

H. Courtney Hodges, Ph.D.

Citizenship: USA

Languages: English (native), Spanish (advanced, CEFR scale C1)

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Education and Academic Positions

- 2017-present Assistant Professor, Department of Molecular & Cellular Biology, Baylor College of Medicine
Assistant Professor (adjunct), Department of Bioengineering, Rice University
Member, Center for Precision Environmental Health, and Dan L Duncan Comprehensive Cancer Center
- 2017–2023 Member, MD Anderson Center for Cancer Epigenetics
- 2010-2017 Postdoctoral fellow, Departments of Pathology and Developmental Biology,
Stanford University School of Medicine
Advisor: Gerald R. Crabtree, MD (HHMI/Stanford)
- 2003-2009 Ph.D., Biophysics, University of California at Berkeley
Dissertation title: “Single-molecule studies of gene expression”
Advisor: Carlos J. Bustamante (HHMI/UC Berkeley)
- 1999-2003 B.S., Biochemistry, minor in Mathematics, Texas A&M University
Graduated *summa cum laude* with University Honors distinction

Other Positions

- 2023-present Consultant, Avenge Bio, Inc.
- 2000-2003 Linux and IT Administrator, Texas Digital Systems (now NCR), College Station, TX
- 1996-2006 Linux and Network Administrator, Westech Computer Systems (now Infassure), Dallas, TX

Grant Support as Principal Investigator

1. Adrienne Helis Malvin Medical Research Foundation, 2022
“SWI/SNF inhibition as precision medicine against AML”
Total budget: \$675,000
2. NIH/National Cancer Institute (NCI) R01, R01CA272769, 2022
“Mechanisms and small-molecule targeting of SWI/SNF activity in neuroblastoma”
Total budget: \$2,841,265
3. NIH/National Institute of General Medical Sciences (NIGMS), R35GM137996, 2020
“Determinants of genome-wide activity and specificity of SWI/SNF family chromatin remodeling”
Total budget: \$1,991,600
4. The Mark Foundation for Cancer Research, 2020
“Expanding bifunctional molecules to restore function after SWI/SNF loss”
Total budget: \$230,000
5. The V Foundation, 2018
“Targeting SMARCA4 (Brg1) addiction in high-risk neuroblastoma”
Total budget: \$200,000
6. Gabrielle’s Angel Foundation for Cancer Research Grant, 2017
“Revealing novel SMARCA4-related dependencies in mixed-lineage leukemia”
Total budget: \$225,000
7. Cancer Prevention & Research Institute of Texas (CPRIT), RR170036, 2017
Recruitment award for first-time tenure-track faculty
Total budget: \$2,000,000
8. NIH/National Cancer Institute (NCI) K99/R00 Pathway to Independence Award, R00CA187565, 2014
“Dynamic effects of cancer mutations on the mammalian SWI/SNF ATPase Brg”

