Aaron S. Meyer

ameyer@ucla.edu
(310) 794-4821
http://asmlab.org

4121G Engineering V
Los Angeles, CA 90095

Education

Ph.D., Biological Engineering — April 2014
Massachusetts Institute of Technology (MIT), Cambridge, MA
Thesis: Quantitative approaches to understanding signaling regulation of 3D cell migration

B.S., Bioengineering, magna cum laude — June 2009
University of California, Los Angeles (UCLA), CA

Professional Experience

Associate Professor — 2023 – Present
Assistant Professor — 2017 – 2023
Bioengineering Department, UCLA
Bioinformatics Interdepartmental Graduate Program, UCLA
Computational & Systems Biology Interdepartmental Program, UCLA

Vice Chair of Graduate Studies — 2024 – Present
Bioengineering Department, UCLA

Principal Investigator & Research Fellow — 2014 – 2017
Koch Cancer Institute, MIT, Cambridge, MA

Graduate Researcher in the labs of Douglas Lauffenburger & Frank Gertler — 2009 – 2014
Department of Biological Engineering & Koch Cancer Institute, MIT, Cambridge, MA

Undergraduate Researcher in the lab of Daniel Kamei — 2006 – 2009
Department of Bioengineering, UCLA

Submitted Publications Under Review/Revision

48. **E.C. Hung**, **E. Hodzic**, **Z.C. Tan**, **A.S. Meyer**. "Censored Least Squares Imputes Missing Values in PARAFAC Tensor Factorization." *Submitted, bioRxiv preprint*

47. **Abraham, A.A.**, **Z.C. Tan**, **P. Shrestha**, **E. Bozich**, **A.S. Meyer**. "Multivalent binding model quantifies antibody species from systems serology." *Submitted, bioRxiv preprint*

46. Kojima, H., T. Morinelli, Y. Wang, **J. Chin**, **A.S. Meyer**, M. Kuo, K. Kadono, S. Yao, T. Torgerson, K. Dery, A. Bhat, E. Reed, F. Kaldas, D. Windt, D. Farmer, J. Kupiec-Weglinski, Y. Zhai. "Group 1 innate lymphoid cells protect liver transplants from ischemia reperfusion injury via IFN-γ-mediated pathway." *Submitted.*

45. **Orcutt-Jahns, B.**, J. Rodrigues Lima Junior, R.C. Rockne, A. Matache, S. Branciamore, E. Hung, A.S. Rodin, P.P. Lee, **A.S. Meyer**. "Systems profiling reveals recurrently dysregulated cytokine signaling responses in ER+ breast cancer patients' blood." *Submitted, bioRxiv preprint.*

44. **Creixell, M.**, **S.D. Taylor**, J. Gerritsen, **S.Y. Bae**, M. Jiang, T. Augustin, **M. Loui**, **C. Boixo**, P. Creixell, F.M. White, **A.S. Meyer**. "Dissecting signaling regulators driving AXL-mediated bypass resistance and associated phenotypes by phosphosite perturbations." *Submitted, bioRxiv preprint.*

Refereed Publications

43. **Tan, Z.C.**, **A.S. Meyer**. "The structure is the message: preserving experimental context through tensor decomposition." *arXiv preprint*. *In press, Cell Systems*.

42. **Chin, J.L.**, **Z.C. Tan**, L.C. Chan, F. Ruffin, R. Parmar, R. Ahn, **S. Taylor**, A.S. Bayer, A. Hoffmann, J. Vance G Fowler, E.F. Reed, M.R. Yeaman, **A.S. Meyer**, MRSA Systems Immunobiology Group. "Tensor modeling of MRSA bacteremia cytokine and transcriptional patterns reveals coordinated, outcome-associated immunological programs." *PNAS Nexus.* 2024 May 4; 3(5): pgae185.

41. **Orcutt-Jahns, B.**, **P.C. Emmel**, **E.M. Snyder**, **S.D. Taylor**, **Aaron S. Meyer**. "Multivalent, asymmetric IL-2–Fc fusions show enhanced selectivity for regulatory T cells." *Science Signaling.* 2023 Oct 17; 16(807): eadg0699.

40. Peyton, S.R., L.W. Chow, S.D. Finley, A.N. Ford Versypt, R. Hill, M.L. Kemp, E.M. Langer, A.P. McGuigan, **A.S. Meyer**, S.K. Seidlits, K. Roy, S.M. Mumenthaler. "Synthetic living materials in cancer biology." *Nature Reviews Bioengineering.* 2023 Oct 2; 1, 972–988.

39. Terry, A.Q., H. Kojima, R.A. Sosa, F.M. Kaldas, **J.L. Chin**, Y. Zheng, B.V. Naini, D. Noguchi, J.N.-Mejia, Y.-P. Jin, R.W. Busuttil, **A.S. Meyer**, D.W. Gjertson, J.W. Kupiec-Weglinski, E.F. Reed. "Disulfide-HMGB1 Signals Through TLR4 and TLR9 to Induce Inflammatory Macrophages Capable of Innate-Adaptive Crosstalk in Human Liver Transplantation." *Am J Transplant.* 2023 Aug 9; S1600-6135(23)00625-1.

38. **Tan, Z.C.**, A. Lux, M. Biburger, P. Varghese, **S. Lees**, F. Nimmerjahn, **A.S. Meyer**. "Mixed IgG Fc immune complexes exhibit blended binding profiles and refine FcR affinity estimates." *Cell Reports.* 2023 July 25; 42(7): 112734.

37. S.M. Gross, **F. Mohammadi**, C. Sanchez-Aguila, P.J. Zhan, **A.S. Meyer**, L.M. Heiser. "Analysis and modeling of cancer drug responses using cell cycle phase-specific rate effects." *Nature Communications.* 2023 June 10; 14: 3450.

