JEANNE A. HARDY, PH.D.

Professor of Chemistry
University of Massachusetts Amherst
710 N. Pleasant St., 104 LGRT,
Amherst, MA 01003

Phone: (413) 545-3486
E-mail: hardy@chem.umass.edu
http://hardylab.chem.umass.edu/
https://orcid.org/0000-0002-3406-7997

RESEARCH INTERESTS

Biological chemistry and structural biology (x-ray crystallography, NMR, HDX-MS) of biomedically important proteases. Design of novel drug-like compounds. Identification, mechanistic studies and exploitation of allosteric sites and exosites in protease drug targets.

EDUCATION

Ph.D. Biochemistry and Molecular Biology, May 2000 — *Advisor:* Hillary Nelson
University of California at Berkeley, Berkeley, CA
Dissertation Title: Role of an α-Helical Bulge and Kink in the Heat Shock Transcription Factor

B.S. Chemistry/ M.S. Biochemistry, Cum Laude 1994 — *Advisor:* Ann Aust
Utah State University, Logan, UT
Thesis Title: Effect of Iron Binding on the Ability of Crocidolite to Cause DNA Single-Strand Breaks

PROFESSIONAL EXPERIENCE

2018-Present Professor, Department of Chemistry
2019-2022 Associate Head, Department of Chemistry
2017-Present Director the NIH T32 Biotechnology Training Program
2015-Present Associate Director Models to Medicine Center of the Institute for Applied Life Science
2007-Present Adjunct Professor, Department of Biochemistry& Molecular Biology
2005-Present Faculty Member, Chemistry-Biology Interface Training Program
2005-Present Faculty Member, Molecular & Cellular Biology Graduate Program
2012-2018 Associate Professor with tenure, Department of Chemistry
2015-2017 Co-director the NIH T32 Biotechnology Training Program
2006-2015 Faculty Member, Institute for Cellular Engineering
2005-2012 Assistant Professor, Department of Chemistry
University of Massachusetts Amherst, Amherst, MA
2014 Visiting Researcher & Fulbright Fellow, Dept. of Structural Biology & Chemistry
Institute Pasteur, Paris FRANCE
2013-2014 Visiting Associate Professor, Department of Neuropathology & Neuroscience
University of Tokyo, Tokyo, JAPAN
2001-2005 NIH Post-doctoral Fellow — *Advisor:* James Wells
Sunesis Pharmaceuticals, South San Francisco, CA
2000-2001 Japan Society for Promotion of Science Post-Doctoral Fellow *Advisor:* Masasuke Yoshida
Tokyo Institute of Technology, Yokohama Japan

HONORS and DISTINCTIONS

International Proteolytic Society – Councilor for the Americas 2019-2025
The Protein Society – Executive Council 2022-2024
Elected Chair/Vice-chair Proteolysis Gordon Research Conference, 2024/2022
Chair of the Protein Society Annual Symposium Organizing Committee, 2021
Northeastern Association of Graduate Schools Graduate Faculty Teaching Award, 2020
Finalist for the UMass University Distinguished Teaching Award 2019
Journal of Biological Chemistry (JBC) Editorial Board 2019-Present
Mahoney Life Sciences Prize, 2018

Fulbright Scholar - Pasteur Institute; Paris, France, 2014
Editorial Board of Frontiers in Cell Death and Survival, 2014-Present
Editorial Board Biochemical Journal, 2010-present
Chancellor's Junior Fellows, 2009-2012
Lilly Teaching Fellowship, 2009-2010
The Cottrell Scholar Award, 2008-2011
The Beckman Young Investigator Award, 2006-2009
The Smith Family New Investigator Award, 2005-2007
NIH Post-doctoral Fellowship (3-year Individual NRSA), 2002-2005
Japan Society for the Promotion of Science Post-doctoral Fellowship, 2000-2001
Regents Fellowship, University of California at Berkeley, 1995-1996
Outstanding Graduate Student Instructor Award, University of California at Berkeley, 1995-1996
International Institute of Chemists Student Awardee, 1993
Utah State University Presidential Scholar, Utah State University, 1989-1993
National Elks Foundation Scholar, 1989-1993

CURRENT FUNDING

Description	*Role*	*Dates*	*Direct Amount*
NIH R35 GM149348 *Title: Discovering and Exploiting Caspase Regulatory, Allosteric and Exosites* Hardy, PI	PI	6/1/23 - 5/31/28	$1,250,000
NIH T32 GM135096-01 *Title: Biotechnology Training Program in Applied Life Sciences* J. Hardy, PI; S. Peyton, co-I	PI	7/1/20 - 6/30/25	$2,291,000
MLSC FY24 Research Infrastructure Grant *Title: UMass Amherst 800 MHz NMR for structural biology, metabolomics and workforce development* J. Hardy, PI; J. Fejzo, co-PI	PI	4/1/24- 3/30/26	$4,416,301

COMPLETED FUNDING

Description	*Role*	*Dates*	*Direct Amount*
Canadian Institute of Health Research (CIHR) PS 162417 *Title: Alphavirus-host interactions: Toward novel antiviral therapies* T. Hobman, PI; J. Hardy, O. Julien co-PIs	co-I	4/1/19 - 3/31/24	$212,433 (Hardy Portion)
NIH R01 GM080532-12 *Title: Control of Executioner Caspases with an Allosteric Switch* J. Hardy, PI	PI	12/1/2018 - 11/30/23	$900,000
NSF 2029416 *Title: RAPID COVID-19 Detection Through Amplification of Protease-Based Signals* S. Thayumanavan, PI; J. Hardy, T. Andrew co-PIs	Co-PI	5/1/20- 4/30/22	$65,685 (Hardy Portion)
IALS/Manning Award *Title: Development of Potent Zika Virus Protease Inhibitors* J. Hardy, PI	PI	10/1/19 - 9/30/21	$100,000

NSF CBET 1511367 *Title: A Novel Cell Selection System Using Evolved, Natural-Product Responsive Caspases* J. Hardy, PI; S. Roberts (WPI), co-PI	PI	8/15/15- 9/30/20	$480,520
NIH T32 GM108556 *Title: UMass Training Program in Biotechnology* J. Hardy, PI; S. Peyton, co-I	PI	7/1/15 - 6/30/20	$783,378
IALS Seed Grant *Title: Furoxan-based Caspase-6 Inhibitors for Treatment of Neurodegeneration* J. Hardy, PI	PI	8/1/2016- 7/31/2018	$50,000
UMASS-Chemical Screening Initiative Tier II Grant *Title: Unbiased discovery of inhibitors of Zika virus NS2B-NS3 protease for the treatment of Zika infections* J. Hardy, PI	PI	8/12/2016- 8/11/2018	$22,500
NIH R01 GM080532 *Title: Control of Executioner Caspases with an Allosteric Switch* J. Hardy, PI	PI	7/1/08 - 6/30/13 and thru 11/30/18	$692,000 $825,000
Manning Inventor Fellowship for Post-doctoral Fellow *Title: Development of a new class of caspase-6 inhibitors* J. Hardy, PI; N. Meka, PD Fellow	PD Advisor	8/8/2015- 8/7/2016	$50,000
NIH R03 DA035189 *Title: Caspase-6 allosteric inhibitors: activity probes and neurodegeneration treatments* J. Hardy, PI	PI	8/1/12- 7/31/14	$50,000
Armstrong Fund for Science *Title: Validating a New Allosteric Site in Caspase-6 for Alzheimer's Disease Treatment* J. Hardy, PI	PI	5/1/13- 6/30/15	$30,000
National Science Foundation DGE-065412 *Title: Integrative Graduate Education and Research Traineeship in Cellular Engineering* S. Roberts, PI, S. Bhatia, J. Hardy, J. Normanly, S. Peterson, co-PIs	co-PI	8/15/07 - 7/31/14	$2.82M
Research Corporation Cottrell Scholar Award *Title: Designing Allosteric Switches in Phosphatases* J. Hardy, PI	PI	5/6/08 - 6/1/12	$100,000
Center of Excellence in Apoptosis Research *Title: Building an apoptosis-reporting mouse* J. Hardy, Lead PI and K. Tremblay co-PI (All funds used to support the work of one joint Post-Doctoral Fellow with a principal appointment in Hardy Lab.)	PI	10/1/09- 9/30/11	$120,000
Center of Excellence in Apoptosis Research *Title: Development of a Real-Time Indicator of Apoptosis in Zebrafish* G. Downes, Lead PI and J. Hardy co-PI (All funds used to support the work of one joint Research Fellow with a principle appointment in Downes Lab.)	co-PI	9/1/10- 8/31/11	$26,000

Arnold and Mabel Beckman Foundation *Title: Development of an Allosteric Trigger in Caspase-7* J. Hardy, PI	PI	9/1/06 - 8/30/10	$264,000
The Medical Foundation-Smith Family New Investigator Award *Title: Designing Allosteric Switches in Caspases* J. Hardy, PI	PI	12/1/05 - 9/1/08	$190,000
American Cancer Society Institutional Research Grant *Title: Mechanism of Caspase-6 Activation and Inhibition* J. Hardy, PI	PI	5/1/07- 4/30/08	$30,000
NSM Deans Excellence Initiative *Title: Proton Exchange Membranes from Engineered M2* J. Hardy, PI. S. Thayumanavan, L. Thompson, co-PIs	PI	12/1/07 - 6/30/08	$50,000 ($16,700 Hardy Portion)
National Science Foundation CHE-0739227 *Title: Center for Chemical Innovation: Fueling the Future* S. Thayumanavan, PI., S. Auerbach, J. Hardy, M. Johnson, D. Venketraman, co-PIs	co-PI	8/15/07 - 8/14/10	$1.5M ($66,800 Hardy Portion)
Mellon Foundation Mutual Mentoring Grant *Title: Life Sciences Women Faculty* L. Thompson Lead PI and J. Hardy co-PI	co-PI	7/1/09- 7/0/10	$8,800

REFEREED PUBLICATIONS – ORCID for Jeanne A. Hardy: 0000-0002-3406-7997
Hardy as corresponding author underlined. Undergraduate authors*; Joint first authors+

From work at University of Massachusetts

1. Sparsh Makhaik, Wioletta Rut, Shruti Choudhary, Tulsi Upadhyay, Chenzhou Hao, Michael Westberg, Cedric Bobst, Euna Yoo, Jasna Fejzo, Michael Z Lin, Matthew Bogyo, Paul Thompson, Marcin Drag and Jeanne A. Hardy (2025) "A Robust Fluorogenic Substrate for Chikungunya Virus Protease (nsP2) Activity." ***Protein Science.*** https://doi.org/10.1002/pro.70069
2. Kristalle G. Cruz, Kevin Alexander, Sparsh Makhaik and Jeanne A. Hardy (2024) "FRET Probes for Detection of both Active and Inactive Zika Virus Protease." ***ACS Biochemistry***. https://doi.org/*10.1021/acs.biochem.4c00415*
3. Kristalle G. Cruz, Maureen E. Hill, Sparsh Makhaik, Sergey Savinov, and Jeanne A. Hardy (2024) "A Non-Active-Site Inhibitor with Selectivity for Zika Virus NS2B-NS3 Protease" ***ACS Infectious Diseases***. 10: 412-425.
4. Ranit Dutta, Sparsh Makhaik, Peiyao Zhao, Kristalle G. Cruz, Kwang-Won Park, Hongxu Liu, Trisha L. Andrew, Jeanne A. Hardy, and S. Thayumanavan (2022) "A Colorimetric Cotton Swab for Viral Protease Detection" ***ACS Analytical Chemistry***. 94 (37): 12699–12705 https://doi.org/10.1021/acs.analchem.2c02033
5. Vishnu Raman, Nele Van Dessel, Christopher Hall, Victoria Whetherby, Samantha Whitney, Emily Kolewe, Shoshana Bloom, Abhinav Sharma, Jeanne Hardy, Mathieu Bollen, Aleyde Van Eynde, Neil S. Forbes (2021) "Intracellular delivery of protein drugs with an autonomously lysing bacterial system reduces tumor growth and metastases" ***Nature Communications***. 12 (1): 1-14 https://doi.org/10.1038/s41467-021-26367-9. PMCID: PMC8531320
6. Ishankumar V. Soni and Jeanne A. Hardy, (2021) "Caspase-9 Activation of Procaspase-3 but not Procaspase-6 is Based both on Local Context of Cleavage Site Motifs and on Sequence" ***ACS Biochemistry*** 60(37):2824-2835 PMCID: PMC8489496
7. Luam Araya+, Ishankumar Soni+, Jeanne A. Hardy, and Olivier Julien (2021) "Caspase-3 and caspase-9 substrate profiling using N-terminomics reveals unique sets of targets" ***ACS Chemical Biology.*** 16 (11):2280-2296. doi: 10.1021/acschembio.1c00456