Total budget: \$1,088,064

Publications

1. Cermakova K, Hodges HC. Interaction modules that impart specificity to disordered protein. *Trends Biochem Sci.* 2023 May;48(5):477-490. doi: 10.1016/j.tibs.2023.01.004. Epub 2023 Feb 6. PMID: 36754681; PMCID: PMC10106370.
* Selected for cover
2. Chambers C, Cermakova K, Chan YS, Kurtz K, Wohlan K, Lewis AH, Wang C, Pham A, Dejmek M, Sala M, Loeza Cabrera M, Aguilar R, Nencka R, Lacorazza HD, Rau RE, Hodges HC. SWI/SNF Blockade Disrupts PU.1-Directed Enhancer Programs in Normal Hematopoietic Cells and Acute Myeloid Leukemia. *Cancer Res.* 2023 Apr 4;83(7):983-996. doi: 10.1158/0008-5472.CAN-22-2129. PMID: 36662812; PMCID: PMC10071820.
3. Cermakova K, Veverka V, Hodges HC. The TFIIIS N-terminal domain (TND): a transcription assembly module at the interface of order and disorder. *Biochem Soc Trans.* 2023 Feb 27;51(1):125-135. doi: 10.1042/BST20220342. PMID: 36651856; PMCID: PMC9987994.
4. Chen M, Kim B, Jarvis MI, Fleury S, Deng S, Nouraein S, Butler S, Lee S, Chambers C, Hodges HC, Szablowski JO, Suh J, Veiseh O. Immune profiling of adeno-associated virus response identifies B cell-specific targets that enable vector re-administration in mice. *Gene Ther.* 2023 May;30(5):429-442. doi: 10.1038/s41434-022-00371-0. Epub 2022 Nov 14. PMID: 36372846; PMCID: PMC10183056.
5. Cermakova K, Demeulemeester J, Lux V, Nedomova M, Goldman SR, Smith EA, Srb P, Hexnerova R, Fabry M, Madlikova M, Horejsi M, De Rijck J, Debysier Z, Adelman K, Hodges* HC, Veverka* V. A ubiquitous disordered protein interaction module orchestrates transcription elongation. *Science.* 2021 Nov 26;374(6571):1113-1121. doi: 10.1126/science.abe2913. Epub 2021 Nov 25. PMID: 34822292; PMCID: PMC8943916.
* Corresponding author
6. Doloff JC, Veiseh O, de Mezerville R, Sforza M, Perry TA, Haupt J, Jamiel M, Chambers C, Nash A, Aghlari-Fotovat S, Stelzel JL, Bauer SJ, Neshat SY, Hancock J, Romero NA, Hidalgo YE, Leiva IM, Munhoz AM, Bayat A, Kinney BM, Hodges HC, Miranda RN, Clemens MW, Langer R. The surface topography of silicone breast implants mediates the foreign body response in mice, rabbits and humans. *Nat Biomed Eng.* 2021 Oct;5(10):1115-1130. doi: 10.1038/s41551-021-00739-4. Epub 2021 Jun 21. PMID: 34155355.
7. Surman DR, Xu Y, Lee MJ, Trepel J, Brown K, Ramineni M, Splawn TG, Diggs LP, Hodges HC, Davis JL, Lee HS, Burt BM, Ripley RT. Therapeutic Synergy in Esophageal Cancer and Mesothelioma Is Predicted by Dynamic BH3 Profiling. *Mol Cancer Ther.* 2021 Aug;20(8):1469-1480. doi: 10.1158/1535-7163.MCT-20-0887. Epub 2021 Jun 4. PMID: 34088830; PMCID: PMC8338890.
