CURRICULUM VITAE: Kevin H. Gardner

Director, Structural Biology Initiative, CUNY Advanced Science Research Center
Distinguished Professor of Chemistry and Biochemistry, City College of New York
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OVERVIEW

Over 26 years' experience leading academic structural biology & biochemistry research group focused on determining how cellular machines sense and respond to environmental changes, gaining mechanistic insights into biological sensing of oxygen and light. Applied these discoveries to establish and advise two companies, leading to a first-in-class, FDA-approved targeted cancer therapy (Peloton Therapeutics, leading to Merck's belzutifan) and new optogenetic tools (Optologix). Founded a new interdisciplinary research center in a large urban public university system, hiring and mentoring nine new faculty and establishing four core facilities in the process. Advised strategic and technical facets of research, training, and industry/academic interactions at international, national, city, and university levels.

ACADEMIC POSITIONS

Founding Director (2013-present)	Structural Biology Initiative CUNY Advanced Science Research Center City University of New York
Distinguished Professor (2025-present) Einstein Professor (2013-2025)	Department of Chemistry and Biochemistry City College of New York
Program Chair (2004-2010) Director, NIH T32 Training Grant (2004-2014)	Graduate Program in Molecular Biophysics Division of Basic Sciences, Southwestern Graduate School of Biomedical Sciences UT Southwestern Medical Center
Professor (2009-2021 [adjunct 2013-2021, part-time non-tenured 2024-present]) Associate Professor (2004-2009) Assistant Professor (1998-2004)	Departments of Biophysics, Biochemistry and Pharmacology UT Southwestern Medical Center

TRAINING

Postdoctoral Research (1995-1998) — University of Toronto, Advisor: Lewis E. Kay, Ph.D.

Development of biophysical and biochemical methods to obtain structural models of larger proteins and protein complexes using solution NMR

Ph. D. (1989-1995) — Molecular Biophysics and Biochemistry, Yale University, Advisor: Joseph E. Coleman, M.D., Ph.D.

Cadmium-113 Heteronuclear NMR Studies of Zn_2Cys_6 DNA Binding Domains

B.S. (1985-1989, with Highest Honors): Biochemistry, University of California, Davis

AWARDS AND HONORS

Distinguished Professor of Chemistry & Biochemistry	2025-present, City College of New York
Keynote, Photosensory Receptors & Signal Transduction GRS	2024, Gordon Research Seminar
Stein & Moore Award	2023, The Protein Society
BPS Biophysics of Health & Disease Award	2023, Biophysical Society

Keynote, Larock Undergraduate Research Symposium	2017, UC Davis
Einstein Professor of Chemistry & Biochemistry	2013-2025, City College of New York
Excellence in Education Awards	2010, 2012 UT Southwestern Medical Center
GRC Chairs' Hall of Fame	2011, Gordon Research Conferences
Excellence in Postdoctoral Mentoring Award	2011, UT Southwestern Postdoctoral Association
Virginia Lazenby O'Hara Chair in Biochemistry	2006-2013, UT Southwestern Medical Center
Outstanding Teacher Award	2004-2005, Dept. of Biochemistry, UT Southwestern
Meloche Lecturer	2004, Dept. of Chemistry, University of Wisconsin
CHS Hall of Fame	2000, Cupertino High School, Cupertino CA
Searle Scholar	1999-2002, The Chicago Community Trust
W.W. Caruth Jr. Scholar in Biomedical Research	1998-2013, UT Southwestern Medical Center
Helen Hay Whitney Postdoctoral Fellow	1996-1998, Helen Hay Whitney Foundation
NIH/NRSA Postdoctoral Fellow	1995-1996, National Institutes of Health
HHMI Predoctoral Fellow	1989-1994, Howard Hughes Medical Institute
B.S. with Highest Honors (Biochemistry)	1989, UC Davis
Departmental Citation for Excellence	1989, UC Davis, Department of Biochemistry
Phi Beta Kappa	1989, UC Davis

INDUSTRIAL ACTIVITIES

2011-2019 Founding Consultant, Peloton Therapeutics, Inc., Dallas, TX

Peloton Therapeutics was a spinoff company developing small molecule HIF-2α inhibitors initially discovered in my group in collaboration with Rick Bruick's lab, covered in Bruick et al. 2017 and Gardner et al. 2010 patents. I assisted with the spinoff, helping recruit funding and personnel at early stages, and maintained scientific advisory role throughout company life. Peloton successfully improved efficacy and suitability of nanomolar-potency academic lead compounds for clinical use, overseeing two HIF-2α inhibitors through phase I, II clinical trials for clear cell renal cell carcinoma. Peloton raised over $300M venture capital (led by The Column Group, with additional support by CPRIT) before May 2019 purchase by Merck for $1.1B (with additional $1.3B in incentives). Merck obtained FDA approval for HIF-2α inhibitor WELIREG (belzutifan/MK-6482/PT-2977) clinical use in 2021 (VHL-associated cancers) and 2023 (advanced clear cell renal cell carcinoma); Phase III clinical trials as single agent and combination therapies continue for additional indications.

2014-2018 Co-founder and CSO, Optologix, Inc., New York, NY & Dallas, TX

Optologix was a spinoff company from EL222 optogenetic light-regulated gene expression technology developed in my group, covered in Gardner et al. 2016 and 2019 patents. I developed the business plan within eLabNYC program with co-founder Laura Motta-Mena (2014-2015), jointly planned business and scientific strategy, and explored new product areas. Company operated 2015-2018, funded via sales of optogenetic tool kits, Health Wildcatters accelerator program (Dallas, TX), friends & family support.

PUBLICATIONS – PEER-REVIEWED RESEARCH AND REVIEW ARTICLES

106. Siclari, J.J., Favaro, D.C., Huang, R. and Gardner, K.H. (2025). A pipeline for screening small molecule-enhanced protein stability in a bacterial orphan receptor. Manuscript under review; available at bioRxiv (DOI in progress).

105. Maity, S., Sheppard, J., Russell, H., Han, C., Epstein, L., Johnson, B.A., Price, B., Han, R., Potnuru, L.R., Cui, J., Sherwin, M.S., Shea, J.-E., Lovett, J.E., Gardner, K.H. and Han, S. (2025). Hydraulic activation of the AsLOV2 photoreceptor. Manuscript under review; available at bioRxiv (DOI: 10.1101/2025.06.19.660617).

104. Closson, J.D., Xu, X., Zhang, M., Tiyani, T.T., Marcelino, L.P., Isiorho, E.A., Nagati, J.S., Garcia, J.A. and Gardner, K.H. (2025). Context-dependent variability of HIF heterodimers influences interactions with macromolecular and small molecule partners. Manuscript under review; available at bioRxiv (DOI: 10.1101/2025.05.29.656908).

103. Huang, Z., Forson, M., Benman, W., Gardner, K.H.* and Bugaj, L.J.* (2025) Pulsatory response of the BcLOV4 photoreceptor through intramolecular feed-forward regulation. Manuscript under review; available at bioRxiv (DOI: 10.1101/2025.04.08.647774). (*: corresponding authors)

102. Vörösmarty, C.J., Trujillo, M., Casaccia, P., Cak, A., Gardner, K.H., Greenfield, D.I., Groffman, P.M., Reinmann, A., Solecki, W., Serreze, M., Waldman, J., Bhatnagar, J., Brumberg, H., Carnaval, A., Cullman, J., Egendorf, S.P., Hauber, M.E., Herlan, J., Kavouras, I., Mason, C.E., Marcotullio, P., McCracken, M., McKay, D.A., Miszlivetz, F., Muth, T., Nomura, Y., Penick , C.A., Rising, J., Toledo-Crow, R. and Zarnoch, C. (2025) A Climate BioStress Sentinel System (CBS3): Identifying climate impacts from the genome to urbanized biosphere. Manuscript in revision.