8. Francesca Anson, S. Thayumanavan, Jeanne A. Hardy (2021) “Exogenous Introduction of Initiator and Executioner Caspases Result in Different Apoptotic Outcomes” ***JACS Au*** 1(8): 1240-1256 https://doi.org/10.1021/jacsau. PMCID: PMC8385707
9. Francesca Anson, Bin Liu, Pintu Kanjilal, Peidong Wu, Jeanne A. Hardy‡ and S. Thayumanavan‡ (2021) “Evaluating Endosomal Escape of Caspase-3-Containing Nanomaterials Using Split GFP” ***Biomacromolecules*** 22(3): 1261–1272 https://doi.org/10.1021/acs.biomac.0c01767 PMCID: PMC8477791
10. Francesca Anson, Pintu Kanjilal, S. Thayumanavan and Jeanne A. Hardy (2020) “Tracking Exogenous Intracellular Casp-3 Using Split GFP.” ***Protein Science.*** 30(2):366-380. DOI:10.1002/pro.3992 PMCID: PMC7784757
11. Jorge Luis Arias Arias, Derek J. MacPherson, Maureen Hill, Jeanne A. Hardy and Rodrigo Rodriguez (2020) “A fluorescence activatable reporter of flavivirus NS2B-NS3 protease activity enables live imaging of infection in single cells and viral plaques.” ***J. Biol. Chem.*** 295(8), 2212-2226.
12. Bach Pham, Scott J. Eron, Maureen E. Hill, Xin Li, Monifa A. Fahie, Jeanne A. Hardy, and Min Chen (2019) “A Nanopore Approach for Analysis of Caspase-7 Activity in Cell Lysates” ***Biophyiscal Journal*** 117(5), 844-855.
13. Eric S. Okerberg, Kevin B. Dagbay, Jennifer L. Green, Ishankumar Soni, Arwin Aban, Tyzoon K. Nomanbhoy, Sergey N. Savinov, Jeanne A. Hardy, John W. Kozarich (2019) “Chemoproteomics Using Nucleotide Acyl Phosphates Reveals an ATP Binding Site at the Dimer Interface of Procaspase-6” ***ACS Biochemistry*** 58(52): 5320-5328.
14. Derek J. MacPherson, Caitlyn Mills, Mary Jo Ondrechen and Jeanne A. Hardy (2019) “N-terminal tri-arginine patch recruits for substrates for caspase-6 hydrolysis via exosite interactions” ***Journal of Biological Chemistry***. 294(1): 71-88.
15. Maureen E. Hill, Muslum Yildiz and Jeanne A. Hardy (2019). “Cysteine Disulfide Traps Reveal Distinct Conformational Ensembles in Dengue Virus NS2B-NS3 Protease” ***ACS Biochemistry***. 58(6): 776-787.
16. Jeanne A. Hardy (2018). “Fighting Kinase Resistance with Caspase Activators.” ***Cell Chemical Biology.*** 25(8), 927-928.
17. Maureen E. Hill, Anil Kumar, James A. Wells, Tom C. Hobman, Olivier Julien and Jeanne A. Hardy (2018) “The Unique Cofactor Region of Zika Virus NS2B–NS3 Protease Facilitates Cleavage of Key Host Proteins” ***ACS Chemical Biology*****.** 13(9), 2398-2405.
18. Kristen L. Huber*, Banyuhay P. Serrano* and Jeanne A. Hardy (2018). “Caspase-9 CARD: Core Domain interactions require a properly-formed active site.” ***Biochemical Journal.*** 475(6):1177-1196.
19. Agne Tubeleviciute-Aydin, Libin Zhou, Gyanesh Sharma, Ishankumar V. Soni, Sergey N. Savinov, Jeanne A. Hardy and Andrea C. LeBlanc (2018) “Rare human Caspase-6-R65W and Caspase-6-G66R variants identify a novel regulatory region of Caspase-6 activity.” ***Scientific Reports.*** 8, Article number: 4428.
20. Scott J. Eron, Derek J. MacPherson, Kevin Dagbay and Jeanne A. Hardy (2018). “Zinc-mediated inhibition of the apoptotic caspases -3, -6, -7, & -8.” ***ACS Chemical Biology*****.** 13(5), 1279-1290.
21. Banyuhay P. Serrano and Jeanne A. Hardy (2018) “Phosphorylation by Protein Kinase A Disassembles the Caspase-9 Core Promoting Formation of Ordered Aggregates.” ***Cell Death and Differentiation***. 25(6):1025-1039.
22. Celia Homyak, Ann Fernandez, Mollie Touve, Bo Zhao, Francesca Anson, Jeanne Hardy, Richard Vachet, Nathan Gianneschi, Jennifer Ross, Sankran Thayumanavan (2017) “Lipogels for Encapsulation of Hydrophilic Proteins and Hydrophobic Small Molecules" ***Biomacromolecules***. 19(1):132-140.

23. Banyuhay P. Serrano, Hannah S. Szydlo, Dominique Alfandari and Jeanne A. Hardy (2017) "Active-site Adjacent Phosphorylation at Tyr-397 by c-Abl Kinase Inactivates Caspase-9." ***Journal of Biological Chemistry***. 292(52):21352-21365.
24. Kishore Raghupathi, Scott J. Eron, Francesca Anson, Jeanne A. Hardy, Sankaran Thayumanavan (2017) "Utilizing Inverse Emulsion Polymerization to Generate Responsive Nanogels for Cytosolic Protein Delivery." ***Molecular Pharmaceutics***. 14(12):4515-4524.
25. Kevin B. Dagbay and Jeanne A. Hardy (2017) "Multiple proteolytic events in caspase-6 self activation impact conformations of discrete structural regions" ***Proceedings of the National Academy of Science, USA.*** 114(30): E7977-86.
26. Kevin B. Dagbay, Maureen Hill, Elizabeth Barrett* and Jeanne A. Hardy (2017) "Tumor-Associated Mutations in Caspase-6 Negatively Impact Catalytic Efficiency" ***Biochemistry*** 56(34):4568-77.
27. Kevin B. Dagbay, Nicolas Bolik-Coulon, Sergey N. Savinov and Jeanne A. Hardy (2017). "Caspase-6 Undergoes a Distinct Helix-Strand Interconversion Upon Substrate Binding" ***Journal of Biological Chemistry***. 292: 4885-4897.
28. Scott J. Eron, Kishore Raghupathi and Jeanne A. Hardy, (2017). "Dual Site Phosphorylation of Caspase-7 by PAK2 Blocks Apoptotic Activity by Two Distinct Mechanisms." ***Structure*** (Cell Press). 25 (1): 27–39.
29. Jeanne A. Hardy and Lynmarie Thompson (2017). "Mutual Mentoring to Promote Success and Satisfaction of Women Faculty in STEM." Educational and Outreach Projects from the Cottrell Scholars Collaborative: Professional Development and Outreach ***ACS Books.*** Volume 1259 http://pubs.acs.org/isbn/9780841232426.
30. Maureen E. Hill, Derek J. MacPherson, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, (2016). "Reprogramming Caspase-7 specificity to Caspase-6 by regio-specific mutations and selection" ***ACS Chemical Biology.*** 11(6):1603–1612.
31. Yaning Wu, Jeannine Garnett, Dongbin Xu, Elsa R. Flores, Yunlong Zhao, Jeanne A. Hardy, Andreas Bergmann, (2015). *"*Genetic characterization of two gain-of-function alleles of the effector caspase DrICE in *Drosophila"* ***Cell Death and Differentiation.*** 23(4):723-32.
32. Judy Ventura, Scott J Eron, Daniella C González-Toro, Kishore Raghupathi, Fei Wang, Jeanne A. Hardy, Sankaran Thayumanavan, (2015). "Reactive Self-Assembly of Polymers and Proteins to Reversibly Silence a Killer Protein." ***Biomacromolecules***. 16(10):3161-71.
33. Chang Soo Kim, Rubul Mout, Yunlong Zhao, Yi-Cheun Yeh, Rui Tang, Youngdo Jeong, Bradley Duncan, Jeanne A. Hardy and Vincent M. Rotello, (2015). "Co-Delivery of Protein and Small Molecule Therapeutics Using Nanoparticle-Stabilized Nanocapsules." ***Bioconjug Chem***. 26 (5): 950–954.
34. Kevin Dagbay, Scott J. Eron, Banyuhay P. Serrano, Yunlong Zhao, Elih M. Velázquez-Delgado, Di Lin* and Jeanne A. Hardy, (2014). A multi-pronged approach for compiling a global map of allosteric regulation in the apoptotic caspases. In Avi Ashkenazi, Junying Yuan, Jim Wells, editors: Regulated Cell Death Part A, ***Methods in Enzymology***, UK: Academic Press, 544: 215-249.
35. Muslum Yildiz, Sumana Ghosh, Jeffrey A. Bell, Woody Sherman and Jeanne A. Hardy, (2013). "Allosteric inhibition of the NS2B-NS3 protease from dengue virus" ***ACS Chemical Biology.*** 8 (12): 2744–2752.
36. Rui Tang, David J. Solfiell, Subinoy Rana, Chang Soo Kim, Rubul Mout, Elih M. Velázquez-Delgado, Apiwat Chompoosor, Zheng-Jiang Zhu, Chaekyu Kim, Bo Yan, Youngdo Jeong, Jeanne A. Hardy and Vincent M. Rotello, (2013). "Direct Delivery of Functional Proteins and Enzymes to the Cytosol Using Nanoparticle-Stabilized Nanocapsules." ***ACS Nano.*** 7 (8): 6667–6673.
37. Peng Wu, Samantha Nicholls and Jeanne A. Hardy, (2013). A tunable, modular approach to fluorescent protease-activated reporters. **Biophysical Journal**. 104(7):1605-14.

38. Samantha Nicholls and Jeanne A. Hardy, (2013). “Structural Basis of Fluorescence Quenching in Caspase Activatable-GFP.” ***Protein Science****.* 22(3), 247. *Article featured as cover illustration.*
39. Elih M. Velazquez-Delgado and Jeanne A. Hardy, 2012. “Zinc-Mediated Allosteric Inhibition of Caspase-6.” ***Journal of Biological Chemistry***. 287(43), 36000.
40. Kristen L. Huber, Sumana Ghosh, and Jeanne A. Hardy, (2012). “Inhibition of caspase-9 by stabilized peptides targeting the dimerization interface.” ***Peptide Science***. 98(5), 451–465.
41. Kristen L. Huber and Jeanne A. Hardy, (2012). “Mechanism of zinc-mediated inhibition of caspase-9.” ***Protein Science*****.** 21,1056-1065. *Article featured as cover illustration.*

Publications Prior to Tenure (Awarded June 12, 2012)

42. Velazquez-Delgado, Elih M. and Hardy, Jeanne A., (2012). “Phosphorylation regulates assembly of the caspase-6 substrate-binding groove.” ***Structure***. 20, 742–751. *Article featured with a Preview.*

