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Education:

- 1993-1996 University of California, Berkeley, B.S. in Chemistry
1996-1998 Columbia University, N.Y., M.A. in Chemistry; advisor, Prof. James L. Leighton
1998-2002 The Scripps Research Institute, La Jolla, CA, Ph.D. in Chemistry; advisor, Prof. Chi-Huey Wong

Professional Experience:

- 1992-2000 Laboratory Technician (92B), United States Army and United States Army Reserve
1994-1996 Undergraduate Research, UC Berkeley, with Prof. Peter G. Schultz
1996 Summer Research Fellow, Memorial Sloan Kettering Cancer Center, with Prof. Jon S. Thorson
1996-1998 Graduate Research, Columbia University, with Prof. James L. Leighton
1998-2002 Graduate Research, The Scripps Research Institute, with Prof. Chi-Huey Wong
1998-2006 Organic Chemistry and General Chemistry Instructor, The Princeton Review
2002-2004 HHMI Postdoctoral Associate, Yale University School of Medicine, with Prof. Arthur L. Horwich
2004-2007 NIH Postdoctoral Fellow, The Scripps Research Institute, with Prof. Arthur L. Horwich
2007-2012 Assistant Professor of Molecular Biology (non-tenure eligible), The Scripps Research Institute with Prof. Arthur L. Horwich
2012-2018 Assistant Professor, College of Pharmacy, Department of Pharmacology and Toxicology, The University of Arizona
2018-2023 Associate Professor (with tenure), College of Pharmacy, Department of Pharmacology and Toxicology, The University of Arizona
2012-2024 Member, Biological Chemistry Program, The University of Arizona
2013-2024 Member, Southwest Environmental Health Sciences Center, The University of Arizona
2014-2024 Member, Cancer Biology Program, The University of Arizona Cancer Center
2015-2024 Graduate Interdisciplinary Program in Genetics, The University of Arizona
2016-2024 Applied Biosciences Graduate Interdisciplinary Program, The University of Arizona
2023-2024 Professor (with tenure), College of Pharmacy, Department of Pharmacology and Toxicology, The University of Arizona
2024- Professor, College of Medicine, Department of Pharmacology and Therapeutics, Center for Inflammation Science and Systems Medicine, University of Florida

Honors:

1994, 1995 Howard Hughes Medical Institute Summer Research Fellowship
1996 Memorial Sloan Kettering Cancer Center Summer Research Fellowship
1996-1998 Columbia University Faculty Fellowship
1998-2002 Skaggs Institute Predoctoral Fellow
2003-2007 National Research Service Award

Patents:

1. Compounds and Methods of Inhibiting Bacterial Chaperonin Systems
Johnson, S. M.; Chapman, E.
PCT/US2019/059458
2. Inhibition of Bacterial Chaperonin Systems
Johnson, S. M.; Chapman, E.
PCT/US2021/17287226
3. Analogs of Nitrofurantoin Antibiotics to Combat Resistance
Johnson, S. M.; Chapman, E.
PCT/US2022/17365390
4. Inhibitors of HSP70 proteins
Chapman, E.; Ambrose, A. J.; Shi, T.
PCT/US2023/17791167

Provisional Patents:

1. Compounds and Methods of Inhibiting Bacterial Chaperonin Systems
Johnson, S. M.; Chapman, E.
US Provisional Patent Application # 62/755,027
2. Compounds and Methods of Inhibiting Bacterial Chaperonin Systems
Johnson, S. M.; Chapman, E.
US Provisional Patent Application # 62/934,672
3. Inhibition of Bacterial Chaperonin Systems
Johnson, S. M.; Chapman, E.; Horwich, A. L.; Schultz, P. G.
US Provisional Patent Application #62/697,779
4. Antiprotozoan Compounds and Their Use
Johnson, S. M.; Chapman, E.; Horwich, A. L.; Schultz, P. G.
US Provisional Patent Application #62/399,039.
5. GroEL/ES Inhibitors as Potential Antibiotics
Johnson, S. M.; Chapman, E.; Horwich, A. L.; Schultz, P. G.
US Provisional Patent Application #62/362,106
6. An eIF4A Inhibitor with a Novel Mechanism of Action
Chapman, E.; Zerio, C
US Provisional Patent Application # 63/238,456

Publications:

Publications from graduate school and postdoc

1. Thorson, J. S., **Chapman, E.**, Judice, J. K., Murphy, E. M., and Schultz, P. G. (1995) Linear free energy analysis of hydrogen bonding in proteins. *J. Am. Chem. Soc.* **117**, 1157-1158.

2. Thorson, J. S., **Chapman, E.**, and Schultz, P. G. (1995) Analysis of hydrogen bond strengths in proteins using unnatural amino acids. *J. Am. Chem. Soc.* **117**, 9361-9362.
3. **Chapman, E.**, Thorson, J. S., and Schultz, P. G. (1997) Mutational analysis of backbone hydrogen bonds in Staphylococcal nuclease. *J. Am. Chem. Soc.* **119**, 7151-7152.
4. Leighton, J. L., and **Chapman, E.** (1997) Rhodium catalyzed intramolecular silylformylation of alkenes. *J. Am. Chem. Soc.* **119**, 12416-12417.
5. Thorson, J. S., Shin, I., **Chapman, E.**, Stenberg, G., Mannervik, B., and Schultz, P. G. (1998) Analysis of the role of the active site tyrosine in human glutathione transferase A1-1 by unnatural amino acid mutagenesis. *J. Am. Chem. Soc.* **120**, 451-452.
6. Burkart, M. D., Izumi, M., **Chapman, E.**, and Wong, C-H. (2000) Regeneration of PAPS for the enzymatic synthesis of sulfated oligosaccharides. *J. Org. Chem.* **65**, 5565-5574.
7. **Chapman, E.**, and Wong, C-H. (2002) A pH sensitive colorimetric assay for the high-throughput screening of enzyme inhibitors and substrates: a case study using kinases. *Bioorg. Med. Chem.* **10**, 551-555.
8. **Chapman, E.**, Ding, S., Schultz, P. G., and Wong, C-H. (2002) A potent and highly selective sulfotransferase inhibitor. *J. Am. Chem. Soc.* **124**, 14524-14525.
9. **Chapman, E.**, Bryan, M. C., and Wong, C-H. (2003) Mechanistic studies of β -arylsulfotransferase-IV. *Proc. Natl. Acad. Sci. USA* **100**, 910-915. PMC298700
10. Wong, C-H., Bryan, M. C., Nyffeler, P. T., Liu, H., and **Chapman, E.** (2003) Synthesis of carbohydrate-based antibiotics. *Pure Appl. Chem.* **75**, 179.
11. **Chapman, E.**, Best, M. D., Hanson, S. R., and Wong, C-H. (2003) Sulfotransferases: structure, mechanism, biological activity, inhibition, and synthetic utility. *Angew. Chem. Int. Ed.* **43**, 3526-3548.
12. Best, M. D., Brik, A., **Chapman, E.**, Lee, L. V., Cheng, W-C., and Wong, C-H. (2004) Rapid discovery of potent sulfotransferase inhibitors using diversity-oriented reaction in microplates followed by in situ screening. *ChemBioChem* **5**, 811-819.
13. **Chapman, E.**, Farr, G. W., Usaite, R., Furtak, K., Fenton, W. A., Chaudhuri, T. K., Hondorp, E. R., Matthews, R. G., Wolf, S. G., Yates, J. R., Pypaert, M., and Horwich, A. L. (2006) Global aggregation of newly translated proteins in an *Escherichia coli* strain deficient of the chaperonin GroEL. *Proc. Natl. Acad. Sci. USA* **103**, 15800-15805. PMID: PMC1613232
14. Horwich, A. L.; Fenton, W. A.; **Chapman, E.**; and Farr, G. W. (2007) Two families of chaperonin: Physiology and Mechanism. *Annu. Rev. Cell Dev. Biol.* **23**, 115-145.
15. **Chapman, E.**; Fenton, W. A.; Johnson, S. M.; and Horwich, A. L. (2008) Requirement for binding multiple ATPs to convert a GroEL ring to the folding-active state. *Proc. Natl. Acad. Sci. U.S.A.* **105**, 19205-19210. PMID: PMC2592988
16. **Chapman***, E.; Farr, G. W.; Furtak, K.; Horwich, A. L. (2009) A small molecule inhibitor selective for a variant ATP-binding site of the chaperonin GroEL. *Bioorg. Med. Chem. Lett.* **19**, 811-813. PMID: PMC2633924