8. Karki M, Jangid RK, Anish R, Seervai RNH, Bertocchio JP, Hotta T, Msaouel P, Jung SY, Grimm SL, Coarfa C, Weissman BE, Ohi R, Verhey KJ, Hodges HC, Burggren W, Dere R, Park IY, Prasad BVV, Rathmell WK, Walker CL, Tripathi DN. A cytoskeletal function for PBRM1 reading methylated microtubules. *Sci Adv.* 2021 Apr 2;7(14):eabf2866. doi: 10.1126/sciadv.abf2866. PMID: 33811077.
9. Arabzade A, Zhao Y, Varadharajan S, Chen HC, Jessa S, Rivas B, Stuckert AJ, Solis M, Kardian A, Tlais D, Golbourn BJ, Stanton AJ, Chan YS, Olson C, Karlin KL, Kong K, Kupp R, Hu B, Injac SG, Ngo M, Wang PR, De León LA, Sahm F, Kawauchi D, Pfister SM, Lin CY, Hodges HC, Singh I, Westbrook TF, Chintagumpala MM, Blaney SM, Parsons DW, Pajtlar KW, Agnihotri S, Gilbertson RJ, Yi J, Jabado N, Kleinman CL, Bertrand KC, Deneen B, Mack SC. ZFTA-RELA Dictates Oncogenic Transcriptional Programs to Drive Aggressive Supratentorial Ependymoma. *Cancer Discov.* 2021 Sep;11(9):2200-2215. doi: 10.1158/2159-8290.CD-20-1066. Epub 2021 Mar 19. PMID: 33741710; PMCID: PMC8418998.
10. Van Belle S, El Ashkar S, Čermáková K, Matthijssens F, Goossens S, Canella A, Hodges CH, Christ F, De Rijck J, Van Vlierberghe P, Veverka V, Debysier Z. Unlike Its Paralog LEDGF/p75, HRP-2 Is Dispensable for MLL-R Leukemogenesis but Important for Leukemic Cell Survival. *Cells.* 2021 Jan 19;10(1):192. doi: 10.3390/cells10010192. PMID: 33477970; PMCID: PMC7835958.
11. Sood S, Weber CM, Hodges HC, Krokhotin A, Shalizi A, Crabtree GR. CHD8 dosage regulates transcription in pluripotency and early murine neural differentiation. *Proc Natl Acad Sci U S A.* 2020 Sep 8;117(36):22331-22340. doi: 10.1073/pnas.1921963117. Epub 2020 Aug 24. PMID: 32839322; PMCID: PMC7486765.
12. Hao Y, England JP, Bellucci L, Paci E, Hodges HC, Taylor SS, Maillard RA. Activation of PKA via asymmetric allosteric coupling of structurally conserved cyclic nucleotide binding domains. *Nat Commun.* 2019 Sep 4;10(1):3984. doi: 10.1038/s41467-019-11930-2. PMID: 31484930; PMCID: PMC6726620.
13. Smith EA, Hodges HC. The Spatial and Genomic Hierarchy of Tumor Ecosystems Revealed by Single-Cell Technologies. *Trends Cancer.* 2019 Jul;5(7):411-425. doi: 10.1016/j.trecan.2019.05.009. Epub 2019 Jun 18. PMID: 31311656; PMCID: PMC6689240.
14. Msaouel P, Hong AL, Mullen EA, Atkins MB, Walker CL, Lee CH, Carden MA, Genovese G, Linehan WM, Rao P, Merino MJ, Grodman H, Dome JS, Fernandez CV, Geller JI, Apolo AB, Daw NC, Hodges HC, Moxey-Mims M, Wei D, Bottaro DP, Staehler M, Karam JA, Rathmell WK, Tannir NM. Updated Recommendations on the Diagnosis, Management, and Clinical Trial

