

Daniel A. Bachovchin, Ph.D.

Memorial Sloan Kettering Cancer Center
Chemical Biology Program
1275 York Ave, RRL-1301
New York, NY 10065

Tel: 212-639-5509
bachovcd@mskcc.org

Professional Appointments:

- **Member**, Chemical Biology Program, Sloan Kettering Institute, Memorial Sloan Kettering Cancer Center (MSKCC), June 2024 – present
- **Associate Member**, Chemical Biology Program, Sloan Kettering Institute, Memorial Sloan Kettering Cancer Center (MSKCC), June 2021 – present
- **Assistant Member**, Chemical Biology Program, Sloan Kettering Institute, MSKCC, September 2015 – June 2021
- **Faculty Member**, Tri-Institutional PhD Program in Chemical Biology of MSKCC, The Rockefeller University, and Weill Cornell Medical College, September 2015 – present
- **Faculty Member**, Gerstner Sloan-Kettering Graduate School of Biomedical Sciences, MSKCC, September 2015 – present
- **Faculty Member**, Pharmacology Program, Weill Graduate School of Medical Sciences, Cornell University, September 2015 – present

Education:

- **The Broad Institute of MIT and Harvard**, Cambridge, MA
Postdoctoral Research Fellow, June 2011- August 2015
Research Advisor: Professor Todd R. Golub
- **The Scripps Research Institute**, La Jolla, CA
Ph.D. in Chemistry, May 2011
Research Advisor: Professor Benjamin F. Cravatt
- **Harvard College**, Cambridge, MA
A.B. in Chemistry, June 2005
Magna Cum Laude, High Honors in Field
Research Advisor: Professor M.-Christina White

Honors and Awards:

- David P. Hajjar Excellence in Teaching and Mentoring Award, Weill Cornell Graduate School, May 2023

CURRICULUM VITAE

- Geoffrey Beene Junior Faculty Chair, March 2022-March 2026
- Louise and Allston Boyer Young Investigator Award for Distinguished Achievement in Basic Research, June 2021
- Anna Fuller Award, March 2021-February 2022
- Gabrielle's Angel Foundation Fellowship, July 2018-June 2021
- Pershing Square Sohn Prize for Young Investigators in Cancer Research, July 2018-June 2021
- Alfred P. Sloan Foundation Fellow in Chemistry, February 2018
- Pew-Stewart Scholar Award for Cancer Research, July 2017-June 2021
- Stand Up to Cancer (SU2C) Innovative Research Grant, July 2017-June 2020
- Josie Robertson Investigator (MSKCC), September 2015 – August 2020
- California Breast Cancer Research Program Graduate Fellowship, July 2010-May 2011
- National Science Foundation Predoctoral Fellowship, September 2006-September 2009
- The Scripps Research Institute Dean's Fellowship, January 2005-January 2006
- John Harvard Scholar, 2003-2004 (Top 5% of Class GPA)
- Harvard College Research Program Fellowship, June 2003-August 2003
- Harvard College Scholar, 2001-2002, 2002-2003, 2004-2005

Publications:

†Equal contribution

*Corresponding author

Published and in press:

48. Tsamouri, L.P.; Hsiao, J.C.; Wang, Q.; Geeson, M.B.; Huang, H.-C.; Nambiar, D.R.; Zou, M.; Ball, D.P.; Chui, A.J.; **Bachovchin, D. A.*** “The hydrophobicity of the CARD8 N-terminus tunes inflammasome activation.” *Cell Chem Biol*, 2024, 31, 1699-1713.

47. Geeson, M.B.†; Hsiao, J.C. †; Tsamouri, L.P.; Ball, D.P.; **Bachovchin, D. A.** * “The interaction between NLRP1 and oxidized TRX1 involves a transient disulfide bond.” *Cell Chem Biol*. 2024, 31, 955-961.

46. Bhattacharjee, A.; **Bachovchin, D. A.*** “DPP8/9 are not required to cleave most proline containing peptides.” *Israel Journal of Chemistry*, 2023, e202200117.

45. Chen, Q.; Wang, A.; Covelli, D.J.; Orth-He, E.L.; Rao, S.D.; Huang, H.C.; Ball, D.P.; Hsiao, J.C.; **Bachovchin, D. A.*** “Optimized M24B Aminopeptidase Inhibitors for CARD8 Inflammasome Activation.” *J Med Chem*, 2023, 66, 111965.

44. Orth-He, E.L.†; Huang, H.C. †; Rao, S.D.; Wang, Q.; Chen, Q.; O'Mara, C.M.; Chui, A.J.; Saoi, M.; Griswold, A.R.; Bhattacharjee, A.; Ball, D.P.; Cross, J.R.; **Bachovchin, D. A.*** “Protein folding stress potentiates NLRP1 and CARD8 inflammasome activation.” *Cell Reports*, 2023, 42, 111965.