36. Yang, H., U.Y. Ulge, A. Quijano-Rubio, Z.J. Bernstein, D.R. Maestas, J.-H. Chun, W. Wang, J.-X. Lin, K.M. Jude, S. Singh, **B.T. Orcutt-Jahns**, P. Li, J. Mou, L. Chung, Y.-H. Kuo, Y.H. Ali, **A.S. Meyer**, W.L. Grayson, N.M. Heller, K.C. Garcia, W.J. Leonard, D.-A. Silva, J.H. Elisseeff, D. Baker, J.B. Spangler. "Design of cell-type-specific hyperstable IL-4 mimetics via modular de novo scaffolds." *Nature Chemical Biology*. 2023 April 6. 1552–4469.

35. **J.L. Chin**, L.C. Chan, M.R. Yeaman, **A.S. Meyer**. "Tensor-based insights into systems immunity and infectious disease." *Trends in Immunology*. 2023 May; 44(5): 329–332.

34. **Wilder, C.**, D. Lefaudeux, R. Mathenge, K. Kishimoto, A.Z. Munoz, M.A. Nguyen, **A.S. Meyer**, Q.J. Cheng, A. Hoffmann. "A stimulus-contingent positive feedback loop enables IFN-β dose-dependent activation of pro-inflammatory genes." *Molecular Systems Biology*. 2023 March 17; 19: e11294.

33. P. Kulkarni, H.S. Wiley, H. Levine, H. Sauro, A. Anderson, S.T.C. Wong, **A.S. Meyer**, P. Iyengar, K. Corlette, K. Swanson, A. Mohanty, S. Bhattacharya, A. Patel, V. Jain, R. Salgia. "Addressing the genetic/nongenetic duality in cancer with systems biology." *Trends in Cancer*. 9(3), 2023 March, 185–187.

32. Kim, H., A. Wirasaputra, **F. Mohammadi**, A.N. Kundu, J.A.E. Esteves, L.M. Heiser, **A.S. Meyer**, S.R. Peyton. "Live Cell Lineage Tracing of Dormant Cancer Cells." *Advanced Healthcare Materials.* 2023 Jan 10; 12(14): 2202275.

31. **Mohammadi, F.**, **S. Visagan**, S.M. Gross, **L. Karginov**, **JC Lagarde**, L.M. Heiser, **A.S. Meyer**. "A lineage tree-based hidden Markov model to quantify cellular heterogeneity and plasticity." *Communications Biology*. 2022 Nov 17; 5(1): 1528.

30. VanDyke, D., M. Iglesias, J. Tomala, A. Young, J. Bridge, J. Perry, E. Gebara, A.R. Cross, L.S. Cheung, A.G. Dykema, **B. Orcutt-Jahns**, T. Henclová, J. Golias, J. Balolong, L.M. Tomasovic, D. Funda, **A.S. Meyer**, D.M. Pardoll, J. Hester, F. Issa, C.A. Hunter, M.S. Anderson, J.A. Bluestone, G. Raimondi, J.B. Spangler. "Engineered human cytokine/antibody fusion proteins elicit targeted expansion of regulatory T cells and confer protection against autoimmune diseases." *Cell Reports.* 2022 Oct 18; 41(3): 111478.

29. **Creixell, M.**, H. Kim, **F. Mohammadi**, S.R. Peyton, **A.S. Meyer**. "Systems approaches to uncovering the contribution of environment-mediated drug resistance." *Current Opinion in Solid State & Materials Science.* 2022 Oct; 26(5): 101005.

28. **Creixell, M.**, **A.S. Meyer**. "Dual data and motif clustering improves the modeling and interpretation of phosphoproteomic data." *Cell Reports Methods.* 2022 Feb 28; 2(2): 100167.

27. Majumder, A., S. Hosseinian, M.J. Stroud, E. Adhikari, J.J. Saller, D.M.A. Smith, D.G. Zhang, S. Agarwal, **M. Creixell**, B.S. Meyer, M.F. Kinose, K.S. Bowers, B. Fang, P.A. Stewart, E.A. Welsh, T.A. Boyle, **A.S. Meyer**, J.M. Koomen, E.B. Haura. "Proteomic Characterization of AXL Kinase Inhibitors and Signaling Pathways." *Molecular Cancer Research.* 2022 Jan 7; 20(4): 542–555.

26. **Tan, Z.C.**, **B.T. Orcutt-Jahns**, **A.S. Meyer**. "A quantitative view of strategies to engineer cell-selective ligand binding." *Integrative Biology.* 2021 Nov 23; 13(11): 269–282.

25. **Tan, Z.C.**, **A.S. Meyer**. "A general model of multivalent binding with ligands of heterotypic subunits and multiple surface receptors." *Mathematical Biosciences.* 2021 Dec; 342:108714.

24. **Tan, Z.C.**, **M.C. Murphy**, **H.S. Alpay**, **S.D. Taylor**, **A.S. Meyer**. "Tensor-structured decomposition improves systems serology analysis." *Molecular Systems Biology.* 2021 Sept 6; 17:e10243.

23. **Farhat, A.M.**, **A.C. Weiner**, C. Posner, **Z.S. Kim**, **B. Orcutt-Jahns**, S.M. Carlson, **A.S. Meyer**. "Modeling Cell-Specific Dynamics and Regulation of the Common Gamma Chain Cytokines." *Cell Reports.* 2021 April 27; 35(4):109044.

22. **Bae, S.Y.**, **N. Guan**, **R. Yan**, **K. Warner**, **S.D. Taylor**, **A.S. Meyer**. "Measurement and models accounting for cell death capture hidden variation in compound response." *Cell Death & Disease.*, 2020 Apr 20; 255(11).