43. Abeer M. Jabaiah, Jennifer A. Getz, Witold A. Witkowski, Jeanne A. Hardy, Patrick S. Daugherty, (2012). Identification of protease exosite-interacting peptides that enhance substrate cleavage kinetics. ***Biological Chemistry***. 393(9): 933-41.
44. Gustavo E. López, Inara Colón-Díaz, Anthony Cruz, Sumana Ghosh, Samantha B. Nicholls, Usha Viswanathan, Jeanne A. Hardy, and Scott M. Auerbach, (2012). Modeling non-aqueous proton wires tethered to helical peptides: Biased proton transfer driven by helical dipoles. ***The Journal of Physical Chemistry A****.* 116(4):1283-8.
45. Filip Jagodzinski, Jeanne A. Hardy and Ileana Streinu, (2011). “Using Rigidity Analysis To Probe Mutation-Induced Structural Changes in Proteins.” Proceedings, Bioinformatics and Biomedicine Workshops (BIBMW), 2011 IEEE International Conference (BIBM), Atlanta, USA, 2011; 432-437.
46. Witold Witkowski and Jeanne A. Hardy, (2011). “A designed redox-controlled caspase.” ***Protein Science*****,** 20, 1421-1431. *Article featured as cover illustration.*
47. Samantha Nicholls, Jun Chu, Genevieve Abbruzzese, Kimberly D. Tremblay and Jeanne A. Hardy, (2011). “Mechanism of a dark-to-bright reporter of caspase activity.” ***Journal of Biological Chemistry*****,** 286 (28), 24977-24986.
48. Sravanti Vaidya, and Jeanne A. Hardy, (2011). “Caspase-6 latent state stability relies on helical propensity.” ***Biochemistry*** 50(16), 3282-7.
49. Sravanti Vaidya, Elih M. Velazquez-Delgado, Genevieve Abbruzzese and Jeanne A. Hardy, (2011). “Substrate-Induced Conformational Changes Occur in All Cleaved Forms of Caspase-6.” ***Journal of Molecular Biology*****,** 406, 75-91. *Article featured as cover illustration.*
50. Witold Witkowski and Jeanne A. Hardy, (2009). “L2’ loop is critical for caspase-7 active-site formation.” ***Protein Science*****,** 18, 1459-1468. *Article featured as cover illustration.*
51. Kristen L. Huber, Kevin D. Olsen* and Jeanne A. Hardy, (2009). “Robust Production of a Peptide Library using Methodological Synchronization.” ***Protein Expression and Purification*****,** 67,139-147.
52. Jeanne A. Hardy, (2007). “A Link Means a Lot: Disulfide Tethering in Structure-Based Drug Design” in ***Computational Approaches to Structure Based Drug Design***, publishers Royal Society of Chemistry, p. 318-347.
53. Jeanne A. Hardy, (2006). "Discovery and exploitation of allosteric sites for control of protein function." ***Nanomedicine*****,** 2(4), 291.

From work prior to University of Massachusetts

54. Jeanne A. Hardy and James A. Wells, (2009). “Dissecting an Allosteric Switch in Caspase-7 using Chemical and Mutational Probes.” ***Journal of Biological Chemistry*****,** 284(38), 26063-9.
55. Jeanne A. Hardy and James A. Wells, (2004). “Searching for Allosteric Sites in Enzymes.” ***Current Opinion in Structural Biology,*** 14(6), 706-715.

56. Jeanne A. Hardy, Joni Lam, Jack T. Nguyen, Thomas O'Brien, and James A. Wells, (2004). "Discovery of an allosteric site in caspases." ***Proceedings of the National Academy of Science USA*****,** 101(34), 12461-6.
57. Marco P. Cicero, Susan T. Hubl, Celia J. Harrison, Otis Littlefield, Jeanne A. Hardy, Hillary C.M. Nelson, (2001). "The wing in yeast heat shock transcription factor (HSF) DNA-binding domain is required for full activity." ***Nucleic Acids Research*****,** 29(8), 1715-23.
58. Jeanne A. Hardy and Hillary C.M. Nelson, (2000). "Proline in an α-helical kink is required for folding kinetics but not for kinked structure, function or stability of heat shock transcription factor." ***Protein Science***, 9(11), 2128-2141.
59. Jeanne A. Hardy, Scott T.R. Walsh, and Hillary C.M. Nelson, (2000). "Role of an α-Helical Bulge in the Yeast Heat Shock Transcription Factor." ***Journal of Molecular Biology***, 295(3), 393-409.
60. Andrew J. Werner, Michael F. Hochella, George D. Guthrie, Jeanne A. Hardy, Ann E. Aust, J. Donald Rimstidt, (1995). "Asbestiform reibeckite (crocidolite) dissolution in the presence of Fe-chelators: Implications for mineral-induced disease." ***American Mineralogist*****,** 80 (11),1093.
61. Jeanne A. Hardy and Ann E. Aust, (1995). "Iron in Asbestos Chemistry and Carcinogenicity." ***Chemical Reviews*****,** 95, 97-118.
62. Jeanne A. Hardy and Ann E. Aust, (1995). "The Effect of Iron Binding on the Ability of Crocidolite Asbestos to Catalyze DNA Single-Strand Breaks." ***Carcinogenesis*****,** 16(2), 319-325.

MANUSCRIPTS SUBMITTED

1. Sparsh Makhaik, Wioletta Rut, Shruti Choudhary, Tulsi Upadhyay, Chenzhou Hao, Michael Westberg, Cedric Bobst, Euna Yoo, Jasna Fejzo, Michael Z Lin, Matthew Bogyo, Paul Thompson, Marcin Drag and Jeanne A. Hardy "A Robust Fluorogenic Substrate for Chikungunya Virus Protease (nsP2) Activity." *Manuscript under review at Protein Science.*

MANUSCRIPTS IN PREPARATION

2. Penchala Narasimharao Meka, Kevin B. Dagbay, Irina Sagarbarria, Elih M. Velazquez-Delgado, Andrew Smith, Derek J. MacPherson, Ishankumar V. Soni, Yifei Pei, Sergey Savinov, Elena Vazey and Jeanne A. Hardy "Discovery of potent and selective inhibitors of caspase-6." *Manuscript in preparation.*
3. Ishankumar V. Soni, Trisha Brady and B. Woody Sherman, Jeanne A. Hardy "HDX reveals changes in casp-9 upon substrate binding." *Manuscript in preparation.*

INTELLECTUAL PROPERTY FILINGS

1. Jeanne A. Hardy and Penchala Narasimarao Meka, Furoxan-Based Compounds and Uses thereof.. *U.S. patent application Ser. No. 16/960,470, filed Jul. 7, 2022, which is a U.S. National Stage Filing under 35 U.S.C. § 371 from International Application No. PCT/US2019/013201, filed on Jan. 11, 2019, which claims the benefit of U.S. Provisional Provisional Patent No. 62/616,160, filed Jan. 11, 2018*
2. Daniel A. Erlanson, Stig K. Hansen, Jeanne A. Hardy, Joni Lam, Thomas O'Brien, April 11, (2003). "Methods for Identifying Allosteric Sites." ***World Patent*****,** WO 03/087051 A2

INVITED SEMINARS

2025

American Society of Biochemistry & Molecular Biology, Apr. 12-15

"Harnessing protease reactions for detection and treatment of viral infections"

2024

University of Alberta, Faculty of Medicine, Department of Biochemistry, Jan. 19
"Using Exosites to Achieve Substrate-Selective Caspase Protease Inhibition"

Wesleyan University, June 27
Molecular Biophysics in the Northeast, Amherst, MA April 13
The Vanderbilt Center for Structural Biology (CSB) Symposium, March 28
49th Lorne Conference on Protein Structure and Function, Lorne Australia, Feb 9-13
"Harnessing protease reactions for detection and treatment of viral infections"

2023

University of Virginia Department of Microbiology, Immunology & Cancer Biology Oct. 11
University of Massachusetts Dartmouth, Department of Chemistry Sept. 13
"Harnessing protease reactions for detection and treatment of viral infections & Alzheimer's Disease"

International Proteolytic Society, Singapore June 24-29
"Harnessing protease reactions for detection and treatment of viral infections"

John's Hopkins University School of Medicine, Dept. of Biophysics & Biophysical Chemistry, Post-Doctoral Associates invited speaker, May 9
"Targeting Rare Conformational States to Achieve Selective Caspase Protease Inhibition"

National Cancer Institute, May 10
"Delivery of Native and Engineered Caspases Tuned to Cellular Properties"

2022

University of Utah, Department of Chemistry, Jan. 6
Dartmouth College, Department of Biochemistry Retreat Keynote Speaker, Nov 1
"Targeting Rare Conformational States to Achieve Selective Caspase Protease Inhibition"

University of Utah, Department of Pharmaceutical Chemistry, April 7
"Delivery of Native and Engineered Caspases Tuned to Cellular Properties"

2021

University of Massachusetts Boston, Department of Chemistry, Feb. 23
Clark University, Sept 24
"Targeting Rare Conformational States to Achieve Selective Caspase Protease Inhibition"

2020

Biophysical Society, San Diego, CA, Feb. 15-19
"Targeting Rare Conformational States to Achieve Selective Caspase Protease Inhibition"

2018

Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy, Jun. 4
"Caspase-6 attains unique conformations at various points during its lifecycle"

2017

10th General Meeting of the International Proteolysis Society - Banff, AB Canada Oct 28-Nov1
Keynote Address: CBI/BMB/UMMS Retreat – Worcester, MA May 23
"A battle to the death: Diverse molecular mechanisms for caspase regulation by kinases"

Eindhoven University of Technology (Netherlands) Department of Biomedical Engineering - Dec. 11
Engineering apoptotic caspases to discover substrate-binding exosites

Association for Biochemistry and Molecular Biology (ASBMB) Annual Meeting - Chicago, IL, Apr. 5
"Phosphorylation regulates apoptotic caspase function through diverse molecular mechanisms"

25th Annual Enzyme Mechanisms Conference – St. Pete's Beach, FL, Jan. 4-8
"Native allosteric regulation of caspase-6"

2016

Protease Inhibitors in Drug Discovery Conference - San Diego, CA, Mar. 2
"A Directed, Proactive Method for Identifying Protease Exosites for Substrate Binding"

Association for Biochemistry and Molecular Biology (ASBMB) Annual Meeting - San Diego, CA, Apr. 5
"Engineered Caspases with Altered Specificities Enable Identification of Exosites"

Trinity College Department of Chemistry – Hartford, CT, Oct. 7
"Caspase Structures that Enable a Search for new Alzheimer's Drugs"

University of Pennsylvania Medical School Raisizz Rounds, Dept. of Biochemistry & Biophysics, Oct 27
"Caspases and Kinases on the Apoptotic Battlefield"

2015

Protease Inhibitors in Drug Discovery Conference - San Diego, CA, Feb. 26-27
Université de Sherbrooke – Sherbrooke, QC, Jun 1.
"Identifying and Exploiting of Allosteric Sites in Caspases"

Merrimack College Department of Chemistry - North Andover, MA, Mar. 2
"Caspase Structures that Enable a Search for new Alzheimer's Drugs"

James Wells 65th Birthday Symposium - UCSF, CA, Apr. 25
"Caspases and Kinases on the Apoptotic Battlefield"

McGill University Department of Neurology & Neurosurgery - Montreal, QC, Jun. 2.
29th Annual Symposium of The Protein Society - Barcelona, Spain, July 22-25.
"Mapping Allosteric Sites Across the Apoptotic Caspases"

2014

Tokyo Metropolitan Inst. of Medical Science – Dept. of Advanced Science for Biomolecules, Jan. 24.
"Handcuffing the Killers: Conformational control and real-time monitoring of caspase proteolytic activity"

European Workshop on Cell Death – Paphos, Cyprus, Mar. 31.
"Allosteric Regulation of Apoptotic Caspases"

Institute Pasteur – Dept. of Structural Biology & Chemistry, Apr. 28.
"Handcuffing the Killers: Conformational control of caspase proteolytic activity"

Institute Pasteur – Dept. of Structural Biology & Chemistry, July 1
"Discovering and Exploiting Allosteric sites in Dengue Virus Protease"

Kings College London – Metal Metabolism Group Zinc Brain Storming Session, July 31
"Allosteric regulation of caspases by zinc"

International Society for Zinc Biology – Asilomar, CA, Sept. 15
"Allosteric Regulation of Apoptotic Caspases by Zinc"

2013

Brandeis University – Department of Chemistry, Jan. 28.
University of Massachusetts Molecular & Cellular Biology Retreat, Feb. 23.
Peking University – School of Life Sciences, Mar. 18.
University of Western Ontario – Departments of Chemistry and Biochemistry, Mar. 27.
"Suicidal Shape Shifters: Conformational Control of Caspases."

