSU Biology	2020-present
10) Kate Sabo, MS 2022, SDSU Biochemistry	2019-2022
11) Jade Ngoc Huynh, MA 2021, SDSU Biochemistry	2018-2021
12) Lucas Luna, PhD 2021, SDSU Biochemistry	2015-2021
13) Amanda Coale, MS 2020, SDSU Engineering (Co-mentor)	2018-2020
14) Joi Weeks, PhD 2020, SDSU Biology	2018-2020
15) Diego Avellaneda Matteo, PhD 2020, SDSU Biochemistry	2015-2020
16) Zeqing Ruth Xu, MS 2019, SDSU Biochemistry	2017-2019
17) Grace Wells, MS 2018, SDSU Biochemistry	2016-2018
18) Adam Grunseth, MS student, SDSU Biochemistry	2016-2018
19) Anna Uvarova, MS 2017, SDSU Biochemistry	2015-2017

Undergraduate Students and Post-Baccalaureates in the Sohl Lab

1) Melina Urquidez, SDSU undergraduate	2024
2) Grace Viljoen, SDSU undergraduate	2024
3) Sean Alfaro-Cunningham, SDSU undergraduate	2024-present
4) Darius Hyde, SDSU undergraduate	2023-2024
5) Aaron Le, SDSU undergraduate	2023-2024
6) Marissa Balagtas, SDSU undergraduate	2022-2023
7) Divine Pungi, SDSU undergraduate	2022-2023
8) Jennifer Schenkenfelder, SDSU undergraduate	2022
9) Caroline Stack, SDSU undergraduate	2021-2022
10) Nicole Sierra, SDSU undergraduate	2021-2024
11) Rachel Khoury, SDSU undergraduate	2021-2023
12) Chelsie Miller, SDSU undergraduate	2021-2023
13) Nalani Coleman, SDSU undergraduate	2019-2022
14) Ella Thornberg, SDSU undergraduate	2019-2021
15) Danielle Caliger, SDSU undergraduate	2019-2021
16) Vinnie Widjaja, SDSU undergraduate	2019-2021
17) Alexandra Strom, SDSU undergraduate	2019-2021
18) Dahra Pucher, USC undergraduate	2019
19) Tony Zamro, SDSU undergraduate	2019
20) Tin Duc Nguyen, Miramar College undergraduate	2019
21) Sati Alexander, SDSU undergraduate	2018-2020
22) Michelle Nguyen, SDSU undergraduate	2018
23) Michelle Scott, SDSU undergraduate	2018-2019
24) Elan Zora, SDSU undergraduate	2018
25) Dania Meza-Acosta, SDSU undergraduate	2018
26) Esteban Delgado, SDSU undergraduate	2018
27) Viraj Upadhye, SDSU undergraduate	2017-2020
28) Giovanni Quichocho, SDSU undergraduate	2017-2020
29) Jeon Erik Fonbon, SDSU undergraduate	2017-2018
30) Zach Lesecq, SDSU undergraduate	2017-2018
31) Madison Kennedy, SDSU undergraduate	2015-2018
32) Celene Anaya, SDSU undergraduate	2017
33) Precious Moman, SDSU undergraduate	2016-2017

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34) Anup Sarakki, SDSU post-bac	2016
35) Jorge Sandoval, SDSU undergraduate	2016
36) Andrea Ruiz, SDSU undergraduate	2016
37) Carlos Bobadilla, SDSU undergraduate	2016
38) Yunjin Wu, SDSU post-bac	2016
39) Stacy Anselmo, SDSU undergraduate	2015-2017
40) Eric Gonzalez, SDSU undergraduate	2015-2017

Total trainees as of 7/2024: 58

64% self-identify as members of NIH-defined historically excluded groups, 62% identify as non-male

## **STUDENT RESEARCH FELLOWSHIPS/PROGRAMS**

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• Sean Alfaro-Cunningham, NSF California State University Louis Stokes Alliance for Minority Participation (CSU-LSAMP)	2024-2025
• Sean Alfaro-Cunningham, CREATE (SDSU/UCSD Cancer Research and Education to Advance Health Equity) Scholars program	2024
• Darius Hyde; NSF California State University Louis Stokes Alliance for Minority Participation (CSU-LSAMP)	2023-2024
• Nicole Sierra, SDSU MARC (Maximizing Access to Research Careers) Program	2022-2024
• Rachel Khoury, SDSU IMSD (Initiative for Maximizing Student Development) Program	2021-2023
• Nicole Sierra, SDSU IMSD (Initiative for Maximizing Student Development) Program	2021-2022
• Chelsie Miller, SDSU IMSD (Initiative for Maximizing Student Development) Program	2021-2023
• Alexandra Strom; NSF GRFP (Graduate Research Fellowship Program)	2021
• Nalani Coleman; SDSU MARC (Maximizing Access to Research Careers) Program	2020-2022
• Vinnie Widjaja; SDSU MARC (Maximizing Access to Research Careers) Program	2019-2021
• Alexandra Strom, SDSU IMSD (Initiative for Maximizing Student Development) Program	2019-2021
• Lucas Luna, ARCS (Advancing Science in America) Fellow	2019-2021
• Sati Alexander, SDSU IMSD (Initiative for Maximizing Student Development) Program	2019-2020
• Joi Weeks, ARCS (Advancing Science in America) Fellow	2018-2020
• Joi Weeks, Ford Foundation Fellow	2018-2020
• Sati Alexander; UCSD/SDSU Partnership Scholars Program	2018-2020
• Viraj Upadhye; SDSU MARC (Maximizing Access to Research Careers) Program	2018-2020
• Giovanni Quichocho, SDSU IMSD (Initiative for Maximizing Student Development) Program	2018-2020
• Michelle Scott, SDSU IMSD (Initiative for Maximizing Student Development) Program	2018-2019
• Dania Meza-Acosta; NIH NCI U54 Cancer Disparities Summer Research Program	2018
• Madison Kennedy; NSF GRFP (Graduate Research Fellowship Program)	2018
• Esteban Delgado, SDSU IMSD (Initiative for Maximizing Student Development) Program	2018
• Madison Kennedy; SDSU MARC (Maximizing Access to Research Careers) Program.	2016-2018
• Giovanni Quichocho; NIH NCI U54 Cancer Disparities Summer Research Program	2017
• Stacy Anselmo; NSF California State University Louis Stokes Alliance for Minority Participation (CSU-LSAMP)	2017
• Eric Gonzalez; NSF GRFP (Graduate Research Fellowship Program)	2017
• Precious Moman, UCSD/SDSU Partnership Scholars Program	2016-2017
• Jorge Sandoval; NIH NCI U54 Cancer Disparities Summer Research Program	2016
• Andrea Ruiz; NIH NCI U54 Cancer Disparities Summer Research Program	2016
• Eric Gonzalez; SDSU MARC (Maximizing Access to Research Careers) Program	2015-2017