101. Gagné, D., Azad, R., Aramini, J.M., Xu, X., Isiorho, E.A., Edupuganti, U.R., Williams, J., Marcelino, L.P., Akasaka, K. and Gardner, K.H. (2025) Use of high pressure NMR spectroscopy to rapidly identify proteins with internal ligand-binding voids. Manuscript in revision; available at bioRxiv (DOI: 10.1101/2020.08.25.267195v2).

100. Swingle, D., Epstein, L., Aymon, R., Isiorho, E.A., Abzalimov, R.R., Favaro, D.C. and Gardner, K.H. (2025) Variations in kinase and effector signaling logic in a two component signaling network. *J. Biol. Chem.*, **301**: 108534. PMCID: PMC Journal – In Process.

99. Cleere, M.M. and Gardner, K.H. (2024) Optogenetic control of phosphate-responsive genes using single component fusion proteins in *Saccharomyces cerevisiae*. *ACS Synth Biol*, **13**: 4085-4098. DOI: 10.1021/acssynbio.4c00529. PMCID: PMC12089998.

98. Silvestrini, M.L.*, Solazzo, R.*, Boral, S., Cocco, M.J., Closson, J.D., Masetti, M., Gardner, K.H. and Chong, L.T. (2024) Gating residues govern ligand unbinding kinetics from the buried cavity in HIF-2α PAS-B. *Protein Science*, **33**: e5198. (*: *equal contributors*) PMCID: PMC11516114.

97. Xu, X., Closson, J.D., Marcelino, L.P., Favaro, D.C., Silvestrini, M.L., Solazzo, R., Chong, L.T. and Gardner, K.H. (2024) Identification of small molecule ligand binding sites on and in the ARNT PAS-B domain. *J. Biol. Chem.*, **300**, 107606. PMCID: PMC11381877.

96. Xiao, M.*, Dhungel, S.*, Azad, R.*, Favaro, D., Rajesh, R.P., Gardner, K.H.[#] and Kikani, C.K.[#] (2024). Signal-regulated unmasking of nuclear localization motif in the PAS domain regulates the nuclear translocation of PASK. *J. Mol. Biol.*, **436**: 168433. (*: *equal contributors; [#]:corresponding authors*) PMCID: PMC10922792.

95. Dikiy, I.*, Swingle, D.*, Toy, K., Edupuganti, U.R., Rivera-Cancel, G. and Gardner, K.H. (2023) Conservation of function with diversification of higher-order structure within sensor histidine kinases. *J. Biol. Chem.*, **299**: 104934. (*: *equal contributors*) PMCID: PMC10359499.

94. Berlew, E.E., Yamada, K., Rand, E.A., Kuznetsov, I.A., Ochs, C., Jaber, Z., Gardner, K.H. and Chow, B.Y. (2022) Designing single-component optogenetic membrane recruitment systems: The Rho-family GTPase signaling toolbox. *ACS Synthetic Biology*, **11**: 515-521. PMCID: PMC8867532.

93. Hart, J.E. and Gardner, K.H. (2021) Lighting the way: Recent progress on the structure and function of phototropin blue light receptors. *J. Biol. Chem.*, **296**: 100594. PMCID: PMC8086140.

92. Xu, X., Dikiy, I., Evans, M.R., Marcelino, L.P. and Gardner, K.H. (2021) Fragile protein folds: Sequence and environmental factors affecting the equilibrium of two interconverting, stably folded protein conformations. *Magn. Reson.*, **2**: 63-76. PMCID: PMC9119131.

91. LaBelle, J., Ramos-Martinez, A., Shen, K., Motta-Mena, L.B., Gardner, K.H., Materna, S.C. and Woo, S. (2021) TAEL 2.0: An improved optogenetic expression system for zebrafish. *Zebrafish,* **18**: 20-28. PMCID: PMC8020536.

90. Xu, X., Gagné, D., Aramini, J.M. and Gardner, K.H. (2021) Volume and compressibility differences between protein conformations revealed by high-pressure NMR. *Biophys J.*, 120: 924-935. (covered by Sprangers in *New and Notable* article in same issue, 749-751). PMCID: PMC8008263.

89. Iuliano, J.N., Collado, J.T., Gil, A.A., Ravindran, P.T., Lukacs, A., Shin, S., Woroniecka, H.A., Adamczyk, K., Aramini, J.M., Edupuganti, U.R., Hall, C.R., Greetham, G.M., Sazanovich, I.V., Wu, I.P., Daryaee, T., Toettcher, J.E., French, J.B., Gardner, K.H., Simmerling, C.L., Meech, S.R. and Tonge, P.J. (2020) Unraveling the mechanism of a LOV domain optogenetic sensor: A glutamine lever induces unfolding of the Jα helix. *ACS Chem. Biol.*, **15**: 2752-2765. PMCID: PMC7572778.

88. Dikiy, I. and Gardner, K.H. (2019) Shining light on the Alphaproteobacterial general stress response. *Mol. Micro.*, **112**: 438-441. PMCID: PMC6703917.

87. Dikiy, I., Edupuganti, U.R., Abzalimov, R.R., Borbat, P.B., Srivastava, M., Freed, J.H. and Gardner, K.H. (2019) Insights into histidine kinase activation mechanisms from the monomeric blue light sensor EL346. *Proc. Natl. Acad. Sci.,* **116:** 4963-4972. PMCID: PMC6421462.

86. Clark, L., Dikiy, I., Rosenbaum, D.M.[†] and Gardner, K.H.[†] (2018) On the use of *Pichia pastoris* for isotopic labeling of human GPCRs for NMR studies. *J. Biomol. NMR*, **71**: 203-211. ([†]: *corresponding authors*) PMCID: PMC7282444.

85. Glantz, S.T., Berlew, E.E., Jaber, Z., Schuster, B.S., Gardner, K.H. and Chow, B.Y. (2018) Directly light-regulated binding of RGS-LOV photoreceptors to anionic membrane phospholipids. *Proc. Natl. Acad. Sci.*, **115**: E7720-E7727. PMCID: PMC6099885.

84. Losi, A.[†], Gardner, K.H.[†] and Möglich, A.[†] (2018) Blue-light receptors for optogenetics. *Chem. Res.,* **118**: 10659-10709. ([†]: *corresponding authors*) PMCID: PMC6500593.

83. Clark, L.*, Dikiy, I.*, Chapman, K., Rödström, K.E., Aramini, J., LeVine, M., Khelashvili, G., Rasmussen, S.G.F., Gardner, K.H.[†] and Rosenbaum, D.M.[†] (2017) Ligand modulation of sidechain dynamics in a wild-type human GPCR. *eLife*, **6**: e28505. PMCID: PMC5650471. (*:*equal contributors,* [†]*: corresponding authors*)

82. Reade, A., Motta-Mena, L.B., Gardner, K.H., Stanier, D.Y., Weiner, O.D. and Woo, S. (2017) TAEL: A zebrafish-optimized optogenetic gene expression system with fine spatial and temporal control. *Development,* **144**: 345-355. PMCID: PMC5394756.

81. Corrêa, F., Key, J., Kuhlman, B. and Gardner, K.H. (2016) Computational repacking of HIF-2α cavity replaces water-based stabilized core. *Structure*, **24**: 1918-1927.