43. Wang, Q. Hsiao, J.C.; Yardeny, N.; Huang, H.C.; O'Mara, C.M.; Orth-He, E.L.; Ball, D.P.; Zhang, Z.; **Bachovchin, D. A.*** “The NLRP1 and CARD8 inflammasomes detect reductive stress.” *Cell Reports*, 2023, 42, 111966.

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42. Ball, D.P.; Tsamouri, L.P.; Wang, A.E.; Warren, C.D.; Wang, Q.; Edmonson, I.H.; Griswold, A.R.; Rao, S.D.; Johnson, D.C.; **Bachovchin, D. A.***; “Oxidized thioredoxin-1 restrains the NLRP1 inflammasome.” *Science Immunol.* 2022, 7, eabm7200.
41. Volpe, M.R.; Velilla, J.A.; Daniel-Ivad, M; Yao, J.J.; Stornetta, A.; Villalta, P.W.; Huang, H.C.; **Bachovchin, D.A.**; Balbo, S.; Gaudet, R.; Balskus, E.P. “A small molecule inhibitor prevents gut bacterial genotoxin production,” *Nat Chem Biol.* 2022, 19, 159-167.
40. Hsiao, J.C.; Neugroschl, A.R.; Chui, A.J.; Taabazuing, C.Y.; Griswold, A.R.; Wang, Q.; Huang, H.C.; Orth-He, E.L.; Ball, D.P.; Hiotis, G.; **Bachovchin, D.A.*** “A ubiquitin-independent proteasome pathway controls activation of the CARD8 inflammasome,” *J Biol Chem.* 2022, 298, 102032.
39. Griswold, A.R.*; Huang, H.C.; **Bachovchin, D.A.*** “The NLRP1 Inflammasome induces pyroptosis in human corneal epithelial cells,” *Invest Ophthalmol Vis Sci.* 2022, 63, 2.
38. Rao, S.D.†; Chen, Q.†; Wang, Q.†; Orth-He, E.L.†; Saoi, M.; Griswold, A.R.; Bhattacharjee, A.; Ball, D.P.; Huang, H.-C.; Chui, A.J.; Covelli, D.J.; You, S.; Cross, J.R.; **Bachovchin, D.A.*** “M24B aminopeptidase inhibitors selectively activate the CARD8 inflammasome.” *Nat Chem Biol.* 2022, 18, 565-574.
37. Sharif, H.†; Hollingsworth, R.L. †; Griswold, A.R.†; Hsiao, J.C.; Wang, Q.; **Bachovchin, D.A.***; Wu, H. * “Structural mechanism of CARD8 regulation by DPP9.” *Immunity*, 2021, 54, 1392-1404.
36. Hollingsworth, R.L. †; Sharif, H. †; Griswold, A.R. †; Fontana, P.; Mintseris, J.; Dagbay, K.B.; Paulo, J.A.; Gygi, S.P.; **Bachovchin, D.A.***; Wu, H. * “DPP9 sequesters the NLRP1 C-terminus to repress inflammasome activation.” *Nature*, 2021, 592, 778-783.
35. Hollingsworth, R.L. †; David, L.†; Li, Y.†; Griswold, A.R.; Ruan, J.; Sharif, H.; Fontana, P.; Orth-He, E.L.; Fu, T.M.; **Bachovchin, D.A.**; Wu, H. “Mechanism of filament formation in UPA-promoted CARD8 and NLRP1 inflammasomes” *Nature Commun.* 2021, 12, 189.
34. Chui, A.C.; Griswold, A.R.; Taabazuing, C.Y.; Orth, E.L.; Gai, K.; Rao, S.D.; Ball, D.P.; Hsiao, J.C.; **Bachovchin, D.A.*** “Activation of the CARD8 inflammasome requires a disordered region.” *Cell Reports.* 2020, 33, 108264.
33. Johnson, D.C.; Okondo, M.C.; Orth, E.L.; Rao, S.D.; Huang, H.C.; Ball, D.P.; **Bachovchin, D.A.*** “DPP8/9 inhibitors activate the CARD8 inflammasome in resting lymphocytes.” *Cell Death Dis.* 2020, 11, 628.
32. Ball, D.P.†; Taabazuing, C.Y.†; Griswold, A.R.; Orth, E.L.; Rao, S.D.; Kotliar, I.B.; Vostal, L.E.; Johnson, D.C.; **Bachovchin, D.A.*** “Caspase-1 interdomain linker cleavage is required for pyroptosis.” *Life Sci Alliance.* 2020, 3, e202000664.
31. Griswold, A.R.; Ball, D.P.; Bhattacharjee, A.; Chui, A.J.; Rao, S.D.; Taabazuing, C.Y.; **Bachovchin, D.A.*** “DPP9’s enzymatic activity and not its binding to CARD8 inhibits inflammasome activation.” *ACS Chem Biol.* 2019, 14, 2424-2429.
30. Gai, K.†; Okondo, M.C.†; Rao, S.D.; Chui, A.J.; Ball, D.P.; Johnson, D.C.; **Bachovchin, D.A.*** “DPP8/9 Inhibitors are universal activators of functional NLRP1 alleles.” *Cell Death Dis.* 2019, 10, 587.