## **SERVICE**

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Professional Service (dates in Mo/Day/Y or Mo/Y)

• Judge, Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS) Conference	11/15-18/2023
• Grant reviewer, NIH MIRA R35 MRAE study section	10/17-18/2023

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- Ad hoc NIGMS Advisory Council member 9/7/2023
- Grant reviewer, American Cancer Society TBE study section 6/8-9/2023
- Session Co-Organizer, Division of Chemical Toxicology (TOXI), American Chemical Society (ACS) National Meeting, 13-17 Aug. 2023 2022-2023
- Co-Course Director, Session Chair, UCSD CME: "Delivering Discoveries: Updates in Oncology" 10/29-30/2021
- Planning Committee, UCSD CME: "Delivering Discoveries: Updates in Oncology", UCSD 2021
- CSU-ICM online symposium presentation judge and abstract reviewer 2020
- Grant reviewer, Oklahoma Center for the Advancement of Science and Technology (OCAST) Chemistry and Biochemistry Review Panel 6/26/2020
- Early Career Reviewer (ECR), NIH Scientific Review Group MFSA (Macromolecular Structure and Function A) 2/7-8/2019
- Ad Hoc grant reviewer, Oklahoma Center for the Advancement of Science and Technology (OCAST) 2018
- Grant reviewer, CSUPERB (Cal State System) 2017-2018
- Ad Hoc grant reviewer, Veni (Netherlands) 4/2018
- Ad Hoc grant reviewer, Breast Cancer Now (UK) 10/14/2016
- Early Career Reviewer (ECR), NIH Scientific Review Group CE (Cancer Etiology) 5/26-27/2016
- Ad Hoc grant reviewer, NSF 3/10/2016
- Manuscript reviewer for journals including: *Sci Reports; Cell Reports; Oncotarget; Biochemical J; Anal Chim Acta; PlosOne; Virus Genes; Biosci Rep; Nature Comm, etc.* 2015-present

University (SDSU) Service (dates in Mo/Day/Y or Mo/Y)

- Faculty Mentor, STEM Pathways Program 2024-present
- Biopod Supervisor, College of Sciences, SDSU 2024-present
- Member, Five-Year Review of College of Sciences Dean Committee 2024
- Member, CREATE Partnership Internal Advisory Committee (AIC), UCSD/SDSU 2023-2025
- Chair, Chemistry Department Graduate Committee, SDSU 2023-present
- Director, SDSU MARC Program, SDSU 2023-present
- S3 (SDSU Student Symposium) Judge, SDSU 2023
- "Mental Health Challenges in Grad School," Guest lecturer, COMP 600, SDSU 3/10/2023
- Chair, Chemistry Department Chair search committee, SDSU Spring 2023
- "Mentoring", Panel Discussion with Computational Science graduate students, SDSU 4/15/2022
- Co-planning and launch of first annual Graduate Student Mind, Body, and Soul Community Fair 4/6/2022
- SDSU FUERTE Cancer Disparities Hiring Committee member, SDSU 2021-2022
- "Supporting students' (and faculty's!) mental health and wellness", SDSU new faculty workshop 10/15/2021
- MARC/IMSD Leadership Team, SDSU 2021-2023
- SDSU FUERTE Recruitment Committee member, SDSU 2021-2022
- Motivating Learners Campus Fellow, CSU/SDSU 2021-2023
- MCTEN Action Collaborative mentor, SDSU 2021-2022
- Departmental RTP reviewer, SDSU 2021-present
- "The joy (and challenges!) of a scientific career", SDSU Womxn in STEM Support Group 10/13/2021
- "The benefits of joining a research team (and how to do it!)", SDSU Black Student Science Organization (BSSO) 10/14/2021
- Careers in Cancer panelist, UCSD/SDSU Partnership Scholars Program 08/09/2021
- IRACDA Teaching Mentor, Teaching Training Committee Member, SDSU/UCSD 2021-2026
- Launched "Finding Balance in Grad School" initiative, serves as faculty mentor, SDSU 2020-2023
- Selection Committee member, Rees-Stealy Fellowship 2020-present
- Big Ideas committee member: "Pandemic, Stress, and Quality of Living: Assessing and Minimizing Health Risks in San Diego County (and Beyond...)", SDSU 2019-2020
- College of Sciences Diversity Council member, SDSU 2019-present
- Graduate Committee member, Dept. Chemistry, SDSU 2019-present
- Presidential Transition Team, member, SDSU 2018
- Cancer CoRe (Convergent Research) steering committee member and co-founder, SDSU 2018-present

