Department of Molecular & Cellular Biology
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Guang Yao

EDUCATION

1997–2002	Ph.D. in Oncology/Cancer Biology, University of Wisconsin, Madison, WI. Dissertation: "Understanding the Ah Receptor Regulatory Network" Advisor: Dr. Chris Bradfield
1991–1996	B.S. in Molecular Biology, University of Science and Technology of China (USTC), Hefei, Anhui, China

EMPLOYMENT

2018–present	Associate Professor, Dept. of Mol. & Cellular Biology, Univ. of Arizona, Tucson, AZ
2011–2018	Assistant Professor, Dept. of Mol. & Cellular Biology, Univ. of Arizona, Tucson, AZ
2011–present	*Affiliated member:* Arizona Cancer Center; Graduate Interdisciplinary Programs in Genetics, Cancer Biology, Applied Biosciences, and Applied Mathematics
2003–2010	Postdoctoral Fellow, Duke Univ., Durham, NC (Mentor: Dr. Joseph Nevins)

SERVICE/OUTREACH

Local/State Outreach

2020	Speaker, Tucson Kids Sunday Lecture Series
2017–present	Volunteer, Meet MCB! Annual Open House for High School Students
2014-2017, 2025	Volunteer, Tucson Festival of Books
2013–present	Mentor, KEYS High School Summer Internship Program
2013, 2015	Volunteer, "Vision to Your Future" – MCB Open House for High School Students
2013, 2018	Author, Article on Cancer Systems Biology for Arizona Daily Star Science Section
2011	Departmental Representative, Honors College Recruitment

Departmental Service

2024–present	Associate Dept. Head
2023	Interim Associate Dept. Head
2023–present	Member, Undergraduate Curriculum Committee
2022–2023	Chair, Faculty Search Committee
2022–2023	Director, Systems & Big Data Biology Undergraduate Degree Track
2022, 2024	Chair, Faculty P&T Committee (for Drs. Padi and Hester)
2021–present	Chair, Graduate Curriculum Committee
2019–2022	Member, Student Awards Committee
2017–2021	Member, Graduate Curriculum Committee
2017–present	Member, Discretionary Fund Allocation Committee
2017	Member, Undergraduate Curriculum Committee
2015–2016	Member, Faculty Search Committee
2013–2017	Chair, Website Committee
2012–2013	Member, Website Committee
2012–2017	Member, Instrument Committee

College/University Service

2023–present	Member, Executive Committee, Data Science & Applied Statistics (Professional MS)
2022, 2023	Member, Review Panel, HSI Faculty Seed Grant Program
2021–present	Member, Admission Committee, Genetics GIDP
2018–2022	Member, Graduate Awards Committee, College of Science
2016	University Childcare Request for Information (RFI) Review Committee
2013–2020	Mentor, Arizona's Science, Engineering and Math Scholars (ASEMS)
2012–2022	Member, International Applicants Selection & Interview Committee, Arizona Biological and Biomedical Sciences Program (ABBS)
2011–2013	Member, Cellular & Systems Biol. Selection Committee, ABBS
2011–2015	Member, Executive Committee, BMCB Graduate Program

National/International Service

2020–2022	Topic Editor, Frontiers in Cell and Developmental Biology
2020–present	Review Editor, Frontiers in Physiology
2013–present	Member, Editorial Board, American Journal of Clinical and Experimental Obstetrics and Gynecology
2012–present	Member, International Evaluation Panel, Peking-Tsinghua Center for Life Sciences (CLS), Peking University, China

Journal Reviewer

2011–present	Nature Communications, Cell Systems, Science Signaling, Molecular Systems Biology, PLoS Biology, PLoS Computational Biology, PLoS ONE, Genome Research, Genome Biology, Seminars in Cancer Biology, Frontiers in Oncology, Frontiers in Genetics, Journal of Cell Science, Scientific Reports, Comprehensive Physiology, Biophysical Journal, Journal of The Royal Society Interface, Royal Society Open Science, FEBS Journal, Journal of Theoretical Biology, Oncotarget, BMC Systems Biology, IET Systems Biology, Open Biology, Chemical Research in Toxicology, Mathematical Biosciences and Engineering, International Journal of Developmental Biology, Mechanisms of Ageing and Development, Molecular Biology and Evolution, Physical Review E

Ad-hoc Grant Reviewer

2023, 2024	National Science Centre (Poland), Ad hoc grant reviewer
2017	Medical Research Council (UK), Career Development Award
2017	National Science Foundation (USA), NSF-Simons Research Centers for Mathematics of Complex Biological Systems
2017	Austrian Science Fund, Erwin Schroedinger Fellowship
2016	Wellcome Trust (UK), Sir Henry Wellcome Postdoctoral Fellowship

PUBLICATIONS

Key: *Italics,* Yao Lab trainees; **^** Equal contributions; **G Yao#**, (co-)corresponding author