CURRICULUM VITAE

29. Griswold, A.R.; Cifani, P.; Rao, S.D.; Axelrod, A.J.; Miele, M.M.; Hendrickson, R.C.; Kentsis, A.; **Bachovchin, D.A.** * “A chemical strategy for protease substrate profiling.” *Cell Chem Biol.* 2019, 26, 901-907.
28. Chui, A.J.[†]; Okondo, M.C.[†]; Rao, S.D.[†]; Gai, K.; Griswold, A.R.; Johnson, D.C.; Ball, D.P.; Taabazuing, C.Y.; Orth, E.L.; Vittimberga, B.A.; **Bachovchin, D.A.** * “N-terminal degradation activates the Nlrp1b inflammasome.” *Science.* 2019, 365, 82-85.
27. Buckley B.J.; Aboelela, A.; Minaei, E.; Jiang, L.X.; Xu, Z.; Ali, U; Fildes, K; Cheung, C.Y.; Cook, S.M.; Johnson, D.C.; **Bachovchin, D.A.**; Cook, G.M.; Apte, M.; Huang, M.; Ranson, M.; Kelso, M.J. “6-Substituted Hexamethylene Amiloride (HMA) Derivatives as Potent and Selective Inhibitors of the Human Urokinase Plasminogen Activator for Use in Cancer.” *J Med Chem.* 2018, 61, 8299-8320.
26. Johnson, D. C. [†]; Taabazuing, C. Y. [†]; Okondo, M. C.; Chui, A. J.; Rao, S. D.; Brown, F. C; Reed, C.; Peguero, E.; de Stanchina, E.; Kentsis, A.; **Bachovchin, D. A.** * “DPP8/9 inhibitor-induced pyroptosis for treatment of acute myeloid leukemia.” *Nat Med.* 2018, 24, 1151-1156.
25. Okondo, M. C.[†]; Rao, S. D.[†]; Taabazuing, C. Y.[†]; Chui, A. J.; Poplawski, S. E.; Johnson, D. C.; **Bachovchin, D. A.** * “Inhibition of Dpp8/9 Activates the Nlrp1b Inflammasome.” *Cell Chem Biol.* 2018, 25, 262-267.
24. Goel, P.; Jumpertz, T.; Mikles, D.C.; Tichá, A.; Nguyen, M.T.N.; Verhelst, S.; Hubalek, M.; Johnson, D.C.; **Bachovchin, D.A.**; Ogorek, I.; Pietrzik, C.U.; Strisovsky, K.; Schmidt, B.; Weggen, S. “Discovery and Biological Evaluation of Potent and Selective N-Methylene Saccharin-Derived Inhibitors for Rhomboid Intramembrane Proteases.” *Biochemistry.* 2017, 56, 6713-6725.
23. Tichá, A.; Stanchev, S.; Vinothkumar, K.R.; Mikles, D.C.; Pachl, P.; Began, J.; Škerle, J.; Švehlová, K.; Nguyen, M.T.N.; Verhelst, S.H.L.; Johnson, D.C.; **Bachovchin, D.A.**; Lepšík, M.; Majer, P.; Strisovsky, K. “General and Modular Strategy for Designing Potent, Selective, and Pharmacologically Compliant Inhibitors of Rhomboid Proteases.” *Cell Chem Biol.* 2017, 24, 1523-1536.
22. Taabazuing, C. Y.; Okondo, M. C.; **Bachovchin, D. A.** * “Pyroptosis and apoptosis pathways engage in bidirectional crosstalk in monocytes and macrophages.” *Cell Chem Biol.* 2017, 24, 507-514.
21. Keckesova, Z.; Donaher, J.; DeCock, J.; Freinkman, E.; Lingrell, S.; **Bachovchin, D. A.**; Bierie, B.; Tischler, V.; Noske, A.; Reinhardt, F.; Thiru, P.; Golub, T.R.; Vance, J., Okondo, M.; Weinberg, R. “LACTB, a tumor suppressor that modulates lipid metabolism and differentiation.” *Nature.* 2017, 543, 681-686.
20. Okondo, M.C.; Johnson, D. C., Sridharan, R., Go, E. B., Chui, A. J., Wang, M. S., Poplawski, S. E., Wu, W., Liu, Y.; Lai, J. H.; Sanford, D. G.; Arciprete, M. O.; Golub, T. R.; Bachovchin, W. W.; **Bachovchin, D. A.*** “Inhibition of DPP8/9 induces pro-caspase-1-dependent pyroptosis in monocytes and macrophages.” *Nat Chem Biol.* 2017, 13, 46-53.
19. Hatzios, S. K.; Abel, S.; Martell, J.; Hubbard, T.; Sasabe, J.; Munera, D.; Clark, L.; **Bachovchin, D. A.**; Qadri, F.; Ryan, E. T.; Davis, B. M.; Weerapana, E.; Waldor, M. K. “Chemoproteomic profiling of host and pathogen enzymes active in cholera.” *Nat Chem Biol.* 2016, 12, 268-274.