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• MARC/IMSD Advisory Board Committee member, SDSU	2018-2023
• Society for Advancement of Chicano/Hispanics and Native Americans in Science (SACNAS) Faculty Co-Advisor, SDSU	2017-2021
• Women in Science seminar series Steering Committee, SDSU	2017-2019
• Irwin Zahn Spirit of Innovation Award Committee, SDSU	2017-2020
• Coordinator and Mentor, SDSU MINDSET (Maximizing INclusion and Diversity in Science Engineering, and Technology)	2016-2020
• Radiation Safety Committee, SDSU	2016-2019
• ACSESS (Applied Computational Science and Engineering Student Support) Event, judge for student poster presentations, Computational Science Research Center, SDSU	4/21/2017
• Cancer Biology Faculty Search Committee, Dept. Biology, SDSU	2017
• Faculty Mentor, Creating Scientists to Reduce Cancer Disparities Program, SDSU	2016-present
• Faculty Mentor, CREATE (formerly Partnerships Scholars) Program, SDSU/UCSD	2016-present
• Analytical Chemistry Faculty Search Committee, Dept. Chemistry/Biochemistry, SDSU	2016-2017
• Student Research Symposium Judge, SDSU	2016, 2017, 2019, 2021, 2022
• Undergraduate Research Symposium Oral Presentation Judge, SDSU	2016, 2019
• Career Development Peer Groups (CDPG) Program Co-Administrator, Yale University	2013-2015
• Mentor, Women in Science at Yale, Yale University	2010-2015
• Board Member, Women in Science at Yale, Yale University	2011-2014
• Committee Member, Yale School of Medicine Sustainability Committee, Yale University	2011-2012
• Core Member, Graduate Honor Council, Vanderbilt University	2008-2010

#### Student Committees

1. Masters Committee member for Rosalva Romero-Gonzalez, SDSU Psychology	2024-present
2. Masters Committee member for Chih-An Bian, SDSU Psychology	2024-present
3. Masters Committee member for Sarah Warner, SDSU Biology	2024-present
4. Masters Committee member for Nabressa Lilly, SDSU Psychology	2024
5. Masters Committee member for Rachel Hobbs, SDSU Math	2024-present
6. Dissertation Committee Chair for Nino Mamasakhlisi, SDSU Chemistry	2024-present
7. Dissertation Committee member for Ani Chakhrakia, SDSU Chemistry	2023-present
8. Masters Committee member for Amineh Rastandeh, SDSU Chemistry	2022-2024
9. Masters Committee member for Joy Itol, SDSU Energy and Nutrition Sciences	2022-2023
10. Masters Committee member for Shane Mitchel, SDSU Chemistry	2022-2023
11. Masters Committee member for Ty-Tianna Clark, SDSU Biology	2022-2024
12. Masters Committee member for Grant Shain, SDSU Biology	2022-2023
13. Dissertation Committee member for Jessica Torres, SDSU Chemistry	2022-present
14. Masters Committee member for Vernon Rayo, SDSU Nutritional Science	2021-2022
15. Masters Committee member for Guadalupe Rosas, SDSU Psychology	2021-present
16. Masters Committee member for Ramon Martinez, SDSU Chemistry	2021-present
17. Masters Committee member for Denay Stevenson, SDSU Biology	2021-2022
18. Masters Committee member for Benjamin Canter, SDSU Biology	2020-2021
19. Masters Committee member for Yecenia Peraza, SDSU Chemistry	2020-2021
20. Dissertation Committee chair for Elene Albekioni, SDSU Chemistry	2020-present
21. Masters Committee chair for Isaac Marquez, SDSU Chemistry	2020-2022
22. Dissertation Committee chair for Grace Chao, SDSU Chemistry	2020-present
23. Master Committee member for Jesus Ceja, SDSU Chemistry	2020
24. Master Committee member for Amanda Coale, SDSU Engineering	2020
25. Masters Committee member for Nina Barr, SDSU Biology	2020-2021
26. Master Committee member for James Julian, SDSU Engineering	2020-2022
27. Dissertation Committee member for Jennifer Waters, SDSU Biology	2019-2023
28. Master Committee member for Dan Averbuj, SDSU Biology	2019-2020
29. Masters Committee member for David Ebeid, SDSU Biology	2019-2021
30. Outside reader for Ph.D. Thesis, Ivan de Jesus Salazar Estrada,	2019