80. Chen, W., Hill, H., Christie, A., Kim, M.S., Holloman, E., Pavía-Jiménez, A., Homayoun, F., Ma, Y., Patel, N., Yell, P., Hao, G., Yousuf, Q., Joyce, A., Pedrosa, I., Geiger, H., Zhang, H., Chang, J., Gardner, K.H., Bruick, R.K., Reeves, C., Hwang, T.H., Courtney, K., Frenkel, E., Sun, X., Zojwalla, N., Wong, T., Rizzi, J.P., Wallace, E.M., Josey, J.A., Xie, Y., Xie, X.-J., Kapur, P., McKay, R.M. and Brugarolas, J. (2016) Targeting renal cell carcinoma with a HIF-2 antagonist. *Nature*, **539**: 112-117. PMCID: PMC5340502.

79. Corrêa, F. and Gardner, K.H. (2016) Basis of mutual domain inhibition in a bacterial signaling switch. *Cell Chem. Biol.*, **23**: 945-954. PMCID: PMC5159254.

78. Glantz, S.T., Carpenter, E.J., Melkonian, M., Gardner, K.H., Boyden, E.S., Wong, G.K-S. and Chow, B.Y. (2016) Functional and topological diversity of LOV domain photoreceptors. *Proc. Natl. Acad. Sci. USA*, **113**: E1442-E1451. PMCID: PMC4801262.

77. Scheuermann, T.H., Padrick, S.B., Gardner, K.H. and Brautigam, C.A. (2016) On the acquisition and analysis of microscale thermophoresis data. *Anal. Biochem.*, **496**: 79-93. PMCID: PMC4873313.

76. Scheuermann, T.H., Stroud, D., Sleet, C., Bayeh, L., Shokri, C., Wang, H., Caldwell, C.G., Longgood, J., MacMillan, J.B., Bruick, R.K., Gardner, K.H. and Tambar, U.K. (2015) Isoform-selective and stereoselective inhibition of hypoxia inducible factor-2. *J. Med. Chem.*, **58**: 5930-5941.

75. Clark, L., Zahm, J.A., Ali, R., Kukula, M., Bian, L., Gardner, K.H., Rosen, M.K. and Rosenbaum, D.M. (2015) Methyl labeling and TROSY NMR spectroscopy of proteins expressed in the eukaryote *Pichia pastoris*. *J. Biomol. NMR,* **62**: 239-245. PMCID: PMC4496254.

74. Guo, Y., Scheuermann, T.H., Partch, C.L., Tomchick, D.R. and Gardner, K.H. (2015) Coiled-coil coactivators play a structural role mediating interactions in hypoxia inducible factor heterodimerization. *J. Biol. Chem.*, **290**: 7707-7721. PMCID: PMC4367273.

73. Ocasio, V., Corrêa, F. and Gardner, K.H. (2015) Ligand-induced folding of a two component signaling receiver domain. *Biochemistry,* **54**: 1353-1363. PMCID: PMC4423417. (*Recommended in F1000 Prime; selected as featured article by journal*)

72. Rivera-Cancel, G., Ko, W.-H., Tomchick, D.R., Corrêa, F. and Gardner, K.H. (2014) Full-length structure of a monomeric histidine kinase reveals basis for sensory regulation. *Proc. Natl. Acad. Sci USA*, **111**: 17839-17844. PMCID: PMC4273353. (*Recommended in F1000 Prime*)

71. Motta-Mena, L.B., Reade, A., Mallory, M.J., Glantz, S., Weiner, O.D., Lynch, K.W. and Gardner, K.H. (2014) An optogenetic gene expression system with rapid activation and deactivation kinetics. *Nat. Chem. Biol.*, **10**: 196-202. PMCID: PMC3944926.

70. Salomon, D., Guo, Y., Kinch, L.N., Grishin, N.V., Gardner, K.H. and Orth, K. (2013) Effectors from animal and plant pathogens use a common domain to bind host phosphoinositides. *Nature Communications*, **4**: 2973.

69. Zoltowski, B.D., Motta-Mena, L.B. and Gardner, K.H. (2013) Blue-light induced dimerization of a bacterial LOV-HTH DNA-binding protein. *Biochemistry*, **52**: 6653-6661. PMCID: PMC3813961.

68. Corrêa, F., Ko, W.-H., Ocasio, V., Bogomolni, R.A. and Gardner, K.H. (2013) Blue light regulated two-component systems: Enzymatic and functional analysis of light-oxygen-voltage (LOV)-histidine kinases and downstream response regulators. *Biochemistry*, **52**: 4656-4666. (*Selected as featured article by journal*) PMCID: PMC3830641.

67. Freddolino, P.L., Gardner, K.H.[†] and Schulten, K.[†] (2013) Signaling mechanisms of LOV domains: New insights from molecular dynamics studies. *Photochem. Photobiol. Sci.*, **12**: 1158-1170 ([†]*: corresponding authors*) PMCID: PMC3679247.

66. Rogers, J.L.*, Bayeh, L.*, Scheuermann, T.H.*, Longgood, J., Caldwell, C., Key, J., Naidoo, J., Melito, L., Shokri, C., Frantz, D.E., Bruick, R.K., Gardner, K.H.[†], MacMillan, J.B.[†] and Tambar, U.K.[†] (2013) Development of inhibitors of the PAS-B domain of the HIF-2α transcription factor. *J. Med. Chem.*, **56**: 1739-1747. (*:*equal contributors,* [†]*: corresponding authors*) PMCID: PMC3676484.

65. Moon, T.M., Corrêa, F., Kinch, L.N., Piala, A., Gardner, K.H.[†] and Goldsmith, E.J.[†] (2013) Solution structure of the WNK1 autoinhibitory domain, a WNK-specific PF2 domain. *J. Mol. Biol.*, **425**: 1245-1252. ([†]*: corresponding authors*)

64. Scheuermann, T.H., Li, Q., Ma, H.-W., Key, J., Zhang, L., Chen, R., Garcia, J.A., Naidoo, J., Longgood, J., Frantz, D.E., Tambar, U.K., Gardner, K.H.[†] and Bruick, R.K.[†] (2013) Allosteric inhibition of Hypoxia Inducible Factor 2 with small molecules. *Nat. Chem. Biol.*, **9**: 271-276. ([†]*: corresponding authors*) PMCID: PMC3604136.

63. Guo, Y., Partch, C.L., Key, J., Card, P.B., Pashkov, V., Patel, A., Bruick, R.K., Wurdak, H. and Gardner, K.H. (2013) Regulating the ARNT-TACC3 axis: Multiple approaches to manipulating protein-protein interactions with small molecules. *ACS Chem. Biol.*, **8**: 626-635. PMCID: PMC3600089.

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18. Goto, N.K., Gardner, K.H., Mueller, G.A., Willis, R.C. and Kay, L.E. (1999) A robust and cost-effective method for the production of Val, Leu and Ile (δ1) methyl-protonated ^{15}N, ^{13}C, ^{2}H-labeled proteins. *J. Biomol. NMR*, **13**: 369-374.

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Graduate research – Yale University (1989-1995) and Undergraduate research – UC Davis (1985-1989)
7. Gardner, K.H., Anderson, S.F. and Coleman, J.E. (1995) Solution structure of the *K. lactis* LAC9 Cd_2Cys_6 DNA-binding domain. *Nat. Struct. Biol.*, **2**: 898-905.

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5. Klemba, M., Gardner, K.H., Marino, S., Clarke, N.D. and Regan, L. (1995) A novel family of designed metal-binding proteins. *Nat. Struct. Biol.*, **2**: 368-373 *(addendum and correction: NSB* **2**: 912*)*

4. Gardner, K.H. and Coleman, J.E. (1994) ^{113}Cd-^{1}H heteroTOCSY: a method for determining metal-protein connectivities. *J. Biomol. NMR*, **4**: 761-774.