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18. Zhao, N.; Darby, C.; Small, J.; **Bachovchin, D. A.**; Jiang, X.; Burns-Huang, K.; Botella, H.; Ehrt, S.; Boger, D.; Anderson, E.; Cravatt, B. F.; Speers, A.; Fernandez-Vega, V.; Rosen, H.; Spicer, T.; Nathan, C. "A target-based screen against mycobacterial acid resistance protease implicates an additional periplasmic serine protease in regulation of intrabacterial pH homeostasis in *Mycobacterium tuberculosis*." *ACS Chem Biol.* 2015, 10, 364-371.
17. **Bachovchin, D. A.**; Koblan, L. W.; Wu, W.; Liu, Y.; Li, Y.; Zhao, P.; Woznica, I.; Shu, Y.; Lai, J. H.; Poplawski, S. E.; Kiritsy, C. P.; Healey, S. E.; DiMare, M.; Sanford, D. G.; Munford, R. S.; Bachovchin, W. W.; Golub, T. R. "A high-throughput, multiplexed assay for superfamily-wide profiling of enzyme activity." *Nat Chem Biol.* 2014, 10, 656-663.
16. Liu, X.; Dix, M.; Speers, A.; **Bachovchin, D. A.**; Zuhl, A. M.; Cravatt, B. F.; Kodadek, T. "Rapid development of a potent photo-triggered inhibitor of the serine hydrolase RBBP9." *ChemBioChem.* 2012, 13, 2082-2093.
15. Adibekian, A.; Martin, B.; Chang, J. W.; Hsu, K. L.; Tsuboi, K.; **Bachovchin, D. A.**; Speers, A. E.; Brown, S. J.; Spicer, T.; Fernandez-Vega, V.; Rosen, H.; Cravatt, B. F. "Confirming target engagement of reversible inhibitors in vivo by kinetically tuned activity-based probes." *J Am Chem Soc.* 2012, 134, 10345-10348.
14. Dillon, M. B.; **Bachovchin, D. A.**; Brown, S. J.; Finn, M. J.; Rosen, H.; Cravatt, B. F.; Mowen, K. A. "Novel inhibitors for PRMT1 discovered by high-throughput screening using activity-based fluorescence polarization." *ACS Chem Biol.* 2012, 7, 1198-1204.
13. Zuhl, A. M.; Mohr, J. T.; **Bachovchin, D. A.**; Niessen, S.; Hsu, K. L.; Berlin, J. M.; Dochnahl, M.; Lopez-Alberca, M. P.; Fu, G. C.; Cravatt, B. F. "Competitive activity-based protein profiling identifies azab-lactams as a versatile chemotype for serine hydrolase inhibition." *J Am Chem Soc.* 2012, 134, 5068-5071.
12. Tsuboi, K.; **Bachovchin, D. A.**; Speers, A. E.; Spicer, T. P.; Fernandez-Vega, V.; Hodder, P.; Rosen, H.; Cravatt, B. F. "Potent and selective inhibitors of glutathione *S*-transferase omega 1 that impair cancer drug resistance." *J Am Chem Soc.* 2011, 133, 16605-16616.
11. Lone, A. M.; **Bachovchin, D. A.**; Westwood, D.; Speers, A. E.; Spicer, T. P.; Fernandez-Vega, V.; Chase, P.; Hodder, P. S.; Rosen, H.; Cravatt, B. F.; Saghatelian, A. "A substrate-free activity-based protein profiling screen for the discovery of selective PREPL inhibitors." *J Am Chem Soc.* 2011, 133, 11665-11674.
10. **Bachovchin, D. A.**[†]; Zuhl, A. M.[†]; Speers, A. E.; Wolfe, M. R.; Weerapana, E.; Brown, S. J.; Rosen, H.; Cravatt, B. F. "Discovery and optimization of sulfonyl acrylonitriles as selective, covalent inhibitors of protein phosphatase methylesterase-1." *J Med Chem.* 2011, 54, 5229-5226.
9. Adibekian, A.; Martin, B. R.; Wang, C.; Hsu, K.; **Bachovchin, D. A.**; Niessen, S.; Hoover, H.; Cravatt, B. F. "Click-generated triazole ureas as a versatile scaffold for ultrapotent in vivo-active serine hydrolase inhibitors." *Nat Chem Biol.* 2011, 7, 469-478.
8. **Bachovchin, D. A.**; Mohr, J. T.; Speers, A. E.; Wang, C.; Berlin, J. M.; Spicer, T. P.; Fernandez-Vega, V.; Chase, P.; Hodder, P. S.; Schürer, S. C.; Nomura, D. K.; Rosen, H.; Fu, G. C.; Cravatt, B. F. "Academic cross-fertilization by public screening yields a remarkable class of protein phosphatase methylesterase-1 inhibitors." *Proc Natl Acad Sci.* 2011, 108, 6811-6816.
7. Weerapana, E.[†]; Wang, C.[†]; Simon, G. M.; Khare, S.; Richter, F.; Dillon, M. B.; **Bachovchin, D.**

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A.; Mowen, K.; Baker, D.; Cravatt, B. F. “Quantitative reactivity profiling predicts functional cysteines in native and designed proteins.” *Nature*. 2010, 468, 790-795.