- Eligibility Criteria for Patients With Renal Medullary Carcinoma. *Clin Genitourin Cancer*. 2019 Feb;17(1):1-6. doi: 10.1016/j.clgc.2018.09.005. Epub 2018 Sep 12. PMID: 30287223; PMCID: PMC6348017.
15. Cermakova K, Hodges HC. Next-Generation Drugs and Probes for Chromatin Biology: From Targeted Protein Degradation to Phase Separation. *Molecules*. 2018 Aug 6;23(8):1958. doi: 10.3390/molecules23081958. PMID: 30082609; PMCID: PMC6102721.
 16. England JP, Hao Y, Bai L, Glick V, Hodges HC, Taylor SS, Maillard RA. Switching of the folding-energy landscape governs the allosteric activation of protein kinase A. *Proc Natl Acad Sci U S A*. 2018 Aug 7;115(32):E7478-E7485. doi: 10.1073/pnas.1802510115. Epub 2018 Jul 23. PMID: 30038016; PMCID: PMC6094112.
 17. Sharma S, Čermáková K, De Rijck J, Demeulemeester J, Fábry M, El Ashkar S, Van Belle S, Lepšík M, Tesina P, Duchoslav V, Novák P, Hubálek M, Srb P, Christ F, Řezáčová P, Hodges HC, Debyser Z, Veverka V. Affinity switching of the LEDGF/p75 IBD interactome is governed by kinase-dependent phosphorylation. *Proc Natl Acad Sci U S A*. 2018 Jul 24;115(30):E7053-E7062. doi: 10.1073/pnas.1803909115. Epub 2018 Jul 11. PMID: 29997176; PMCID: PMC6065015.
 18. Hodges HC, Stanton BZ, Cermakova K, Chang CY, Miller EL, Kirkland JG, Ku WL, Veverka V, Zhao K, Crabtree GR. Dominant-negative SMARCA4 mutants alter the accessibility landscape of tissue-unrestricted enhancers. *Nat Struct Mol Biol*. 2018 Jan;25(1):61-72. doi: 10.1038/s41594-017-0007-3. Epub 2017 Dec 11. PMID: 29323272; PMCID: PMC5909405.
 19. Stanton BZ, Hodges C, Crabtree GR, Zhao K. A General Non-Radioactive ATPase Assay for Chromatin Remodeling Complexes. *Curr Protoc Chem Biol*. 2017 Mar 2;9(1):1-10. doi: 10.1002/cpch.16. PMID: 28253434; PMCID: PMC5334659.
 20. Miller EL, Hargreaves DC, Kadoch C, Chang CY, Calarco JP, Hodges C, Buenrostro JD, Cui K, Greenleaf WJ, Zhao K, Crabtree GR. TOP2 synergizes with BAF chromatin remodeling for both resolution and formation of facultative heterochromatin. *Nat Struct Mol Biol*. 2017 Apr;24(4):344-352. doi: 10.1038/nsmb.3384. Epub 2017 Feb 27. PMID: 28250416; PMCID: PMC5395302.
 21. Stanton* BZ, Hodges* C, Calarco JP, Braun SM, Ku WL, Kadoch C, Zhao K, Crabtree GR. Smarca4 ATPase mutations disrupt direct eviction of PRC1 from chromatin. *Nat Genet*. 2017 Feb;49(2):282-288. doi: 10.1038/ng.3735. Epub 2016 Dec 12. PMID: 27941795; PMCID: PMC5373480.
* Contributed equally
 22. Hodges C, Kirkland JG, Crabtree GR. The Many Roles of BAF (mSWI/SNF) and PBAF Complexes in Cancer. *Cold Spring Harb Perspect Med*. 2016 Aug 1;6(8):a026930. doi: 10.1101/cshperspect.a026930. PMID: 27413115; PMCID: PMC4968166.
 23. Kadoch C, Hargreaves DC, Hodges C, Elias L, Ho L, Ranish J, Crabtree GR. Proteomic and bioinformatic analysis of mammalian SWI/SNF complexes identifies extensive roles in human malignancy. *Nat Genet*. 2013 Jun;45(6):592-601. doi: 10.1038/ng.2628. Epub 2013 May 5. PMID: 23644491; PMCID: PMC3667980.
 24. Hodges C, Crabtree GR. Dynamics of inherently bounded histone modification domains. *Proc Natl Acad Sci U S A*. 2012 Aug 14;109(33):13296-301. doi: 10.1073/pnas.1211172109. Epub 2012 Jul 30. PMID: 22847427; PMCID: PMC3421184.
 25. Hathaway NA, Bell O, Hodges C, Miller EL, Neel DS, Crabtree GR. Dynamics and memory of heterochromatin in living cells. *Cell*. 2012 Jun 22;149(7):1447-60. doi: 10.1016/j.cell.2012.03.052. Epub 2012 Jun 14. PMID: 22704655; PMCID: PMC3422694.
 26. Bintu L, Kopaczynska M, Hodges C, Lubkowska L, Kashlev M, Bustamante C. The elongation rate of RNA polymerase determines the fate of transcribed nucleosomes. *Nat Struct Mol Biol*. 2011 Nov 13;18(12):1394-9. doi: 10.1038/nsmb.2164. PMID: 22081017; PMCID: PMC3279329.
 27. Maillard RA, Chistol G, Sen M, Righini M, Tan J, Kaiser CM, Hodges C, Martin A, Bustamante C. ClpX(P) generates mechanical force to unfold and translocate its protein substrates. *Cell*. 2011 Apr 29;145(3):459-69. doi: 10.1016/j.cell.2011.04.010. PMID: 21529717; PMCID: PMC3686100.
 28. Hodges C, Bintu L, Lubkowska L, Kashlev M, Bustamante C. Nucleosomal fluctuations govern the transcription dynamics of RNA polymerase II. *Science*. 2009 Jul 31;325(5940):626-8. doi: 10.1126/science.1172926. PMID: 19644123; PMCID: PMC2775800.
 29. Wen JD, Lancaster L, Hodges C, Zeri AC, Yoshimura SH, Noller HF, Bustamante C, Tinoco I. Following translation by single ribosomes one codon at a time. *Nature*. 2008 Apr 3;452(7187):598-603. doi: 10.1038/nature06716. Epub 2008 Mar 9. PMID: 18327250; PMCID: PMC2556548.