***Peer-Reviewed Research Articles**:*

1. Y Zhang, D Ding, S Li, *Q Pan*, J Ru, H Zhao, G Yao, J Wei, S Wang, S Hou, X Wang (2025). Single-cell RNA sequencing reveals intrahepatic signature related to pathobiology of duck hepatitis A virus type 3 (DHAV-3) infection. **Poult. Sci.** 104:104798

2. *X Wang,* HH Woo, *M Wei,* S Gibson, M Miranda, D Rush, J Cragun, W Zheng, **G Yao#** & SK Chambers# (2024). miR-449, identified through antiandrogen exposure, mitigates functional biomarkers associated with ovarian cancer risk. **Sci. Rep.** 14:29937

3. S Sun, A Hara, L Johnstone, B Hallmark, JC Watkins, CA Thomson, SM Schembre, S Sergeant, JG Umans, G Yao, HH Zhang, FH Chilton (2024). Optimal Pair Matching Combined with Machine Learning Predicts a Significant Reduction in Myocardial Infarction Risk in African Americans Following Omega-3 Fatty Acid Supplementation. **Nutrients** 16:2933.

4. *E Lu,* A Hara, S Sun, B Hallmark, JM Hallmark, MC Seeds, JC Watkins, CE McCall, HH Zhang, G Yao, FH Chilton (2024). Temporal Associations of Plasma Levels of the Secreted Phospholipase A2 Family and Mortality in Severe COVID-19. **Eur. J. Immunol.** 54:2350721

5. A Hara, *E Lu*, L Johnstone, *M Wei*, S Sun, B Hallmark, JC Watkins, HH Zhang, **G Yao#**, FH Chilton# (2024). Identification of an allele-specific transcription factor binding interaction that may regulate PLA2G2A gene expression. **Bioinform. Biol. Insights.** 2024;18.

6. *B Liu, X Wang,* L Jiang#, J Xu, Y Zohar, **G Yao#** (2022). Extracellular Fluid Flow Induces Shallow Quiescence Through Physical and Biochemical Cues. **Front. Cell Dev. Biol.** 10:792719.

7. JM Snider, JK You, *X Wang*, et al., G Yao, MD Poeta, FH Chilton (2021). Group IIA secreted phospholipase A2 is associated with the pathobiology leading to COVID-19 mortality. **J Clin Invest.** 131:e149236.

8. *B Liu*, Y Shen, H Huang, *K Della Croce*, M Wu, Y Fan, Y Liu#, J Xu#, **G Yao#** (2020). Curcumin derivative C212 inhibits Hsp90 and eliminates both growing and quiescent leukemia cells in deep dormancy. **Cell Commun. Signal.** 18:1-15.

9. B Mathey-Prevot, B-T Parker, C Im, C Hong, P Dong, G Yao, L You (2020). Quantifying E2F1 protein dynamics in single cells. **Quant. Biol.** 8:20–30.

10. *K Fujimaki^,* R Li^, H Chen, *K Della Croce,* J Xing, F Bai#, **G Yao#** (2019). Graded regulation of cellular quiescence depth between proliferation and senescence by a lysosomal dimmer switch. **PNAS** 116: 22624-22634.

11. J Zhang, H Chen, R Li, DA Taft, G Yao, F Bai, J Xing (2019). Spatial clustering and common regulatory elements correlate with coordinated gene expression. **PLoS Comput. Biol.** 15(3): e1006786.

12. X Tian, X Tu, *K Della Croce*, G Yao, H Cai, N Brock, S Pau, R Liang (2019). Multi-wavelength Quantitative Polarization and Phase Microscope. **Biomed. Opt. Express** 10: 1638-1648.

13. Y Pu, Y Li, X Jin, T Tian, Q Ma, Z Zhao, S Lin, Z Chen, B Li, G Yao, MC Leake, C-J Lo, F Bai (2018). ATP-Dependent Dynamic Protein Aggregation Regulates Bacterial Dormancy Depth Critical for Antibiotic Tolerance. **Mol. Cell** 73: 143-156.

14. *X Wang^, K Fujimaki^, G Mitchell^, J Kwon, K Della Croce,* C Langsdorf, H Zhang, **G Yao#** (2017). Exit from quiescence displays a memory of cell growth and division. **Nature Commun.** 8: 321.

15. *J Kwon, NJ Everetts, X Wang,* W Wang*, K Della Croce*, J Xing, **G Yao#** (2017). Controlling depth of cellular quiescence by an Rb-E2F bistable switch. **Cell Reports** 13: 3223-3235.

16. I Shats, M Deng, A Davidovich, C Zhang, *J Kwon*, D Manandhar, R Gordan, G Yao, L You (2017). Expression level is a key determinant of E2F1-mediated cell fate. **Cell Death Differ.** 24: 626-637.

17. *J Dai, MA Miller, NJ Everetts, X Wang,* P Li, Y Li#, J-h Xu#, **G Yao#** (2017). Elimination of quiescent slow-cycling cells via reducing quiescence depth by natural compounds purified from ganoderma lucidum. **Oncotarget** 21: 13770-13781.

18. C Chen, P Li, Y Li, G. Yao, J-h Xu (2016). Antitumor effects and mechanisms of Ganoderma extracts and spores oil. **Onc. Lett.** 12: 3571-3578.