21. Lee, C.-H., T. H. Kang, O. Godon, M. Watanabe, G. Delidakis, C.M. Gillis, D. Sterlin, D. Hardy, M. Cogné, L.E. Macdonald, A.J. Murphy, N. Tu, J. Lee, J.R. McDaniel, E. Makowski, Peter M. Tessier, **A.S. Meyer**, P. Bruhns, G. Georgiou. "An engineered human Fc domain that behaves like a pH-toggle switch for ultra-long circulation persistence." *Nature Communications.*, 2019 Nov 6; 10(1):5031.

20. **Meyer, A.S.**, L.M. Heiser. "Systems biology approaches to measure and model phenotypic heterogeneity in cancer." *Current Opinion in Systems Biology.* 2019 Oct 4; 17: 35–40.

19. Situ, K., B.A. Chua, **S.Y. Bae**, **A.S. Meyer**, K. Morizono. "Versatile targeting system for lentiviral vectors involving biotinylated targeting molecules." *Virology.* 2018 Oct 2; 525: 170–181.

18. **Robinett, R.A.**, **N. Guan**, A. Lux, M. Biburger, F. Nimmerjahn, **A.S. Meyer**. "Dissecting FcγR Regulation Through a Multivalent Binding Model." *Cell Systems.* 2018 Jul 25; 6(7): 1–8.

17. Claas, A.M., L. Atta, S. Gordonov, **A.S. Meyer**, D.A. Lauffenburger. "Systems Modeling Identifies Divergent Receptor Tyrosine Kinase Reprogramming to MAPK Pathway Inhibition." *Cellular and Molecular Bioengineering* 2018 Jul 26; 1–19.

16. Muffat, J., Y. Li, A. Omer, A. Durbin, I. Bosch, G. Bakiasi, **E. Richards**, **A.S. Meyer**, L. Gehrke, R. Jaenisch. "Human iPS-derived Glial Cells and Neural Progenitors Display Divergent Responses to Zika and Dengue Infections." *Proc. Natl. Acad. Sci. U.S.A.* 2018 Jun 18; 201719266.

15. Schwartz, A.D., L.E. Barney, L.E. Jansen, T.V. Nguyen, C.L. Hall, **A.S. Meyer**, S.R. Peyton. "A Biomaterial Screening Approach to Reveal Microenvironmental Mechanisms of Drug Resistance." *Integrative Biology.* 2017 Nov 14; 9: 912–924.

14. **Zweemer, A.J.M.**, C.B. French, J. Mesfin, S. Gordonov, **A.S. Meyer**, D.A. Lauffenburger. "Apoptotic Cell Bodies Elicit Gas6-Mediated Migration Of AXL-Expressing Tumor Cells." *Molecular Cancer Research.* 2017 Sept 18; 15 (12): 1656–1666.

13. Archer, T.C., E.J. Fertig, S.J.C. Gosline, M. Hafner, S.K. Hughes, B.A. Joughin, **A.S. Meyer**[1], S.P. Piccolo, A. Shajahan-Haq. "Systems Approaches to Cancer Biology." *Cancer Research.* 2016 Nov 18; 76 (23); 1–4.

12. **Manole, S.**, **E.J. Richards**, **A.S. Meyer**. "JNK pathway activation modulates acquired resistance to EGFR/HER2 targeted therapies." *Cancer Research.* 2016 Sept 15; 76 (18): 5219–5228.

11. McConnell, R.E., J.E. Van Veen, M. Vidaki, A.V. Kwiatkowski, **A.S. Meyer**, D.A. Lauffenburger, F.B. Gertler. "A Requirement for Filopodia Extension Towards Slit During Robo-Mediated Axon Repulsion." *Journal of Cell Biology.* 2016 Apr 18; 213 (2): 261.

10. Miller, M.A., M.J. Oudin, R.J. Sullivan, D.T. Frederick, **A.S. Meyer**, S. Wang, H. Im, J. Tadros, L.G. Griffith, H. Lee, R. Weissleder, K.T. Flaherty, F.B. Gertler, D.A. Lauffenburger. "Reduced proteolytic shedding of receptor tyrosine kinases is a post-translational mechanism of kinase inhibitor resistance." *Cancer Discovery.* 2016 Apr; 6:331-333.

9. Miller, M.A., M. Moss, G. Powell, R. Petrovich, L. Edwards, **A.S. Meyer**, L.G. Griffith, D.A. Lauffenburger. "Targeting autocrine HB-EGF signaling with specific ADAM12 inhibition using recombinant ADAM12 prodomain." *Scientific Reports.* 2015 Oct 19; 5:15150.

8. **Meyer**[2]**, A.S.**, **A.J.M. Zweemer**, D.A. Lauffenburger[2]. "The AXL receptor is a sensor of ligand spatial heterogeneity." *Cell Systems.* 2015 Nov 29; 1(1):25-36.

7. Riquelme, D.N., **A.S. Meyer**, M. Barzik, A. Keating, F.B. Gertler. "Selectivity in subunit composition of Ena/VASP tetramers." *Biosci. Rep.* 2015 Jul 28;35(5). pii: e00246.

[1]Corresponding author.
[2]Co-corresponding authors.

6. **Meyer, A.S.**, M.A. Miller, F.B. Gertler, D.A. Lauffenburger. "The receptor AXL diversifies EGFR signaling and limits the response to EGFR-targeted inhibitors in triple-negative breast cancer cells." *Science Signaling.* 2013 Aug 6; 6(287):ra66.

5. Miller[3], M.A., **A.S. Meyer**[3], M. Beste, Z. Lasisi, S. Reddy, K. Jeng, C.-H. Chen, J. Han, K. Isaacson, L.G. Griffith, D.A. Lauffenburger. "ADAM-10 and -17 regulate endometriotic cell migration via concerted ligand and receptor shedding feedback on kinase signaling." *Proc. Natl. Acad. Sci. U.S.A.* 2013 May 28; 110(22):E2074-83.