3. Schweitzer, B.I., Mikita, T., Kellogg, G.W., Gardner, K.H. and Beardsley, G.P. (1994) Solution structure of a DNA dodecamer containing the anti-neoplastic agent arabinosylcytosine: combined use of NMR, restrained molecular dynamics, and full relaxation matrix refinement. *Biochemistry*, **33**: 11460-11475.

2. Gardner, K.H., Pan, T., Narula, S., Rivera, E. and Coleman, J.E. (1991) Structure of the binuclear metal-binding site in the GAL4 transcription factor. *Biochemistry*, **30**: 11292-11302.

1. Sekiguchi, J.M., Cole, A.D., Gardner, K.H. and Kmiec, E.B. (1990) Transcription factor TFIIIA stimulates DNA supercoiling promoted by a fractionated cell-free extract from *Xenopus laevis*. *Eur. J. Biochem*, **192**: 311-320.

PUBLICATIONS – NON-PEER REVIEWED

17. Khorasanizadeh, S. and Gardner, K.H. (2024). Mechanisms of PAS domain signalling, from sensing varied small molecules and peptides to approved pharmaceuticals and use in optogenetics. *J. Mol. Biol.*, **436:**168457.

16. Siclari, J.J. and Gardner, K.H. (2021) Two steps, one ligand: How PPARγ binds small molecule agonists. *Structure,* **29**: 935-936. PMCID: PMC8819882.

15. Dikiy, I., Clark, L., Gardner, K.H.† and Rosenbaum, D.M.† (2019) Isotopic labeling of eukaryotic membrane proteins for NMR studies of interactions and dynamics. *Meth. Enz.*, **614**: 37-65. (†: *corresponding authors*) PMCID: PMC7309954.

14. Markley, J.L., Akutsu, H., Asakura, T., Baldus, M., Boelens, R., Bonvin, A., Kaptein, R., Bax, A., Bezsonova, I., Gryk, M.R., Hoch, J.C., Korzhnev, D.M., Maciejewski, M.W., Case, D., Chazin, W.J., Cross, T.A., Dames, S., Kessler, H., Lange, O., Madl, T., Reif, B., Sattler, M., Eliezer, D., Fersht, A., Forman-Kay, J., Kay, L.E., Fraser, J., Gross, J., Kortemme, T., Sali, A., Fujiware, T., Gardner, K.H., Luo, X., Rizo-Rey, J., Rosen, M.K., Gil, R.R., Ho, C., Rule, G., Gronenborn, A.M., Ishima, R., Klein-Seetharaman, J., Tang, P., van der Wel, P., Xu, Y., Grzesiek, S., Hiller, S., Seeling, J., Laue, E.D., Mott, H., Nietlispach, D., Barsukov, I., Lian, L.Y., Middleton, D., Blumenschein, T., Moore, G., Campbell, I., Schnell, J., Vakonaski, I.J., Watts, A., Conte, M.R., Mason, J., Pfuhl, M., Sanderson, M.R., Craven, J., Williamson, M., Dominguez, C., Roberts, G.C.K., Günther, U., Overduin, M., Werner, J., Williamson, P., Blindauer, C., Crump, M., Driscoll, P., Frenkiel, T., Golovanov, A., Matthews, S., Parkinson, J., Uhrin, D., Williams, M., Neuhaus, D., Oschkinat, H., Ramos, A., Shaw, D.E., Steinbeck, C., Vendruscolo, M., Vuister, G.W., Walters, K.J., Weinstein, H., Wüthrich, K. and Yokoyama, S. (2012) In support of the BMRB. *Nat. Struct. Mol. Biol.,* **19**: 854-860.

13. Rizo, J., Rosen, M.K. and Gardner, K.H. (2012) Enlightening molecular mechanisms through study of protein interactions. *J. Mol. Cell. Biol.*, **4**: 270-283. PMCID: PMC3464395.

12. Gardner, K.H. and Corrêa, F. (2012) How plants see the invisible. *Science*, **335**: 1451-1452.

11. Gardner, K.H., Mittermaier, A. and Mulder, F.A.A. (2011) A tribute to Lewis Kay on his 50th birthday. *J. Biomol. NMR,* **51**: 3-4.

10. Motta-Mena, L.B., Partch, C.L. and Gardner, K.H. (2010) The three Rs of transcription: Recruit, retain and recycle. *Mol. Cell*, **40**: 855-858. PMCID: PMC3012270.

9. Partch, C.L. and Gardner, K.H. (2010) Coactivator recruitment: A new role for PAS domains in transcriptional regulation by the bHLH-PAS family. *J. Cell. Physiol.*, **223**: 553-557. PMCID: PMC2872778.

8. Gardner, K.H. (2008) Molecular Biophysics at UT Southwestern Medical Center: Strength through breadth. *Biopolymers*, **89**: 244-247.

7. Ko, W.-H., Nash, A.I. and Gardner, K.H. (2007) A LOVely view of blue light photosensing. *Nature Chem. Biol.,* **3**: 372-374.

6. Scheuermann, T.H., Yang, J., Zhang, L., Gardner, K.H. and Bruick, R.K. (2007) Hypoxia-Inducible Factor PAS domains: Structure and function. *Meth. Enz.*, **435**: 3-24.

5. Gardner, K.H. and Montminy, M. (2005) Can you hear me now: Regulation of transcriptional activators by phosphorylation. *Science STKE*, **2005**: pe 44.

4. Card, P.B. and Gardner, K.H. (2005) Identification and optimization of protein domains for NMR studies. *Meth. Enz.,* **394**: 3-16.

3. Gardner, K.H. and Kay, L.E. (1998) The use of ^{2}H, ^{13}C, ^{15}N multidimensional NMR to study the structure and dynamics of proteins. *Ann. Rev. Biophys. Biomol. Struct.*, **27**: 357-406.
(reprinted as Gardner, K.H. and Kay, L.E. (1999) Multidimensional ^{2}H-based NMR methods for resonance assignment, structure determination and the study of protein dynamics in Biological Magnetic Resonance: Modern Techniques in Protein NMR, **16**: 27-74)

2. Hardy, B.J., Doughty, S., Parretti, M., Tennison, J., Finn, B., Gardner, K.H. (1997) Internet conferences in nuclear magnetic resonance spectroscopy. *Prog. NMR Spec.*, **31**: 107-117.

1. Kay, L.E. and Gardner, K.H. (1997) Solution NMR spectroscopy beyond 25 kDa. *Curr. Op. Struct. Biol.*, **7**: 722-731.

PATENTS

6. Gardner, K.H., Motta-Mena, L.B. and Zoltowski, B.D. (2019) Blue-light inducible system for gene expression. US Patent Number 10,221,422 (issued March 5, 2019)

5. Bruick, R.K., Caldwell, C.J., Frantz, D.E., Gardner, K.H., MacMillan, J.B., Scheuermann, T.H. and Tambar, U.K. (2017) Inhibition of HIF-2α heterodimerization with HIF-1β (ARNT) US Patent Number 9,757,379 (issued September 12, 2017)

4. Gardner, K.H., Motta-Mena, L.B. and Zoltowski, B.D. (2016) Blue-light inducible system for gene expression. US Patent Number 9,506,073 (issued November 29, 2016)

3. Gardner, K.H., Amezcua, C.A., Erbel, P.J.A. and Card, P.B. (2010) NMR detection of foreign PAS domain ligands. US Patent Number 7,645,569 (issued January 12, 2010)

1,2. McKnight, S.L., Gardner, K.H., Harper, S., Rutter, J., Michnoff, C. and Amezcua, C. (2001) PAS kinase. US Patent Number 6,319,679 (issued November 20, 2001) and Patent Number 7,132,278 (issued November 7, 2006)

EDITORIAL SERVICE:

2024: Special issue of *J. Mol. Biol.*, focusing on PAS domain signaling mechanisms. Co-edited with Sepideh Khorasanizadeh (U Oxford).