19. X Xiong, Y Li, P Li, G Yao, Z Zhang, J-h Xu (2015). Chemical constituents from fruiting body of Ganoderma lucidum and their antitumor activity. **Chin Hosp Pharm J** 35: 1902-1906.

20. D Mondal, E Dougherty, A Mukhopadhyay, A Carbo, **G Yao#**, J Xing**#** (2014). Systematic reverse engineering of network topologies: a case study of resettable bistable cellular responses**. PLoS One** 9: e105833.

21. JK Srimani^, G Yao^, J Neu, Y Tanouchi, TJ Lee, S Mori, JR Nevins, L You (2014). Linear population allocation by bistable switches in response to transient stimulation. **PLoS One** 9: e105408.

22. YY Wang, Y Wang, D Li, L Li, *W Zhang,* G Yao, Z Jiang, W Zheng (2014). IMP3 signatures of fallopian tube: a risk for pelvic serous cancers. **Journal of Hematology & Oncology** 7: 49.

23. **G Yao#**, C Tan, M West, JR Nevins, L You (2011). Origin of bistability underlying mammalian cell cycle entry. **Mol Syst Biol.** 7: 485.

24. J Wong, G Yao, JR Nevins, L You (2011). Viral-mediated noisy gene expression reveals biphasic E2f1 response to MYC. **Mol. Cell** 41: 275-285.

25. TJ Lee, G Yao, DC Bennett, JR Nevins, L You (2010). Stochastic E2F activation and reconciliation of phenomenological cell-cycle models. **PLoS Biol.** 8(9): e1000488.

26. S Mori, JT Chang, ER Andrechek, N Matsumura, T Baba, G Yao, JW Kim, M Gatza, S Murphy, JR Nevins (2009). Anchorage-independent cell growth signature identifies tumors with metastatic potential. **Oncogene** 28: 2796-2805.

27. G Yao, TJ Lee, S Mori, JR Nevins, L You (2008). A bistable Rb-E2F switch underlies the restriction point. **Nature Cell Biol.** 10: 476-482.

28. TJ Lee, G Yao, JR Nevins, L You (2008). Sensing and integration of ERK and PI3K signals by Myc. **PLoS Compt Biol.** 4(2): e1000013.

29. S Mori, R Rempel, JT Chang, G Yao, A Lagoo, JR Nevins (2008). Utilization of pathway signatures to reveal distinct types of B-lymphoma in the Eμ-myc model and human diffuse large B-cell lymphoma. **Cancer Research** 68: 8525-8534.

30. AH Bild, G Yao, JT Chang, Q Wang, A Potti, D Chasse, MB Joshi, D Harpole, JM Lancaster, A Berchuck, JA Olson Jr, JR Marks, HK Dressman, M West, JR Nevins (2006). Oncogenic pathway signatures in human cancers as a guide to targeted therapies. **Nature** 439: 353-357.

31. M Delong, G Yao, Q Wang, A Dobra, EP Black, JT Chang, AH Bild, M West, JR Nevins, HK Dressman (2005). DIG – a system for gene annotation and functional discovery. **Bioinformatics** 21: 2957-2959.

32. A Dobra, C Hans, B Jones, JR Nevins, G Yao, M West (2004). Sparse graphical models for exploring gene expression data. **Journal of Multivariate Analysis** 90: 196-212.

33. G Yao, M Craven, N Drinkwater, CA Bradfield (2004). Interaction networks in yeast define and enumerate the signaling steps of the vertebrate aryl hydrocarbon receptor. **PLoS Biol.** 2: 355-367.

34. WK Chan, G Yao, YZ Gu, CA Bradfield (1999). Cross-talk between the aryl hydrocarbon receptor and hypoxia inducible factor signaling pathways: Demonstration of competition and compensation. **J. Biol. Chem.** 274: 12115-12123.

Reviews and Book Chapters:

35. **G Yao#** (2024). Quiescence-Origin Senescence: A New Paradigm in Cellular Aging. **Biomedicines** 12:1837

36. *MY Wei*, **G Yao#** (2024). Modeling the Depth of Cellular Dormancy from RNA-sequencing data (2024). **Methods Mol Biol.** 2811:123-135

37. **G Yao#***,* J Dhawan**#**, AR Barri**#** (2022). Cellular dormancy—State determination and plasticity. **Front. Cell Dev. Biol.** 10:984347

38. *K Fujimaki,* **G Yao#** (2020). Cell dormancy plasticity: quiescence deepens into senescence through a dimmer switch. **Physiol Genomics**. 52:558-562.

39. *K Fujimaki,* **G Yao#** (2018). Crack the state of silence: tune the depth of cellular quiescence for cancer therapy. **Mol Cell Oncol.** 5:1, e1403531.

40. *J Kwon, X Wang,* **G Yao#** (2017). Study Quiescence Heterogeneity by Coupling Single-Cell Measurements and Computer Modeling. **Methods Mol Biol.** 1686:287-299.