6. **Bachovchin, D. A.**[†]; Ji, T.[†]; Li, W.[†]; Simon, G. M.; Hoover, H.; Niessen, S.; Cravatt, B. F. “A superfamily-wide portrait of serine hydrolase inhibition achieved by library-versus-library screening.” *Proc Natl Acad Sci*. 2010, 107, 20941-20946.

5. Knuckley, B.; Jones, J. E.; **Bachovchin, D. A.**; Slack, J.; Causey, C. P.; Brown, S. J.; Rosen, H.; Cravatt, B. F.; Thompson, P. R. “A Fluopol-ABPP HTS Assay to Identify PAD Inhibitors.” *Chem Comm*. 2010, 46, 7175-7177.

4. **Bachovchin, D. A.**; Wolfe, M. R.; Masuda, K.; Brown, S. J.; Spicer, T. P.; Fernandez-Vega, V.; Chase, P.; Hodder, P.S.; Rosen, H.; Cravatt, B. F. “Oxime esters as selective, covalent inhibitors of the serine hydrolase retinoblastoma-binding protein 9 (RBBP9).” *Bioorg Med Chem Lett*. 2010, 20, 2254-2258.

3. **Bachovchin, D. A.**; Brown, S. J.; Rosen, H.; Cravatt, B. F.; “Identification of selective inhibitors of uncharacterized enzymes by high-throughput screening with fluorescent activity-based probes.” *Nat. Biotechnol*. 2009, 27, 387-394.

2. Fraunhoffer, K. J.; **Bachovchin, D. A.**; White, M.C. “Hydrocarbon oxidation vs. C-C Bond forming approaches for efficient syntheses of oxygenated molecules.” *Org Lett*. 2005, 7, 223-226.

1. Haddad, K. C.; Sudmeier, J. L.; **Bachovchin, D. A.**; Bachovchin, W.W.; “ α -lytic protease can exist in two separately stable conformations with different His57 mobilities and catalytic activities.” *Proc Natl Acad Sci*. 2005, 102, 1006-1011.

Reviews and Commentaries:

3. **Bachovchin, D.A.** * “NLRP1: A jack of all trades, or a master of one?” *Mol. Cell*, 2021, 81, 423-425.

2. Taabazuing, C.Y.; Griswold, A.R.; **Bachovchin, D.A.*** “The NLRP1 and CARD8 inflammasomes.” *Immunological Reviews*. 2020, doi: 10.1111/imr.12884.

1. **Bachovchin, D. A.**; Cravatt, B. F. “The pharmacological landscape and therapeutic potential of serine hydrolases.” *Nat Rev Drug Discov*. 2012, 11, 52-68.

Teaching:

Weill Cornell, Pharmacology I: Chemical Biology 2015-present
Lecture: Pharmacological landscape and therapeutic potential of covalent inhibitors

Weill Cornell, Molecular Pharmacology Cancer Course 2016-present
Lecture: Chemical biology approaches for target and inhibitor discovery in cancer

TPCB, Chemistry in Biology & Medicine 2016-present
Lecture (biennial): Basic biology and therapeutic potential of proteases

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| Weill Cornell, Pharmacology II: Signal Transduction <i>Lecture: The structure and function of protein kinases</i> | 2017-present |
| Weill Cornell, Next-Gen Methods <i>Lecture: Chemical screening</i> | 2019-present |
| Weill Cornell, Systems Pharmacology <i>Lecture: Anti-inflammatory Drugs: Non-steroidals</i> | 2022-present |
| Weill Cornell, Advanced Topics in Immunology <i>Lecture: Innate Immune Sensing and Human Disease</i> | 2019 |
| TPCB, Principles of Chemical Biology <i>Lecture: Activity-based protein profiling</i> | 2015 |

Grant Reviews and Study Sections:

NIH Study Sections

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| Drug Discovery and Molecular Pharmacology (Ad Hoc) | 10/2021 |
| Drug Discovery and Molecular Pharmacology (Ad Hoc) | 10/2022 |
| Innate Immunity and Inflammation (Ad Hoc) | 06/2023 |
| Drug Discovery and Molecular Pharmacology C (Ad Hoc) | 10/2023 |
| Adaptive and Innate Immunity Special Emphasis Panel | 04/2024 |
| Innate Immunity B (Ad Hoc) | 11/2024 |