BOOK REVIEW

review of **Carbon-13 NMR Spectroscopy of Biological Systems** (Nicolau Beckmann, editor; 1995) *J. Magn. Reson. B* **111**(1996): 103-104.

RESEARCH FUNDING *Track record of approx. $40M raised in federal (NIH, NSF), state, foundation, and in-house funding as PI or co-I of proposals. Funded efforts include research in my group, collaborative multi-lab research, training, instrumentation, and infrastructure.*

Pending

2025-2029: NIH R01 EB037930: "Engineering protein thermometers to sense and control mammalian physiology" (MPI with Lukasz Bugaj [UPenn], under review scored Feb 2025).

2025-2028: Mathers Foundation MF-2503-09339: "Isoform-specific determinants of HIF-1 and HIF-2: Structural and functional features essential for neuroendocrine tumor growth" (PI, with Joseph Garcia [CUIMC] co-I)

Current

2025-2030: NIH R35 GM156296: "PAS proteins: Study and application of signaling mechanisms" (PI)

2024-2025: NIH U54 CA132378, "Structural and Chemical Probing of A New Anticancer Target: HIF-Coactivator Complexes" (PI, with Derek Tan [MSKCC] co-I); included as project in renewal of U54 "CCNY-MSKCC Partnership for Cancer Research, Education and Community Outreach" *(grant administratively terminated prematurely)*

2022-2025: Mathers Foundation MF-2112-02288: "Targeting HIF-associated factors Acss2 and CCCs: Essential and linked signal transducers in solid tumors" (PI, with Joseph Garcia [CUIMC] co-I)

2013-2026: NIH R01 GM106239: "Photosensory LOV proteins: Study and application of signaling mechanisms" (PI)

Prior

2022-2025: NIH R21 GM147755: "A novel method to characterize cis-regulatory complexes during development" (co-I, with Mark Emerson [CCNY] PI)

2023-2024: NIH R01 GM-106239-12S1: "AKTA PURE FPLC System for Macromolecular Purification and Characterization" (PI).

2023-2024: NIH R01 GM-106239-12S2: "Summer Undergraduate Research Support – Ms. Anastasiia Fisiuk" (PI).

2021-2023: MSKCC-CCNY Partnership Pilot Grant: "Structural and Chemical Probing of A New Anticancer Target: HIF-Coactivator Complexes" (PI, with Derek Tan [MSKCC] co-I); awarded as part of U54 CA132378, "CCNY-MSKCC Partnership for Cancer Research, Education and Community Outreach"

2022-2023: CUNY Program Planning Grant: "A concerted experimental and computational attack to find small molecule inhibitors for 'undruggable' targets" (PI, with 5 co-Is)

2018-2023: NSF MCB-1818148: "Protein Structural Defects: Sites for Small Molecule Binding and Regulation" (PI)

2020-2021: NIH R01 GM106239-09S1: "AKTA PURE FPLC System for Macromolecular Purification and Characterization" (PI)

2019-2020: NIH R01 GM106239-08S1: "Helium Recovery System for CUNY ASRC/CCNY NMR Facilities" (PI)

2013-2017: CPRIT Individual Investigator Award RP130513, "Discovery and Optimization of Natural and Artificial Ligands Regulating Hypoxia Inducible Factor" (PI when awarded; subsequently switched to collaborator upon move from Texas)

1999-2014: Robert A. Welch Foundation I-1424: "Comparative studies of the signaling mechanisms of flavin-based protein photosensors" (PI)

2013-2016: CPRIT High Impact, High Risk RP130312: "Development of optogenetic tools for cellular and in vivo manipulation of cancer pathways" (PI when awarded; subsequently switched to collaborator upon move from Texas)

2012-2013: NIH S10 OD018027: "Acquisition of upgrades for 800MHz NMR console" (co-PI, with PI Jose Rizo-Rey)

2002-2013: NIH P01 CA095471: "A concerted chemical, biophysical and molecular biological attack on intracellular pathways relevant to cancer" (co-PI and directed 2 of 4 projects; PI: Steve McKnight)

2001-2012: NIH R01 GM081875: "Structural studies of PAS domain signaling mechanisms" (PI)

2009-2012: NIH R21 NS067624: "High Throughput Screen Development for Modulators of PAS/coactivator Interactions" (PI, with coinvestigator Rick Bruick)

2010: NIH R13 GM093350: "2010 Photosensory Receptors and Signal Transduction GRC/GRS Meetings" (PI)

2010-2013: CPRIT Individual Investigator Award RP100846, "Discovery and Optimization of Natural and Artificial Ligands Regulating Hypoxia Inducible Factor" (PI, with coinvestigators Rick Bruick, John MacMillan and Uttam Tambar)

2004-2014: NIH T32 GM008297: "Molecular Biophysics Predoctoral Training Program" (PI, renewed and transferred to Dr. Yuh Min Chook upon departure from UT Southwestern)

2004-2005: Advanced Technology Program (Texas Higher Education Coordinating Board) 010019-0124-2003: "Photoregulated enzymes: A novel and general approach to control function *in vitro* and *in vivo*" (PI, with coinvestigator Michael Rosen)
2002-2003: NIH S10 RR17270 (High End Instrumentation Grant): "800 MHz NMR spectrometer" (coinvestigator with PI: Jose Rizo-Rey)
1998-2002: Endowed Scholar in Biomedical Research Program, UT Southwestern Medical Center
1999-2002: Searle Scholar Program, Chicago Community Trust

TRAINEES *Proud of having mentored and mentoring approximately 60 trainees at postdoc, Ph.D., and undergraduate levels, with diversity of gender (ca. 1:1 women:men), racial and ethnic backgrounds, prior academic training, and career interests*

Postdoctoral researchers:

Dr. Soumendu Boral (2023-present)
Dr. Jaynee Hart (2019-2020) – *Postdoctoral Researcher, Robert Last Laboratory, Michigan State University*
Dr. Meiling Zhang (2019-2021) – *Senior Scientist, Computational Biology, Insmed, Inc., Bridgewater, NJ*
Dr. Igor Dikiy (NIH NRSA Postdoctoral Fellow 2015-2020; Finalist, Blavatnik Regional Young Scientist Award – Chemistry; NIH K22 awardee) – *Principal Scientist – Protein Biochemistry, Regeneron Pharmaceuticals, Tarrytown, NY*
Dr. Donald Gagné (Fonds de Recherche Québec Nature et Technologies Postdoctoral Fellow, 2015-2018) – *Research Scientist, Health Canada, Ottawa, Canada*
Dr. Laura Motta-Mena (2010-2014; Senior Research Associate 2014-2016) – *Director – Healthy Aging, Methodist Health System*
Dr. Giomar Rivera-Cancel (2009-2014) – *Senior Research Associate, Josephine Thinwa laboratory, UT Southwestern*
Dr. Brian Zoltowski (NIH NRSA Postdoctoral Fellow 2008-2011) – *Professor, Dept of Chemistry, Southern Methodist University*
Dr. Fernando Corrêa (2008-2014; Senior Research Associate 2014-2016) – *Senior Director – Discovery Medicine, Kodiak Sciences, Palo Alto, CA*
Dr. Jason Key (2007-2011; Assistant Instructor 2011-2012) – *Associate Director of Technology and Innovation, SBGrid, Harvard Medical School*
Dr. Carrie Partch (NIH NRSA Postdoctoral Fellow 2006-2011) – *HHMI Investigator and Professor, Dept. of Chemistry and Biochemistry, UC Santa Cruz*
Dr. Thomas Scheuermann (American Cancer Society Postdoctoral Fellow 2004-2010; Instructor 2010-2013) – *Senior Field Application Specialist, Waters*
Dr. Qiong Wu (2003-2009) – *Director, Biomolecular NMR Facility, UT Southwestern*
Dr. Paul Erbel (2000-2004) – *Research Investigator (Structural Sciences Unit), Novartis Institutes for Biomedical Research, Basel, CH*
Dr. Carlos Amezcua (1999-2003) – *Associate Global R&D Fellow, FMC, Newark, DE*