41. *W Zhang^, L Wei^,* L Li^, B Yang, B Kong, **G Yao#**, W Zheng# (2015). Ovarian serous carcinogenesis from tubal secretory cells. **Histol. Histopathol.** 30: 1295-1302.

42. **G Yao#** (2014). Modeling mammalian cellular quiescence**. Interface Focus** 4: 20130074.

43. *C Chen,* J Li, **G Yao#**, SK Chambers, W Zheng (2013). Tubal origin of ovarian low-grade serous carcinoma. **Am J Clin Exp Obstet Gynecol** 1:31-36.

44. TJ Lee, G Yao, L You (2012). Cell cycle transition: principles of the restriction point. In: Encyclopedia of Systems Biology (Dubitzky W., Wolkenhauer O., Cho K., Yokota H., Eds.), Springer.

45. J Wong, G Yao, JR Nevins, L You (2011). Using noisy gene expression mediated by engineered adenovirus to probe signaling dynamics in mammalian cells. **Methods Enzymol.** 497:221-37.

46. G Yao, EB Harstad, CA Bradfield (2003). The Ah receptor. In: PAS Proteins: Regulators and Sensors of Development and Physiology (S. Crews, Ed.). Kluwer Academic Publishers, Boston, MA, p149-182.

CONFERENCES/SCHOLARLY PRESENTATIONS

Invited Departmental Seminars

2024 Joint Biology Seminar, Mol. Cell Biol., Univ. of Arizona, Tucson, AZ
2022 Computational Medicine Program, University of North Carolina at Chapel Hill, NC
2021 Arizona Cancer Center, Univ. of Arizona, Tucson, AZ
2017 Department of Basic Medical Sciences, UA College of Medicine – Phoenix, AZ
2016 Arizona Cancer Center, Univ. of Arizona, Tucson, AZ
2016 Department of Biochemistry, University of California, Riverside, CA
2016 Department of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH
2016 Systems and Synthetic Biology Seminar Series, University of California, Davis, CA
2015 Centre for Integrative Systems Biology, University of Oxford, Oxford, UK
2015 Molecular Cell Sciences Research Centre, St. George's, University of London, UK
2015 Institute of Molecular and Cell Biology, Biopolis-A*STAR, Singapore
2015 Department of Mathematics, Konkuk University, Seoul, South Korea
2015 Center for Quantitative Biology, Peking University, Beijing, China
2015 School of Life Sciences, Univ. of Science and Technology of China, Hefei, China
2015 Institute of Biophysics, Nanjing University, Nanjing, China
2015 Department of Mol. Cell and Develop. Biology (Coller Group), UCLA, Los Angeles, CA
2014 School of Information: Science, Technology, and Arts, Univ. of Arizona, Tucson, AZ
2014 Program in Applied Mathematics, Univ. of Arizona, Tucson, AZ
2013 VT Life Sciences Seminar Series, Virginia Tech, Blacksburg, VA
2013 Program in Applied Mathematics, Univ. of Arizona, Tucson, AZ
2012 School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ
2011 CAS-MPG Partner Institute for Comput. Biology, Chinese Academy of Sci., Shanghai, China
2011 Dept. of Bioinformatics and Biostatistics, Shanghai Jiao Tong Univ., Shanghai, China
2011 School of Information: Science, Technology, and Arts, Univ. of Arizona, Tucson, AZ
2011 Program in Applied Mathematics, Univ. of Arizona, Tucson, AZ
2011 Arizona Cancer Center, Univ. of Arizona, Tucson, AZ

Conference Presentations

2024 Forbeck Forum on Cellular Quiescence and Tumor Dormancy (*Invited talk*). Denver, CO
2023 Ginny L. Clements Breast Cancer Research Institute Symposium (*Invited talk*). Tucson, AZ
2019 The 13th annual qBio Conference (Contributed talk). San Francisco, CA
2018 The 10th Salk Institute Cell Cycle Meeting (Contributed talk). La Jolla, CA
2017 MBI Workshop on Hybrid Multi-Scale Modeling and Validation (*Invited talk*), OSU, OH
2017 Single Cell Analysis & Single Molecule Analysis (*Invited talk*), San Diego, CA
2017 The 18th International Conf. on Systems Biol. (Contributed talk). Virginia Tech, Blacksburg, VA
2017 Gordon Research Conference: Cell Growth and Proliferation (Poster). West Dover, VT
2016 Workshop on Quantifying Cell Dynamics (*Invited talk*). Half Moon Bay, CA
2016 11th AIMS Conf. on Dynamical Systems and Applications (*Invited talk*). Orlando, FL
2015 The 9th Salk Institute Cell Cycle Meeting (Contributed talk), La Jolla, CA
2015 The 9th qBio Conference (Poster). Virginia Tech, Blacksburg, VA
2014 CSHL Meeting on the Cell Cycle (Poster). Cold Spring Harbor Laboratory, NY
2013 International Conf. on Comput. Cell Biol. (Contributed talk). Virginia Tech, Blacksburg, VA
2013 CSHL Meeting on Comput. Cell Biol. (Contributed talk). Cold Spring Harbor Laboratory, NY
2013 The 1st annual Winter qBio Meeting (Contributed talk). Honolulu, HI
2011 Summer Symposium on Molecular Biophysics and Interdisciplinary Sciences (*Invited talk*). Univ. of Science and Technology of China, Hefei, China
2011 CSHL Meeting on Comput. Cell Biol. (Contributed talk). Cold Spring Harbor Laboratory, NY