Macquarie University, Sydney, Australia

31. Dissertation Committee member for Eric Rogers, SDSU Chemistry	2019-2023
32. Masters Committee chair for Jade Ngoc Huynh	2018-2021
33. Dissertation Committee chair for Joi Weeks, SDSU Biology	2018-2020
34. Dissertation Committee member for Esteban Vazquez-Hidalgo, SDSU Engineering	2018-2022
35. Masters Committee member for Joy Nader, SDSU Biology	2018
36. Masters Committee member for Eduardo Zepeda, SDSU Engineering	2018
37. Honors Thesis Committee for Celeste Romero, SDSU Biology	2018
38. Masters Committee member for Alexandria Casillas, SDSU Biology	2018-2020
39. Masters Committee chair for ZeQing Ruth Xu, SDSU Chemistry/Biochemistry	2017-2019
40. Masters Committee member for Sarah Fernandes, SDSU Biology	2017-2018
41. Doctoral Committee member for Joi Weeks, SDSU Biology	2017-2018
42. Masters Committee member for Anup Sarakki, SDSU Biology	2017-2018
43. Doctoral Committee member for Ryne Holmberg, SDSU Chemistry/Biochemistry	2017-2023
44. Doctoral Committee member for Cathrine Aivati, SDSU Biology	2017-2018
45. Masters Committee member for Zibah Mirzakhel, SDSU Engineering	2017-2018
46. Masters Committee member for Dillon Burns, SDSU Chemistry/Biochemistry	2016-2018
47. Masters Committee member for Kelli Ilves, SDSU Biology	2016-2018
48. Masters Committee member for Rebecca De Wardt, SDSU Biology	2016-2018
49. Dissertation Committee member for Samantha-Joy Natividad Cohen, SDSU Chemistry	2016-2021
50. Masters Committee chair for Grace Wells, SDSU Chemistry/Biochemistry	2016-2018
51. Dissertation Committee chair for Lucas Luna, SDSU Chemistry/Biochemistry	2016-2021
52. Dissertation Committee chair for Diego Avellaneda Matteo, SDSU Chemistry/Biochemistry	2016-2020
53. Masters Committee chair for Anna Uvarova, SDSU Chemistry/Biochemistry	2015-2017
54. Masters Committee chair for Adam Grunseth, SDSU Chemistry/Biochemistry	2016-2018
55. Masters Committee member for Yunjin Sheri Wu, SDSU Chemistry/Biochemistry	2017-2018
56. Masters Committee member for Shivsmriti Kaul, SDSU Biology	2017-2018
57. Masters Committee member for Robert Huff, SDSU Biology	2017-2018
58. Masters Committee member for Aishani Prem, SDSU Bioinformatics	2016-2017
59. Masters Committee member for Raymond Lee, SDSU Chemistry/Biochemistry	2016-2017
60. Dissertation Committee member for Brian Maniaci, SDSU Chemistry/Biochemistry	2015-2019
61. Masters Committee member for Peter Suon, SDSU Chemistry/Biochemistry	2015-2017
62. Outside reader for Masters of Research Thesis, Ivan de Jesus Salazar Estrada, Macquarie University, Sydney, Australia	2015

Public Service (dates in Mo/Day/Y or Mo/Y)

• Guest lecturer, CHEM 171, Southwestern College	3/16/2023
• High School STEM Exploration Day presenter, SDSU, San Diego, CA. Presenter	2019
• “The Science of Cocktails”, San Diego Fleet Science Center Museum, San Diego, CA. Speaker	3/10/2018
• “Understanding how proteins drive cancer”, High Tech High School, Chula Vista, CA. Lecturer	2/20/2018
• “Latest in Cancer Research”, Suds & Science: An evening of thinking and drinking series from the San Diego Fleet Science Center Museum, San Diego, CA. Lecturer	7/10/2018
• “Ask a Scientist: Two scientists walk into a pizza parlor”, SDSU Stem Cell Outreach, Speaker	9/7/2016

**CURRENT PROFESSIONAL MEMBERSHIPS**

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Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) (lifetime member)	2022-present
American Chemical Society (ACS)	2022-present
HSI STEM Professionals Network	2021-present
Association for Women in Science (AWIS)	2016-2023
Women in Cancer Research (WICR)	2014-2023
American Association for Cancer Research (AACR)	2012-2023
American Society for Biochemistry and Molecular Biology (ASBMB)	2008-present