Honors and Awards

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| 2023 | Accelerating Scientific Platforms and Innovative Research (ASPIRE) II Award, The Mark Foundation for Cancer Research |
| 2020 | ASPIRE Award, The Mark Foundation for Cancer Research |
| 2020 | Maximizing Investigator's Research Award (MIRA), NIH/NIGMS |
| 2018 | V Scholar Award, The V Foundation |
| 2018 | Medical Research Award, Gabrielle's Angel Foundation |
| 2017 | Cancer Prevention Research Institute of Texas (CPRIT) Faculty Scholar |
| 2016 | Holly and Gerald N. Wogan Award for Scientific Research Excellence, Aspen Cancer Conference |
| 2016 | Aspen Cancer Conference Fellow, The 31st Aspen Cancer Conference |

- 2016 Charles B. Carrington Memorial Prize, Stanford University School of Medicine
- 2015 AACR NextGen Star, American Association for Cancer Research
- 2014 K99/R00 Pathway to Independence Award, National Cancer Institute
- 2014 Best Talk, 37th Annual Stanford University Cancer Biology Conference
- 2012 American Cancer Society Postdoctoral Fellow (2012, financial support declined)
- 2012 National Research Service Award, National Institute of Child Health and Human Development
- 2003 Best Thesis in the Life Sciences, Texas A&M University
- 2003 Best Thesis Presentation in Life Sciences Group I, Texas A&M University
- 2003 Sigma-Genosys Outstanding Biochemistry Student Award, Texas A&M University
- 2003 University Honors Distinction, Texas A&M University

Service and Leadership Roles

External leadership roles

- 2023 Member, Education Committee, American Association for Cancer Research (AACR)
- 2022 Session Chair, ASBMB Transcription and Chromatin Meeting, Snowbird, UT
- 2022 Member, Organizing Committee and Session Chair, EpiBio 2022 Annual Meeting, Houston, TX
- 2022 Session Chair, Keystone Meeting, Gene Regulation: From Emerging Technologies to New Models, Santa Fe, NM, USA
- 2022 Session Chair, AACR Annual Meeting, Spatial genomics and single-cell biology at scale, New Orleans, LA, USA
- 2021 Co-organizer and Session chair, Gulf Coast Consortium Single-cell Omics Cluster annual symposium
- 2021 Session Chair, Dan L Duncan Comprehensive Cancer Center Annual Symposium
- 2020 Member, Thoracic Oncology Working Group, Dan L Duncan Comprehensive Cancer Center
- 2019 Organizer and Session Chair, Workshop on DNA-Protein Interactions, Rice University

Local service roles

- 2021 Chair, Diversity, Equity, and Inclusion committee, Center for Precision Environmental Health, Baylor College of Medicine
- 2022 Co-chair, Center for Precision Environmental Health New Faculty Search Committee
- 2021 Co-chair, Center for Precision Environmental Health New Faculty Search Committee
- 2021 Therapeutics Innovation Center (THINC) New Faculty Search Committee
- 2020 Molecular and Cellular Biology (MCB) New Faculty Search Committee
- 2021 Molecular and Human Genetics (MHG) New Faculty Search Committee
- 2020 Molecular and Cell Biology (MCB) New Faculty Search Committee
- 2020 Graduate School of Biomedical Sciences (GSBS) Graduate Faculty Membership Committee
- 2019 Therapeutics Innovation Center (THINC) New Faculty Search Committee
- 2019 Molecular and Human Genetics (MHG) New Faculty Search Committee
- 2019 Molecular and Cell Biology (MCB) New Faculty Search Committee
- 2018 Center for Precision Environmental Health (CPEH) New Faculty Search Committee
- 2018 Faculty Diversity and Inclusion Ambassador, Center for Precision Environmental Health (07/2018 – present)

Reviewing

- 2023 Ad hoc reviewer, NIH Mechanisms of Cancer Therapeutics A (MCTA) study section
- 2023 Ad hoc reviewer, NIH Special Emphasis "Genes, Genomics, and Genetics" Panel ZRG1 F08-L (20)
- 2023 Ad hoc reviewer, National Science Foundation (NSF) Systems and Synthetic Biology review panel
- 2023 Reviewer, Diana Helis Henry and Adrienne Helis Malvin Medical Research Foundation
- 2023 External reviewer, Israel Science Foundation (ISF) Research Proposal
- 2022 External reviewer, Dutch Cancer Society (KWF)
- 2022 External reviewer, Israel Science Foundation (ISF) Research Proposal
- 2021 Reviewer, Diana Helis Henry and Adrienne Helis Malvin Medical Research Foundation
- 2020 External reviewer, Swiss National Science Foundation (SNSF)
- 2020 Reviewer, Diana Helis Henry and Adrienne Helis Malvin Medical Research Foundation
- 2019 External reviewer, Austrian Academy of Science Doctoral Program Fellowship
- 2019 External reviewer, Pasteur Institute Italy "Anna Tramontano" Research Proposal
- 2018 Reviewer, Diana Helis Henry and Adrienne Helis Malvin Medical Research Foundation
- Ad hoc reviewer for *Science*, *Nature Genetics*, *Nature Structural & Molecular Biology*, *Molecular Cell*, *EMBO Journal*, *Biophysical Journal*, *Genome Research*, *Genome Medicine*, *Molecules*, *Pharmaceuticals*, and other journals