GRANTS

Ongoing Research Support

04/01/2024 - 03/31/2027
Arizona Biomedical Research Centre, Investigator Grants (IG) RFGA2023-008-09
Developing Personalized Ovarian Cancer Risk Prediction through Circulating miRNA Biomarkers in 'Family-History High-Risk' Women
PIs: Setsuko Chambers & Guang Yao (16.6% effort)

12/01/2021 – 11/30/2025
NIH, 1R01DK130971
Sphingolipids, Dietary Fatty Acids, and Intestinal Pathophysiology
PI: Ashley Snider; Co-I: Richard Simpson, Curtis Thorne, Guang Yao (5.0% effort)

08/01/2023 – 07/31/2025
University of Arizona Cancer Center, Biomarker Discovery Research Award
Circulating miRNA Biomarkers for Ovarian Cancer Risk Prediction: A Proof-of-Principle Study
PI: Guang Yao; Co-PI: Setsuko Chambers

Pending Research Support

06/01/2025 - 05/31/2030
NIH/NIGMS, 1R01GM151371-01A1
Identifying and modulating mechanistic cellular paths of quiescence deepening and transition to senescence
PI: Guang Yao (16.6% effort), Co-I: Jianhua Xing
Score: 4th percentile

05/01/2025 - 04/30/2028
Arizona Biomedical Research Centre
Preventing Lethal Recurrence of Metastatic Breast Cancer: Modeling Heterogeneous Microenvironments and Targeting Dormant Cancer Cells Using a Novel Lung-on-a-Chip
PI: Guang Yao (8.3% effort), Co-Is: Linan Jiang & Yitshak Zohar

Completed Research Support

03/01/2021 – 02/29/2025
NSF, DBI-2034210
IIBR Instrumentation: All Reflective Microscopy for Biological Research
PI: Ron Liang; Co-PI: Guang Yao (8.3% effort)

09/01/2020 – 08/31/2024
NSF, DBI-2016035
IIBR Multidisciplinary: Multiplexed live imaging with hyperspectral light-sheet microscopy
PI: Leilei Peng; Co-PI: Guang Yao (8.3% effort)

07/01/2023 – 07/31/2024
University of Arizona, Research Development Grant
Epitranscriptomic analysis of a novel quiescence-to-senescence transition in cellular aging
PI: Guang Yao; Co-PI: Hongxu Ding

08/01/2022 – 07/30/2023
University of Arizona Cancer Center Pilot Award
Model metastatic breast cancer dormancy in a lung-on-a-chip microenvironment
PI: Guang Yao; Co-PI: Yitshak Zohar

01/14/2022 – 07/31/2022
Bio5 Institute, University of Arizona (Bio5 Rapid Grant)
Lipidomic and proteomic characterization of a novel quiescence-to-senescence path in aging and regeneration
PI: Guang Yao; Co-I: Ski Chilton

09/15/2015 – 08/31/2020
NSF/NIH (DMS/NIGMS Joint Initiative at the Interface of the Biological and Mathematical Sciences), DMS-1463137
Collaborative Research: Modeling the Coupling of Epigenetic and Transcriptional Regulation
PI: Guang Yao (8.3% effort)

09/01/2015 – 08/31/2019
NSF, DBI-1455630
IDBR: TYPE A: Quantitative Polarization and Phase Microscope for label-free imaging of live cell and tissue dynamics
PI: Rongguang Liang; Co-PIs: Stanley Pau, Guang Yao (4.2% effort)

06/30/2018 – 07/31/2019
Univ. of Arizona, Accelerate for Success
Mechanisms of Cancer Drug Resistance and Sensitivity in Breast Cancer Metastasis
PIs: Joyce Schroeder/Andrew Paek/Guang Yao

07/15/2014 – 01/14/2019
DARPA, WF911NF-14-1-0395
REACH: Reading and Assembling Contextual and Holistic Mechanisms from Text
PI: Mihai Surdeanu; Co-PIs: Kobus Barnard, Angus Forbes, Ryan Gutenkunst, Clayton Morrison, Guang Yao (8.3% effort)

08/01/2014 – 07/31/2018
NSF, DMS-1418172
Collaborative Research: Semiparametric ODE Models for Complex Gene Regulatory Networks
PI: Guang Yao (4.2% effort); Co-PI: Hao Helen Zhang

04/01/2013 – 03/31/2016
International Sci & Tech Cooperation Program of China (ISTCP), 2013DFA30900
Antitumor Effective Components and Mechanisms of Ganoderma Lucidum and Coix Seed Extracts
PI: Ye Li; Co-PIs: Jianhua Xu, Guang Yao