Independent Publications

17. **Chapman***, E.; Fry, A. N.; and Kang, MJ. (2011) The complexities of p97 function in health and disease. *Mol. Biosyst.* **7**, 700-710. PMID: PMC3050576

18. Charbon, G., Brustad, E., Scott, K. A., Wang, J., Løbner-Olesen, A., Schultz, P. G., Jacobs-Wagner, C., and **Chapman*, E. (2011)** Subcellular protein localization by using a genetically encoded fluorescent amino acid. *Chembiochem.* **12**, 1818-1821. PMID: PMC3175735
19. Charbon, G.; Wang, J.; Brustad, E.; Schultz, P. G.; Horwich, A. L.; Jacobs-Wagner, C.; and **Chapman*, E. (2011)** Localization of GroEL determined by in vivo incorporation of a fluorescent amino acid. *Bioorg. Med. Chem. Lett.*, **21**, 6067-6070. PMID: PMC3177974
20. Rothmann, M.; Kang, M.; Villa, R.; Ntai, I.; La Clair, J. J.; Kelleher, N. L.; **Chapman*, E.**; and Burkart*, M. D. **(2013)** Metabolic perturbation of an essential pathway: evaluation of a glycine precursor of coenzyme A. *J. Am. Chem. Soc.*, **135**, 5962-5965. PMID: PMC3657554
21. Villeneuve, N. F.; Tian, W.; Wu, T.; Sun, Z.; Lau, A.; **Chapman, E.**; Fang, D.; and Zhang, D. D. **(2013)** USP15 negatively regulates Nrf2 through deubiquitination of Keap1. *Mol. Cell*, **51**, 68-79. PMID: PMC3732832
22. Johnson, S. M.; Sharif, O.; Mak, P. A.; Engels, I. H.; Brinker, A.; Schultz, P. G.; Horwich, A. L.; and **Chapman*, E. (2014)** A biochemical screen for GroEL/GroES inhibitors. *Bioorg. Med. Chem. Lett.* **24**, 786-789.
23. Wu, T.; Zhao, F.; Gao, B.; Yagishita, N.; Nakajima, T.; Wong, P. K.; **Chapman, E.**; Fang, D.; and Zhang, D. D. **(2014)** Suppression of Nrf2 transcriptional programs by Hrd1 exacerbates liver cirrhosis. *Genes Dev.* **28**, 708-722. PMID: PMC4015486
24. La Clair*, J. J.; Loveridge, S.; Tenney, K.; O'Neil-Johnson, M.; **Chapman*, E.**; and Crews*, P. **(2014)** Marine natural product discovery via an artificial sponge. *PLoS One.* **9**, e100474. PMID: PMC4086721
25. Kang, M.; Wu, T.; Wijeratne, E. M. K.; Lau, E.; Mason, D.; Mesa, C.; Tillotson, J.; Zhang, D. D.; Gunatilaka, A. A. L.; La Clair, J. J.; and **Chapman*, E. (2014)** Functional chromatography reveals three natural products that target the same protein with distinct mechanisms of action. *ChemBioChem.* **15**, 2125-2131. PMID: PMC4187115
26. Tao, S.; Wang, S.; Moghaddam, S. J.; Ooi, A.; **Chapman, E.**; Wong, P. K.; and Zhang, D. D. **(2014)** Oncogenic KRAS confers chemoresistance by transcriptional upregulation of NRF2 via the TPA Response Element. *Cancer Research.* **74**, 7430-7441. PMID: PMC4268230
27. Lau, E. C.; Mason, D. J.; Eichhorst, N.; Engelder, P.; Mesa, C.; Wijeratne, E. M. K.; Gunaherath, G. M. K. B.; Gunatilaka, A. A. L.; La Clair, J. J.; and **Chapman*, E. (2015)** Functional chromatographic technique for natural product isolation. *Org. Biomol. Chem.* **10**, 2255-2259. PMID: PMC4576851
28. Ambrose, A. J.; Fenton, W.; Mason, D. J.; **Chapman*, E.** and Horwich*, A. L. **(2015)** Unfolded DapA forms aggregates when diluted into free solution, confounding comparison with folding by the GroEL/GroES chaperonin system. *FEBS Lett.* **589**, 497-499. PMID: PMC4410871
29. **Chapman*, E.**; Maksim, N; de la Cruz, F.; and La Clair, J. J. **(2015)** Inhibitors of the AAA+ chaperone p97. *Molecules.* **20**, 3027-3049. PMID: PMC4576884
30. Shen, T.; Jiang, T.; Long, M.; Chen, J.; Ren, D.-M.; Wong, P. K.; **Chapman*, E.**; Zhou*, B.; and Zhang*, D. D. **(2015)** A curcumin derivative that inhibits vinyl carbamate-induced lung carcinogenesis via activation of the Nrf2 protective response. *Antioxid. Redox. Signal.* **10**, 651-664. PMID: PMC4560850