Brookhaven National Laboratory – Brookhaven Women in Science, Apr. 24
University of Tokyo – Graduate School of Pharmaceutical Sciences, Oct. 3
University of Tokyo – Department of Applied Chemistry – School of Engineering, Nov. 26
Tokyo Institute of Technology – Nagatsuta Campus - Chemical Resources Laboratory, Nov. 29
"Handcuffing the Killers: Conformational control and real-time monitoring of caspase proteolytic activity"

Tokyo Institute of Technology – Ookayama Campus – Department of Computer Science, Nov. 15
"Discovering and Exploiting Allosteric sites in Caspases and Dengue Virus Protease"

University of Western Ontario – School of Arts and Sciences, Mar. 28.
"Every Third Thursday: Mutual Mentoring for Women in the STEM Disciplines."

2012

Quinnipiac University – Department of Chemistry, Nov. 9.
Symposium on Biomolecular Structure, Dynamics & Function - St. Jude Children's Hospital, Memphis, TN April 27-29th.
"Suicidal Shape Shifters: Conformational Control of Caspases."

16th Annual UMass Food Science Industrial Strategic Research Alliance Meeting. April 12, 2012.
"Exploring and Exploiting Allosteric sites on Caspase-6 for Treatment of Alzheimer's Disease."

2011

Massachusetts Institute of Technology – Program in Biophysics, April 1.
Vanderbilt University – Department of Microbiology & Immunology, April 5.
University of Massachusetts School of Medicine – Department of Biochem. & Mol. Pharmacology, April 13.
University of Massachusetts Dartmouth –Department of Chemistry, Feb 16.
North Carolina State University – Department of Molecular & Structural Biochemistry, Sept. 15.
University of Massachusetts Amherst – Department of Chemistry, Sept. 22
University of Pennsylvania School of Medicine – Department of Biochemistry & Biophysics, Sept. 29.
Smith College – Department of Chemistry, Oct. 6.
New England Young Faculty Symposium, Amherst, MA, Oct. 22.
"Suicidal Shape Shifters: Conformational control and monitoring of caspase proteolytic activity."

Proteins Gordon Research Conference, Holderness, NH, June 20. Talk selected from abstracts.
"Multiple Allosteric Sites Exist in Neurodegenerative Caspase-6."

2010

University of Utah School of Medicine –Department of Pharmaceutical Chemistry, March 18.
Brigham Young University–Department of Chemistry & Biochemistry, March 19.
"Controlling Caspases Allosterically with Chemical, Mutational & Fluorescent Probes."

Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy, May 6. One of two talks selected from abstracts as a "hot talk".
"A Dark to Bright Reporter of Protease Activity"

2009

Aileron Therapeutics, Boston, MA. March 19.
"Designing helical peptides as caspase inhibitors and scaffolds for proton transport studies."

Pacific Coast Protease Meeting, Warner Springs Ranch, CA. April 19. Invited Keynote Speaker.
"Dissecting the Caspase-7 Allosteric Mechanism with Chemical, Mutational & Fluorescent Probes."

Research Corporation for Science Advancement Cottrell Scholar Conference, Tucson, AZ, July 10.
"Crime Scene Chemistry: The truth & lie behind CSI."

Annual Symposium of the Protein Society, Boston MA, July 25. Talk selected from abstracts.
"A Dark to Bright Reporter of Proteolytic Activity."

Beckman Young Investigators Symposium, Irvine CA, Aug 9.

University of Massachusetts Amherst – Department of Vet & Animal Science. May 6.
"Controlling Caspases Allosterically with Chemical, Mutational & Fluorescent Probes."

2008

Health & Diseases: Discoveries and Treatments Symposium, UMass Alumni Weekend, Jun. 7.
"Chemical Genetics for Drug Target Validation."

Center for UMass-Industry Research on Polymers Lecture Series, Oct. 14.
"Robust Production of a Peptide Library using Methodological Synchronization"

2006

American Association for Nanomedicine Washington, DC, Sept. 9.
"Discovery and Exploitation of Allosteric Sites for Control of Protein Function."

The College of the Holy Cross - Department of Chemistry, Sept. 29.
Clark University - Department of Chemistry, Oct. 4.
SUNY Albany - Department of Chemistry, Oct. 10.
Amherst College - Department of Chemistry, Oct. 20.
Mt. Holyoke College - Department of Biochemistry, Nov. 14.
University of Massachusetts Molecular & Cellular Biology Retreat. South Hadley, MA, March 18.
"Regulating Caspase Activity Using Native and Engineered Allosteric Sites"

University of Massachusetts Amherst-Department of Polymer Science & Engineering, Dec. 1.
"Regulating Biopolymer Function with Allosteric Small Molecules"

2005

Princeton University - Department of Chemistry, Jan. 4.
Georgia Institute of Technology - Department of Chemistry and Biochemistry, Jan. 10.
University of Texas Southwestern Medical Center - Department of Biochemistry, Jan. 13.
University of Illinois Urbana-Champaign - Department of Biochemistry, Jan. 17.
Indiana University - Department of Chemistry, Jan. 19.
Carnegie Mellon University - Department of Biology, Jan. 31.
University of Chicago - Department of Biochemistry, Feb. 8.
Utah State University - Department of Chemistry and Biochemistry, Aug. 26
"Discovery of an Allosteric Site in the Caspases Using Thiol-Directed Ligands."

2004

Apoptosis in Biochemistry and Structural Biology Keystone Symposium, Keystone, CO. Feb. 6.
University of Southern California - Department of Chemistry, Jan. 27.
Saint Louis University - Department of Biology, Feb. 11.
Duquesne University - Department of Chemistry and Biochemistry, Feb. 23.
Pacific Coast Protease Workshop, Half Moon Bay, CA, April 26.
Barnard College - Department of Chemistry, Nov. 15.
University of Pennsylvania - Department of Biochemistry and Biophysics, Dec. 6.
Purdue University - Department of Biochemistry, Dec. 8.
University of Nebraska Medical Center - Department of Biochemistry and Molecular Biology, Dec. 13.
University of Massachusetts Amherst - Department of Chemistry, Dec. 16.
"Discovery of an Allosteric Site in the Caspases Using Thiol-Directed Ligands."

INTERNATIONAL ORAL PRESENTATIONS BY HARDY GROUP MEMBERS

Graduate student poster presenter underlined. Undergraduate presenters*.

Nathanael Kuzio, Jasna Fejzo, and Jeanne A. Hardy. "Caspase-6 Structure and Dynamics by NMR: Investigating the On-Off States of a Protease Involved in Neurodegeneration" 38th Annual Symposium of the Protein Society - Vancover, BC July 22-26, 2024.

Derek MacPherson, Kevin Dagbay, and Jeanne A. Hardy. "Caspase-6 Self-Activation Enables Distinct Helix-Strand Interconversion Upon Substrate Binding" Association for Biochemistry and

Molecular Biology (ASBMB) Annual Meeting at Experimental Biology - San Diego, CA April 21-25, 2018.

INTERNATIONAL POSTER PRESENTATIONS

Graduate student poster presenter underlined. Undergraduate presenters*.

Kevin D. Olson*, Kristen L. Huber, and Jeanne A. Hardy. "Rapid Production of a Protease-Directed Peptide Library." Protein Society 22nd Annual Symposium, San Diego, CA. 7/27/2008.

Witold Witkowski and Jeanne A. Hardy. "Role of Caspase-7 L2' Loop in Active Site Formation and Allosteric Inhibition. Protein Society 22nd Annual Symposium, San Diego, CA. 7/27/2008.

Elih. M. Velazquez, Samantha Bernard, Kevin Olson, Sumana Ghosh and Jeanne A. Hardy. "Proton transport using alpha helical scaffolds." Society for Advancement of Chicanos and Native Americans in Science National Conference, Salt Lake City, UT. 10/11/2008.

Naomi Fox, Filip Jagodzinski, Jeanne Hardy, Ileana Streinu, "How Hydrogen Bond Redundancy Affects Protein Flexibility" Protein Society 23rd Annual Symposium, Boston, MA. 7/26/2009.

Witold Witkowski and Jeanne Hardy, "Studies of motion in the caspase-7 L2' loop." Protein Society 23rd Annual Symposium, Boston, MA. 7/26/2009.

Samantha Bernard, Genevieve Abbruzzese and Jeanne Hardy, "A Dark to Bright Reporter of Proteolytic activity" Protein Society 23rd Annual Symposium, Boston, MA. 7/26/2009.

Samantha Bernard, Jun Chu, Genevieve Abbruzzese, Kim Tremblay and Jeanne Hardy, "A Dark to Bright Reporter of Caspase activity" Cell Death Pathways: Apoptosis, Autophagy and Necrosis Keystone Symposium, Vancouver, BC. 3/16/2010.

Samantha Nicholls, Jun Chu, Genevieve Abbruzzese, Kim Tremblay and Jeanne Hardy, "A Dark to Bright Reporter of Proteolytic activity" Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy. 5/5/2010.

Elih Velazquez-Delgado, Sravanti Vaidya, and Jeanne Hardy, "The role of the 90's helix in caspase-6 structure and activity" Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy. 5/4/2010.

Sravanti Vaidya, Elih Velazquez-Delgado, Genevieve Abbruzzese and Jeanne Hardy, "Substrate-induced conformational changes in caspase-6 are independent of prodomain and intersubunit linker." Protein Society 24th Annual Symposium, San Diego, CA. 8/03/2010.

Sravanti Vaidya, Elih Velazquez-Delgado, and Jeanne Hardy, "Multiple Allosteric Sites Exist in Neurodegenerative Caspase-6" Proteins Gordon Research Conference, Holderness, NH 6/21/2011.

Elih Velazquez-Delgado and Jeanne Hardy, "Phosphorylation Regulates the Assembly of Active-Site Loops in Caspase-6" Proteins Gordon Research Conference, Holderness, NH. 6/22/2011.

Samantha Nicholls, Jun Chu, Genevieve Abbruzzese, Kim Tremblay and Jeanne Hardy, "Mechanism of A Dark to Bright Reporter of Proteolytic activity" Proteins Gordon Research Conference, Holderness, NH. 6/23/2011.

Kristen Huber and Jeanne Hardy, "Caspase-9 is regulated by zinc mediated inhibition and CARD-domain interactions" Protein Society 25rd Annual Symposium, Boston, MA. 7/26/2011.

Sravanti Vaidya, Elih Velazquez-Delgado, and Jeanne Hardy, "Multiple Allosteric Sites Exist in Neurodegenerative Caspase-6" Protein Society 25rd Annual Symposium, Boston, MA. 7/27/2011.

Filip Jagodzinski, Jeanne Hardy, and Ileana Streinu "Using Rigidity Analysis To Probe Mutation-Induced Structural Changes in Proteins" IEEE International Conference on Bioinformatics and Biomedicine, Washington D.C., 11/1/2011.

Scott Eron and Jeanne Hardy, "The Structural Mechanisms of Inhibition of Caspase-7 by Phosphorylation" Symposium on Biomolecular Structure, Dynamics & Function - St. Jude Children's Hospital, Memphis, TN April 27-29th, 2012. *Recipient of a Poster Prize.*

Scott Eron, Elih Velazquez-Delgado and Jeanne Hardy, "The Structural Mechanisms of Inhibition of Caspase-6 and -7 by Phosphorylation" Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy. 6/19/2012. **Recipient of the Protease GRC Outstanding Poster Award.*

Kevin Dagbay and Jeanne Hardy, "Splicing, Prodomain and Intersubunit Linker Impact Caspase-6 Function and Stability" The 27th Annual Symposium of the Protein Society – Boston, MA July 20-23, 2013.

Kevin Dagbay and Jeanne Hardy, "Probing Caspase-6 Domain Architecture for Regulation" Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy, June 22-27, 2014.

Banyuhay P. Serrano and Jeanne Hardy, "Phosphorylation by PKA Regulates Caspase-9 through Diverse Mechanisms" Keystone Symposium on Cell Death Signaling in Cancer and the Immune System, Sao Paulo, Brazil, October 28 - November 2, 2014.

Derek MacPherson, Maureen E. Hill, Peng Wu, and Jeanne Hardy, "Altering Caspase Specificity Using an Intracellular Directed Evolution Approach" ASBMB, Boston, MA, March 2015.

Maureen E. Hill, Derek MacPherson, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "Engineering Caspases with Altered Specificities" Synthetic Biology: Engineering, Evolution and Design (SEED), Boston, MA, June 10-13, 2015.