4. **Meyer, A.S.**, S.K. Hughes-Alford, J.E. Kay, A. Castillo, A. Wells, F.B. Gertler, D.A. Lauffenburger. "2D protrusion but not motility predicts growth factor-induced cancer cell migration in 3D collagen." *Journal of Cell Biology.* 2012 Jun 11; 197(6):721-9.

3. Kim, H.D., **A.S. Meyer**, J.P. Wagner, S.K. Alford, A. Wells, F.B. Gertler, D.A. Lauffenburger. "Signaling network state predicts Twist-mediated effects on breast cell migration across diverse growth factor contexts." *Mol. Cell. Proteomics.* 2011 Nov;10(11):M111.008433.

2. **Meyer, A.S.**, R.G. Condon, G. Keil, N. Jhaveri, Z. Liu, Y.-S. Tsao. "Fluorinert, an oxygen carrier, improves cell culture performance in deep square 96-well plates by facilitating oxygen transfer." *Biotechnol. Prog.* 2012 Jan; 28(1):171-8.

1. Mashayekhi, F., **A.S. Meyer**, S.A. Shiigi, V. Nguyen, D.T. Kamei. "Concentration of mammalian genomic DNA using two-phase aqueous micellar systems." *Biotechnol. Bioeng.* 2009 Apr 15; 102(6):1613-23.

Research Support & Awards

Contact PI on all grants unless indicated otherwise.

NIH NIAID U01-AI179524 (Co-I) 2024 – 2029
"Systems Analyses of Induction and Maintenance of Immunity to SARS-CoV-2 Vaccination in Kidney Transplant Recipients Receiving Mycophenolate Mofetil Immunotherapy"

NSF 2404470 (Co-I) 2024 – 2027
"Multi-analyte Detection Enabled by Machine Learning-Guided Voltammetry"
Division: CHE Research and Development

NIH NEI R01-EY011996 (Co-I) 2023 – 2027
"Retinal Disease: Molecular Basis and Pathophysiology"

NIH NIAID U19-AI172713 (Co-PI) 2023 – 2028
Systems Biology for Infectious Diseases Consortium
"Systems Epigenomics of Persistent Bloodstream Infection"

Emerging Leader Award, Mark Foundation for Cancer Research 2023 – 2025
"Tracking and Reactivating Humoral Immunity through Systems Serology"

SEEDS Grant 2023 – 2024
Merck & Co., Inc.
"Systematic and Receptor-Specific Dissection of Fc Receptor Functions"

[3]Equally contributing authors.

NIH NIAID P01-AI120944 (Co-I) 2022 – 2027
Transplant Immunology Program Project Grant
"Innate-Adaptive Immunoregulation in Liver Transplant Ischemia/Reperfusion Injury"

Outstanding Mentor Award, Bruins-In-Genomics 2022

COVID Relief Funds, Vice Chancellor for Research Office 2022

Milstein Abstract Award, Cytokine Society 2021
"Multivalency enhances the specificity of Fc-cytokine fusions"

Northrop Grumman Excellence in Teaching Award 2021

Administrative Supplement to U01-CA215709 2020 – 2021
"Mechanistic Autoencoders for Patient-Specific Phosphoproteomic Models"

Grant 2020 – 2022
Jayne Koskinas Ted Giovanis Foundation
"Cell cycle-specific drug responses in breast cancer"

American Cancer Society, Research Scholar Grant (co-I) 2020 – 2023
"Tissue-engineered models of glioblastoma for evaluating treatment responses"

NIH NIAID U01-AI148119 2019 – 2024
Fc-Dependent Mechanisms of Antibody-Mediated Killing Consortium
"Mapping the effector response space of antibody combinations"

UCLA Faculty Career Development Award 2019 – 2020

UCLA Hellman Fellow 2019 – 2020
"Engineering anti-tumor antibody combinations for more effective and less toxic therapies"

Visterra, Inc. Research Agreement 2019 – 2021
"IL-2 Receptor Binding Engineering"

Administrative Supplement to U01-CA215709 2018 – 2019
"Cell lineage analysis to quantify heterogeneous cell cycle responses of cancer cells"

NIH NCI U01-CA215709 2017 – 2022
Cancer Systems Biology Consortium
"Precision Lung Cancer Therapy Design through Multiplexed Adapter Measurement"

Fellowship Grant 2017 – 2019
Terri Brodeur Breast Cancer Foundation
"Decoding the Role of TAM Receptors *In Vivo* Using More Specific and Potent Inhibitors"

Finalist, Career Awards at the Scientific Interface 2017
Burroughs Wellcome Fund

Ten to Watch, Amgen Scholars Foundation 2016

AMIGOS Program Award 2016 – 2020
Jayne Koskinas Ted Giovanis Foundation and Breast Cancer Research Foundation
"Understanding the Role of Cell Plasticity in Mediating Drug Resistance"

GPU Grant 2016

NVIDIA Corporation
"Parameterizing Stochastic Cell Signaling Pathways Through Variability Fitting"

Frontier Research Program Initiator Award 2015
Koch Institute for Integrative Cancer Research
"Multiplexed Tools for Probing Chemokine Receptor Activation State in Breast Cancer"

NIH Director's Early Independence Award, DP5-OD019815 2014 – 2019
"Adapter-Layer RTK Signaling: Basic Understanding & Targeted Drug Resistance"
Highlighted by the NIH director's office.