Additional

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| Emerson Collective | 2019-present |
| US-Israel Binational Science Foundation (BSF) | 2020 |
| Technology Development Fund (MSKCC) | 2023-present |
| European Research Council | 2024 |

Journal Reviewer:

Science, Nature, Nature Biotechnology, Nature Chemistry, Nature Chemical Biology, Molecular Cell, The Journal of the American Chemical Society, Cell Chemical Biology, ACS Chemical Biology, The Journal of Biological Chemistry, Israel Journal of Chemistry, Cell Reports, Cancer Research, Science Signaling, ELife, Cell Death & Disease, Biochemistry, Molecular Pharmaceutics, PeerJ, and Trends in Biochemical Sciences

Mentoring:

Current lab Members:

Graduate students

1. Hsin-Che Huang, *TPCB graduate student*, June 2020–present. Understanding metabolic control of the NLRP1 and CARD8 inflammasomes.
2. Lydia Tsamouri, *Cornell Pharmacology graduate student*, May 2022–present. Characterizing the relationship between reductive stress and protein disorder.
3. Anqi (Nora) Zhou, *TPCB graduate student*, June 2022–present. Characterization of inflammasome-activation danger signals.

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4. Ashley Tucewicz, *Cornell BCMB student*, June 2022–present. Characterizing the relationship between metabolism and inflammasome activation.
5. Lauren Hollmer, *Cornell Pharmacology student*, June 2024–present. Characterizing the DPP9-KEAP1 interaction.
6. Lourdes Pajuelo, *Cornell BCMB student*, June 2024–present. Characterizing the relationship between metabolism and inflammasome activation.

Postdoctoral fellows

7. Daniel P. Ball, PhD., *postdoctoral fellow*, September 2017–present. Activation of human NLRP1.
8. Michael Geeson, PhD., *postdoctoral fellow*, September 2022–present. Determining how cells sense reductive stress.
9. Timothy Bishop, PhD., *postdoctoral fellow*, April 2023–present. Identification and characterization of inflammasome-activating danger signals.
10. Zhencheng Lai, PhD., *postdoctoral fellow*, April 2023–present. Identification and characterization of inflammasome-activating danger signals.

Technicians

11. Kathleen Bishop, June 2023–present. Identification and characterization of inflammasome-activating danger signals.

Undergraduates

Former lab members:

Undergraduates

1. Alex Nazzaro, *GSK summer student*, June 2016–August 2016. *Current position*: Graduate Student, New York University.
2. Brooke A. Vittimberga, *GSK summer student*, June 2017–August 2017. *Current position*: Undergraduate student, Stanford University.
3. Sophie Kong, *ChBSP summer student*, June 2018–August 2018. *Current position*: Graduate student, UCSF.
4. Shaochen You, *ChBSP summer student*, June 2019–August 2019. *Current position*: Graduate student, Scripps Research.
5. Charles Warren, *ChBSP summer student*, June 2020–August 2020. *Current position*: Graduate student, TPCB.
6. Dominic Covelli, *ChBSP summer student*, June 2021–August 2021. *Current position*: Graduate student, Caltech.
7. Atara Neugroschl, *ChBSP summer student and part time researcher*, June 2021–June 2022. *Current position*: Graduate student, TPCB.
8. Isabelle Edmonson, *ChBSP summer student*, June 2022–August 2022. *Current position*: Undergraduate student, Middlebury College.
9. Judey DaRos, June 2023–December 2023. *Current position*: Postbaccalaureate fellow, Meier Lab, NIH.
10. Christina Marrero Robles, June 2024–August 2024. *Current position*: Undergraduate student, University of Puerto Rico.

Technicians

11. Kuo Gai, *research technician*, September 2017–May 2020. *Current position*: N/A (could not return from China during the COVID-19 pandemic)
12. Marian C. Okondo, M.S., *research technician*, November 2015–August 2020. *Current position*: Graduate student, Rockefeller University.

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13. Alvin Wang, *research technician*, January 2021–December 2022. Characterization of NLRP1’s N-terminal domains. *Current position*: Applying to graduate schools.

14. Claire O’Mara, *research technician*, August 2021–present. Characterization of the NLRP3 and NLRC4 inflammasomes. *Current position*: Graduate student, Harvard University.

Graduate students

15. Darren C. Johnson, Ph.D., *TPCB graduate student*, May 2016–July 2020. *Current position*: Postdoctoral fellow, Pfizer.

16. Ashley J. Chui, Ph.D., *TPCB graduate student*, May 2016–June 2020. *Current position*: Postdoctoral fellow, Pagano Lab, New York University.

17. Sahana D. Rao, *TPCB graduate student*, May 2017–June 2021. Mechanisms of Nlrp1b activation by diverse stimuli. *Current position*: Postdoctoral fellow, Mootha Lab, MGH-Broad Institute.

18. Andrew R. Griswold, *MD-PhD graduate student*, September 2017–September 2021. Development and application of a chemical strategy for protease inhibitor discovery. *Current position*: Resident, Massachusetts Eye and Ear, Harvard University.