Derek MacPherson, Maureen Hill, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "Reprogramming Caspase Activity by Directed Evolution Provides Alternate Solutions for Substrate Recognition" ACS, Boston, MA, August 16 – 20, 2015.

Derek MacPherson, Maureen Hill, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "Reprogramming Caspase Activity by Directed Evolution Provides Alternate Solutions for Substrate Recognition" Sci-Mix Special Poster Session, ACS Boston, Seaport District, Boston, MA, August 18, 2015.

Maureen E. Hill, Derek MacPherson, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "A Directed Evolution Approach to Engineer Caspase Specificity and Allostery" Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy. June 26-July 1, 2016. **Recipient of a Poster Prize.*

Derek MacPherson, Maureen Hill, Peng Wu, Olivier Julien, James A. Wells, Jeanne Hardy, "Interrogating Caspase-6 Selectivity Utilizing an Evolved Specificity Caspase Reveals Exosite Dependent Substrates" The 30th Symposium of the Protein Society, Baltimore, MD, July 16-19, 2016.

Banyuhay P. Serrano and Jeanne Hardy, "Phosphorylation Controls Caspase-9 Function through Divergent Mechanisms" The 30th Symposium of the Protein Society, Baltimore, MD, July 16-19, 2016. **Recipient of a Poster Prize.*

Maureen E. Hill, Derek MacPherson, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "A Directed Evolution Approach to Engineer Caspase Specificity and Allostery" The 30th Symposium of the Protein Society, Baltimore, MD, July 16-19, 2016.

Kevin Dagbay, Nicolas Bolik-Coulon, Sergey Savinov, and Jeanne A. Hardy, "Probing the Domain Architecture and Structural Dynamics of Caspase-6 for its Specific Regulation" The 30th Symposium of the Protein Society, Baltimore, MD, July 16-19, 2016.

Kevin Dagbay, Nicolas Bolik-Coulon, Sergey Savinov, and Jeanne A. Hardy, "Probing the Domain Architecture and Structural Dynamics of Caspase-6 for its Specific Regulation" The First Gordon Conference on Molecular Structure and Elucidation, Mt. Snow, West Dover, VT, August 14-19, 2016.

Maureen E. Hill, Derek MacPherson, Peng Wu, Olivier Julien, James A. Wells, Jeanne A. Hardy, "A Directed Evolution Approach to Engineer Caspase Specificity and Allostery" St. Jude National Graduate Student Symposium, St. Jude Children's Hospital, Memphis, TN, March 20-23, 2017.

Maureen E. Hill and Jeanne A. Hardy, "Conformational Flexibility is critical for Catalytic Activity of Dengue Virus NS2B-NS3 protease." 10th General Meeting of the International Proteolysis Society - Banff, AB Canada Oct 28-Nov1

Francesca Anson, Sankaran Thayumanavan, Jeanne A. Hardy, "Probing Caspase-Nanogel Self-Assembly and Release" The 32nd Symposium of the Protein Society, Boston, MA, July 9-12, 2018.

Ishankumar V. Soni, Kevin Dagbay, Eric Okerberg, Jennie Green, Tyzoon Nomanbhoy, Sergey Savinov, John Kozarich and Jeanne Hardy. "Investigating the functionality of Procaspase-6 and caspase-6 by various nucleotides." The 32nd Symposium of the Protein Society, Boston, MA, July 9-12, 2018.

Maureen E. Hill and Jeanne Hardy. "Conformational Flexibility is critical for Catalytic Activity of Dengue Virus NS2B-NS3 protease." The 32nd Symposium of the Protein Society, Boston, MA, July 9-12, 2018.

Nathanael J. Kuzio, Jasna Fejzo, Jeanne Hardy, "Investigating Caspase-6 Mobility via Biomolecular NMR" The 35th Annual Symposium of the Protein Society, Virtual Conference, July 7th-9th & 12th-14th, 2021.

Sparsh Makhaik, Ranit Dutta, Peiyao Zhao, Kristalle G. Cruz, Kwang-Won Park, Hongxu Liu, Trisha L. Andrew, S. Thayumanavan, Jeanne A. Hardy. "A Colorimetric Cotton Swab for Viral Protease Detection.", Gordon Research conference (GRC and GRS) on Proteolytic Enzymes and Their Inhibitors, Lucca, Italy, June 4-June 10, 2022.

Nathanael J. Kuzio, Jasna Fejzo, Jeanne Hardy, "Probing of Caspase-6 Structure, Inhibition, and Dynamics for the Development of Neurodegeneration Therapeutics" The 36th Annual Symposium of the Protein Society, San Francisco, CA, July 7th-10th, 2022.

Irina S. Sagarbarria, Ethan R. Goulart and Jeanne A. Hardy. "Structural Characterization of Potent and Selective Caspase-6 Inhibitors for the Treatment of Neurodegeneration" The 36th Annual Symposium of the Protein Society, San Francisco, CA, July 7th-10th, 2022.

Nathanael J. Kuzio, Jasna Fejzo, Jeanne Hardy, "Probing of Caspase-6 Structure, Inhibition, and Dynamics for the Development of Neurodegeneration Therapeutics" 29th International Conference on Magnetic Resonance in Biological Systems, Boston, MA, August 21st-25th, 2022.

Nathanael J. Kuzio, Jasna Fejzo, Jeanne Hardy, "Probing of Caspase-6 Structure, Inhibition, and Dynamics for the Development of Neurodegeneration Therapeutics" American Society for Biochemistry and Molecular Biology Discover BMB 2023, Seattle, WA, March 25th-28th, 2023.

Sparsh Makhaik, Jasna Fejzo, Jeanne A. Hardy, "Exploring the druggability of Chikungunya virus protease using Biomolecular NMR', Protein Society Symposium-37, Boston, July 2023.

Irina S. Sagarbarria, and Jeanne A. Hardy. "Structural Characterization of Potent and Selective Caspase-6 Inhibitors for the Treatment of Neurodegeneration" The 37th Annual Symposium of the Protein Society, Boston, MA, July 2023

Andrew Smith, and Jeanne A. Hardy. "Investigating Caspase-6 and Tau Interactions to Identify Exosites used for Substrate Recruitment" The 37th Annual Symposium of the Protein Society, Boston, MA, July 2023

Thomas A. Bregnard, Trisha W. Brady, Derek J. MacPherson, and Jeanne A. Hardy, "Identification of Exosites in Caspase-6 for Development of Substrate-Selective Inhibitors" 2024 Proteolytic Enzymes and Their Inhibitors Gordon Research Seminar, Barga, Italy, June 8-9, 2024.

Irina S. Sagarbarria, Jamie Seo, and Jeanne A. Hardy. "Inhibition of Caspase-6 as a Therapeutic Strategy for the Treatment of Neurodegeneration" 2024 Proteolytic Enzymes and Their Inhibitors Gordon Research Conference, Barga, Italy, June 9-14, 2024.

Thomas A. Bregnard, Trisha W. Brady, Derek J. MacPherson, and Jeanne A. Hardy, "Identification of Exosites in Caspase-6 for Development of Substrate-Selective Inhibitors" 2024 Proteolytic Enzymes and Their Inhibitors Gordon Research Conference, Barga, Italy, June 9-14, 2024.

Sparsh Makhaik, Jasna Fejzo, Jeanne A. Hardy, "Exploring the druggability of Chikungunya virus protease nsP2", Protein Society Symposium-37, July 22-26, Vancouver, 2024.

Nathanael J. Kuzio, Jasna Fejzo, Jeanne Hardy, "Caspase-6 Structure and Dynamics by NMR: Investigating the On-Off States of a Protease involved in Neurodegeneration" The 38th Annual Symposium of the Protein Society, Vancouver, BC, July 22nd-26th, 2024.

REGIONAL and LOCAL POSTER PRESENTATIONS

Students from my lab have presented 150+ posters at local and regional conferences including: The Northeast Structural Symposium, Northeast Bioengineering Conference, Smith Medical Foundation Annual Meetings, UMass REU symposiums, CBI Annual Joint retreats, UMass ResearchFest (annually), NEA-GEP/ICE Recruiting Weekend, MCB Retreat, Center for Chemical Innovation Symposium, and the University of Massachusetts System Undergraduate Conferences.

Graduate Student Awards and Prizes *(*National and International Awards)*

Sravanti Vaidya - Chemistry-Biology Interface Joint Retreat Outstanding Poster Prize, June 2007
Sravanti Vaidya - Peter C. Uden Outstanding Poster Presentation Award Sponsored by the William E. McEwen Fellowship, 2007
Kristen Huber - Peter C. Uden Outstanding Poster Presentation Award Sponsored by the William E. McEwen Fellowship, 2008
Sravanti Vaidya - Peter C. Uden Outstanding Poster Presentation Award, sponsored by Proctor and Gamble, 2009
Kristen Huber - UMass Outstanding Achievement in Chemistry Award, 2010
Witold Witkowski - Richard and Meryl Brown $2000 Award for the Most Outstanding ResearchFest Presentation, 2010
Elih Velazquez-Delgado - Chemistry-Biology Interface Joint Retreat Outstanding Poster Prize, 2011
* Scott J. Eron - Symposium on Biomolecular Structure, Dynamics & Function Poster Prize.- St. Jude Children's Hospital, Memphis, TN 2012.
* Scott J. Eron - Proteolytic Enzymes and their Inhibitors Gordon Research Conference Outstanding Poster Award, Barga, Italy. 2012.
Bay Serrano - William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2013
Kevin B. Dagbay - 3M Award for Most Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2013
Bay Serrano - Best Poster Presentation, Joint CBI/BMB/BMP Retreat, UMass Worcester, 2014
Kevin B. Dagbay - William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2014
Bay Serrano - 3M Award for Most Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2014
Scott Eron – William E. McEwen $2000 Award for Most Outstanding ResearchFest Presentation, 2014
* Bay Serrano - Keystone Symposia-FAPESP (São Paulo Research Foundation) Travel Fellowship, 2014
Scott J. Eron - Best Poster Presentation, Joint CBI/BMB/BMP Retreat, UMass Worcester, 2015
Bay Serrano - William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2015
Kevin B. Dagbay - William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2015
Scott J. Eron - William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2015
*Derek MacPherson - Sci-Mix Poster Award, Annual Symposium of the American Chemical Society, 2015
Bay Serrano – William E. McEwen $2000 Fellowship Award for Outstanding Presentation during ResearchFest 2015
* Bay Serrano – Best Poster Award, 30th International Protein Society Meeting, Baltimore MD, 2016
Kevin B. Dagbay – Best Poster Award, Best Poster Presentation, Joint CBI/BMB/BMP Retreat, Amherst, MA, 2016
* Maureen Hill – Gordon Research Seminar Poster Award Prize, Proteolytic Enzymes & Their Inhibitors in Il Ciocco, Italy 2016

Derek MacPherson – Dr. Paul Hathaway Terry Graduate Scholarship Award for Outstanding ResearchFest Oral Presentation, 2016
Maureen Hill – Dr. Paul Hathaway Terry Graduate Scholarship Award for Outstanding ResearchFest Oral Presentation 2017
Derek MacPherson – William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2017
* Maureen Hill – International Proteolytic Society Travel Award, 2017
Francesca Anson – Donald Kuhn Graduate Fellowship, 2017
Francesca Anson – William E. McEwen Award for Outstanding Poster, ResearchFest, 2018
* Nathanael Kuzio – NSF Graduate Research Fellowship Program Honorable Mention, 2021
Nathanael Kuzio – UMass Chemistry Department Ambassador Award 2022
* Nathanael Kuzio – International Conference on Magnetic Resonance in Biological Systems Travel Award, 2022
* Sparsh Makhaik – DEI travel award, The Protein Society Annual Symposium (PS37), 2023
* Kristalle Cruz – Protein Society Travel Award, 2023
Irina Sagarbarria – William E. McEwen Award for Outstanding Poster Presentation, UMass Chemistry ResearchFest, 2023, 2024
*Irina Sagarbarria –2024 Heck-Sloane Award at the Proteolytic Enzymes and their Inhibitors Gordon Resarch Conference
*Trisha Brady – Travel award, The Protein Society Annual Symposium (PS38), 2024
Sparsh Makhaik – Travel award, The Protein Society Annual Symposium (PS38), 2024
Nathanael Kuzio – William E. McEwen $2000 Fellowship Award for Outstanding Presentation during ResearchFest 2024