Siebel Scholar, Class of 2014 2013

Whitaker Fellowship 2013
Massachusetts Institute of Technology

Repligen Fellowship in Cancer Research 2012
Koch Institute for Integrative Cancer Research

Frontier Research Program Initiator Award 2011
Koch Institute for Integrative Cancer Research
"Global Growth Factor Reprogramming and Invasion By AXL Expression And Shedding In Breast Carcinoma"

Breast Cancer Research Predoctoral Fellowship 2010 – 2014
Department of Defense, W81XWH-11-1-0088
"Molecular Regulatory Network Dysregulation in Breast Cancer Cell Migration & Invasion"

Graduate Research Fellowship 2009 – 2014
National Science Foundation

Momenta Presidential Fellowship 2009
Massachusetts Institute of Technology

Teaching Experience

Instructor, Machine Learning & Data-Driven Modeling in Bioengineering 2018 – Present
UCLA, Department of Bioengineering

- Designed and lead project-based course tailored to the background of students in the program

Instructor, Bioengineering Laboratory 2018 – Present
UCLA, Department of Bioengineering

- Lead lab-based course introduction to laboratory work in bioengineering and basics of experimental design and analysis

Guest Speaker, Bioinformatics 202 2023
UCLA, Bioinformatics Interdepartmental Program

- Discussed our lab's research and related topics in bioinformatics.

Guest Lecturer, Fundamentals of Digital Imaging and Image Processing 2021, 2022
UCLA, Molecular, Cell, and Developmental Biology M130

- Led discussion of a paper from the lab used as a project within the class

Discussion Leader, Ethics and Accountability in Biomedical Research 2021, 2024
UCLA, Microbiology, Immunology, & Molecular Genetics

- Led discussion of various ethics case studies

Advisor, Integrated and Interdisciplinary Undergraduate Research Program 2019 – 2023
UCLA, Undergraduate Research Center

- Advise program participants on developing research, presentation, and professional skills

Mentor, Bioengineering Capstone 2017, 2018, 2019, 2020
UCLA, Department of Bioengineering

- Mentored three capstone teams for the bioengineering senior design course
- Poster competition winning team: 2018, 2019

Guest Speaker, Introduction to Bioengineering 2017, 2019, 2020, 2023
UCLA, Department of Bioengineering

- Guest speaker to discuss research program and opportunities in bioengineering

Faculty of the Citizen Science Program 2015 – 2016
Bard College, Citizen Science Program, Annandale-on-Hudson, NY

- Led a short course introducing students to the natural sciences and scientific method

Teaching Assistant, Thermodynamics of Biomolecular Systems 2010
MIT, Department of Biological Engineering, Cambridge, MA

Conference & Invited Presentations (Last Five Years)

Massachusetts Institute of Technology, Biological Engineering, Invited Oral Presentation Sept 2024
"Experiment structure is the message: building an integrative view of immunity with tensors."

UCLA Bruins-In-Genomics Summer Program, Invited Oral Presentation July 2024
"Experiment structure is the message: building an integrative view of immunity with tensors."

Fc Mechanisms of Cell Killing Workshop, Invited Oral Presentation June 2024
"Mapping the effector response space of antibody combinations"

Cytokine Based Drug Development Summit, Invited Oral Presentation May 2024
"New Cytokine Targeting Strategies Enabled by Multivalent Cis-Targeted Complexes."

NIAID Systems Biology Consortium Webinar, Invited Oral Presentation May 2024
"Tensor Modeling of Clinical Outcomes in S. aureus Bacteremia."

Tracer Precision Health Workshop, Invited Oral Presentation April 2024
"Mechanistic, integrative, and high-resolution dissection of single-cell studies with PARAFAC2."

Cancer Systems Biology Program, Invited Oral Presentation December 2023
"Analysis and modeling of cancer drug responses using cell cycle phase-specific rate effects."

Systems Biology Consortium for Infectious Diseases, Invited Oral Presentation September 2023
"Developing integrative signatures across omics, studies, and diseases with tensor-based analysis."

UCLA Bioinformatics Retreat, Invited Oral Presentation July 2023
"Building the tensor learning universe."

Antibodies & Complement, Selected Oral Presentation June 2023
"Cancer systems serology reveals active humoral immunity but disrupted Fc-elicited interactions."

CSBC Annual Meeting, Invited Oral Presentation March 2023
"Phosphoproteomic Analysis of AXL Identifies YAP as a Key Regulator of Resistance."

UCLA Musculoskeletal Devices & Tech. Development Group, Invited Seminar September 2022
"Uncovering immunologic mechanisms of MRSA persistence by tensor-mediated data integration."

SIAM Conference on Mathematics of Data Science, Invited Podium Presentation September 2022
"Mechanistic and Data-Driven Dissection of Cell Communication Through Tensor Methods."

American Assoc. for Cancer Research Annual Meeting, Invited Podium Presentation April 2022
"Systems approaches for identifying cell states and pathways modulating therapy response."

Southern California Systems Biology Conference, Invited Podium Presentation April 2022
"Mechanistic and Data-Driven Dissection of Cell Communication Through Tensor Methods."

Johns Hopkins Univ., Institute for Comp. Medicine, Invited Seminar February 2022
"Mechanistic and Data-Driven Dissection of Cell Communication Through Tensor Methods."

Cellular & Molecular Bioengineering, Selected Oral Presentation January 2022
"Rapid Prototyping of Multivalent And Multi-Specific Drugs To Overcome The Limited Selectivity Of IL-2 Toward Regulatory T Cells"

Biomedical Engineering Society Annual Meeting, Invited Podium Presentation October 2021
"Tensor Factorization-Based Data Fusion Improves Predictions and Interpretation of MRSA Outcome."

CSHL Systems Immunology, Selected Oral Presentation April 2021
"Developing a Mechanistic View of Mixed IgG Antibody Immune Effector Responses."

University of Massachusetts, Mol & Cell Biol Program, Invited Seminar March 2021
"Mixture models of cell populations and signaling to understand heterogeneous drug response."