07/01/2013 – 06/30/2015
Arizona Cancer Center & Better than Ever Group (Basic-Clinical Partnerships Research Grant)
Molecular Mechanisms of Tubal Secretory Cell Expansion and Biomarkers for Ovarian Cancer Detection
PIs: Guang Yao, Wenxin Zheng

04/01/2012 – 03/31/2013
Bio5 Institute, University of Arizona (Bio5 Pilot Projects Award)
Hyperspectral Fluorescence Single-Cell Analysis of Cell Fate Decisions
PIs: Leilei Peng, Guang Yao

07/01/2011 – 06/01/2012
American Cancer Society, IRG 7400134
Understanding Life and Death Decisions of Individual Cells
PI: Guang Yao

07/01/2011 – 06/01/2012
University of Arizona Foundation (Faculty Seed Grant)
Single-Cell Experimental Platform for Cancer Systems Biology
PI: Guang Yao

Completed Teaching Support

12/01/2012 – 06/30/2013
University of Arizona (Online Education Project)
Developing an Online Summer Course: Cancer Basics (MCB 175)
PI: Joyce Schroeder; Co-I: Guang Yao

AWARDS (Past 5 years)

2023 Outstanding Teaching Award, MCB Dept., Univ. of Arizona

Teaching and Advising

Extent of Teaching

Courses taught		(* 1 session = 50 minutes)
2012, Spring	Genetic and Molecular Networks (MCB 546)	20 students, 10 sessions
2012, Spring	Advanced Topics in Cancer Biology (CBIO 553)	8 students, 5 sessions
2012, Fall	Biology of Cancer, Honors section (MCB 302H)	13 students, 16 sessions
2013, Spring	Genetic and Molecular Networks (MCB 546)	24 students, 22 sessions
2014, Spring	Molecular Genetics (MCB 304)	199 students, 30 sessions
2015, Spring	Genetic and Molecular Networks (MCB 546)	19 students, 22 sessions
2015, Spring	Molecular Genetics (MCB 304)	188 students, 30 sessions
2016, Spring	Genetic and Molecular Networks (MCB 546)	15 students, 22 sessions
2016, Spring	Molecular Genetics (MCB 304)	212 students, 30 sessions
2016, Fall	Biology of Cancer (MCB 325)	137 students, 25 sessions
2016, Fall	Biology of Cancer, Honors section (MCB 325H)	13 students, 16 sessions
2017, Spring	Genetic and Molecular Networks (MCB 546)	20 students, 22 sessions
2017, Fall	Biology of Cancer (MCB 325)	95 students, 25 sessions
2017, Fall	Topics in Molecular Biology (MCB 595A)	29 students, 16 sessions
2018, Spring	Genetic and Molecular Networks (MCB 546)	16 students, 22 sessions
2020, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	40 students, 45 sessions
2021, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	40 students, 45 sessions
2021, Spring	Stem Cells and Human Health (MCB 295d)	18 students, 15 sessions
2021, Fall	Molecular and Cellular Biology Seminar (MCB 596)	48 students, 16 sessions
2022, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	42 students, 45 sessions
2022, Fall	Molecular and Cellular Biology Seminar (MCB 596)	48 students, 16 sessions
2023, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	41 students, 45 sessions
2024, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	40 students, 45 sessions
2024, Spring	Genetic and Molecular Networks (MCB 546)	24 students, 20 sessions
2025, Spring	Bioinfo & Functional Genomics (MCB 416a/516a)	40 students, 45 sessions
2025, Spring	Genetic and Molecular Networks (MCB 546)	22 students, 20 sessions

Guest lectures		
2011, Fall	Recent Advances in Genetics (GENE 670)	15 students, 1 session
2012, Spring	Introductory Biology, Honors section (MCB 181H)	15 students, 1 session
2012, Spring	Key Concepts in Quantitative Biology (MCB 315)	15 students, 1 session
2014, Fall	Topics in Mathematics (MATH 596A)	5 students, 2 sessions
2015, Summer	Topics in Systems Biology (Peking Univ., China)	60 students, 2 sessions
2022, Spring	Case Studies in Applied Mathematics (Math 586B)	10 students, 1 session
2022, Fall	Case Studies in Applied Mathematics (Math 586A)	10 students, 1 session