Talks

- 2023 University of Michigan Rogel Cancer Center, Grand Rounds, Ann Arbor, MI
- 2023 Case Western Reserve University, Department of Chemistry Research Seminar, Cleveland, OH
- 2023 NIH Laboratory of Receptor Biology and Gene Expression Research Seminar, National Cancer Institute, Bethesda, MD
- 2023 ASBMB Transcription and Chromatin Meeting, Snowbird, UT
- 2022 American Association for Cancer Research Annual Meeting, New Orleans, LA
- 2022 Keystone Symposium (Gene Regulation), Santa Fe, NM
- 2021 University of Colorado School of Medicine, Endocrine Research Conference, Division of Endocrinology, Metabolism, and Diabetes, Denver, CO
- 2020 Mark Foundation Induced Proximity Flash Meeting, New York, NY
- 2020 Single Cell 'omics Symposium, Gulf Coast Consortium (10/2020)
- 2019 Department of Pharmacology and Chemical Biology, Baylor College of Medicine, Houston, TX (01/2019)
- 2019 Department of Epigenetics and Molecular Carcinogenesis Seminar, MD Anderson Cancer Center–Science Park, Smithville, TX (10/2019)
- 2019 Department of Pharmacy Seminar, UNC, Chapel Hill, North Carolina (03/2019)
- 2019 Human Genetics Center, UTHealth School of Public Health (09/2019)
- 2019 EpiBio Meeting, Epigenetics and Bioengineering Conference, Society for Biological Engineering, Barcelona, Spain (09/2019)
- 2019 Keck Seminar, Gulf Coast Consortium, Texas Medical Center (11/2019)
- 2018 Center for Cancer Epigenetics Annual Retreat, MD Anderson, Round Top, TX (4/2018)
- 2018 Department of Bioinformatics and Computational Biology Seminar, MD Anderson, Houston, TX (4/2018)
- 2018 Houston Stem Cell Club Seminar, Texas Medical Center, Houston, TX (5/2018)
- 2018 Therapeutic Innovation Center (THINC) Symposium, Baylor College of Medicine, Houston, TX (6/2018)
- 2017 David H. Koch Seminar, Department of Genitourinary Medical Oncology, MD Anderson, Houston, TX (12/2017)
- 2017 Protein-DNA Interactions: from Biophysics to Cancer Biology Workshop, Rice University, Houston, TX (12/2017)
- 2017 Workshop on Integrative Next-Gen Epigenomics, Center for Precision Environmental Health, Baylor College of Medicine, Houston, TX (11/2017)
- 2017 EMBL/EMBO meeting, The Nucleosome: From Atoms to Genomes, Heidelberg, Germany (08/2017)
- 2017 Department of Bioengineering, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland (04/2017)
- 2017 Department of Bioengineering, Boston University, Boston, MA (03/2017)
- 2017 Molecular Medicine Tri-Conference 2017, San Francisco, CA (02/2017)
- 2017 Department of Physics, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland (02/2017)
- 2017 Department of Biochemistry, University of Colorado, Boulder, CO (02/2017)
- 2017 Department of Biochemistry and Molecular Genetics, Northwestern University Feinberg School of Medicine (01/2017)
- 2016 Institute of Organic Chemistry and Biochemistry (IOCB), Prague, Czech Republic (04/2016)
- 2016 NIH Epigenomics 2016 Meeting, Rio Grande, Puerto Rico (01/2016)
- 2016 European Molecular Biology Laboratory (EMBL), Heidelberg, Germany (12/2016)
- 2016 School of Pharmacy, University of Colorado, Anschutz, CO (12/2016)
- 2015 Institute of Molecular Biology (IMB) 2015 Conference, Mainz, Germany (06/2015)
- 2015 American Association for Cancer Research (AACR) Annual Meeting, Philadelphia, PA (04/2015)
- 2014 Tomorrow's Cancer Researchers Symposium, Stanford Cancer Institute, Stanford, CA (10/2014)
- 2014 37th Annual Stanford University Cancer Biology Conference, Santa Cruz, CA (09/2014)
- 2012 National Institute of Child Health & Human Development Career Planning Workshop, Bethesda, MD (09/2012)
- 2012 Developmental Biology 3D seminar series, Stanford University School of Medicine, Stanford, CA (04/2012)
- 2009 Department of Chemistry Seminar, University of the Pacific, Stockton, CA (03/2009)
- 2009 UCSF, Ad-hoc seminar, San Francisco, CA (02/2009)
- 2008 American Society for Cell Biology (ASCB) Annual Meeting, San Francisco, CA (12/2008)