19. Elizabeth L. Orth-He, *TPCB graduate student*, May 2018–April 2022. Identification and characterization of the DPP8/9 danger signal. *Current position*: Management consulting.

20. Jeffrey C. Hsiao, *Pharmacology graduate student*, May 2020–present. Understanding redox control of the CARD8 inflammasome.

Postdoctoral fellows

21. Cornelius Y. Taabazuing, Ph.D., *postdoctoral fellow*, April 2016–December 2021. Mechanism of CARD8 activation by DPP8/9 inhibitors. *Current position*: Assistant Professor, University of Pennsylvania.

22. Qifeng Chen, Ph.D., *postdoctoral fellow*, April 2020–September 2022. Synthesis and characterization of protease inhibitors. *Current position*: Assistant Professor, Sichuan University.

23. Abir Bhattacharjee, Ph.D., *postdoctoral fellow*, August 2018–September 2022. Synthesis and characterization of small molecule inflammasome modulators. *Current position*: Research Scientist, Brady Lab, Rockefeller University.

24. Qinghui Wang, Ph.D., *postdoctoral fellow*, October 2018–May 2024. Identification and characterization of small molecules that regulate inflammasome activation. *Current position*: Full Specialist, Small Molecule Discovery Center, UCSF.

Invited Seminars:

- “A Physiologically Relevant Mechanism of DPP9 Inhibition.” September 26, 2024, EMBO Workshop – The Inflammasomes: 2024, Martinsried, Germany
- “Innate Immune Sensing of Intracellular Redox Potential.” September 12, 2024, Chemical Biology Seminar Series, Yale University, New Haven, CT.
- “Innate Immune Sensing of Intracellular Redox Potential.” July 18, 2024, Gordon Research Conference, Thiol-Based Redox Regulation and Signaling, Barcelona, Spain.
- “Innate Immune Sensing of Intracellular Redox Potential.” May 3, 2024, Scripps Research, San Diego, CA.
- “The NLRP1 and CARD8 Inflammasomes.” November 28, 2023, Inflammasome Therapeutics Meeting, Boston, MA.

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- “Small molecule activators of the NLRP1 inflammasome.” October 19, 2023, Woodward Department Colloquium Series, Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA.
- “Small molecule activators of the NLRP1 and CARD8 inflammasomes.” September 12, 2023, Abbvie Inc, Chicago, IL.
- “Small molecule activators of the NLRP1 and CARD8 inflammasomes.” August 3, 2023, Gordon Research Conference, High Throughput Chemistry and Chemical Biology, New London, NH.
- “The NLRP1 and CARD8 inflammasomes.” May 4-5, 2023, Case Western Reserve University, Inflammasomes & gasdermin proteins as regulators of innate immunity symposium, Cleveland, OH.
- “The NLRP1 and CARD8 inflammasomes.” January 26, 2023, ViiV Healthcare, Branford, CT.
- “The NLRP1 and CARD8 inflammasomes.” December 8, 2022, Pew Annual Meeting, Los Suenos, Costa Rica.
- “The NLRP1 and CARD8 inflammasomes.” December 1, 2022, Inflammasome Therapeutics Meeting, Boston, MA.
- “The NLRP1 and CARD8 inflammasomes” April, 28, 2022, Oregon Health Sciences University Chemical Biology & Physiology Symposium, Portland, OR.
- “The NLRP1 and CARD8 inflammasomes” February 18, 2022, Biochemistry and Molecular Biology Seminar Series, University of Massachusetts Medical School, Worcester, MA.
- “The NLRP1 and CARD8 inflammasomes” January 12, 2022, UNC Lineberger Seminar Series, University of North Carolina, NC (virtual seminar)
- “The NLRP1 and CARD8 inflammasomes” January 10, 2022, Pathology Seminar Series, New York University, New York, NY (virtual seminar)
- “Recent insights into NLRP1 and CARD8 inflammasome activation” October 27, 2021, Molecular Discovery Seminar Series for the Chemical Biology Laboratory, National Cancer Institute, Frederick, MD (virtual seminar)
- “A Chemical Strategy for Protease Substrate Profiling” October 19, 2021, Pershing Square Sohn Cancer Research Alliance Retreat, New York, NY
- “Recent insights into NLRP1 and CARD8 inflammasome activation” September 22, 2021, EMBO Workshop – The Inflammasomes: The next frontier, Martinsried, Germany
- “Activation of the NLRP1 and CARD8 Inflammasomes” May 10, 2021, Department of Pathology, Weill Cornell Medical College, New York, NY (virtual seminar)
- “Activation of the NLRP1 Inflammasome” March 23, 2021, EPFL Seminar Series, Lausanne, Switzerland (virtual seminar)