International Conference on Biomolecular Engineering, Selected Oral Presentation January 2021
"Developing a Mechanistic View of Mixed IgG Antibody Immune Effector Responses."

Vanderbilt University, QSBC Center, Invited Center Seminar October 2020
"Mixture models of cell populations and signaling to understand heterogeneous drug response."

Buffalo Quantitative Systems Pharmacology Symposium, Invited Speaker July 2020
"Deeply profiling pharmacodynamic response with single cell dynamics."
Postponed due to COVID-19.

Tufts University, Dept. of Bioengineering, Invited Dept. Seminar March 2020
"Linking Statistical and Mechanistic Models for Drug Development."
Postponed due to COVID-19.

Univ. of Calif., Los Angeles, Immunogenetics Center, Invited Speaker Jan 2020
"Using models with incomplete information to study and engineer antibody effector response."

Biomedical Engineering Society Annual Meeting, Selected Oral Presentation October 2019
"A Binding Model Predicts *In Vivo* Effector Cell-Elicited Killing Across Multiple Disease Models."

Xencor, Inc., Invited Oral Presentation July 2019

"Computational molecular models for immune engineering."

Antibodies & Complement, Selected Oral Presentation May 2019
"A Multivalent Binding Model Predicts FcγR Regulation and Effector Cell-Elicited Killing."

CSBC West Coast Meeting, Selected Oral Presentation May 2019
"Hidden Markov models on a tree as a general approach to single cell plasticity analysis."

Research Supervision

Postdoctoral Fellows

- Catera Wilder, Ph.D. (Assistant Professor, UCSF) 2018 – 2022
- Song Yi Bae, Ph.D. (Senior Scientist, Astrin Biosciences) 2016 – 2019
- Edward Richards, Ph.D. (Senior Scientist, Dragonfly Therapeutics) 2015 – 2020
  - American Cancer Society Postdoctoral Fellowship
- Annelien Zweemer, Ph.D. (Assistant Professor, Leiden University) 2014 – 2017

Ph.D. Students

- Meera Trisal 2023 – Present
- Michelle Loui 2022 – Present
  - SURF Fellowship, UCLA Graduate Division
- Andrew Ramirez 2021 – Present
  - NSF Graduate Research Fellowship
  - Cota Robles Fellowship
  - UCLA EDI Student Leadership Award
- Jackson Chin 2020 – Present
  - Best Poster Award, QC Bio Retreat, 2022
- Brian Orcutt-Jahns (Postdoctoral Associate, Genentech) 2019 – Present
  - Best Poster Award, CSBC Junior Investigator Meeting
  - Best Poster Award, Cytokine Society
  - Best Presentation Award, Los Angeles Bioscience Ecosystem Summit
  - Outstanding Ph.D. Award, Department of Bioengineering
- Cyrillus Tan 2019 – Present
  - Dissertation Year Fellowship, UCLA Graduate Division
- Farnaz Mohammadi (Postdoctoral Associate, Genentech) 2018 – 2023
  - Dissertation Year Fellowship, UCLA Graduate Division
- Marc Creixell (Scientist, Calico Life Sciences) 2018 – 2023
  - JCCC Fellowship

M.S. Students

- Het Desai 2023 – 2024
- Manmeet Bains 2023 – 2024
- Enio Hodzic (Machine Learning Algorithm Engineer, Adaptive Dynamics) 2021 – 2023
- Madeleine Murphy (Computational Biologist, Broad Institute) 2020 – 2022

Undergraduate Students

- Jamie Stickelmaier 2021 – 2023
- Ethan Hung (Amgen Scholar, Berkeley) 2021 – Present
- Eva Hunter 2021 – 2022
- Hakan Alpay (Frontend Engineer, Facebook) 2021
- Luka Karginov (NCI CSBC Summer Scholar; Ph.D., Biological Engineering, MIT) 2020 – 2021
- Aditya Sivakumar 2020 – 2021
- Eli Snyder (M.D., University of Hawaii) 2020 – 2021
- Peter Emmel 2019 – 2022
- Amanda Tsao (M.D., University of Southern California) 2019 – 2021
- JC Lagarde 2019 – 2022
- Sumedha Kanthamneni (Google) 2019 – 2022
- Heather Carmen Mercieca (Amgen Scholar) 2019
- Linnet Chang (Analyst, Accenture) 2018 – 2021
- Stephen Lees (Ph.D., Biomedical Engineering, UVA) 2018 – 2021
- Zoe Kim (Engineer, GaN Corporation) 2018 – 2020
- Micah Bryant (M.S., Mechanical Engineering, UCSD) 2018 – 2020
- Robby Theisen (Ph.D., Biomedical Engineering, University of Michigan) 2018 – 2020
- Alison Tran (Biosciences Account Manager, Thermo Fisher Scientific) 2018 – 2020
- Willie Wu (Software Engineer, Rivian) 2018 – 2019
- Katrina Warner (Amgen Scholar; Ph.D., Biomedical Sciences, Harvard) 2018
- Donya Khashayar (Transfer Student Summer Research Program) 2018
- Rui Yan (Cathy Bank Scholarship; Ph.D., ICME, Stanford) 2017 – 2019
- Ali Farhat (Rose Hills Foundation Scholar; M.D./Ph.D., U Illinois) 2017 – 2019
- Adam Weiner (Internet Research Initiative Award; Ph.D., Tri-Institute CompBio) 2017 – 2019
- Ning Guan (Ph.D., Systems Biology, Harvard) 2015 – 2017
- Ryan Robinett (NSF GRFP; Ph.D., Comp. Sci., U. Chicago) 2015 – 2017

Service to the Profession

Ad Hoc Reviewer, Cell 2024

Reviewer, Swiss National Science Foundation 2024
National Centre of Competence in Research

Co-Chair, Modeling Working Group 2023 – Present
Systems Biology for Infectious Diseases Consortium