Teaching

1. Lecturer, Technologies for Cancer Drug Discovery and Development (GS-CC-6401), Baylor College of Medicine, 2023.
2. MCB Graduate Student Presentation R&D Workshop, Baylor College of Medicine, 2020.
3. Guest Lecturer, Department of Bioengineering, Rice University. BIOE 581, Introduction to Computational Biology. Theory and application of ChIP-seq from a bioengineering perspective. April 2020.
4. Instructor, Department of Molecular and Cellular Biology, Baylor College of Medicine. GS-MCB-466. Seminar in Cell Biology: ATP-dependent chromatin remodeling. The history of SWI/SNF, from discovery to modern cancer biology. Spring 2019.

5. Guest Lecturer, Department of Bioengineering, Rice University. BIOE 581, Introduction to Computational Biology. Theory and application of CHIP-seq from a bioengineering perspective. April 2019.
6. Instructor, Quantitative and Computational Biology Program, Baylor College of Medicine. Current literature in quantitative and computational biology, 2019.
7. Guest Lecturer, Department of Bioengineering, Rice University. BIOE 581, Introduction to Computational Biology. Theory and application of CHIP-seq from a bioengineering perspective. April 2018.
8. Instructor, Quantitative and Computational Biology Program, Baylor College of Medicine. Current literature in quantitative and computational biology, 2018.
9. Instructor, Stanford Institutes of Medicine Research Program (SIMR), Statistics and Mathematics in Cancer, Summer 2014. Introduction to statistics and informatics, mutation as a binomial process, likelihood functions, maximum-likelihood estimation, nested hypothesis testing. Students analyze mutation data to identify genes that drive malignancy, correcting for background mutation rate and gene length.
10. Instructor, Stanford University Interdisciplinary Biosciences, BIOS 226: Introduction to Force Spectroscopy, Spring 2014. Theory of force transduction in optical tweezers and atomic force microscopy (AFM). Harmonic oscillators and the Langevin equation, properties of thermal noise, diffusion, and spatiotemporal resolution. Single-molecule manipulation experiments for applying force and torque to elastic systems, and the effect of molecular-scale forces on rates and equilibrium. Introduction to force spectroscopy primary literature.
11. Guest Lecturer, Stanford University Department of Bioengineering, BIOE 300A: Introduction to Molecular Bioengineering, Winter 2014. The molecular and cellular basis of life from a quantitative perspective. Analysis of molecular structure and dynamics, enzyme function, molecular interactions, metabolic pathways, signal transduction, and cellular mechanics. Introduction to quantitative primary literature.
12. Instructor, Stanford Institutes of Medicine Research Program (SIMR), Statistics and Mathematics in Cancer, Summer 2013. Same course content as in Summer 2014.

Illustrations

1. "RNA Polymerase II meets a nucleosome," (2009). Modeled in "Coot" from crystal structures of the yeast Pol II ternary elongation complex and the nucleosome.
 - Featured in *Chemical & Engineering News* vol. 87(31): p. 27
2. "70S ribosome translating mRNA held by optical tweezers," with Laura Lancaster, Noller Lab, University of California at Santa Cruz (2008). Modeled in "O" from crystal structure of the *E. coli* ribosome.
 - Selected for cover, *Nature* vol. 451(7187)
 - Featured in *Science* vol. 323(5916): p. 864, and in *Chemistry World* vol. 5(4)
 - Used in *Essential Genes* (2nd ed.), Benjamin Lewin, Ch. 8
 - Title image, *The 58th Annual Meeting of the Biophysical Society*, San Francisco, CA, 2014

References

Available upon request