TEACHING

At University of Massachusetts

Term	*Course*	*Course Name*	*Credits*	*Instructor(s)*
S 25	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
S 25	CHEM 731	Responsible Conduct of Research	1	J. Hardy (50%)
F 24	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (20%); Teaching Release
S 24	CHEM 731	Responsible Conduct of	1	J. Hardy (50%); Teaching Release
F 23	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (20%); Teaching Release
S 23	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
F 22	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (100%)
F 21	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (25%)
S 21	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
S 20	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
F 19	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (100%)
F 19	CHEM 291A	Sophomore Seminar	1	J. Hardy (100%)
S 19	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
S 18	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
F 17	CHEM 797T	Frontiers of Biotechnology	3	J. Hardy (50%) / B. Osborne
S 17	CHEM 423	Biochemistry for Chemists	3	J. Hardy (100%)
F 16	CHEM 121H	Honors General Chemistry	4	J. Hardy (100%)
S 16	CHEM 657	Drug Design	3	J. Hardy (50%) / S. Garman
S 16	CHEM 797T	Frontiers in Biotechnology	3	J. Hardy (50%) / B. Osborne
F 15	CHEM 121H	Honors General Chemistry	4	J. Hardy (100%)
S 15	CHEM 657	Drug Design	3	J. Hardy (50%) / S. Garman
F 14	CHEM 121H	Honors General Chemistry	4	J. Hardy (100%)
S 13	CHEM 657	Drug Design	3	J. Hardy (50%) / S. Garman
S 13	BIOC 697N	Hands on X-ray Diffraction	1	J.Hardy (33%) / S. Garman / K. Theis

F 12	CHEM 121H	Honors General Chemistry	4	J. Hardy (100%)
S 12	CHEM 657	Drug Design	3	J. Hardy (50%) / S. Garman
S 11	CHEM 657	Drug Design	3	J. Hardy (50%) / S. Garman
S 11	BIOC 697N	Hands on X-ray Diffraction	1	J.Hardy (33%) / S. Garman / K. Theis
F 10	CHEM 791A	Biomolecular Structure	3	J. Hardy (50%) / M. Chen
S 10	UNIV 197	Crime Scene Chemistry	1	J. Hardy (100%)
S 09	BIOC 697N	Hands on X-ray Diffraction	1	J.Hardy (33%) / S.Garman / K.Theis
S 09	CHEM 112	General Chemistry II	4	J. Hardy (100%)
F 08	CHEM 791A	Biomolecular Structure	3	J. Hardy (100%)
S 08	CHEM 112	General Chemistry II	4	J. Hardy (100%)
S 08	BIOC 697N	Hands on X-ray Diffraction	1	J. Hardy (33%) / S. Garman / K. Theis
S 07	CHEM 112	General Chemistry II	4	J. Hardy (50%) / R. Weis
S 07	BIOC 697N	Hands on X-ray Diffraction	1	J. Hardy (33%) / S. Garman / K. Theis
F 06	CHEM 791A	Biomolecular Structure	3	J. Hardy (100%)
S 06	-	X-ray Practical Mini Course	-	J. Hardy (33%) / S. Garman / K. Theis
F 05	CHEM 791A	Biomolecular Structure	3	J. Hardy (50%) / C. Martin
F 05	-	X-ray Practical Mini Course	-	J. Hardy (33%) / S. Garman / K. Theis

*Teaching Releases were granted in Fall 2020 and Fall 2021 for service as Associate Head.

RESEARCH TRAINING and MENTORING

Graduate Students

Name	*Program*	*Degree*	*Dates*	*Present Position*
Sravanti Vaidya	Chemistry	Ph. D.	Jan 2006 – Jan 2011	Project Scientist at the Center for Cellular and Molecular Biology (CCMB) at the Indian Ministry of Science and Technology
Witold Witkowski	Chemistry	Ph. D.	Jan 2006 – May 2011	Data Scientist at Quest Diagnostics
Kristen Huber	Chemistry	Ph. D.	Jan 2006 – Jan 2012	Senior Research Scientist HotSpot Therapeutics
Nivas Ramaswamy	Chemistry	M.S.	May 2006 – Aug 2007	Not reported
Allison Craney	Molecular & Cellular Biology	Rotation	Oct 2006 – Jan 2007	Strategy Consultant at Clarion Healthcare
Samantha Nicholls	Chemistry	Ph. D.	Jan 2008 – Dec 2012	Scientist at ScholarRock Inc.
Elih Velazquez	Chemistry	Ph. D.	Dec 2008 – Jun 2012	Genomics & Bioinformatics Dept. Naval Medical Research Center - Frederick
Daniel Seeman	Chemistry	M. S.	Dec 2008 – May 2010	Scientist at Brookhaven Instruments
Muslum Yildiz	Chemistry	Ph. D.	Dec 2008 – Oct 2013	Faculty at Gebze Technical University
Leslie Conway	Molecular & Cellular Biology	Rotation	Oct 2008 – Jan 2009	Principal Scientist at Jnana Therapeutics
Genevieve Abbruzzese	Molecular & Cellular Biology	Rotation	Sept 2009 – Jan 2010	Research Senior Scientist at Takeda
Scott Eron	Chemistry	Ph. D.	Dec 2010 – Nov 2016	Scientist at Aleksia Therapeutics
Kevin Dagbay	Chemistry	Ph. D.	Dec 2010 – Apr 2017	Principal Scientist at Keros Therapeutics

Yunlong Zhao	Chemistry	M. S.	Dec 2011 – April 2014	Scientist at Regeneron Pharmaceuticals
Banyuhay Serrano	Chemistry	Ph. D.	Dec 2011 – Sept 2017	Postdoctoral Fellow Harvard Medical School
Maureen Hill	Chemistry	Ph. D.	Dec 2012 – Sept 2018	Scientist at Stealth Mode Biotech
Derek MacPherson	Chemistry	Ph. D.	Dec 2012 – Oct 2018	Principal Scientist at Stealth Mode Biotech
Francesca Anson	Chemistry	Ph. D.	Dec 2015 – May 2021	Scientist III at Genentech
Ishankumar Soni	Chemistry	Ph. D.	Dec 2015 – May 2022	Investigator I at CSL
Kristalle Cruz	Chemistry	Ph. D.	Dec 2017 – Present	Graduate Student UMass
Yifei Pei	Chemistry	M.S.	Dec 2015 – May 2017	Associate Director Pieris Pharmaceuticals
Kevin Ramos	PREP	-	Jun 2017 – Jun 2018	Graduate Student at Albert Einstein
Sparsh Makhaik	Chemistry	Ph. D.	Dec 2018 – Present	Graduate Student UMass
Irina Sagarbarria	Chemistry	Ph. D.	Dec 2018 – Present	Graduate Student UMass
Andrew Smith	Chemistry	Ph. D.	Dec 2018 – Present	Graduate Student UMass
Nathanael Kuzio	Chemistry	Ph. D.	Dec 2019 – Present	Graduate Student UMass
Rashad Baker	Chemistry	M.S.	Mar 2021 – Jan 2023	API Lab Analyst at Pfizer
Trisha Brady	Chemistry	Ph. D.	Jan 2022 – Present	Graduate Student UMass
Yi Zheng	Chemistry	Ph. D.	Jan 2024 – Present	Graduate Student UMass
Muhammad Arslan Rahat	Chemistry	Ph. D.	Jan 2024 – Present	Graduate Student UMass
Abhin Maya Vishnu	Chemistry	Ph. D.	Dec 2024 – Present	Graduate Student UMass

Graduate Student Dissertation Titles

Sravanti Vaidya, Ph.D.	(2006-2011):	"Structure and Function of Caspase-6."
Witold Witkowski, Ph.D.	(2006-2011):	"Caspase-7 Loop Conformations as a means of Allosteric Control."
Kristen Huber Ph.D.	(2006-2012):	"Regulation of Caspase-9 by Natural and Synthetic Inhibitors."
Samantha Nicholls Ph.D.	(2008-2012):	"Development and Characterization of Caspase Activatable GFP and a Family of Fluorescent Reporters."
Elih Velazquez Ph.D.	(2008-2012):	"Allosteric Regulation of Caspase-6 Proteolytic Activity."
Muslum Yildiz Ph.D.	(2008-2013):	"Allosteric Regulation of Dengue Virus Type-2 Protease."
Scott Eron Ph.D.	(2010-2016):	"Exploitation and Regulation of Apoptotic Caspases."
Kevin Dagbay Ph.D.	(2010-2017):	"Probing the Domain Architecture and Structural Dynamics of Caspase-6 for its specific regulation."
Banyuhay Serrano Ph.D.	(2011-2017):	"The Molecular Basis of Caspase-9 Inactivation by PKA and c-Abl Kinases."
Maureen Hill Ph.D.	(2012-2018):	"Active Site Design and Exploitation of Allosteric Sites in

Proteases."

Derek M[ac]Pherson Ph.D. (2011-2018): "Probing Apoptotic Caspase Allostery and Exosite Interactions for Alternative Regulation."

Francesca Anson Ph.D. (2015-2021): "Investigating Mechanisms to Exploit Caspase-Induced Apoptosis Using Polymeric Nanogels."

Ishan Soni Ph.D. (2015-2022): "Investigating Structures of Apoptotic Caspases."

Kristalle G. Cruz (2016-2024): "Dynamically-Driven Alloseric and Specific Inhibition of Zika Virus Protease"

Graduate Student and Postdoctoral Fellowships

Kristen Huber	NIH Chemistry-Biology Interface Training Fellowship	(2007-2009)
Samantha Nicholls	Cellular Engineering-IGERT Fellowship	(2008-2010)
Elih Velazquez-Delgado	Nano-IGERT Fellowship	(2009-2011)
Scott Eron	Cellular Engineering-IGERT Fellowship	(2011-2013)
Bay Serrano	NIH Chemistry-Biology Interface Training Fellowship	(2013-2015)
Derek MacPherson	NIH Chemistry-Biology Interface Training Fellowship	(2014-2016)
Maureen Hill	Eugene M. Isenberg Scholar Award	(2015-2017)
Narasimharao Meka	Manning Inventor Post-doctoral fellow	(2015-2016)
Francesca Anson	NIH Biotechnology Training Program Fellowship	(2016-2018)
Ishan Soni	NIH Chemistry-Biology Interface Training Fellowship	(2017-2019)
Kristalle Cruz	NIH Biotechnology Training Program Fellowship	(2018-2020)
Andrew Smith	NIH Chemistry-Biology Interface Training Fellowship	(2019-2021)
Nathanael Kuzio	NIH Biotechnology Training Program Fellowship	(2020-2022)
Rashad Baker	NIH Chemistry-Biology Interface Training Fellowship	(2021-2023)
Trisha Brady	NIH Biotechnology Training Program Fellowship	(2022-2024)
Sparsh Makhaik	IALS Translational Graduate Student Fellowship	(2024-2025)
Muhammad Rahat	NIH Biotechnology Training Program Fellowship	(2024-2025)

Undergraduate and High School Students

Name	*Program*	*Degree*	*Dates*
Ama Ruth Boadu	Biochemistry & Mol. Biology	B.S.	Oct 2005 - Aug 2006
Junean Brennan	Chemistry	B.S.	Oct 2005 - May 2006
Elih Velazquez	NEAGAP SPUR	-	Summer 2006
Prince Williams	Biochemistry & Mol. Biology	B.S.	June 2006 - May 2007
Kevin Olsen	Chemistry	B.S.	Jan 2007 - Aug 2008
Matt Barker	Biology	B.S.	Summer 2007
Jessica Bauer	CURE REU	-	Summer 2007
Shawn Haley	Biology	B.S.	Sept 2007 - May 2008
Baharah Barzegar	Chemical Engineering	B.S.	Summer 2008
Jamey Harrell	CURE REU	-	Summer 2008
Amanda Horgan	CURE REU	-	Summer 2009
Joachim Moch	CURE REU	-	Summer 2009
Lindsay Dawson	Chemistry	B.S.	Sept 2008 - Jun 2010
Eydis Lima	Chemical Engineering	B.S.	Sept 2008 - Jun 2009
Melissa F. Gold	Chemistry	B.S.	Sept 2009 - Jun 2010
Kyle Bernier	Chemistry	B.S.	Sept 2009 - Dec 2009
Joanne Philippeaux	Neuroscience	B.S.	Sept 2009 - June 2010
Sam Kmail	Chemistry	B.S.	Jun 2010 – Aug 2010
Charnell Chasten	CURE REU	-	Jun 2010 - Aug 2010
Greg Tuffy	Biochemistry	B.S.	March 2010 - May 2011