Individual Student Contact

Collaborations with undergraduate students on research projects

*Thesis directed; ^Honors program; #Independent studies

#^Aishan Shi	Spring 2011-Spring 2013	Biochem/MCB/English
#^Colleen Carlotto	Summer 2011-Spring 2012	Chemical Engineering
#^Benjamin Horn	Fall 2011-Summer 2012	Biology/Physiology
*#^Eddie Khav	Spring 2012-Spring 2013	Biochem
#^Clayton Lanham	Summer 2012-Fall 2012	Biochem
#Alexa Wollach	Summer 2012-Spring 2013	MCB
^Xia Shuang Sun	Spring 2013	MCB/pre-Pharmacy
^Thomas Bello	Spring 2013-Fall 2013	Bio Engineering/Math
^Ajay Raikhelkar	Summer 2013	Physiology
^Kelly Shim	Fall 2013	MCB
*#^Nick Everetts	Fall 2013-Spring 2015	Biochem
#Louie Garcia	Fall 2014	MCB
*#^Matt Miller	Fall 2014-Summer 2017	MCB/CS
*#^Jun-young Kim	Summer 2015-Fall 2015	MCB
*#^India Williams	Fall 2015-Summer 2017	EEB
Viraj Patel	Fall 2016-Spring 2017	MCB
^Caroline King	Fall 2017-Spring 2019	Physiology
Nathan Jackson	Fall 2017	MCB
^Amelia Lappenbusch	Fall 2017-Spring 2020	Biology
*#^Austin Lipinski	Spring 2018-Spring 2019	MCB/Biochem
*#^Cerys Arnold	Spring 2018	MCB
Muhammad Khan	Spring 2018-Spring 2019	(Freshman)
Amy (Huirong) Chai	Spring 2019-Fall 2019	Math
Shon Alimukhamedov	Spring 2019-Fall 2019	MCB
Andrew Turturo	Fall 2019-Spring 2020	Biochem
Annie Addison	Summer 2020-Spring 2021	Biology
Yandi Xu	Summer2020-Fall 2020	Biology
^Nicole Hanover	Fall 2020-Spring 2023	MCB
*#^Michelle Wei	Fall 2020-Spring 2024	Math/Biochem
*#^Eric Lu	Fall 2020-Spring 2023	MCB/SDS
Jack Tanner	Spring 2022	MCB
#Jasmine Meredith	Summer 2022	MCB
#Abhimanyu Sharma	Fall 2022-Spring 2023	Applied Biosciences (MS)
#Bridget Glass	Spring 2023-Summer 2024	MCB
Anekha Pallamreddy	Spring 2024-	Math/Medicine
#Coltrin Sparks	Spring 2024-	Biochem
*#^Aidan Smith	Spring 2024-	MCB

Robyn Almario	Summer 2024-Fall 2024	Public Health
#^Sydney Cupisz	Summer 2024-	MCB/Neurosci
#^Mara Cecil	Fall 2024-Spring 2025	MCB
#Trisha Dang	Fall 2024-	MCB
Partha Panguluri	Fall 2024-	Data Sci (MS)
Bryan Jacobs	Fall 2024-	Data Sci (MS)
Ravleen Chadha	Spring 2025-	Data Sci (MS)
Aryan Majid	Spring 2025-	MCB

Collaborations with graduate students on research projects (lab rotations)

Xuezhen Ge	Fall 2012	ABBS
Sarah Jungeun Kwon	Fall 2012	ABBS
Daniel Scott	Fall 2012	ABBS
Arron Sullivan	Fall 2012	ABBS
Kun Xiong	Fall 2013	ABBS
Soumya Rajan	Fall 2013	ABBS
Teal Brechtel	Fall 2013	ABBS
Candy Rivas	Fall 2014	ABBS
Yuanzhang Yang	Fall 2014	ABBS
Kotaro Fujimaki	Fall 2015	ABBS
Hong Zhang	Spring 2016	ABBS
Hao Zhang	Fall 2018	ABBS
Jeaho Lim	Fall 2020	Genetics
Qiong Pan	Fall 2021	ABBS
Izzy Viney	Spring 2024	Genetics
Rodrigo De La Vega	Spring 2025	ABBS
Uma Vrudhula	Spring 2025	ABBS
Eduardo Arrivillaga	Spring 2025	Genetics

Mentoring and Career counseling (other mentees)

Chenglu Chen	01/2011-11/2013	Postdoc
Geoff Mitchell	02/2011-07/2013	Postdoc
Jian Dai	09/2014-01/2018	Postdoc
Xia Wang	01/2015-08/2021	Postdoc
Kimiko Della Croce	07/2011-present	Assistant Staff Scientist
Eddie Khav	08/2013-07/2014	Research Technician
Nick Everetts	06/2015-Summer 2016	Research Technician
Qiong Pan	01/2019-08/2021	Research Technician
Wenjing (Nicole) Zhang	08/2013-08/2014	Graduate Exchange Student
Linxuan (Lisa) Wei	09/2014-08/2015	Graduate Exchange Student
Bi Liu	02/2018-06/2020	Graduate Exchange Student

Carly Fife	Summer 2013/Spring 2014	High School Intern (KEYS Program)
Kara Thompson	Summer 2015	High School Intern (KEYS Program)
Vijeeth Guggilla	Summer 2016	High School Intern (KEYS Program)
Christopher Lehman	Summer 2017, 2018	High School Intern (KEYS Program)
Geethika Ameneni	Summer 2018	High School Intern (KEYS Program)
Rishabh Guttal	Summer 2019	High School Intern (KEYS Program)
Michael Wang	Summer 2021	High School Intern (KEYS Program)
Izma syed	Summer 2021	High School Intern (KEYS Program)
Mallory O'Brien	Summer 2024	High School Intern (KEYS Program)
Sophia Peng	Summer 2024	High School Intern
Ryon Tom	Summer 2025	High School Intern (KEYS Program)