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34. Harder, B.; Jiang, T.; Wu, T.; Tao, S.; Rojo de la Vega, M.; **Chapman, E.**; and Zhang, D. D. (2015) Molecular mechanisms of Nrf2 regulation and how these influence chemical modulation for disease intervention. *Biochem. Soc. Trans.* **43**, 680-686. PMID: PMC4613518
35. Wijeratne, E. M. K.; Gunaherath, G. M. K. B.; Chapla, V. M.; Tillotson, J.; de la Cruz, F.; Kang, M.; Ren, J. U'; Araujo, A. R.; Arnold, A. E.; **Chapman, E.**; and Gunatilaka, A. A. L. (2016) Oxaspirol B with p97 Inhibitory Activity and Other Oxaspirols from *Lecythophora* sp. FL1375 and FL1031, Endolichenic Fungal Strains Inhabiting *Parmotrema tinctorium* and *Cladonia evansii*. *J. Nat. Prod.* **79**, 340-352. PMID: PMC4926610
36. Rojo de la Vega, M.; Dodson, M.; Gross, C.; Mansour, H. M.; Lantz, R. C.; **Chapman, E.**; Wang, T.; Black, S. M.; Garcia, J. G. N.; and Zhang, D. D. (2016) Role of Nrf2 and autophagy in acute lung injury. *Curr. Pharmacol. Rep.* **2**, 91-101. PMID: PMC4905711
37. Lee, T. C.; Kang, M.; Kim, C. H.; Schultz, P. G.; **Chapman***, E.; and Deniz*, A. A. (2016) Dual unnatural amino acid incorporation and click-chemistry labeling to enable single-molecule FRET studies of p97 folding. *ChemBioChem.* **17**, 981-984. PMID: PMC4904727
38. Abdeen, S.; Salim, N.; Mammadova, N; Summers, C.; Frankson, R.; Ambrose A. J.; Anderson, G. G.; Schultz, P. G.; Horwich, A. L.; **Chapman, E.**; and Johnson, S. M. (2016) GroEL/ES inhibitors as potential antibiotics. *Bioorg. Med. Chem. Lett.* **26**, 3127-3134.
39. Tillotson, J.; Bashyal, B. P.; Kang, M.; de la Cruz, F.; Gunatilaka, A. A. L.; and **Chapman***, E. (2016) Selective inhibition of p97 by chlorinated analogues of dehydrocurvularin. *Org. Biomol. Chem.* **14**, 5918-5921. PMID: PMC5466822
40. Abdeen, S.; Salim, N.; Mammadova, N; Summers, C.; Goldsmith-Pestana, K.; McMahon-Pratt, D.; Schultz, P. G.; Horwich, A. L.; **Chapman, E.**; and Johnson, S. M. (2016) Targeting the HSP60/10 chaperonin systems of *Trypanosoma brucei* as a strategy for treating African sleeping sickness. *Bioorg. Med. Chem. Lett.* **26**, 5247-5253.
41. Rojo de la Vega, M.; Dodson, M.; **Chapman, E.**; and Zhang, D. D. (2016) NRF2-targeted therapeutics: New targets and modes of NRF2 regulation. *Curr. Opin. Tox.*, **1**, 62-70. PMID: PMC5654570

42. Harder, B.; Tian, W.; La Clair, J. J.; Tan, A. C.; Ooi, A.; **Chapman, E.**; and Zhang, D. D. (2016) Brusatol overcomes chemoresistance through inhibition of protein translation. *Mol. Carcinog.* **56**, 1493-1500. PMID: PMC5404829
43. Ambrose, A. J.; Rocha, D. D.; Wilke, D. V.; Beuzer, P.; Kumar, K. A.; Fuchs, P. L.; Costa-Lotufo, L. V.; **Chapman*, E.**; and La Clair, J. J. (2017) Ritterostatin GN1N, a Cephalostatin-Ritterazine bis-Steroidal Pyrazine hybrid, Selectively Targets GRP78/BIP. *ChemBioChem.* **18**, 506-510. PMID: PMC5562448
44. Tao, S.; Liu, P.; Luo, G.; de la Vega, M. R.; Chen, H.; Wu, T.; Tillotson, J.; **Chapman*, E.**; and Zhang*, D. D. (2017) p97 negatively regulates NRF2 by extracting ubiquitylated NRF2 from the KEAP1-CUL3 E3 complex. *Mol. Cell. Biol.* **37**. PMID: PMC5376629
45. Bashyal, B. P.; Wijeratne, E. M. K.; Tillotson, J.; Arnold, A. E.; **Chapman, E.**; and Gunatilaka, A. A. L. (2017) Chlorinated Dehydrocurvularins and Alterperyleneoxide A from *Alternaria* sp. AST0039, a Fungal Endophyte of *Astragalus lentiginosus*. *J. Nat. Prod.* **80**, 427-433. PMID: PMC5504521
46. Gubiani, J. R.; Wijeratne, E. M. K.; Shi, T.; Araujo, A. R.; Arnold, A. E.; **Chapman, E.**; and Gunatilaka, A. A. L. (2017) An epigenetic modifier induces production of (10S)-verruculide B, an inhibitor of protein tyrosine phosphatases by *Phoma* sp. nov. LG0217, a fungal endophyte of *Parkinsonia microphylla*. *Biorg. Med. Chem.* **25**, 1860-1866. PMID: PMC5362119
47. Tillotson, J.; Zerio, C. J.; Harder, B.; Ambrose, A. J.; Jung, K. S.; Kang, M.; Zhang*, D. D.; and **Chapman*, E.** (2017) Arsenic compromises proteostasis by compromising both p97 and proteasome functions. *Chem. Res. Toxicol.* **30**, 1508-1514. PMID: PMC5687067
48. Tillotson, J.; Guimarães, L.; Ross, A. B.; Peters, T. L.; Ambrose, A. J.; Schmidlin, C. J.; Costa-Lotufo, L. V.; Rodríguez, A. D.; Schatz*, J. H.; and **Chapman*, E.** (2017) ATP-competitive, marine derived natural products that target the DEAD box helicase, eIF4A. *Bioorg. Med. Chem. Lett.* **27**, 4082-4085. PMID: PMC5593424
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51. Dodson, M.; Liu, P.; Jiang, T.; Ambrose, A. J.; Luo, G.; Rojo de la Vega, M.; Cholanians, A. B.; Wong, P. K.; **Chapman, E.**; and Zhang, D. D. (2018) Increased O-GlcNAcylation of SNAP29 drives arsenic-induced autophagic dysfunction. *Mol. Cell. Biol.* Available on line. PMID: PMC5954189
52. Rojo de la Vega, M.; **Chapman, E.**; and Zhang, D. D. (2018) NRF2 and the Hallmarks of Cancer. *Cancer Cell.* **34**, 21-43. PMID: PMC6039250
53. Peters, T. L.; Tillotson, J.; Yeomans, A.; Wilmore, S. C.; Jiménez-Romero, C.; Amador, L. A.; Li, L.; Amin, A. D.; Pongtornpipat, P.; Zerio, C. J.; Ambrose, A. J.; Murrieta, P.; Vega, F.; Packham, G.; Rodríguez, A. D.; **Chapman*, E.**; and Schatz*, J. H. (2018) Target-Based Screening Against eIF4A1 Reveals the Marine Natural