Graduate students:

Fatima Rizwan (2025-present; CUNY GC – Biochemistry Ph.D. Program)
Cullen Roeder (2025-present; CUNY GC – Biochemistry Ph.D. Program)
Leah Epstein (2024-present; CUNY GC – Biochemistry Ph.D. Program; NIH G-RISE trainee)
Malvin Forson (2023-present; CUNY GC – Biochemistry Ph.D. Program; 2024 CCNY Julius Axelrod Scholarship awardee)
Tarsisius Tiyani (2022-present; CUNY GC – Biochemistry Ph.D. Program)
Joseph Closson (2022-present; CUNY GC – Biochemistry Ph.D. Program)
James Siclari (2020-present; CUNY GC – Biology/MCD Ph.D. Program)
Dr. Danielle Swingle (2019-2024; CUNY GC – Biochemistry Ph.D. Program; 2023 Mina Rees Fellowship awardee) – *Postdoctoral Researcher, Birthe Kragelund Lab, University of Copenhagen*
Dr. Matthew Cleere (2018-2023; CUNY GC – Biology/MCD Ph.D. Program) – *Scientist – Early Stage R&D, Helaina, Inc.*
Dr. Roksana Azad (2018-2023; CUNY GC – Biochemistry Ph.D. Program; NIH F31 awardee) – *Postdoctoral Researcher, Nicholas Polizzi Lab, Dana Farber Cancer Center*

Dr. Xingjian Xu (2018-2023; CUNY GC – Biochemistry Ph.D. Program; 2022 Horst Schulz awardee for best first-authored paper by Biochemistry Ph.D. student, 2022 Mina Rees Fellowship awardee) – *Senior Scientist, Analytical R&D, Merck*
Dr. Uthama Edupuganti (2016-2021; CUNY GC – Biochemistry Ph.D. Program)
Dr. Zaynab Jaber (2016-2021; CUNY GC – Biochemistry Ph.D. Program) –*Associate Medical Director, VML Health*
Dr. Victor Ocasio-Ramirez (2010-2014; Ph.D. 2014) – *Senior Field Applications Scientist, Revvity*
Dr. Yirui Guo (2010-2014; Ph.D. 2014) – *Co-founder and CEO, Ligo Analytics (Dallas, TX) & MBA candidate, UT Dallas*
Dr. Abigail Nash (MSTP, 2005-2009; completed Ph.D. portion of M.D./Ph.D. program 2009) – *Medical Director, Neurocrine Biosciences, San Diego, CA*
Dr. Matthew Evans (2005-2009 - Ph.D. 2009; postdoc 2009-2010) – *Revenue Cycle Consultant, Acclaim Physician Group, Fort Worth, TX*
Dr. Wen-Huang (Lisa) Ko (2004-2009; Ph.D. 2009) – *Clinical Scientist, Apellis Pharmaceuticals*
Dr. James Lee (MSTP, 2002-2006; completed Ph.D portion of M.D./Ph.D. program 2006) – *Pathologist in private practice, Alhambra, CA*
Dr. Terra (Holdeman) Caudill (2000-2001) – *M.D. degree from UTMB; psychiatrist in private practice, Boca Raton, FL*
Dr. Paul Card (2000-2005 - Ph.D. 2005; postdoc 2005-2006) – *Senior Medical Writer, Kaleidoscope Strategic*
Dr. Shannon Harper (2000-2004; Ph.D. 2004)
(also mentored over 60 additional Ph.D. rotation students during first-year rotations in lab, 1999-present)

Undergraduate students: (both summer and academic-year work; home campus identified)
Julia Simon (2024-present, CCNY – honors dissertation), Anastasiia Fisiuk (2023-2024, CCNY – honors dissertation), Ramisha Aymon (2022-2024, CCNY – honors dissertation), Jinho Seo (2022, CCNY), Keerthana Rameshbabu (2022, Texas A&M University), Faisal Younus (2021, CCNY), Divine Ehidom (2021, York College), Julia Gardner (2021, Duke University), Leandro Pimentel Marcelino (2019-2022, CCNY – honors dissertation and postbac), Nichelle Camden (2019, Ausburg University), Kaitlyn Toy (2018-2021, CCNY/Macaulay – honors dissertation), Chyana Woodyard (2018, Hampton University), Nora Jaber (2018-2019, Hunter College); Megan Rodriguez-Cepedes (2018-2019, CCNY – honors dissertation); Mahmoud Soliman (2018, CCNY); Kenan Redzematovic (2018, CCNY); Sara Wiener (2017, Yeshiva University); Katie Bunde (2017, CCNY); Casey Sniffin (2017-2018, Macaulay Honors College/CCNY); Andrew Palacios (2016-2018, Macaulay Honors College/CCNY and Columbia University), Aqib Muneer (2016, CCNY); Yun Young Kim (2016, Vassar College); Lucy Hovanisayan (2015, Univ. Pennsylvania); Kyle Ireton (2010, Oregon State Univ.); Laura Salguero (2008, New Mexico State Univ.); Leanna Steier (2007, Notre Dame); Aaron Maeng (2005, UT Austin); Daniel Buehler (2004, Univ. New Mexico); Brad Holmes (2001, Texas A&M Univ.); Mark Chan (1999, Harvard Univ.)

Sabbatical/Independent Scientist visitors:
Prof. Melanie Cocco (sabbatical visit, Fall 2023, UC Irvine)
Dr. Carolina Matos (visiting postdoc, 2023-2024, Ramos & Almeida labs, UNICAMP, São Paolo, Brazil)
Prof. Murray Whitelaw (sabbatical visit, Fall 2018, University of Adelaide)
Dr. Arati Ramesh (independent postdoc, 2011-2014, Winkler lab, Univ. Maryland – College Park)
Dr. Charles Dann (independent McKnight Fellow, 2005-2007, UT Southwestern)
Dr. Susan Alguindigue (sabbatical visit, Summer 2002, Dept. of Chemistry, Univ. of Oklahoma)
Prof. Ernest Blakeney (sabbatical visit, Fall 1999, Dept. of Chemistry, Centenary College)

PROFESSIONAL SERVICE – ADVISORY ROLES *Served and serving on advisory boards in four general areas: Structural biology operations at the international (RCSB PDB, iNEXT Discovery, Academia Sinica) and national scale (NYSBC, ACERT, NMRFAM), biotech entrepreneurship for New York City (LifeSciNYC - $1B/10 yr initiative, CCNY), advocacy panels for professional societies (Biophysical Society, ASBMB), academic community-building effort (CBSD)*