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## INVITED SCIENTIFIC TALKS

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- 1) Gordon Research Conference: Enzymes, Coenzymes and Metabolic Pathways (1 August 2024, Waterville Valley, NH). "The distinct catalytic, structural, and *in vivo* features of tumor-driving IDH1 mutants."
- 2) 2024 FOCUS-LAUNCH-RAPID Summer Institutes (7/18/2024, San Diego, CA). "Creating an Inclusive Laboratory."
- 3) Fairleigh Dickinson University seminar series (3/19/24, online seminar). "Enzymes run amok: the role of IDH1 in rewiring tumor metabolism."
- 4) ACS National Conference (8/16/2023, San Francisco, CA). "Catalytic features of oncometabolite-producing isocitrate dehydrogenase 1 (IDH1) mutants tune phenotype severity."
- 5) ASBMB National Conference (3/28/2023, Seattle, WA). "Kinetic and structural features of tumor-driving IDH1 mutants tune phenotype severity."
- 6) Universität Tübingen Interfakultäres Institut für Biochemie (5 December 2022, Tübingen, Germany). "Metabolism run amok in cancer."
- 7) Biocatalysis 2022 International Meeting (29 August 2022, Hamburg, Germany). "Structure/functional analysis of tumor-driving isocitrate dehydrogenase 1 (IDH1) mutants."
- 8) DKFZ Brain Cancer Metabolism (5 August 2022, online seminar). "Enzymes run amok: the biophysical and cellular consequences of mutant IDH1."
- 9) CSU San Marcos Department of Chemistry and Biochemistry (12 April 2022). "Enzymes run amok: the biophysical and cellular consequences of tumor-driving mutations in IDH1."
- 10) University at Albany Department of Biological Sciences (29 March 2021, online seminar due to Covid-19 pandemic). "Metabolism run amok: the role of IDH1 in rewiring tumor metabolism".
- 11) Notre Dame Department of Chemistry and Biochemistry (5 March 2021, online seminar due to Covid-19 pandemic). "Metabolism run amok: the role of IDH1 in rewiring tumor metabolism".
- 12) UT San Antonio Department of Chemistry (26 February 2021, online seminar due to Covid-19 pandemic). "Metabolism run amok: the role of IDH1 in rewiring tumor metabolism".
- 13) TedX: ideas worth spreading at the University of Tulsa (5 December 2020, moved online due to Covid-19 pandemic). "What tumors eat...and how to poison them."
- 14) CSU East Bay Department of Biological Sciences (20 Oct 2020, online seminar due to Covid-19 pandemic). "Metabolism run amok: the role of IDH1 in rewiring tumor metabolism".
- 15) UCSD Cancer Biology & Signaling (tele)seminar (15 July 2020, San Diego, CA). "Metabolism run amok: the biochemical features of IDH1 in tumors".
- 16) CSU San Marcos Department of Chemistry and Biochemistry Seminar (~~18 March 2020~~, San Marcos, CA). [*cancelled due to Covid-19 pandemic*]
- 17) University of Arkansas School for Medical Sciences (19 February 2020, Little Rock, AR). "Metabolism run amok: the role of IDH1 in rewiring tumor metabolism".
- 18) Sharp Minds Lecture Series at the Fleet Science Center (7 Oct. 2019, San Diego, CA). "A history of cancer treatments: from the bizarre to the inspiring."
- 19) CSU Los Angeles (21 Nov. 2019, Los Angeles, CA). "Metabolism run amok in cancer".
- 20) 2YC3 Conference (23-24 Aug. 2019, San Diego, CA). "Keynote Panel Discussion: Partnerships with two-year colleges in the San Diego area." Panelist.
- 21) Mechanisms and Models of Cancer Conference at the Salk Institute (2 Aug. 2019, La Jolla, CA). "The role of catalysis and environmental regulation in IDH1-driven cancers."
- 22) Gordon Research Conference: Enzymes, Coenzymes and Metabolic Pathways (24 July 2019, Waterville Valley, NH). "The role of catalysis and environmental regulation in IDH1-driven cancers."
- 23) University of Oregon Department of Biochemistry Department Seminar Series (17 May 2019, Eugene, OR). "Exploring the molecular mechanisms of metabolic dehydrogenases in cancer."
- 24) Rhode Island College Physical Sciences Department Seminar Series (5 Apr. 2019, Providence, RI). "Exploring the role of metabolic dehydrogenases in oncogenesis using a mechanistic lens."
- 25) UC Riverside Biochemistry Dept. seminar series (22 Jan. 2019, Riverside, CA). "The role of catalysis and environmental regulation in IDH1-driven cancers."
- 26) 31<sup>st</sup> Annual CSU Biotechnology Symposium (3-5 Jan. 2019, Garden Grove, CA). "The role of catalysis and environmental regulation in IDH1-driven cancers."

- 27) University of Oklahoma Dept. of Chemistry and Biochemistry (19 Oct. 2018, Norman, OK). “Exploring the role of metabolic dehydrogenases in oncogenesis using a mechanistic lens.”
- 28) SDSU Biomath meeting (27 April 2018, SDSU). “The role of dehydrogenases in reductive metabolism.”
- 29) SDSU/UCSD IRACDA Research Symposium (11 April 2018, SDSU). “Enzymes running in reverse: mechanisms of IDH-driven cancers.”
- 30) SWC Chemistry Club Talks (13 April 2018, Southwestern College). “Molecular mechanisms of cancer.”
- 31) Department of Chemistry and Biochemistry Seminar Series (2 Nov. 2017, University of San Diego). “Mutational variants of metabolic dehydrogenases as drivers of cancer.”
- 32) Biomedical Technology Students Association (BTSA) Seminar Series (25 Oct. 2017, SDSU). “Mechanisms of IDH1-driven cancers.”
- 33) Chemistry Seminar Series (5 Oct. 2017, Southwestern College). “The molecular mechanisms of metabolic enzymes driving cancer.”
- 34) Fleet Science Center Suds & Science Series (10 July 2017, Chula Vista, CA). “The latest in cancer research.”
- 35) The School of MBEPS Science Seminar Series (25 April 2017, San Diego Miramar College). “Molecular mechanisms of altered metabolism in cancer.”
- 36) Center for Human Dynamics in the Mobile Age (HDMA) seminar (24 March 2017, SDSU). “Molecular mechanisms of cancer.”
- 37) IMSD/MARC Ph.D. Panel Discussion (3 March 2017, SDSU). Panelist.
- 38) Computational Sciences seminar (10 Feb. 2017, SDSU). “Molecular mechanisms of cancer.”
- 39) Sanford Burnham Prebys Office of Education, Training & International Services panel discussion on obtaining an academic position (9 Nov. 2016, SBP). Panelist.
- 40) SDSU/UCSD Partnership Retreat featured presentation (2 Sept. 2016, UCSD). “Molecular mechanisms of disease: using structure/function studies to probe tumorigenesis.”
- 41) Molecular Biology Institute Seminar (22 Sept. 2016, SDSU). “Probing molecular mechanisms of cancer.”
- 42) PI Lecture Series (16 Sept. 2016, SDSU). “Molecular mechanisms of disease: using structure/function studies to probe tumorigenesis.”
- 43) WISAY (Women in Science at Yale) Obtaining a Faculty Position Panel (18 April 2016, Yale University). Tele-panelist.
- 44) Annual WISAY (Women in Science at Yale) Career Panel (28 May 2015, Yale University). Panelist.
- 45) Translational Lung Cancer Meeting (27 May 2015, Yale University). “Molecular mechanisms of inhibitor resistance by the FGFR1 gatekeeper mutation: the Achilles’ heel of targeted therapy.”
- 46) Academic Jobs Panel Discussion (19 March 2015, Yale University). Panelist.
- 47) Biochemistry Seminar (3 February 2015, San Diego State University). “Using transient kinetics and structural methods to illuminate the molecular mechanisms of disease.”
- 48) Signal Transduction Meeting (21 November 2014, Yale University). “Molecular mechanisms of inhibitor resistance by the FGFR1 gatekeeper mutation.”
- 49) Cancer Metabolism Interest Group Seminar (15 October 2014, Yale University). “Enzymes running in reverse: molecular mechanisms of IDH mutations in cancer.”
- 50) Pol Club Seminar (8 February 2012, Yale University). “Molecular mechanism of inhibition of DNA pol  $\gamma$  and HIV-1 RT by novel nucleotide analogs.”
- 51) Postdoc Brown Bag Lunch Series (15 November 2011, Yale University). “Obtaining postdoctoral funding: NIH F32.”
- 52) Cunningham Lecture Series (8 June 2010, Vanderbilt University). “Kinetic analysis of the multi-step cytochrome P450s 1A2 and 19A1 enzymes.”