Chalk Talk Mentor, BME Underrepresented Needs In Technology & Engineering (UNITE) 2024

Conference Organizer, NIH NIAID 2024
Systems Immunology Approaches in Transplantation Tolerance and Rejection (SIATTR)

Ad Hoc Reviewer, Genome Medicine 2024

Ad Hoc Study Section, NCI Human Tumor Atlas Network 2024

Ad Hoc Reviewer, Metabolomics 2023

Ad Hoc Reviewer, Cancer Gene Therapy 2023

Ad Hoc Reviewer (4x), Science Signaling 2020 – 2023

Ad Hoc Reviewer (3x), Science Advances 2020 – 2023

Track Chair, Biomedical Engineering Society Annual Meeting 2023
Computational & Systems Biology

Abstract Reviewer, UC Systemwide Bioengineering Symposium 2023

F31 Co-Sponsor, University of Texas, Austin 2022
Mollie Harrison (Advisor Stephanie Seidlits)

Ad Hoc Reviewer, Cancer Immunology Research 2022

Co-Chair, Resource & Data Sharing Working Group 2022 – Present
Cancer Systems Biology Consortium

Webmaster, BME Underrepresented Needs In Technology & Engineering (UNITE) 2022 – Present

Ad Hoc Reviewer, iScience 2022

Poster Judge, Cellular & Molecular Bioengineering Meeting 2022

Example U01 proposal, NIH National Institute of Allergy and Infectious Diseases 2021

Reviewer, Australia Medical Research Future Fund 2022
Preventive and Public Health Research Initiative
Optimising the Clinical Use of Immunoglobulins Grant Assessment Committee

Local Organizing Committee, Southern California Systems Biology Conference 2022

Ad Hoc Reviewer, Soft Matter 2022

Ad Hoc Reviewer, FEBS Letters 2021

Co-Organizer, BME UNITE Webinar Series 2021 – Present
Showcase of current and future faculty candidates diverse and underrepresented in BME

Abstract Reviewer, Biomedical Engineering Society Annual Meeting 2021, 2022

Financial Officer, Association of Cancer Systems Biologists 2021 – Present

Session Co-Chair, Biomedical Engineering Society Annual Meeting 2020

Volunteer Speed Interviewer, Biomedical Engineering Society Annual Meeting 2020

Volunteer Resume Reviewer, Biomedical Engineering Society Annual Meeting 2020

Member, BME Underrepresented Needs In Technology & Engineering (UNITE) 2020 – Present
Lead for Project 7: Coordinated graduate student recruiting

Panelist, Amgen Scholars Summer Science Series 2020

Ad Hoc Reviewer, PLOS Biology 2020, 2021

Ad Hoc Reviewer, Cancer Research 2020

External Reviewer, Ming Hsieh Institute, USC 2020

Ad Hoc Reviewer, Cell Systems 2020

Ad Hoc Reviewer, APL Bioengineering 2020

Ad Hoc Reviewer, Integrative Biology 2019

Ad Hoc Reviewer, Scientific Reports 2019

Ad Hoc Reviewer, PNAS 2019

Ad Hoc Reviewer, Current Opinion in Systems Biology 2019

Co-Chair, Association of Cancer Systems Biologists 2017 – 2021

Ad Hoc Reviewer, PLOS Computational Biology 2018

Interviewee, Prescriber Magazine 2017

Ad Hoc Reviewer, WIREs Systems Biology and Medicine 2017

Ad Hoc Remote Reviewer, Irish Research Council 2017

Ad Hoc Reviewer, Cell Reports 2017, 2023

Graduate Research Fellowship Program Review Panelist, National Science Foundation 2016 – 2017

Meeting Organizer & Member, Association of Early Career Cancer Systems Biologists 2015 – 2016

Ad Hoc Reviewer, Biomedical Engineering Society Annual Meeting 2016

Ad Hoc Reviewer, Drug Discovery Today 2016

Ad Hoc Reviewer, Molecular Cell 2015

Member, Biomedical Engineering Society 2010 – Present

Coordinator, MIT Biological Engineering Graduate Student Board 2010 – 2013

Ad Hoc Reviewer, Oncogene 2013

Ad Hoc Reviewer, Nature 2013

Member, MIT Biological Engineering Retreat Organizing Committee 2010 – 2012

Ad Hoc Reviewer, J. Cell Biol. 2011 – 2012

Service to UCLA

Bioengineering Representative, HSSEAS GPU Ad Hoc Committee 2024

Member, Hiring Committee 2024
Hispanic Serving Institution (HSI) STEM Faculty Director

Member, HSSEAS Strategic Planning Committee 2024
Artificial intelligence focus area

Chair, Campus Response to the Climate Crisis Special Committee, Faculty Senate	2023 – 2024
Ad Hoc Member, Executive Board, Faculty Senate	2023 – 2024
Faculty Speaker, UCLA Life Sciences Webinar Series "Digital Immune Twins: The Future of Healthcare?"	2023
Faculty Speaker, UCLA Life Sciences Webinar Series "Digital Immune Twins: The Future of Healthcare?"	2023
Poster Judge, Undergraduate Research and Creativity Showcase Science Dean's Prize	2023
Poster Judge, Jonsson Cancer Center Annual Retreat	2023
Reviewer, Tau Beta Pi Chapter Excellence Scholarship	2021 – 2023
Award Selection Committee, Faculty Career Development Award Office of Equity, Diversity and Inclusion	2022
Faculty Participant, Coffee Chat Series, Computational & Systems Biology	2022
Member, Minors Committee, Computational & Systems Biology	2021 – 2023
Panelist, Graduate School Panel, Computational & Systems Biology	2021
Faculty Representative, Samueli Engineering Grad School Info Session	2020
Faculty Representative, Annual Biomedical Research Conference for Minority Students	2018, 2020
Curriculum Advisory Committee, Computational & Systems Biology	2020 – Present
Written Qualifying Exam Evaluator, Bioinformatics IDP	2020
Mentor, B.I.G. Summer	2020 – 2022
Member, SPUR "Life of a Faculty Member" Panel	2020
Ad Hoc Member, HSSEAS Faculty Executive Committee	April 2020
Application Reviewer, Amgen Scholars Program	2020, 2022, 2023
Reviewer, Graduate Division's Faculty Review Committee	2020
Co-Organizer, UCLA Systems Immunology Seminar Series	2019 – 2020
Faculty Volunteer, Society of Women Engineers Recruitment Dinner	2019, 2020
Member, HSSEAS SEASnet Review Committee	2019
Faculty Advisor, Tau Beta Pi	2017 – Present
Faculty Volunteer, Amgen Scholars Symposium	2018, 2019
Member, HSSEAS Awards Committee for Outstanding Student Awards	2018
Faculty Speaker, UCLA Engineering Alumni Reunion	2018