2023-2026 Member, Committee on Professional Opportunities for Women, Biophysical Society
2023-2025 Member, Institute of Biological Chemistry Academic Advisory Committee, Academia Sinica
2022-2028 Chair (2025-2027) and Member, Public Affairs Action Committee, ASBMB
2022-present Member, RCSB PDB Advisory Committee

2020-2024 Member, iNEXT Discovery Scientific Advisory Board, European Union
2018-2023 Member, METRIC (Molecular Education, Technology and Research Innovation Center) External Advisory Board, NC State University
2017-present Member, LifeSciNYC – Mayor's Life Sciences Advisory Council, City of New York
2016-2021 Member, ACERT (National Biomedical Center for Advanced ESR Technology) External Advisory Board, Cornell University
2015-present Member, Center for Biomolecular NMR Data Processing and Analysis BTTR External Advisory Board, UConn Health Science Center and University of Wisconsin
2014-present Chair (2024-) and Member, Board of Directors, NYSBC (New York Structural Biology Center)
2011-2016 Member, CBSD (Center for Biomolecular Structure and Dynamics) COBRE External Advisory Board, University of Montana
2009-2012 Member and Chair (2010-2012), NMRFAM (NMR Facility at Madison) External Advisory Board, University of Wisconsin, Madison

PROFESSIONAL SERVICE – CONFERENCE ORGANIZATION *Organized and organizing international and regional meetings in biochemistry, structural biology, chemical biology, and photosensing*

2023 Co-organizer, ASRC/NYSBC NYC-ISB23 Integrative Structural Biology Symposium
2022-2023 Co-organizer, Signaling Theme, 2023 DiscoverBMB – ASBMB Annual Meeting
2019-present Member, Steering Committee, Chemical Biology Discussion Group, NY Academy of Sciences
2014-present ICMRBS Council – Chair (2024-2026), Treasurer (2020-2024), Member (2014-present)
2014 Chair, XXVI International Conference for Magnetic Resonance in Biological Systems (ICMRBS), Dallas, TX
2012 Co-organizer, Symposium on Biomolecular Structure, Dynamics and Function, Memphis, TN
2008, 2010 Vice-chair (2008) and Chair (2010) of Photosensory Receptors and Signal Transduction Gordon Research Conference

PROFESSIONAL SERVICE – GRANT, CENTER, AND MANUSCRIPT REVIEWS

2024 Member, NIH BBCB-G review panel
2023 Chair, NIH MBBC-W review panel
2022 *Ad hoc* reviewer, NIEHS Structural Biology Laboratory
2022-2025 *Ad hoc* reviewer, Mathers Foundation
2021 *Ad hoc* member, NIH COBRE Review Study Sections (2) and RM1 Review Study Sections (2)
2019 Member, DFG SFB review panel
2018 Member, NSF MCB review panel
2017-2027 Member, Editorial Board, *Journal of Biological Chemistry*
2015-present Member, Editorial Board, *Structure*
2015 Member, DFG SFB review panel
2014-2020 Permanent Member, NIH MSFC study section
2012 *Ad hoc* member, NIH MSFC study section
2012 *Ad hoc* reviewer, NCI Structural Biology Laboratory
2011-2013 Member, HHMI International Student Research Fellowship Review Committee
2011 *Ad hoc* member, NIH P01 Special Emphasis Panel
2009 *Ad hoc* member, NIH Stimulus panels, NIH/NCI Molecular Oncology P01 Special Emphasis Panel, NIH BBM Study Section
2008 *Ad hoc* member, NIH Shared Instrumentation Special Emphasis Panel and NIH MSFB Study Section
2006 *Ad hoc* member, NIH MSFB Study Section
2004 *Ad hoc* member, NIH BBCA Study Section
2001 *Ad hoc* member, NIH BBCA Special Study Section
ongoing *Ad hoc* reviewer for *Science, Nature, Proc. Natl. Acad. Sci.* (editing and reviewing), *eLife* (editing and reviewing), *Biochemistry, Journal of the American Chemical Society, Journal of Molecular Biology,* and *Journal of Biomolecular NMR* and other journals. Also serving as an *ad hoc* reviewer for several funding agencies not noted above.

PROFESSIONAL SERVICE & TEACHING – CUNY

Service:

2022 CUNY System: Member, Strategic Planning Committee – Research & Innovation Committee

2021 CUNY ASRC: Chair, Faculty Search Committee – ASRC Structural Biology Initiative; Member, Search Committee, Advancement Officer – Sciences
2015-2019 CUNY ASRC: Member, Biosafety Committee
2014-2017, 2023 CUNY ASRC: Chair, Faculty Search Committees (multiple) – ASRC Structural Biology Initiative

2024-present CUNY Graduate Center: Member, MCD Steering Committee, Ph.D. Program in Biology
2023-2025 CUNY Graduate Center: Strategic Planning Committee – Co-chair, Institutional Impact Committee
2021-2024 CUNY Graduate Center: Alternate Representative, University Faculty Senate
2017-2020, 2023-2024 CUNY Graduate Center: Member, Executive Committee, Ph.D. Program in Biochemistry
2017-2020 CUNY Graduate Center: Member, Admissions and Awards Committee, Ph.D. Program in Biochemistry
2017-2020 CUNY Graduate Center: Member, Curriculum and Examination Committee, Ph.D. Program in Biochemistry
2015-present CUNY Graduate Center: Faculty Member, Ph.D. Programs in Biochemistry, Chemistry and Biology
2015-present Pre-tenure advisory committee member for CCNY, ASRC faculty (A. des Georges, S. Elbaum-Garfinkle, D. Keedy, R. Khayat, D. Eisele, S. Mingote, G. Grosso, F. Vallese)
2015-present Ph.D. dissertation committees (30+ total in four graduate programs)

Teaching:

2025 CCNY Chemistry B9800 / GC Biochemistry 81000 – Molecular Biophysics Graduate Seminar; semester long; 11 Ph.D., 3 undergrad students
2024 lecturer: 1st Guangming Biological NMR Workshop: Structure, Dynamics and Function of Biological Macromolecules and Drug Discovery by NMR, Guangming, Shenzhen, China
2022 lecturer: India|EMBO Lecture Course: Structure, Dynamics and Interactions in Biomolecular Systems Using NMR Spectroscopy, Berhampur, Odissa, India
2016-2023 CCNY Chemistry 32002 – Biochemistry I; 30 hr lecture, 50-110 undergraduate students
2016 CCNY Chemistry 80541 – Molecular Biophysics Graduate Seminar; semester long, 8 Ph.D.
2015, 2018 GC Chemistry 86900 – Biomolecular NMR Spectroscopy; 3-6 hr lecture, 8 Ph.D. students
2015 GC Biochemistry 88800 – Hybrid Methods in Structural Biology; 3 hr lecture, 12 Ph.D. students

PROFESSIONAL SERVICE & TEACHING – UT SOUTHWESTERN

Service:

2013-2014 Department of Biophysics: Faculty Senate Representative
2012 Department of Biophysics: Faculty Search Committee

2002-2005 Department of Biochemistry: Computing Committee member
1999-2012 Department of Biochemistry: Faculty Search Committee member (7 committees)
1999-2012 Department of Biochemistry: Seminar and Events Committee member (chair: 1999-2002)

2004-2010 Molecular Biophysics: Graduate Program Chairman
2004-2014 PI, NIH T32 GM008297: Molecular Biophysics Predoctoral Training Program
2001-2005 Molecular Biophysics: Retreat Chairman
2000-2014 Molecular Biophysics: Steering Committee member
1999-2014 Ph.D. dissertation committees (38 total in five graduate programs)
1999-2014 Ph.D. qualifying exam committees (22 total in two graduate programs)