- Product Elatol as a Novel Inhibitor of Translation Initiation with In Vivo Anti-Tumor Activity. *Clin. Cancer Res.* **24**, 4256-4270. PMID: PMC6500731
54. Abdeen, S.; Kunkle, T.; Salim, N.; Ray, A.; Mammadova, N.; Summers, C.; Ambrose, A. J.; Park, Y.; Schultz, P. G.; Horwich, A. L.; Hoang, Q.; **Chapman, E.**; and Johnson, S. M. (2018) Sulfonamido-2-arylbenzoxazole GroEL/ES inhibitors are potent antibacterials against MRSA. *J. Med. Chem.* **61**, 7345-7357. PMID: PMC6345161
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56. Kunkle, T.; Abdeen, S.; Salim, N.; Ray, A.-M.; Stevens, M.; Ambrose, A. J.; Victorino, J.; Park, Y.; Hoang, Q. Q.; **Chapman, E.**; and Johnson, S. M. (2018) Hydroxybiphenylamide GroEL/ES inhibitors are potent antibacterials against planktonic and biofilm forms of *Staphylococcus aureus*. *J. Med. Chem.* **61**, 10651-10664. PMID: PMC6467803
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58. Shi, T.; Kaneko, L.; Sandino, M.; Busse, R.; Zhang, M.; Mason, D.; Machulis, J.; Ambrose, A. J.; Zhang, D. D.; and **Chapman*, E.** (2019) One-step synthesis of thieno[2,3-*d*]pyrimidin-4(3*H*)-ones via a catalytic four-component reaction of ketones, ethyl cyanoacetate, S₈ and formamide. *ACS Sustain Chem. Eng.* **7**, 1524-1528. PMID: PMC6871654
59. Stevens, M.; Abdeen, S.; Salim, N.; Ray, A.-M.; Washburn, A.; Chitre, S.; Sivinski, J.; Park, Y.; Hoang, Q. Q.; **Chapman, E.**; and Johnson, S. M. (2019) HSP60/10 chaperonin systems are inhibited by a variety of approved drugs, natural products, and known bioactive molecules. *Bioorg. Med. Chem. Lett.* **29**, 1106-1112. PMID: PMC6450568
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69. Zhang, D. D. and **Chapman***, **E.** (2020) The role of natural products in revealing NRF2 function. *Nat. Prod. Rep.* **37**, 797-826.
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71. Branco, P. C.; Pontes, C. A.; Rezende-Teixeira, P.; Amengual-Rigo, P.; Alves, D. K.; Maria-Engler, S. S.; da Silva, A. B.; Pessoa, O. D. L.; Jimenez, P. C.; Mollasalehi, N.; **Chapman, E.**; Guallar, V.; Machado-Neto, J. A.; and Costa-Lotufo, L. V. (2020) Survivin modulation in the antimelanoma activity of prodiginines. *Eur. J. Pharmacol.* **888**, 173465.
72. Stevens, M.; Howe, C.; Ray, A-M.; Washburn, A.; Chitre, S.; Sivinski, J.; Hoang, Q. Q.; **Chapman, E.**; and Johnson, S. M. (2020) Analogs of nitrofurantoin antibiotics are potent GroEL/ES inhibitor pro-drugs. *Bioorg. Med. Chem.* **28**, 115710.
73. Liu, P.; Luo, G.; Dodson, M.; Schmidlin, C. J.; Wei, Y.; Kerimoglu, B.; Ooi, A.; **Chapman, E.**; Garcia, J. G. N.; and Zhang, D. D. (2021) The NRF2-LOC344887 signaling axis suppresses pulmonary fibrosis. *Redox Biol.* **38**, 101766.
74. Sivinski, J.; Ambrose, A. J.; Panfilenko, I.; Zerio, C. J.; Machulis, J. M.; Mollasalehi, N.; Kaneko, L. K.; Stevens, M.; Ray, A-M.; Park, Y.; Wu, C.; Hoang, Q. Q.; Johnson, S. M.; and **Chapman***, **E.** (2021) Functional differences between E. coli and ESKAPE pathogen GroES/GroEL. *mBio.* **12**. PMID: PMC7844535

75. Ambrose, A. J.; Pham, N. T.; Sivinski, J.; Guimarães, Larissa; Mollasalehi, N.; Jimenez, P.; Abad, M. A.; Jeyaprakash, A. A.; Shave, S.; Costa-Lotufo, L. V.; La Clair*, J. J.; Auer*, M.; **Chapman*, E.** (2021) A Two-Step Resin Based Approach to Reveal Survivin-Selective Fluorescent Probes. *RSC Chem. Biol.* **2**, 181-186.
76. Schmidlin, C. J.; Tian, W.; Dodson, M.; **Chapman, E.**; and Zhang, D. D. (2021) FAM129B-dependent activation of NRF2 promotes an invasive phenotype in BRAF mutant melanoma cells. *Mol. Carcinog.* **60**, 331-341.
77. Liu, P.; Dodson, M.; Li, H.; Schmidlin, C. J.; Shakya, A.; Wei, Y.; Garcia, J. G. N.; **Chapman, E.**; Kiela, P. R.; Zhang, Q-Y.; White, E.; Ding, X.; Ooi, A.; and Zhang, D. D. (2021) Non-canonical NRF2 activation promotes a pro-diabetic shift in hepatic glucose metabolism. *Mol. Metab.* Available online.
78. Ray, A-M.; Salim, N.; Stevens, M.; Chitre, S.; Abdeen, S.; Washburn, A.; Sivinski, J.; O'Hagan, H. M.; **Chapman, E.**; and Johnson, S. M. (2021) Exploiting the HSP60/10 Chaperonin System as a Chemotherapeutic Target for Colorectal Cancer. *Bioorg. Med. Chem.* **40**, 116129.
79. Jennings, E. Q.; Ray, J. D.; Zerio, C. J.; Trujillo, M. N.; McDonald, D. M.; **Chapman, E.**; Speigel, D. A., and Galligan, J. (2021) Sirtuin 2 Regulates Protein Lactoyllys Modifications. *ChemBiochem.* **22**, 2102-2106.
80. Ambrose, A. J. and **Chapman*, E.** (2021) Function, Therapeutic Potential, and Inhibition of HSP70 Chaperones. *J. Med. Chem.* **64**, 7060-7082.
81. Schmidlin, C. J.; **Chapman, E.**; and Zhang, D. D. (2021) The Intricacies of NRF2 Regulation in Cancer. *Sem. Cancer Biol.* **76**, 110-119.
82. Sivinski, J.; Zhang, D. D.; and **Chapman*, E.** (2021) Targeting NRF2 to Treat Cancer. *Sem. Cancer Biol.* **76**, 61-73.
83. Essegian, D. J.; Cunningham, T. A.; Zerio, C. J.; **Chapman, E.**; Schatz, J. H.; and Schürer, S. C. (2021) Molecular Dynamics Identifies Tractable Lead-like Phenyl-Piperazine Scaffold for eIF4A1 ATP-competitive Inhibitors. *ACS Omega.* **6**, 24432-24443.
84. Zerio, C. J.; Cunningham, T. A.; Tulino, A. S.; Alimusa, E. A.; Ambrose, A. J.; Sivinski, J.; Buckley, T. M.; Essegian, D. J.; Zhang, D. D.; Schürer, S. C.; Schatz, J. H.; and **Chapman*, E.** (2021) Discovery of an eIF4A Inhibitor with a Novel Mechanism of Action. *J. Med. Chem.* **64**, 15727-15746.
85. Sivinski, J.; Ngo, D.; Zerio, C. J.; Ambrose, A. J.; Watson, E. R.; Kaneko, L. K.; Kostelic, M. M.; Stevens, M.; Ray, A. M.; Park, Y.; Wu, C.; Marty, M. T.; Hoang, Q. Q.; Zhang, D. D.; Lander, G. C.; Johnson, S. M.; and **Chapman, E.*** (2022) Allosteric differences dictate GroEL complementation of *E. coli*. *FASEB J.* **36**, e22198. PMID: PMC8887798
86. Dodson, M.; Dai, W.; Anandhan, A.; Schmidlin, C. J.; Liu, P.; Wilson, N. C.; Wei, Y.; Kitamura, N.; Galligan, J. J.; Ooi, A.; **Chapman, E.** and Zhang, D. D. (2022) CHML is an NRF2 target gene that regulates mTOR function. *Mol Oncol.* **16**, 1714-1727. PMID: PMC9019883
87. Bai, Y., Yu, G., Zhou, H. M., Amarasinghe, O., Zhou, Y., Zhu, P., Li, Q., Zhang, L., Nguele Meke, F., Miao, Y., **Chapman, E.**, Tao, W. A., and Zhang, Z. Y. (2022) PTP4A2 promotes lysophagy by dephosphorylation of VCP/p97 at Tyr805. *Autophagy.* Online ahead of print. PMID: 36300783