## REFEREED PUBLICATIONS

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### **Complete List of Published Work in My Bibliography:**

<https://www.ncbi.nlm.nih.gov/sites/myncbi/christal.sohl.1/bibliography/40506925/public/?sort=date&direction=descending>

For SDSU papers: <sup>a</sup>denotes undergraduate; <sup>b</sup>denotes MS student; <sup>c</sup>denotes PhD student; <sup>d</sup>denotes postdoc

- 1) Hernandez, I. A.<sup>d</sup>, Smith, J. L., Villodas, M. T., **Sohl, C. D.**, and Thoman, D. B. (2024) (*revision under review*). “Laying (infertile) soil: Faculty research mentors who believe that success in STEM requires innate brilliance undermines students’ STEM career motivation.”

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- 2) Hernandez, I. A.<sup>d,\*</sup>, Segura, O. M.<sup>b</sup>, Gonzalez, R. R.<sup>b</sup>, Flores, L. A.<sup>b</sup>, Villodas, M. T., **Sohl, C. D.**, Smith, J. L., and Thoman, D. B. (2024) *CBE Life Sci Educ* 23, ar36. "The making of future scientists: Faculty mentor cultural awareness and inclusive science labs." [PMID 39172968](#).
- 3) Adam, M. A. A.<sup>#,d</sup>, Robinson M.<sup>#,d</sup>, Schwartz A. V.<sup>#,c</sup>, Wells G. A.<sup>#,b</sup>, Hoang A, Albekioni E.<sup>c</sup>, Chao G.<sup>c</sup>, Weeks J.<sup>c</sup>, George U. Z., House, C. D., Turcan S.\*, **Sohl C. D.\*** (2024) *bioRxiv [Preprint]*. "Catalytically distinct IDH1 mutants tune phenotype severity in tumor models." doi 10.1101/2024.04.22.590655. (*#co-first authors, \*corresponding authors*).
- 4) Mealka, M.<sup>c</sup>, Sierra, N. A.<sup>a</sup>, Matteo, D. A.<sup>c</sup>, Albekioni, E.<sup>c</sup>, Khoury, R.<sup>a</sup>, Mai, T.<sup>a</sup>, Conley, B. M.<sup>c</sup>, Coleman, N. J.<sup>a</sup>, Sabo, K. A.<sup>b</sup>, Komives, E. A., Bobkov, A. A., Cooksy, A. L., Silletti, S., Schiffer, J. M., Huxford, T., and **Sohl, C. D.\*** (2024) *Nature Comm* 15, 3785. "Active site remodeling in IDH1 mutants drives distinct kinetic and potential resistance mechanisms." (*\*corresponding author*). [PMID 38710674](#).
- 5) Herrera, V., Charles, T., Scott, T., Prather, K., Nguyen, N., **Sohl, C. D.**, Thomas, L., and Richter-Addo, G. (2023) *Biochemistry* 62, 1406-1419. "Insights into nitrosoalkane binding to myoglobin provided by crystallography of wild-type and distal pocket mutant derivatives." [PMID 37011611](#)
- 6) Sabo, K. A.<sup>b</sup>, Albekioni, E.<sup>c</sup>, Caliger, D.<sup>a</sup>, Coleman, N. J.<sup>a</sup>, Thornberg, E.<sup>a</sup>, Matteo, D. A.<sup>c</sup>, Komives, E. A., Silletti, S., and **Sohl, C. D.\*** (2023) *Biochemistry* 62, 1146-1159. "Capturing the dynamic conformational changes of human isocitrate dehydrogenase 1 (IDH1) upon ligand and metal binding using hydrogen-deuterium exchange mass spectrometry." (*\*corresponding author*). [PMID 36854124](#)
- 7) Adam, M. A. A.<sup>d</sup>, and **Sohl, C. D.\*** (2022) *Bioscience Reports*, 42, BSR20212002. "Probing altered enzyme activity in the biochemical characterization of cancer." (*\*corresponding author*). [PMID 35048115](#)
- 8) Weeks, J.<sup>c</sup>, Storm, A.I.<sup>a</sup>, Widjaja, V.<sup>a</sup>, Alexander, S.<sup>a</sup>, Pucher, D.K.<sup>a</sup>, and **Sohl, C. D.\*** (2021) *Biomolecules*, 11, 740. "Evaluating mechanisms of IDH1 regulation through site-specific acetylation mimics." (*\*corresponding author*). [PMC8157008](#)