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- “Activation of the NLRP1 Inflammasome” February 8, 2021, Gene Center, Ludwig-Maximilians Universität, Munich, Germany (virtual seminar)
- “Activation of the NLRP1 Inflammasome” November 6, 2020, Inflammasome Therapeutics Summit, Boston, MA, 2020 (virtual seminar)
- “Activation of the NLRP1 Inflammasome” November 3, 2020, Department of Pharmacology, Weill Cornell Medicine, New York, NY (virtual seminar)
- “Recent insights into CARD8 activation” October 26, 2020, InflammZoom Webinar Series, Cambridge Immunology Network, University of Cambridge, UK (virtual seminar)
- “Activation of the NLRP1 Inflammasome” February 4, 2020, Oregon Health Sciences University, Portland, OR.
- “Activation of the CARD8 Inflammasome” November 14, 2019, Gabrielle’s Angel Foundation Symposium, Miami, FL.
- “Activation of the NLRP1 Inflammasome” October 31, 2019, Inflammasome Therapeutics Summit, Boston, MA.
- “Activation of the NLRP1 Inflammasome” October 1, 2019, Merck/NYC Symposium, New York, New York.
- “Activation of the NLRP1 Inflammasome” July 23, 2019, FASEB Microbial Pathogenesis, Aspen Snowmass, Colorado.
- “A Chemical Strategy for Protease Substrate Profiling” June 6, 2019, Pfizer Pershing Square Sohn Retreat, Pearl River, New York.
- “DPP8/9 inhibitor-induced pyroptosis.” March 27, 2019, Immunology and Microbiology Program, University of Massachusetts Medical School, Worcester, Massachusetts.
- “DPP8/9 inhibitor-induced pyroptosis.” September 26, 2018, EMBO Workshop – The Inflammasomes, Martinsried, Germany.
- “Small molecule inducers of pyroptosis.” June 5, 2018, Gordon Research Conference – Proteolytic enzymes and their inhibitors, Lucca, Italy.
- “Mechanism and therapeutic potential of small molecule inducers of pyroptosis.” April 12, 2018, Center for Experimental Therapeutics Retreat, New York, NY.
- “Mechanism and therapeutic potential of small molecule inducers of pyroptosis.” March 18, 2018, Pew Annual Meeting, Marana, AZ.
- “Inhibition of DPP8/9 induces pyroptosis in monocytes and macrophages.” March 10, 2017, Department of Chemical and Biomolecular Engineering, New York University Tandon School of Engineering, New York, New York.

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- “Inhibition of DPP8/9 induces pyroptosis in monocytes and macrophages.” February 8, 2017, GTCBio 3rd Protease Inhibitors in Drug Discovery Conference, San Diego, California.
- “Inhibition of DPP8/9 induces pyroptosis in monocytes and macrophages.” February 6, 2017, Department of Chemistry and Biochemistry, Queens College, New York, New York.
- “Mechanism and therapeutic potential of small molecule pyroptosis inducers.” January 12, 2017, Pediatric Grand Rounds, Memorial Sloan Kettering Cancer Center, New York, New York.
- “Small molecule inducers of pyroptotic cell death.” October 25, 2016, New York Academy of Sciences – Emerging Paradigms in Drug Discovery & Chemical Biology, New York, New York.
- “Inhibition of DPP8/9 induces pro-caspase-1-dependent pyroptosis in monocytes and macrophages.” September 15, 2016, Baruch College, New York, New York.
- “EnPlex: High-throughput, family-wide profiling of enzyme activity.” March 2, 2016, GTCBio 2nd Protease Inhibitors in Drug Discovery Conference, San Diego, California.
- “EnPlex: High-throughput, family-wide profiling of enzyme activity.” October 7, 2015, International Proteolysis Society Annual Meeting, Penang, Malaysia.
- “A High-Throughput Multiplexed Assay for Superfamily-wide Profiling of Enzyme Activity.” November 5, 2014, Cambridge Biomedical and Luminex Technical Seminar, Cambridge, MA.
- “High-throughput, family-wide profiling of serine hydrolase inhibitors.” November 13, 2013, Broad Institute Retreat, Boston, MA.
- “Multiplexed, high-throughput activity-based protein profiling of serine hydrolases.” February 19, 2013, Broad Cancer Program Meeting, Cambridge, MA.
- “Aza- β -lactams as selective, covalent inhibitors of serine hydrolases.” September 14, 2011, Applied Pharmaceutical Analysis Conference, Boston, MA.
- “Discovery of a remarkable class of protein phosphatase methylesterase-1 (PME-1) inhibitors.” May 1, 2011, World Molecular Engineering Network Meeting, San Jose del Cabo, Mexico.
- “Discovery and characterization of an aza- β -lactam inhibitor of protein phosphatase methylesterase-1 (PME-1).” May 2, 2010, World Molecular Engineering Network Meeting, San Jose del Cabo, Mexico.
- “Identification of selective inhibitors of uncharacterized enzymes by high-throughput screening with fluorescent activity-based probes.” September 11, 2009, TSRI Graduate Student Retreat, San Diego, CA.