2012-2014 member, Magnetic Resonance Safety Committee
2010 Faculty Chair, UTSW Postdoctoral Association Symposium
2007-2014 Inservice teaching and tour leader, STARS (Science Teacher Access to Resources at Southwestern) program

2007-2010 member, search committee – Radiology Department chair

Teaching:

2010 DBS Core Course Biophysics Thread – co-director and 6 60′ lectures, 15 Ph.D.
topics: Biomolecular NMR Spectroscopy, Scattering Methods, Integration of Techniques

2009 Biological Chemistry: Literature Discussion Group – 6 60′ sessions, 10 Ph.D. students
topics: Environmental sensing and signaling

2008-2014 Molec. Biophysics: Advanced Biomolecular NMR – 4 90′ lectures, 5 Ph.D./postdoc
topics: NMR theory, pulse sequence development

2008-2014 Molec. Biophysics: Modern Methods in Structural Biology – 4-6 90′ lectures, 10 Ph.D.
Course organizer and director
topics: solution NMR – chemical shift assignment, structure determination

2007-2013 Molec. Biophysics: Physical Biochemistry I – 1 90′ lecture, 10-12 Ph.D. students
topics: biophysical properties of proteins as polymers

2003-2008 Molec. Biophysics: Enzymology / Physical Biochemistry II – 1-2 90′ lectures, 4-10 Ph.D.
topics: time-resolved biophysical methods; role of dynamics in catalysis

2001, 2002 lecturer: Woods Hole Marine Biology Laboratory – Physiology course

2001 lecturer: NRC/HHMI course "Determination of high-resolution structures for the post-genomic age", Warsaw, Poland

2001-2006 Molec. Biophysics: Biomolecular NMR – 3-5 90′ lectures, 12 Ph.D. students
topics: several topics in NMR theory and practice

2000-2014 Medical Biochemistry – 5-6 60′ lectures, 200-230 M.D. students
topics: protein structure/function; allostery; hemoglobin

1999-2007 DBS Core Course – 1-2 90′ lectures, 60-95 Ph.D. students
topics: protein NMR spectroscopy

1999-2011 DBS Core Course – 5-6 90′ literature review sessions, 8-10 Ph.D. students
topics: protein structure and function

SOCIETY MEMBERSHIPS

The Protein Society, Biophysical Society, AAAS, American Society for Biochemistry and Molecular Biology (ASBMB)

ADVOCACY AND PUBLIC OUTREACH ACTIVITIES *Participating in wide range of science outreach and discussion activities, ranging from Congressional visits to events at conferences and locally within NYC.*

2022-2028 Chair (2025-2027), Exec Committee, and Member, Public Advocacy Affairs Committee, ASBMB including Hill Days 2023-2025

2023-2025 Panelist, ASBMB Career Advising and Discover Careers Speed Networking sessions, DiscoverBMB 2023-2025

2023 Panelist, Yale Alumni Assoc. – Biotech Academia/Industry Panel in "Careers, Life, and Yale" series

2022 Guest, Krea University's "The Common Babbler" podcast, Sri City, India

2022 Speaker, Taste of Science – AI/Drug Discovery/Structural Biology, New York, NY (virtual)

2022 Host, CUNY GC Presents "Demystifying Drug Discoveries" w/Michael Brown (UT Southwestern)

2022 Participant, ASRC Visit, Sen. Chuck Schumer (NY)

2022 Speaker, The Old Guard, West Hartford, CT

2020 Participant, Virtual Rally for Biomedical Research, Washington, DC

2020 Speaker, Secret Science Club, Brooklyn, NY

2019 Guest, CUNY GC's "The Thought Project – Episode 69" podcast, New York, NY

2018 Capitol Hill Visit, Reps. Adriano Espillat (NY-13), Carolyn Maloney (NY-12), José Serrano (NY-15)

2018 Speaker, Riverside Chat – Harlem Biospace, New York, NY

2017 Host, ASRC Structural Biology Initiative Visit, Rep. Adriano Espillat (NY-13)

2017 Host, CUNY GC Presents "Where Do Drugs Come From?" w/Neil Stahl (Regeneron), Neal Rosen (MSKCC), Laura Motta-Mena (Optologix)

2015 Speaker, Science Exclamation Point, New York, NY

INVITED LECTURES (2023 – present)

2026:

268. Gordon Research Conference in Photosensory Receptors and Signal Transduction, Ventura, CA
269. Vanderbilt Institute of Chemical Biology, Vanderbilt University, Nashville, TN

2025:

260. Association of Medical and Graduate Departments of Biochemistry Annual Meeting, San Pedro, Belize (webinar)
261. Department of Chemistry, University of Zurich, Zurich, Switzerland
262. Bavarian NMR Center, TU Munich / Helmholtz Center Munich, Munich, Germany
263. Department of Biochemistry, Genetics, and Microbiology, University of Pretoria, Pretoria, South Africa
264. URC Protein Structure Function Research Unit, University of Witwatersrand, Johannesburg, South Africa
265. Microbiology and Biochemistry Departments, University of the Free State, Bloemfontein, South Africa
266. Gordon Research Conference in Enzymes, Coenzymes and Metabolic Pathways, Waterville Valley, NH
267. Institute of Physics, EPFL, Lausanne, Switzerland

2024:

244. 50th Birthday Symposium in Honor of Carrie Partch, Santa Cruz, CA
245. Gordon Research Seminar in Photosensory Receptors and Signal Transduction, Barga, Italy (Keynote Speaker)
246. Department of Chemistry, University of Florida, Gainesville, FL
247. Department of Chemistry, Talladega College, Talladega, AL (webinar)
248. High Pressure / Reverse Micelle NMR Symposium & Workshop, Texas A&M University, College Station, TX
249. Center for Computational Biology, Flatiron Institute, New York, NY
250. Symposium in Honor of Andrew Byrd, National Cancer Institute, Rockville, MD
251. Department of Biochemistry and Molecular Biology, Thomas Jefferson University, Philadelphia, PA
252. iNEXT-Discovery Annual Meeting, Brno, Czech Republic
253. Division of Pharmaceutical Chemistry, University of Vienna, Vienna, Austria
254. Greater Bay Area Biological NMR Summer School, Shenzhen, China
255. XXXth International Conference on Magnetic Resonance in Biological Systems, Seoul, South Korea
256. NYC-ISB24 Workshop, New York, NY (Keynote Speaker)
257. SCI-Talk Seminar Series, New York Structural Biology Center, New York, NY
258. Department of Chemistry and Biochemistry, Queens College, New York, NY
259. Department of Chemistry and Biochemistry, University of Oklahoma, Norman, OK

2023:

235. 2023 BPS Biophysics of Health & Disease Award Lecture, Biophysical Society (webinar)
236. DiscoverBMB-ASBMB Conference, Seattle, WA
237. Department of Chemistry & Biochemistry, University of Maryland, College Park, MD
238. 19th Chemical Biophysics Symposium, University of Toronto, Toronto, Canada (Keynote Speaker)
239. 37th Annual Meeting of the Protein Society, Boston, MA (Plenary Award Lecturer)
240. Chemical Biology Symposium, New York University, NY
241. Interdisciplinary Science Conference: Climate Stress Across The Biosphere, New York, NY
242. Department of Chemistry, University of Nebraska, Lincoln, NE
243. Eastern Analytical Symposium – EB Wilson Award Symposium for James Prestegard, Plainsboro, NJ