Toni Ambrogio	Nutrition	B.S.	Sept 2010 – May 2012
Jia Wei Chen	Biochemistry	B.S.	Sept 2010 - May 2011
Richard Boehnke	CURE REU	-	Jun 2011 - Aug 2011
Cynthia Honorat	Chemistry	B.S.	June 2011- June 2013
Di Lin	Chemistry	B.S.	June 2011- June 2013
Jacob Lytle	Chemistry & BMB	B.S.	Jan 2013 – May 2016
John Slattery	Biochemistry & Mol. Biology	B.S.	Sept 2013 - Oct 2014
Alesia Vialichka	Biology	B.S.	Sept 2013 – May 2016
Kyle Swainamer	Chemistry / BMB	B.S.	Oct 2014 – Mar 2016
Leslie Williams	ICE REU	-	June 2015 - Aug 2015
Elizabeth Barrett	Biochemistry & Mol. Biology	B.S.	Jun 2015 – May 2017
Talia Feldscher	High School Intern	-	June 2016 - Aug 2016
Leah Woldegiorgis	PREP student	Post Bac	Sept 2016 – May 2017
Abdul Wasay Paracha	Biochemistry & Mol. Biology	B.S.	Jun 2017 – Sept 2017
Kevin Ramos	PREP student	Post Bac	Sept 2017 – May 2018
Jiexian Carolyn Huang	Biochemistry & Mol. Biology	B.S.	Sept 2016 – July 2018
Amber Colon	Chemical Engineering	B.S.	May 2018 – June 2019
Christopher Chinman	Chemistry	B.S.	Jan 2018 – June 2019
Justin Baker	Biochemistry & Mol. Biology	B.S.	Jan 2019 – May 2021
Sashi Weerawarana	Chemistry	B.S.	Sept 2019 - May 2021
Christian Sarro	Environmental Science	B.S.	June 2019 – Aug 2019
Ethan Goulart	Chemistry	B.S.	Jan 2019 - Present
Srinidhi Raghav	Chemistry	B.S.	Sept 2019 - 2021
Mason Tomko	Chemistry/ Environ.Sci.	B.S.	Sept 2019 – Mar 2020
Annie Zhu	Biology	B.S.	Jan 2021 – Dec 2021
Grace Baron	Chemistry	B.S.	Jan 2021 - Present
Alana Mahar	Chemistry	B.S.	Jan 2021 – May 2022
Jamie Sao	Biochemistry & Mol. Biology	B.S.	Sept 2022 - Present
Cece Palak	Biochemistry & Mol. Biology	B.S.	Sept 2022 – May 2024
Zsuzsa Kiss	Biochemistry & Mol. Biology	B.S.	Sept 2022 - Present
Hrachya Tonyan	Biology	B.S.	June 2022 – April 2024
Kevin Alexander	Chemistry, Physics, Math	B.S.	Jan 2023 - Present
Connor Steele	Biochemistry & Mol. Biology	B.S.	Jan 2024 - Present
Leo Scaramozza	Biochemistry & Mol. Biology	B.S.	June 2024 - Present
Beckett Baird	Deerfield Academy	H.S.	March 2024
Isla Cusick	Amherst Region High School	H.S.	June 2024 – Aug 2024
Arjun Iyer *(Sarah Perry - primary advisor)*	Chemical Engineering	B.S.	Aug 2024 - Present
Julia Clabbers	Chemistry	B.S.	Oct 2024 - Present

Post-doctoral Associates and Research Scholars Mentored

Name	*Role in Hardy Lab*	*Dates*	*Present Position*
Sumana Ghosh	Postdoctoral Associate	Aug 2008 – July 2010	Drug Discovery, Chemistry Consultant
Jun Chu	Postdoctoral Fellow (Tremblay co-advisor)	Nov 2009 – July 2010	Assistant Professor Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

Daniel Fowler	Postdoctoral Associate (Thompson co-advisor)	Oct 2009 – Aug 2010	Postdoctoral Associate University of Vermont
Peng Wu	Postdoctoral Fellow (Tremblay co-advisor)	Aug 2010 - Mar 2013	Senior iOS Developer Viv Technologies
Nicolas Bolik-Coulon	Visiting Scholar from École Normale Supérieure - France	Feb 2015 - Aug 2015	Postdoctoral Associate at University of Toronto
Jorge Arias	Visiting Scholar from University of Costa Rica	Sept 2015 - Nov 2015, July 2016 - Aug 2016	Graduate Student University of Costa Rica
Narasimha Rao Meka	Postdoctoral Fellow	Sept 2015 – Feb 2018	Research Specialist II Brandeis University
Abigail Schwartfeger	Visiting Scholar from University of Canterbury, New Zealand	Jun - Aug 2024	Graduate Student University of Canterbury New Zealand
Thomas Bregnard	Postdoctoral Associate	Sept 2023 - present	

Research Technicians Mentored

Name	*Position*	*Dates*	*Present Position*
Kristen Paczkowski	Research Technician	Nov 2005 - Jul 2007	Full-time Parent
Genevieve Abbruzzese	Research Technician	Jul 2007 - Aug 2009	Research Senior Scientist at Takeda

Student Thesis Committee

Role	*Type*	*Name*	*Program*	*Advisor*
Chair	Ph. D	Witold Witkowski	Chemistry	J. Hardy
Chair	Ph. D	Kristen Huber	Chemistry	J. Hardy
Chair	Ph. D	Sravanti Vaidya	Chemistry	J. Hardy
Chair	Ph. D	Samantha Nicholls	Chemistry	J. Hardy
Chair	Ph. D	Elih Velazquez	Chemistry	J. Hardy
Chair	Ph. D	Muslum Yildiz	Chemistry	J. Hardy
Chair	Ph. D	Scott Eron	Chemistry	J. Hardy
Chair	Ph. D	Kevin Dagbay	Chemistry	J. Hardy
Chair	Ph. D	Bay Serrano	Chemistry	J. Hardy
Chair	Ph. D	Derek MacPherson	Chemistry	J. Hardy
Chair	Ph. D	Maureen Hill	Chemistry	J. Hardy
Chair	Ph. D	Ishankumar Soni	Chemistry	J. Hardy
Chair	Ph. D	Kristalle Cruz	Chemistry	J. Hardy
Chair	Ph. D	Sparsh Makhaik	Chemistry	J. Hardy
Chair	Ph. D	M. Irina Sagarbarria	Chemistry	J. Hardy
Chair	Ph. D	Andew Smith	Chemistry	J. Hardy
Chair	Ph. D	Nathanael Kuzio	Chemistry	J. Hardy
Chair	Ph. D	Yi Zheng	Chemistry	J. Hardy

Chair	Ph. D	Muhammad Arslan Rahat	Chemistry	J. Hardy
Co-Chair	Ph. D	Francesca Anson	Chemistry with S. Thayumanavan	J. Hardy
Co-Chair	Ph. D	Trisha Brady	Chemistry with R. Vachet	J. Hardy
Chair	M. S.	Nivas Ramaswany	Chemistry	J. Hardy
Chair	M. S.	Daniel Seeman	Chemistry	J. Hardy
Chair	M. S.	Yunlong Zhao	Chemistry	J. Hardy
Chair	M. S.	Yifei Pei	Chemistry	J. Hardy
Chair	M. S.	Rashad Baker	Chemistry	J. Hardy
Chair	B. S.	Lindsay Dawson	Chemistry Honors Thesis	J. Hardy
Chair	B. S.	Melissa Gold	Chemistry Honors Thesis	J. Hardy
Chair	B. S.	Di Lin	Chemistry Honors Thesis	J. Hardy
Chair	B. S.	Kevin Alexander	Chemistry Honors Thesis	J. Hardy
Chair	B. S.	Alesia Vialichka	BMB Honors Thesis	J. Hardy
Chair	B. S.	Justin Baker	BMB Honors Thesis	J. Hardy
Chair	B. S.	Zsuzsa Kiss	BMB Honors Thesis	J. Hardy
Member	Ph. D	Abigail Ida Guce	Chemistry	S. Garman
Member	Ph. D	Mingxuan Zhang	Chemistry	I. Kaltashov
Member	Ph. D	Juma Bridgewater	Chemistry	R. Vachet
Member	Ph. D	Michael Murphy	Chemistry	K. Theis
Member	Ph. D	Jeffry L. Martin	Chemistry	M. Maroney
Member	Ph. D	Akamole Klakhard	Chemistry	S. Thayumanavan
Member	Ph. D	Booshan Popere	Chemistry	S. Thayumanavan
Member	Ph. D	Apiwat Chompoosor	Chemistry	V. Rotello
Member	Ph. D	Handan Akpinar	Chemistry	V. Rotello
Member	Ph. D	Michael Lartey	Chemistry	S. Thayumanvan
Member	Ph. D	Robert Herbst	Chemistry	M. Maroney
Member	Ph. D	Lawrence Borketey	Chemistry	N. Schnarr
Member	Ph. D	Yao Lu	Chemistry	I. Kaltashov
Member	Ph. D	John Hangasky	Chemistry	M. Knapp
Member	Ph. D	Bradley Duncan	Chemistry	V. Rotello
Member	Ph. D	Jordan Elliott	Chemistry	M. Farkas
Member	Ph. D	Joseph Tilitsky	Chemistry	L. Gierasch
Member	Ph. D	Yunlong Zhao	Chemistry	I. Kaltashov
Member	Ph. D	Hui-Hsien (Tanya) Lin	Chemistry	M. Farkas
Member	Ph. D	Tianying Liu	Chemistry	R. Vachet
Member	Ph. D	Bach Pham	Chemistry	M. Chen
Member	Ph. D	Zheyi Yi	Chemistry	S. Thayumanvan
Member	Ph. D	Jiale Du	Chemistry	E. Strieter
Member	Ph. D	Jessica Allen	Chemistry	L. Thompson
Member	M.S.	Jeffrey Cullen	Chemistry	M. Farkas
Member	Ph. D	Jayashree Bhagabati	Chemistry	S. Thayumanvan
Member	Ph. D	Isabella Jankowski	Chemistry	L. Thompson
Member	Ph. D	Minelise Rivera de Jesus	Chemistry	S. Thayumanvan
Member	Ph. D	Moly Rani	Chemistry	M. Chen
Member	Ph. D	Badal Singh	Chemistry	S. Thayumanvan
Member	Ph. D	Jenny L. Maki	Molecular & Cellular Biology	L. Gierasch
Member	Ph. D	Rob Smock	Molecular & Cellular Biology	L. Gierasch
Member	Ph. D	Mona Gupta	Molecular & Cellular Biology	R. Zimmerman