88. Chitre, S., Ray, A. M., Stevens, M., Doud, E. H., Liechty, H., Washburn, A., Tepper, K., Sivinski, J., O'Hagan, H. M., Georgiadis, M. M., **Chapman, E.**, and Johnson, S. M. (2022) Bis-aryl- α,β -unsaturated ketone (ABK) chaperonin inhibitors exhibit selective cytotoxicity to colorectal cancer cells that correlates with levels of aberrant HSP60 in the cytosol. *Bioorg. Med. Chem.* **75**, 117072. PMID: 36356534.
89. Liu, P., Anandhan, A., Chen, J., Shakya, A., Dodson, M., Ooi, A., **Chapman, E.**, White, E., Garcia, J. G., and Zhang, D. D. (2023) Decreased autophagosome biogenesis, reduced NRF2, and enhanced ferroptotic cell death are underlying molecular mechanisms of non-alcoholic fatty liver disease. *Redox Biol.* **59**, 102570. PMID: 36495698 PMCID: PMC9731892.
90. Ambrose, A. J.; Sivinski, J.; Zerio, C. J.; Zhu, X.; Godek, J.; Coma-Brujas, T.; Torra-Garcia, J.; Annaduraj, A.; Schmidlin, C. J.; Werner, A.; Shi, T.; Zavareh, R. B.; Lairson, L.; Zhang, D. D.; and **Chapman*, E.** (2023) Discovery and Development of a Selective Inhibitor of the ER Resident Chaperone Grp78. *J. Med. Chem.* **66**, 677-694. PMID: 36516003
91. Zerio, C. J.; Sivinski, J.; Wijeratne, E. M. K.; Xu, Y-M., Ngo, D. T.; Ambrose, A. J.; Villa-Celis, L.; Clarkson, M. W.; Gunatilaka, A. A. L.; Fromme, R.; and **Chapman*, E.** (2023) Physachenolide C is a Potent, Selective BET Inhibitor. *J. Med. Chem.* **66**, 913-933. PMID: 36577036
92. Anandhan, A.; Dodson, M.; Shakya, A.; Chen, J.; Liu, P.; Wei, Y.; Tan, H.; Wang, Q.; Jiang, Z.; Yang, K.; Garcia, J. G.; Chambers, S. K.; **Chapman, E.**; Ooi, A.; Yang-Hartwich, Y.; Stockwell, B. R.; and Zhang, D. D. (2023) NRF2 controls iron homeostasis and ferroptosis through HERC2 and VAMP8. *Sci. Adv.* **9**, eade958. PMID: 36724221
93. Liu, P.; Anandhan, A.; Chen, J.; Shakaya, A.; Dodson, M.; Ooi, A.; **Chapman, E.**; White, E.; Garcia, J. G. N.; and Zhang, D. D. (2023) Decreased autophagosome biogenesis, reduced NRF2, and enhanced ferroptotic cell death are underlying molecular mechanisms of non-alcoholic fatty liver disease. *Redox Biol.* **59**, 102570. PMID: 36495698.
94. Shakya, A.; McKee, N. W.; Dodson, M.; **Chapman, E.**; and Zhang, D. D. (2023) Anti-Ferroptotic Effects of Nrf2: Beyond the Antioxidant Response. *Mol. Cells.* **46**, 165-175. PMID: 36994475.
95. Shakya, A.; Liu, P.; Godek, J.; McKee, N. W.; Dodson, M.; Anandhan, A.; Ooi, A.; Garcia, J. G. N.; Costa, M.; **Chapman*, E.**; and Zhang, D. D. (2023) The NRF2-p97-NRF2 negative feedback loop. *Redox Biol.* Available on-line. PMID: 37573837.
96. Ambrose, A. J.; Zerio, C. J.; Sivinski, J.; Zhu, X.; Godek, J.; Sanchez, J. L.; Khanna, M.; Khanna, R.; Lairson, L. Zhang, D. D.; and **Chapman*, E.** (2024) Human Hsp70 substrate binding domains recognize distinct client proteins. *Biochem.* Available on-line.
97. Trujillo, M. N.; Jennings, E. Q.; Hoffman, E. A.; Zhang, H.; Phoebe, A. M.; Mastin, G. E.; Kitamura, N.; Reisz, J. A.; Megill, E.; Kantner, D.; Marcinkiewicz, M. M.; Twardy, S. M.; Lebario, F.; **Chapman, E.**; McCullough, R. L.; D'Alessandro, A.; Snyder, N. W.; Cusanovich, D. A.; and Galligan, J. J. (2024) Lactoylglutathione promotes inflammatory signaling in macrophages. *Mol. Metab.* Available online.
98. Sivinski, J.; Watson, E. R.; Godek, J. A.; Xu, W.; Stevens, M.; Zerio, C. J.; Ambrose, A. J.; Zhu, X.; Zhang, D. D.; Lander, G. C.; Johnson, S. M.; and **Chapman*, E.** (2024)

PBZ1587 validates the GroES/GroEL chaperone system as a viable antibiotic target.
J. Am. Chem. Soc. In revision.