- 9) Gross, S., and **Sohl, C. D.\*** (2021) *Biochem Mol Biol Edu*, 49, 407-415. "Readying students for careers in industry: a guided inquiry activity to prepare students for success in biotechnology and pharmaceutical industry positions." (*\*corresponding author*) [PMID33569919](#)
- 10) Luna, L. A.<sup>c</sup>, Lesecq, Z.<sup>a</sup>, White, K. A., Hoang, A., Scott, D. A., Zagnitko, O., Bobkov, A. A., Barber, D. L., Schiffer, J. M., Isom, D. G., and **Sohl, C. D.\*** (2020) *Biochemical J* 477, 2999-3018. "An acidic residue buried in the dimer interface of isocitrate dehydrogenase 1 (IDH1) helps regulate catalysis and pH sensitivity." (*\*corresponding author*). [PMID32729927](#).
- 11) Chambers, J., Miller, W., Quichocho, G.<sup>a</sup>, Upadhye, V.<sup>a</sup>, Matteo, D. A.<sup>b</sup>, Bobkov, A., **Sohl, C. D.\***, and Schiffer, J. M.\* (2020) *Biochemistry* 59, 479-490. "Water networks and correlated motions in mutant IDH1 are critical for allosteric inhibitor binding and activity." (*\*corresponding authors*) [PMID31869219](#)
- 12) Bernatchez, J. A.<sup>d</sup>, Coste, M.<sup>c</sup>, Beck, S.<sup>d</sup>, Wells, G. S.<sup>b</sup>, Luna, L. A.<sup>c</sup>, Clark, A. E., Zhu, Z., **Sohl, C. D.\***, Purse, B. W.\*, Siqueira-Neto, J. L.\* (2019) *Viruses* 11, E365. "Activity of selected nucleoside analogue ProTides against Zika virus in human neural stem cells." (*\*corresponding authors*). [PMID31010044](#)
- 13) Kennedy, M. A.<sup>a</sup>, Xu, Z.<sup>b</sup>, Wu, Y.<sup>a</sup>, and **Sohl, C. D.\*** (2019) *Biochem Biophys Res Commun* 509, 898-902. "A Tie2 kinase mutation causing venous malformations increases phosphorylation rates and enhances cooperativity." (*\*corresponding author*). [PMID30638931](#)
- 14) Ryan, M. R., **Sohl, C. D.**, Luo, B., and Anderson, K. A. (2019) *Mol Cancer Res* 17, 532-543. "The FGFR1 V561M gatekeeper mutation drives AZD4547 resistance through STAT3 activation and EMT." [PMID30257990](#).
- 15) Matteo, D. A.<sup>c</sup>, Wells, G. A.<sup>b</sup>, Luna, L. A.<sup>c</sup>, Grunseth, A. J.<sup>b</sup>, Zagnitko, O., Scott, D. A., Hoang, A., Luthra, A., Swairjo, M. A., Schiffer, J. A., and **Sohl, C. D.\*** (2018) *Biochem J* 475, 3221-3238. "Inhibitor potency varies widely among tumor relevant human isocitrate dehydrogenase 1 mutants." (*\*corresponding author*). [PMID30257990](#).
- 16) Bernatchez, J. A.<sup>d</sup>, Yang, Z.<sup>d</sup>, Coste, M.<sup>c</sup>, Li, J., Beck, S., Liu, Y., Clark, A. E., Zhu, Z., Luna, L. A.<sup>c</sup>, **Sohl, C. D.**, Purse, B. W., Li, R., and Siqueira-Neto, J. L. (2018) *Antimicrob Agents Chemother* 62, e00725-18. "Development of a phenotypic high-content imaging assay for assessing the antiviral activity of small-molecule inhibitors targeting the Zika virus." [PMID30061280](#).
- 17) Matteo, D. M.<sup>c</sup>, Grunseth, A. J.<sup>b</sup>, Gonzalez, E. R.<sup>a</sup>, Anselmo, S. L.<sup>a</sup>, Kennedy, M. A.<sup>a</sup>, Moman, P.<sup>a</sup>, Scott, D. A., Hoang, A., and **Sohl, C. D.\*** (2017) *J Biol Chem* 292, 7971-83. "Molecular mechanisms of isocitrate dehydrogenase 1 (IDH1) mutations identified in tumors: the role of size and hydrophobicity at residue 132 on catalytic efficiency." (*\*corresponding author*). [PMC5427274](#).