Service to the Department

Ad Hoc Promotion Committee	2023, 2024
Poster Judge, Bioengineering Research Day	2024
Panel Member, Equity, Diversity, & Inclusion Panel Biomedical Engineering Society	2024
Member, Ad Hoc P&T Committee	2023
Judge, Biomedical Engineering Society BioHack	2022 – 2023
Member, Diversity, Equity and Inclusion Committee	2021 – Present
Member, Bioengineering Hiring Search Committee	2021 – 2022, 2023 – 2024
Member, Teaching Facility & Shared Equipment Committee	2021 – Present
Member, Strategic Planning Committee	2020
Co-Chair, Bioengineering and Computational Medicine Joint Hiring Search	2019 – 2020
Field Chair, Biosystem Science and Engineering	2019 – Present
Graduate Admissions Committee Co-Chair, Bioengineering	2019 – Present
Undergraduate Curriculum Committee, Bioengineering	2019 – Present
Member, Bioengineering Alumni Committee	2018 – Present
Chair, Department of Bioengineering Seminar Series	2018 – 2019
Member, Publicity Committee	2017 – 2018

Patents/Disclosures

A.S. Meyer. “Methods of Identifying and Correcting Tumor Humoral Immune Dysregulation.” U.S. patent application PCT/US24/32940, 2024.

Orcutt-Jahns, B., P.C. Emmel, A.S. Meyer. “Multi-specific engineered cytokines.” U.S. patent application PCT/US24/32940, 2023.

A.S. Meyer. “Altering cytokine specificity through binding valency.” U.S. patent application PCT/US22/35711, 2022.

Miller, M.A., M.J. Oudin, A.S. Meyer, L.G. Griffith, F.B. Gertler, D.A. Lauffenburger. “Methods of Reducing Kinase Inhibitor Resistance.” US patent application 14/690,001, 2015.

Thesis Committee Membership

Daniel Bradbury, Bioengineering (Ph.D.)
Advisor: Daniel Kamei
2017–2020

Giovanni Valdez, Bioengineering (Ph.D.)
Advisor: Grace Xiao
2018–2021

Hiromi Miwa, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2019–2022

Mark van Zee, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2019–2022

Rob Dimatteo, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2019–2021

Alexander Wickstrom, Bioengineering (M.S.)
Advisor: Jonathan Kao
2019

Hector E Muñoz, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2019–2020

Wei-Chia Elizabeth Luo, Bioengineering (Ph.D.)
Advisor: Gerard Wong
2020–Present

Mohammadali Alidoost, Bioengineering (Ph.D.)
Advisor: Jennifer Wilson
2021–Present

Cameron S. Movassaghi, Chemistry (Ph.D.)
Advisor: Anne M. Andrews
2021–Present

Felis Doyeon Koo, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2021–2023

Favour Esedebe, Bioinformatics (Ph.D.)
Advisor: Tom Graeber
2021–Present

Connor Razma, Bioinformatics (M.S.)
Advisor: Alexander Hoffmann
2022–2023

Mai Tran, Earth, Planetary & Space Sci. (Ph.D.)
Advisor: William Newman
2022–2023

Nilay Shah, Computer Science (M.S.)
Advisor: Bolei Zhou
2022–2023

Rayo Suseno, Bioengineering (M.S.)
Advisor: Jennifer Wilson
2022–2023

Shawn Liu, Bioengineering (M.S.)
Advisor: Jennifer Wilson
2023–Present

Helen Huang, Bioinformatics (Ph.D.)
Advisor: Alexander Hoffman
2022–Present

Emily Bozich, Bioengineering (Ph.D.)
Advisor: Jennifer Wilson
2023–Present

Jingwen Sun, Chemistry & Biochemistry (Ph.D.)
Advisor: Chong Liu
2023–Present

Seth Hilliard, Comp. & Quant. Medicine (Ph.D.)
Advisor: Andrei Rodin (City of Hope)
2023

Frances Nicklen, Bioengineering (Ph.D.)
Advisor: Daniel Kamei
2023–Present

Michael Mellody, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2023–Present

James Popoli, Bioengineering (Ph.D.)
Advisor: Andrea Kasko
2023–Present

Citra Soemardy, Bioengineering (Ph.D.)
Advisor: Dino Di Carlo
2023–Present

Shivani Kumar, Bioengineering (M.S.)
Advisor: Mireille Kamariza
2024

Alejandro Miron Jabalera, Bioengineering (Ph.D.)
Advisor: Tzung Hsiai
2024–Present

Ahmed Ali, Bioengineering (M.S.)
Advisor: Jennifer Wilson
2023–2024

Yuyang Han, Chemistry (Ph.D.)
Advisor: Anne Andrews
2024–Present