*Indicates corresponding author.

Book chapters and other publications:

1. **Chapman***, E. and Hanson*, S. R. (2011) Sulfotransferases and Sulfatases: Sulfate modification of Carbohydrates. In *Carbohydrate-Modifying Biocatalysts* (Grunwald, P., Ed.), Pan Stanford Publishing Pte. Ltd., Singapore, 329-396.
2. **Chapman***, E. (2015) Book review: Handbook of Chemical and Biological Analytical Methods. *ChemBioChem*. **16**, 1520-1522.
3. **Chapman***, E. and Hanson*, S. R. (2016) Sulfotransferases and Sulfatases: Sulfate modification of Carbohydrates. In *Carbohydrate-Modifying Biocatalysts* (Grunwald, P., Ed.), Pan Stanford Publishing Pte. Ltd., Singapore, 2nd Edition, 399-466.
4. Cunningham, T. A.; **Chapman***, E.; and Schatz, J. H. (2018) eIF4A inhibition: Ready for primetime? *Oncotarget*. **9**, 35515-35516. PMID: PMC6238976

Presentations:

1. XXI International Carbohydrate Symposium (ICS 21); Cairns, Australia, July 7-12, 2002. *Oral presentation.*
2. Yale School of Medicine, Department of Genetics; New Haven, Connecticut, July 15, 2002. *Oral presentation.*
3. University of New Mexico, Department of Chemistry; Albuquerque, New Mexico, March 13, 2009. *Oral presentation.*
4. Zentrum für Molekulare Biologie der Universität Heidelberg; Heidelberg, Germany, March 31, 2009. *Oral presentation.*
5. Gordon Research Conference: Enzymes, Coenzymes, and Metabolic Pathways; Waterville Valley, New Hampshire, July 10-15, 2011. *Poster presentation.*
6. University of Arizona, Biological Chemistry Program; Tucson, Arizona, February 26, 2013. *Oral presentation.*
7. University of Arizona, Department of Chemistry and Biochemistry; Tucson, Arizona, September 16, 2013. *Oral presentation.*
8. University of Arizona, Lymphoma Group; Tucson, Arizona, September 19, 2013. *Oral presentation.*
9. University of Arizona, Cancer Biology Seminar; Tucson, Arizona, December 3, 2013. *Oral presentation.*
10. University of Arizona, Student Affiliates of the American Chemical Society (SAACS); Tucson, Arizona, February 28, 2014. *Oral presentation.*
11. EHS Core Centers Meeting New Investigator Session; Los Angeles, California, April 8, 2014. *Oral presentation.*
12. University of Arizona, MCB/CMM/CBC Seminar; Tucson, Arizona, May 7, 2014. *Oral presentation.*
13. Natural Products Affinity Group, UC San Diego; La Jolla, California, July 11, 2014. *Oral presentation.*
14. University of Central Florida, Department of Chemistry and Biochemistry, Orlando, Florida, April 8, 2015. *Departmental seminar.*
15. USDA, Poisonous Plant Research Center, Logan, Utah, April 23, 2015. *Invited seminar.*

16. New strategies for drug discovery; Fortaleza, Brazil, November 12, 2015. *Invited oral presentation.*
17. University of Florida, Department of Medicinal Chemistry, Gainesville, Florida, January 7, 2016. *Invited departmental seminar.*
18. University of Colorado, Anschutz Medical Campus, Denver, Colorado, January 19, 2016. *Invited departmental seminar.*
19. University of Arizona, Department of Pharmacology, Tucson, Arizona, January 27, 2016. *Departmental seminar.*
20. 6th International Conference on Metals in Genetics, Chemical Biology and Therapeutics (ICMG 2016); Bangalore, India, February 17-20, 2016. *Invited oral presentation.*
21. Universidad Cientificos Medicos, San Jose, Costa Rica, June 22, 2016. *Invited oral presentation.*
22. Arizona State University, Biodesign Institute, Tempe, Arizona, July 7, 2016. *Invited departmental seminar.*
23. PCS Global Diabetes Conference; Moscow, Russia, August 6-7, 2016. *Invited oral presentation.*
24. University of Toledo, Department of Chemistry, Toledo, Ohio, August 29, 2016. *Invited departmental speaker.*
25. Michigan State University, Department of Chemistry, East Lansing, Michigan, August 31, 2016. *Invited departmental speaker.*
26. Wayne State University, Department of Chemistry, Detroit, Michigan, September 02, 2016. *Invited departmental speaker.*
27. University of Kentucky, Department of Pharmaceutical Sciences, Lexington, Kentucky, October 17, 2016. *Invited departmental speaker.*
28. Metal Toxicity and Carcinogenesis; Lexington, Kentucky, October 16-19, 2016. *Invited oral presentation.*
29. North Carolina State University, Department of Chemistry, Raleigh, North Carolina, February 13, 2017. *Invited departmental speaker.*
30. University of North Carolina, Department of Chemistry and Division of Chemical Biology and Medicinal Chemistry, Chapel Hill, North Carolina, February 14, 2017. *Invited departmental speaker.*
31. Duke University, Department of Chemistry, Durham, North Carolina, February 16, 2017. *Invited departmental speaker.*
32. University of Kansas, Department of Medicinal Chemistry, Lawrence, Kansas, April 13, 2017. *Invited departmental speaker.*
33. Sun Yat-sen University, College of Pharmacy, Guangzhou, China, April 27, 2017. *Invited departmental speaker.*
34. Jinan University, College of Pharmacy, Guangzhou, China, April 28, 2017. *Invited departmental speaker.*
35. Southern Medical University, College of Pharmacy, Guangzhou, China, April 28, 2017. *Invited departmental speaker.*
36. Johns Hopkins University, Department of Pharmacology and Molecular Sciences, College of Medicine, Baltimore, Maryland, May 10, 2017. *Invited departmental speaker.*