- 18) **Sohl, C. D.\***, Szymanski, M. R.\*, Mislak, A. C., Shumate, C. K., Amiralaei, S., Schinazi, R. F., Anderson, K. S., and Yin, Y. W. (2015) *Proc Natl Acad Sci USA* 112, 8596-601. "Probing the structural and molecular basis of nucleotide selectivity by human mitochondrial DNA polymerase  $\gamma$ ." (*\*co-first authors*). [PMC4507203](#).
- 19) **Sohl, C. D.\***, Ray, S., and Sweasy, J. B. (2015) *Proc Natl Acad Sci USA* 112, 5864-5. "Pools and pols: mechanism of a mutator phenotype." (*\*co-first authors*). [PMID25931524](#).
- 20) **Sohl, C. D.**, Ryan, M. R., Luo, B., Frey, K. M., and Anderson, K. S. (2015) *ACS Chem Biol* 10, 1319-29. "Illuminating the molecular mechanism of tyrosine kinase inhibitor resistance for the FGFR1 gatekeeper mutation: the Achilles' heel of targeted therapy." [PMC4533833](#).
- 21) Towle-Weicksel, J. B., Dalal, S., **Sohl, C. D.**, Doublet, S., Anderson, K. S., Sweasy, J. B. (2014) *J Biol Chem* 289, 16541-50. "Fluorescence resonance energy transfer studies of DNA polymerase  $\beta$ : the critical role of fingers domain movements and a novel non-covalent step during nucleotide selection." [PMC4047420](#).
- 22) Muftuoglu, Y.\*, **Sohl, C. D.\***, Mislak, A. C., Mitsuya, H., Sarafianos, S. G., and Anderson, K. S. (2014) *Antiviral Res* 106, 1-4. "Probing the molecular mechanism of action of the HIV-1 reverse transcriptase inhibitor 4'-ethynyl-2-fluoro-2'-deoxyadenosine (EFdA) using pre-steady-state kinetics." (*\*co-first author*). [PMC4020981](#).
- 23) **Sohl, C. D.**, Kasiviswanathan, R., Copeland, W. C., and Anderson, K. S. (2013) *Hum Mol Genet* 22, 1074-85. "Mutations in human DNA polymerase  $\gamma$  confer unique mechanisms of catalytic deficiency that mirror the disease severity in mitochondrial disorder patients." [PMC3578408](#).
- 24) Cheng, Q., **Sohl, C. D.**, Yoshimoto, F. K., and Guengerich, F. P. (2012) *J Biol Chem* 287, 59554-67. "Oxidation of dihydrotestosterone by human cytochromes P450s 19A1 and 3A4." [PMC3436178](#).
- 25) **Sohl, C. D.**, Kasiviswanathan, R., Kim, J., Pradere, U., Schinazi, R. F., Copeland, W. C., Mitsuya, H., Baba, M., and Anderson, K. (2012) *Mol Pharmacol* 82, 125-33. "Balancing antiviral potency and host toxicity: identifying a nucleotide inhibitor with an optimal kinetic phenotype for HIV-1 reverse transcriptase." [PMC3382833](#).
- 26) **Sohl, C. D.**, Singh, K., Kasiviswanathan, R., Copeland, W. C., Mitsuya, H., Sarafianos, S., and Anderson, K. (2012) *Antimicrob Agents Chemother* 56, 1630-4. "Mechanism of interaction of human mitochondrial DNA polymerase  $\gamma$  with the novel nucleoside reverse transcriptase inhibitor 4'-ethynyl-2-fluoro-2'-deoxyadenosine indicates a low potential for host toxicity." [PMC3294915](#).
- 27) Guengerich, F. P., **Sohl, C. D.**, and Chowdhury, G. (2011) *Arch Biochem Biophys* 507, 126-34. "Multi-step oxidations catalyzed by cytochrome P450 enzymes: processive vs. distributive kinetics and the issue of carbonyl oxidation in chemical mechanisms." [PMID20804723](#).
- 28) **Sohl, C. D.**, and Guengerich, F. P. (2010) *J Biol Chem* 285, 17734-17743. "Kinetic analysis of the three-step steroid aromatase reaction of human cytochrome P450 19A1." [PMC2878537](#).
- 29) Cheng, Q., **Sohl, C. D.**, and Guengerich, F. P., (2009) *Nat Protoc* 4, 1258-61. "High-throughput fluorescence assay of cytochrome P450 3A4." [PMC3843962](#).
- 30) **Sohl, C. D.**, Cheng, Q., and Guengerich, F. P. (2009) *Nat Protoc* 4, 1252-7. "Chromatographic assays of drug oxidation by human cytochrome P450 3A4." [PMC3883453](#).
- 31) Guengerich, F. P., Martin, M. V., **Sohl, C. D.**, and Cheng, Q. (2009) *Nat Protoc* 4, 1245-51. "Measurement of cytochrome P450 and NADPH-cytochrome P450 reductase." [PMC3843963](#).
- 32) **Sohl, C. D.**, Isin, E. M., Eoff, R. L., Marsch, G. A., Stec, D. F., and Guengerich, F. P. (2008) *J Biol Chem* 283, 7293-7308. "Cooperativity in oxidation reactions catalyzed by cytochrome P450 1A2. Highly cooperative pyrene hydroxylation and multiphasic kinetics of ligand binding." [PMC4662254](#).
- 33) Isin, E. M.\*, **Sohl, C. D.\***, Eoff, R. L., and Guengerich, F. P. (2008) *Arch Biochem Biophys* 473, 69-75. "Cooperativity of cytochrome P450 1A2: interaction of 1,4-phenylene diisocyanide and 1-alkoxy-4-nitrobenzenes." (*\*co-first authors*). [PMID18187423](#)
- 34) Wu, Z.-L., **Sohl, C. D.**, Shimada, T., and Guengerich, F. P. (2006) *Mol Pharmacol* 69, 2007-2014. "Recombinant enzymes over-expressed in bacteria show broad catalytic specificity of human cytochrome P450 2W1 and limited activity of human cytochrome P450 2S1." [PMID16551781](#).
- 35) **Sohl, C. D.**, Lee, J., Alguindigue, S. S., Khan, M. A., and Richter-Addo, G. B. (2004) *J Inorg Biochem* 98, 1238-46. "Synthesis and solid-state molecular structures of nitrosoalkane complexes of iron porphyrins containing methanol, pyridine, and 1-methylimidazole ligands." [PMID15219991](#).

## NON-REFEREED WORKS

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- 1) Thoman, D. B., Smith, J., L., Hernandez, I. A.<sup>d</sup>, **Sohl, C. D.**, and Villodas, M. T. (2024) *Science* 384, 747. “Undergraduate research data crucial to equity. [PMID38753783](#).