Member	Ph. D	Nilima Kolli	Molecular & Cellular Biology	S. Garman
Member	Ph. D	Matt Metcalf	Molecular & Cellular Biology	S. Garman
Member	Ph. D	Luis Ramirez-Tapia	Molecular & Cellular Biology	C. Martin
Member	Ph. D	Derrick Demming	Molecular & Cellular Biology	S. Garman
Member	Oral	Luis Ramirez-Tapia	Molecular & Cellular Biology	C. Martin
Member	Ph.D.	Heidi Hu	Molecular & Cellular Biology	M. Maroney
Member	Oral	Nils Pilotte	Molecular & Cellular Biology	S. Williams
Member	M.S.	Nicole Caci	Molecular & Cellular Biology	R. Zimmerman
Member	M.S.	Jerome Rogich	Molecular & Cellular Biology	S. Garman
Member	Ph.D.	Hyuna Kim	Molecular & Cellular Biology	S. Peyton
Member	Ph.D.	Spencer Shorkey	Molecular & Cellular Biology	M. Chen
Member	Ph.D.	Hanling Guo	Molecular & Cellular Biology	A. Heuck
Member	Ph.D.	Robert Yvon	Molecular & Cellular Biology	A. Cheung
Member	Ph.D.	Patrick Ryan	Molecular & Cellular Biology	J. Lee
Member	Ph.D.	Jackie Sharp	Molecular & Cellular Biology	M. Chen
Member	Ph.D.	May Chou	Molecular & Cellular Biology	J. Rauch
Member	Ph. D	Daniel Sayut	Chemical Engineering	L. Sun
Member	Ph. D	Shuo Sui	Chemical Engineering	S. Perry
Member	Ph. D	Sarthak Saha	Chemical Engineering	S. Perry
Member	Ph. D	Xianci Zeng	Chemical Engineering	S. Perry
Member	Ph. D	Filip Jagodzinski	Computer Science	I. Strenu
Member	Ph. D	Naomi Fox	Computer Science	I. Strenu
Member	Ph. D	Yunxia Hu	Polymer Science & Eng.	T. Emrick
Member	Ph. D	A.Özgül Tezgel	Polymer Science & Eng.	G. Tew
Member	Ph. D	Robert Yvon	Plant Biology	A. Cheung
Member	Ph. D	Michelle McKee	WPI, Biology & Biotech.	S. Roberts
Member	Ph. D	Xiaoxi Yu	Stonybrook University	S. Bhatia
Member	B. S.	Jillian Prendergast	BMB, Honors College	J. Normanly
Member	B. S.	Yurie Kim	BMB, Honors College	S. Garman
Member	B. S.	Josephine Harrington	Chemistry, Honors College	N. Forbes
Member	B. S.	Alex Barbato	Chemistry, Honors College	M. Knapp
Member	B. S.	Cameron Sanders	Chemistry, Honors College	M. Farkas
Member	B. S.	Olivia Izikson	Chemistry, Honors College	R. Vachet

SERVICE to the DEPARTMENT

Chair of NMR Pathways Canvassing and Recruiting Committee – 2024

Co-chair of Academic Quality Assessment and Development (AQAD) Committee – 2024

Associate Department Head – 2019-2022

Co-chair of Chemistry/IALS Faculty Search Committee – 2019, 2020

Chair of the RNA/Protein Engineering Faculty Search Committee – 2017

Chair of the Graduate Recruiting Committee (2010 – 2011, 2015-2016, 2017-2018)

Chair of Michelle Farkas' Mentoring Committee (2017- present)

Member & Acting Chair of Rachid Skouta's Mentoring Committee (2020 - present)

Chair of Chemistry Department Seminar Committee (2005 - 2007)

Co-Chair of Institute of Cellular Engineering Faculty Search Committee (2009 - 2010)

Faculty Co-Advisor for the Association for Professional Development in Chemistry (Research Fest Committee) (2015-2018; 2019-2021)

Faculty Co-Advisor for the Student Development Committee (2014-2015)

Member of the Personnel Committee (2012-2020; 2021)

Member of the AQAD committee (2016-2017)

Member of Graduate Recruitment Committee (2009 – 2010, 2011 – 2012, 2016-17, 2019-21, 2022-2024)

Member of Mellon Mutual Mentoring Committee (2009 - present)

Member of the Strategic Planning Committee (2014 – 2016, 2022-2024)

Member of Search Committee for Bio-organic Faculty Position (2006)

Member of Search Committee for Devices Faculty Position (2006)

Member of Search Committee for Biomedical Chemistry Faculty Position (2012-2013)

Member of Search Committee for Biomaterials Faculty Position (2014-2015)

Member of Search Committee for Three Faculty Positions (2015-2016)

Member of Search Committee for a Faculty Position (2022-2024)

Member of Space Committee (2008 - 2009)

Member of Undergraduate Program Committee (2007 - 2008)

Member of ResearchFest Committee (2009 - 2010)

Member of Development Committee (2009 - 2011)

Judge for Research Fest (2005, 2006, 2008)

SERVICE to the UNIVERSITY

PI and Director of the NIH T32 Biotechnology Training Program (2017 - present)

Associate Director of the IALS Models to Medicine (M2M) Center (2015 - present)

Co-I and Co-director of the NIH T32 Biotechnology Training Program (2015 - 2017)

Executive Committee Member NIH T32 Chemistry Biology Interface Program (2016 - 2021)

Member of Molecular & Cell Biology Graduate Program Steering Committee (2015-2016)

Member of the IALS Models to Medicine (M2M) Steering Committee (2013 - Present)

Member of Biochemistry & Molecular Biology Faculty Search Committee (2014-2015)

Member Chancellor's Junior Faculty Fellows (2008 - 2012)

Executive Committee Member Institute for Cellular Engineering IGERT (2007 - 2014)

Chair of Chemistry-Biology Interface Program Recruitment Committee (2006 - 2019)

Co-Chair of Chemistry-Biology Interface Retreat Committee (2006, 2007, 2008, 2009, 2010, 2011, 2012)

Member of Molecular & Cellular Biology Curriculum Committee (2008 - 2013)

Macromolecular x-ray facility tour guide to prospective undergraduate students (2005, 2006, 2007, 2009)

A Ph.D. is Not Enough (APINE) workshop Invited Speaker (2007).

Panel Member for Deans Excellence Initiative Fund (2006)

SERVICE OUTSIDE the UNIVERSITY

Executive Council of the Protein Society (2022-2024)

Publications Committee:
American Society for Biochemistry and Molecular Biology (2014-2017)

Nomination Committee:
Protein Society (2015-2018)

Editorial & Editorial Advisory Boards:
Biochemical Journal (2010-2017)
Frontiers in Cell Death and Survival (2014 – Present)
Journal of Biological Chemistry (2019 – 2029)
Protein Science (2024 - Present)

Society Committees:
International Proteolysis Society - Council Member Representing the Americas (2019-2026)

Meeting Organization:
Chair of Cytoskeletal Dynamics session at the 23rd Annual Symposium of the Protein Society, Boston MA, July 25th, 2009.
ASBMB Spotlight Session Organizer "Motion is Lotion: New Roles of Motion in Enzyme Function Experimental Biology, San Diego, CA April 21-25, 2018.
Co-Chair of Proteases as Regulators of Immunity and Inflammation Proteolytic Enzymes and their Inhibitors Gordon Research Conference, Barga, Italy, Jun. 4, 2018.
Program Planning Committee for the 2018 Protein Society Meeting, Boston, MA, July 9-12, 2018.
Chair Organizing Committee 35th Annual Meeting of the Protein Society, Boston MA, July 2021.
Vice Chair Proteolytic Enzymes and their Inhibitors Gordon Research Conference, June 2022.
Chair Proteolytic Enzymes and their Inhibitors Gordon Research Conference, June 2024.

Poster Judging at International Meetings:
Poster Judge a - 23rd Annual Symposium of the Protein Society, Boston MA, July 25th, 2009.
Judge for the 2011 IGERT Poster competition. May 3-5th, 2011.
Judge for 2017 Undergraduate Poster Competition ASBMB Chicago, IL April 22, 2017
Poster Judge - 30th Anniversary Symposium of the Protein Society, Baltimore MD, July 18th, 2016.

Manuscript Reviews (10-15/year):
ACS Medicinal Chemistry Letters
ACS Central Science
ACS Chemical Biology
ACS Infectious Diseases
ACS Omega
Biochemical Journal
Biochimica et Biophysica Acta
Biochemistry
Bioconjugate Chemistry
Biophysical Journal Chemical Biology and Drug Design
Cell Death and Differentiation
Cell Chemical Biology
Chemical Science
Journal of Biological Chemistry

Journal of Computational Chemistry
Journal of the American Chemical Society
Journal of Medicinal Chemistry
Medicinal Research Reviews
Molecules
Molecular and Cellular Biology
New Science Press
Nature Catalysis
Nature Chemical Biology
Nature Methods
Nature Protocols
Nature Structural & Molecular Biology
PLoS Computational Biology
PLoS One
Proceedings of the National Academy of Science
Protein Expression & Purification
Protein Science
Science

Ad-hoc Grant Reviews (2-4/year):
National Science Foundation
National Institutes of Health
Center for Excellence in Apoptosis Research
Dean's Excellence Initiative
Research Corporation for the Advancement of Science

Study Section/Panel Attendance:
NIH MSFA Study Section - Permanent member – 2018-2024
Beckman Young Investigator Selection Committee & Panel Member – 2017-2018
NIH MSFA Study Section - Ad hoc member – Oct. 2016
NSF Biotechnology & Biochemical Engineering Panel – Dec. 2015
NSF Career Panel – Oct. 2014
NIH Blueprint for Neuroscience Study Section – Dec. 2012

Ph.D. Committee External Member
Jacob P. Turowec, University of Western Ontario, London, ON Canada, Mar. 2013
Djade Soumana, University of Massachusetts Medical School, Worcester, MA, Dec. 2015
Jeffrey Robert LYNHAM, McGill University, Montreal, Canada Dec 2016
Anniek den Hamer, Eindhoven University of Technology, Eindhoven, Netherlands, Dec. 2017
Michelle McKee, Worcester Polytechnic Institute, Worcester, MA, 2017-2020
Xiaoxi Yu, Stonybrook University, Stoneybrook, NY, Dec. 2020
Jacqueto Zephyr, University of Massachusetts Medical School, Worcester, MA, Sept. 2021
Chansik Kim, Brandeis University, Waltham, MA, Nov. 2022

M.S. Committee External Member
Jeffrey Robert Lynham, McGill University, Nov. 28, 2016

Panelist
MassBioEd Life Sciences Workforce 2017, Northeastern U. Boston, MA June 7, 2017

Search Committee
Selection Committee for Unit Heads, Institute Pasteur, Paris, France, Apr. 2014

Professional Society Memberships

American Association for the Advancement of Science
American Chemical Society
American Society for Biochemistry & Molecular Biology
Biochemical Society
Biophysical Society
Protein Society
International Proteolysis Society

DISCLOSURE of FOREIGN INTERACTIONS

Award	Institution	Dates	Funding
Grant PS 162417 *Title: Alphavirus-host interactions: Toward novel antiviral therapies*	Canadian Institute of Health Research (CIHR)	4/1/19 - 3/31/24	$212,433 (Hardy Portion)

Current and Former Foreign Research Collaborators (PIs)	Institution	Dates	Research Topic(s)
Muhammad Zaman Ashraf zaman.ashraf@f.rwu.edu.pk	Women University, Satellite Town, Rawalpindi, Pakistan	2025-Present	Testing compounds for anti-proteolytic activity
Wojciech Bal wojciech.bal.ibb@gmail.com	Polish Academy of Sciences	2014-2017	Estimating zinc concentrations
Marcin Drag marcin.drag@pwr.edu.pl	Wroclaw University of Science and Technology, Poland	2024	Chikungunya virus protease substrate
Inaki Guijarro guijarro@pasteur.fr	Pasteur Institute, France	2014	Performed sabbatical in his lab to learn NMR
Tom Hobman thobman@ualberta.ca	University of Alberta, Canada	2017-2024	Alphavirus protease inhibitors
Nadia Izadi nadia.izadi@pasteur.fr	Pasteur Institute, France	2014	NMR of caspase-6
Olivier Julien ojulien@ualberta.ca	University of Alberta, Canada	2017-Present	protease substrate profiling using N-terminomics
Andrea C. LeBlanc andrea.leblanc@mcgill.ca	McGill University	2014-Present	Caspase-6 activity and inhibitors
Rodrigo Mora-Rodríguez Rodrigo.Morarodriguez@ucr.ac.cr	University of Costa Rica	2015-2020	Flavivirus reporters and inhibitors & hosted visiting scholar from his lab
Vanessa Morris vanessa.morris@canterbury.ac.nz	University of Canterbury, New Zealand	2024-Present	Caspase-8 activity & hosted graduate student from her lab

Aamer Saeed asaeed@qau.edu.pk	Quaid-i-Azam University Islamabad, Pakistan	2025- Present	Testing compounds for anti-proteolytic activity
Taisuke Tomita taisuke@mol.f.u-tokyo.ac.jp	University of Tokyo, Japan	2013-2014	Performed sabbatical in his lab to learn cortical neuron culture