37. University of Delaware, Department of Chemistry, Newark, Delaware, May 11, 2017. *Invited departmental speaker.*
38. University of Arkansas for Medical Sciences, Department of Pharmaceutical Sciences, Little Rock, Arkansas, July 25, 2017. *Invited departmental speaker.*
39. Louisiana State University, Department of Chemistry, Baton Rouge, Louisiana, July 27, 2017. *Invited departmental speaker.*
40. Indiana University, Department of Biochemistry and Molecular Biology, Indianapolis, Indiana, September 25, 2017. *Invited departmental speaker.*
41. Purdue University, Department of Medicinal Chemistry and Molecular Pharmacology, West Lafayette, Indiana, September 26, 2017. *Invited departmental speaker.*
42. University of Arkansas for Medical Sciences, Department of Pharmaceutical Sciences, Little Rock, Arkansas, October 20, 2017. *Invited departmental speaker.*
43. University of California San Diego, Department of Chemistry and Biochemistry, La Jolla, California, October 23, 2017. *Invited departmental speaker.*
44. University of Arizona, Drug Discovery Symposium, Tucson, Arizona, January 26, 2018. *Invited speaker.*
45. University of California, Irvine, Department of Chemistry, Irvine, California, February 14, 2018. *Invited departmental speaker.*
46. Notre Dame University, Department of Chemistry, South Bend, Indiana; September 13, 2018. *Invited departmental speaker.*
47. Skaggs Biomedical Research Symposium; Tucson, Arizona; October 4-5, 2018. *Invited speaker.*
48. University of Arizona, Comprehensive Cancer Center, Cancer Biology Program; Tucson, Arizona, November 05, 2018. *Invited seminar speaker.*
49. University of Nebraska Medical Center, Department of Pharmaceutical Sciences, Omaha, Nebraska; November 27, 2018. *Invited seminar speaker.*
50. Gordon Research Conference: High Throughput Chemistry and Chemical Biology; New London, New Hampshire, June 2-7, 2019. *Invited speaker.*
51. The Environmental Response V; Sendai, Japan, September 9-14, 2019. *Invited speaker.*
52. Heidelberger Symposium on Cancer Research; Stintino, Sardinia, Italy, September 23-28, 2019. *Invited speaker.*
53. University of Arizona, Department of Chemistry and Biochemistry, Tucson, Arizona, September 23, 2021. *Invited speaker.*
54. University of Arizona, Biological Chemistry Program, Tucson, Arizona, October 28, 2021. *Invited speaker.*
55. Mycobacterial chaperonins as potential targets for new therapeutic approaches to tuberculosis; Birmingham, England, November 8 & 9, 2021. *Invited speaker.*
56. Organic and Medicinal Chemistry Symposium 2021; Lahore, Pakistan, December 16, 2021. *Invited speaker.*
57. University of Florida, Center for Inflammation Science and Systems Medicine; Jupiter, Florida, June 29, 2023. *Invited speaker.*
58. University of Florida, Department of Pharmacology and Therapeutics; Gainesville, Florida, October 11, 2023. *Invited speaker.*

Teaching:

General Chemistry – MCAT preparatory course
Organic Chemistry – MCAT preparatory course
Chemistry Journal Club – Faculty Participant
Biology Journal Club – Faculty Participant
Scientific Proposal Writing – Faculty participant in student grant writing and review process and mock study section to train students and postdocs to write RO1 style grants
Structural Biology Core Course

- Protein folding in macromolecular machines
- Protein unfolding in macromolecular machines

Biophysics Core Course

- Chemical biology as a tool for biophysical studies

Cell Biology Core Course

- Subcellular localization of protein aggregates

PCOL189 – Molecules that Changed History – **Course Developer and Coordinator**
PCOL195a – Perspectives in Pharmaceutical Science: Medicines from Bench to Bedside
PCOL 530 – Proteins and Nucleic Acids as Drug Targets – **Course Developer and Coordinator**
PCOL 630a – Cellular Communications and Signal Transduction
PCOL 820 – Case Studies
PCOL 821 – Case Studies
PCOL 832 – Metabolic Basis of Pharmacotherapy
PCOL 837A/PHSC 537A – Medicinal Chemistry
PCOL 871a – Pharmacology
PHSC 670 – Principles in Drug Discovery, Design, and Development
PCOL410 – Medicinal Chemistry – **Course Developer and Coordinator**

Departmental, College, and University Service:

Molecular and Cell Biology Affinity Group Organizing Committee
Society of Fellows – Referee for annual symposium
Research Affairs Committee
New Faculty Search Committee
Student Search Committee
Drug Discovery and Development Seminar Series Coordinator
Biological Chemistry Program Steering Committee
Student Recruitment – Graduate Interdisciplinary Program in Genetics
Pharmacology and Toxicology Department Head Search Committee
Curriculum Committee
Curriculum-Assessment Ad Hoc Committee
Student Recruitment – Arizona Biological and Biomedical Sciences (ABBS) Program
Biological Chemistry Program Journal Club Coordinator
Teaching and Technology Committee
Director of Drug Discovery Search Committee
Assessment Committee
Student Professionalism Committee
ACPE Curriculum Review Committee
Arizona Comprehensive Cancer Center/Drug Discovery and Development Faculty Recruitment Committee

Drug Discovery and Development Faculty Search Committee
Functional Genomics Core Advisory Committee
Pharm.D. Admissions Committee
Faculty Status Committee
Drug Discovery and Development Track Director

Other Service:

Swiss Cancer League – reviewer; April 05, 2015
NIH Study Section – SBCA – ad hoc reviewer; November 15 and 16, 2015
NIH Study Section – CSR Anonymization Pilot; June 06, 2018
NIH Study Section – CSR Anonymization Pilot; February 27, 2019
NIH Study Section – BCMB-G – ad hoc reviewer; June 24, 2019
NIH Study Section – XNDA – ad hoc reviewer; June 25 and 26, 2020
NIH Study Section – XNDA – ad hoc reviewer; February 25 and 26, 2021
Biotechnology and Biological Sciences Research Council (BBRSC) of the UK 2021
DDRC Pilot Project Review – April 22, 2022
Fonds Recherche – June 03, 2022
NIH Study Section – DMP – ad hoc reviewer; June 23 and 24, 2022
NIH Study Section – SBCS – ad hoc reviewer; October 13 and 14, 2022
Austrian Science Fund (FWF) – September 01, 2022
NIH Study Section – DMPA – ad hoc reviewer; March 07 and 08, 2023
NIH Study Section – ZRG1 DCAI-C – ad hoc reviewer; April 03, 2023
NIH Study Section – CDDT – ad hoc reviewer; June 22-23, 2023
NIH Study Section – SEP-8 – October 18, 2023