Dissertation/thesis directed and in progress

Sarah Jungeun Kwon	Spring 2013-Summer 2017	BMCB, Ph.D
Kotaro Fujimaki	Spring 2016-Spring 2021	BMCB, Ph.D
Jun-young Kim	Spring 2016-2018	MCB, MS
Sateesh Peri	Fall 2020-Summer 2021	Genetics, MS
Gabby Mendez	Fall 2020-Spring 2022	MCB, MS
Qiong Pan	Spring 2022-present	BMCB, Ph.D
Nicole Hanover	Fall 2023-Spring 2024	MCB, MS
Saheed Ganiyu (co-mentor)	Fall 2024-present	Applied Math, Ph.D
Ruidong Chen (co-mentor)	Fall 2024-present	Statistics & Data Sci, Ph.D
Happiness Obadiah	Fall 2024-present	Applied Biosciences, MS
Rodrigo De La Vega	Spring 2025-present	BMCB, Ph.D
Eduardo Arrivillaga	Spring 2025-present	Genetics, MS

Dissertation/thesis committees

Joseph Kunkel (Genetics PhD candidate)	Fall 2012-Fall 2015
Ivan Dimitrov (BMCB PhD candidate)	Fall 2012-Spring 2018
Navneeta Kaul (MCB, MS)	Fall 2012
Scott Daniel (BMCB PhD candidate)	Fall 2013-Summer 2017
Arron Sullivan (BMCB PhD candidate)	Fall 2013-Spring 2019
Xuezhen Ge (BMCB PhD candidate)	Fall 2013-Summer 2014
Michael Lien (AMP, MS)	Spring 2014-Fall 2016
Guanhui Wu (AMP, MS)	Spring 2014-Summer 2014
Kun Xiong (BMCB PhD candidate)	Fall 2014-Summer 2019
Soumya Rajan (CBIO PhD candidate)	Fall 2014-Fall 2015
Katie Williams (Applied Math PhD candidate)	Fall 2014-Spring 2016
Julie Huynh (AMP, MS)	Fall 2014-Fall 2015
Kevin Gee (AMP, MS)	Fall 2016-Summer 2017
Anoop Hunjan (AMP, MS)	Summer 2017-Fall 2017

Kathleen Lasick (BMCB PhD candidate)	Summer 2017-Fall 2022
Ben Atwell (BMCB PhD candidate)	Spring 2018-Fall 2019
Carly Wiersma (CBIO PhD candidate)	Fall 2018-Fall 2021
Jacob Cecil (BMCB PhD candidate)	Fall 2018-Fall 2023
Julie Huynh (MD/PhD condidate)	Fall 2018-Fall 2021
Angelica Escoto (BMCB PhD candidate)	Fall 2019-Summer 2024
Minhao Chen (Applied Biosciences, MS)	2019-2021
Robert Porter (Applied Biosciences, MS)	2019
Jiawen Yang (CBIO PhD candidate)	Spring 2021-Spring 2025
Rosa Luna (Animal Sci PhD candidate)	Spring 2021-Summer 2024
Jack Blomberg (Animal Sciences, MS)	2021
Taylor Wingfield (Applied Biosciences, MS)	2021
Annalisa Medina (Applied Biosciences, MS)	2021
Hamza Islam Butt (Biostat PhD candidate)	Fall 2021-present
Kenneth Ly (AMP, MS)	2021-2022
Lucas Harrell (BMCB PhD candidate)	Spring 2022-present
Jiacheng Ding (CMM PhD candidate)	Fall 2022-present
Emily Ngu (AMP, MS)	Fall 2022-Fall 2024
Ryan Hecksel (BMCB PhD candidate)	Fall 2022-present
Xiang Zhang (Biosystems/BAT PhD candidate)	Fall 2022-Fall 2023
Cristina Padilla (BMCB PhD candidate)	Fall 2022-present
Ziyuan Wang (Pharmacy PhD candidate)	Spring 2023-present
Yanghuan Yu (BMCB PhD candidate)	Spring 2023-present
Danielle DiFranco (CBIO PhD candidate)	Fall 2023-present
Ong Jing Han (Genetics, MS)	Fall 2023-Spring 2024
Kaiwen Huang (Genetics, PhD candidate)	Fall 2023-present
Chenbo Sun (Biostatistics, PhD candidate)	Fall 2023-present
Amy Fan (Statistics & DS, MS)	Fall 2024-present
Ryan Bowser (MCB AMP/MS)	Fall 2024-Spring 2025
Raymond Hon (BMCB, PhD candidate)	Fall 2024-present
Mohammed Jalloh (BMCB, PhD candidate)	Fall 2024-present
Md Abdur Rahman Apu (CMM, PhD candidate)	Spring 2025-present

<u>Mentorship committees</u>

Kelvin Pond (Postdoctoral fellow, Thorne/Paek Lab)	Fall 2021-Fall 2023