Reviewer: ACS Medicinal Chemistry Letters, ACS Nano, Analytical Biochemistry, Analytical Chemistry, Angewandte Chemie, Antioxidant & Redox Signaling, BBA – Proteins and Proteomics, BBA – General Subjects, Biochemistry, Biomedicine and Pharmacotherapy, Bioorganic and Medicinal Chemistry, Bioorganic and Medicinal Chemistry Letters, BMC Cancer, Carcinogenesis, Cell Biology and Toxicology, Cell Chemical Biology, Cell Death and Disease, Cell Stress and Chaperones, ChemBioChem, ChemCom, Chemical Research in Toxicology, ChemMedChem, Chemistry and Biodiversity, Chemistry and Biology, ChemistrySelect, Chemosphere, Current Medicinal Chemistry, Current Pharmaceutical Biotechnology, European Journal of Organic Chemistry, Free Radical Biology and Medicine, Frontiers in Pharmacology, Future Medicinal Chemistry, International Journal of Biological Macromolecules, International Journal of Molecular Sciences, Journal of Applied Microbiology, Journal of Biochemical and Molecular Toxicology, Journal of Ethnopharmacology, Journal of Hazardous Materials, Journal of Medicinal Chemistry, Journal of Molecular Biology, Journal of Pharmaceutical and Biomedical Analysis, Journal of the American Chemical Society, Marine Drugs, Medical Principles and Practice, Medicinal Chemistry, Molecular

Biosystems, Molecular Carcinogenesis, Molecular Informatics, Molecular Pharmacology, Molecules, The Natural Products Journal, Natural Product Reports, Oxidative Medicine and Cellular Longevity, Pharmaceuticals, PLoS ONE, Proceedings of the National Academy of Sciences, Science, Science Advances, Science Translational Medicine, Sensors, Toxicology and Applied Pharmacology

Support:

Ongoing research:

R01 ES031463 (PI)

07/09/2020-04/30/2025

NIH – direct total \$1,000,000

Redox and Protein Homeostasis in Arsenic Tumorigenicity

Arsenic is an environmental carcinogen the effects 200 million people worldwide. Yet, the underlying cause of arsenic mediated carcinogenesis remains without a molecular explanation. These studies will explore the relationship between redox and protein homeostasis and how this can lead to arsenic-derived tumors.

R35 ES031575 (co-I with Dr. Donna Zhang)

06/01/2020-02-29-2028

NIH – direct total \$5,057,944

NRF Transcription Factors in Environmental Stress and Disease

Chronic exposure to arsenic, an environmental contaminant that affects an estimated 160 million people worldwide, is a global public health concern. The goals of this R35 include in-depth mechanistic investigations of arsenic pathogenesis/NRF signaling and the translation of basic mechanistic knowledge into preclinical drug development. Completion of these goals will allow us to fill current gaps, advance environmental health research, and ultimately improve human health.

Completed research:

R01 GM120350 (co-I with Dr. Steven M. Johnson)

05/01/2017-02/28/2022

NIH – direct total \$500,000

Selective modulation of bacterial chaperonins by targeting novel small molecule binding sites.

These studies use medicinal chemistry, structural biology, biochemistry, and biophysics to understand and develop GroEL-GroES inhibitors as potential lead antibiotics.

R01 ES023758 (PI with Dr. Donna D. Zhang)

02/01/2014-10/31/2018

NIH – direct total \$1,125,000

Stress response, p97, and Nrf2 in arsenic mediated toxicity.

These studies incorporate elements of enzymology, cellular biochemistry, and in vivo studies to understand the mechanism of cellular transformation induced by low-level arsenic exposure.

R01 GM086225-01 (Co-PI), 2008-2012.

NIH – direct total \$2,500,000

Site-specific protein labeling in vivo through genetically engineered phospho-pant.

These studies explored a bio-orthogonal strategy to incorporate labels in living organisms using the pantetheine biosynthetic pathway.

Graduate Student Trainees:

| Trainee Name | Training Period (Degree) | Title of Research Project |
|---------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Eric Lau | 2012-2016 (M.S.) | Functional chromatography for expedited discovery of natural products |
| Joseph Tillotson | 2013-2016 (Ph.D.) | Targeting enzymes involved in protein translation and quality control as potential cancer therapeutics |
| Taoda Shi | 2014-2017 (Ph.D.) | Synthesis and biological evaluation of protein tyrosine phosphatase inhibitors |
| Magda Kedzior | 2017-2017 (M.A.) | Small molecule modulators of autophagy |
| Andy Ambrose | 2014-2020 (Ph.D.) | Characterization and exploitation of divergent substrate binding within HSPA5 for the development of selective inhibitors |
| Damian Mason | 2016-2017 (M.S.) | Natural product inhibitors of AAA+ proteins |
| Megha Raghunathan | 2017-2018 (M.S.) | Targeting Eukaryotic Initiation Factor 4A to Treat Cancer |
| Chris Zerio | 2017-2021 (Ph.D.) | Targeting the central dogma to inhibit nodes of convergence cancer |
| Jared Sivinski | 2018-2023 | GroEL-ES from the <i>ESKAPE</i> pathogens |
| Jason Machulis | 2018-2020 (M.S.) | NRF2 inhibitors in lung cancer therapy |
| Xiaoyi Zhu | 2021- | Hsp70 inhibitors |
| Jack Godek | 2021- | Hsp70 inhibitors |
| Carlee Trindl | 2022- | PTP inhibitors |

Graduate Student Thesis Committee Member:

Brendan Frett – Ph.D. 2015
Aram Cholanians – Ph.D. 2016
Cyf Ramos – Ph.D. 2016
Alejandro Garcia Flores – Ph.D. 2016
Guillermo Martinez-Ariza – Ph.D. 2016
Nick McConnell – Ph.D. 2017
Bryan Harder – Ph.D. 2017
Chanel Griggs – Ph.D. 2018
Will Resager – MS 2018
Xuezhen Ge – Ph.D. 2019
Erica Toth – Ph.D. 2019

Kevin Scott – Ph.D. 2021
Cody Schmidlin – Ph.D. 2021
Lipsa Jena
Laura Emilia Basantes
Kristiane Torgeson
David Donald
Tik Hang Soong
Yue Dong

Undergraduate Students:

Zubair Ahmed
Hussain Alibrahim
Erin Alimusa
Katy Blevins
Fernanda Borchardt
Thomas Buckley
David Campas
Haley Cravalho
Louis Chavez
Fabian de la Cruz
Faith Digby
Nichole Eichhorst
Krishma Esar
Casey Haller
Leah Jaclyn Homad
Josh Goldenberg
Tigran Grigoryan
Adi Gunderia
Kara Hillig
Matt Huntley
Ricky Lira
Kevin Jung
Lynn Kaneko
Magda Kedzior
Kathy Kelly
Ivy Machora
Damian Mason
Celestina Mesa
Kohlson Moore
Duc Ngo
Charlie Norwood
Hannah Nielson
Charles Orido
Adelina Ortiz
Iliya Panfilenko
Ben Rabichow
Alison Ross

Michael Sandino
Victoria Sato
Cody Schmidlin
Cristian Solano
Allison Tulino
Luis Villa
Kimberly Widrick
Kirsten Winsatt
Juliana Young

High School Students:

Kelsey Barter
Gavin Steeber
Alexa Christianson
Mana Abdi
Alex Lehman
Leah Tolby
Amelia Proudfoot
Corazon Nunez
Ryan Busse
Mae Zhang
Ronnie Sabatino
AJ Villafana
Cristina Crill