CURRICULUM VITAE
JEFFERSON KNIGHT, PH.D.

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Department of Chemistry
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Education

2001 – 2006, Ph.D., Yale University, Pharmacology
Thesis title: "Interactions of Islet Amyloid Polypeptide with Phospholipid Membranes"

1996 – 2000, B.S. with Highest Honors, University of North Carolina, Chapel Hill, Chemistry

1998-1999, no degree, Friedrich Schiller University, Jena, Germany
Chemistry Study Abroad via Trans-Atlantic Science Student Exchange Program

Professional Experience

2025 – present Director of Undergraduate Research and Creative Activities
University of Colorado Denver

2022 – present Professor
University of Colorado Denver
Department of Chemistry

2017 - 2022 Associate Professor
University of Colorado Denver
Department of Chemistry

2020 – present Associate Faculty (courtesy appointment)
University of Colorado Denver
Department of Integrative Biology

2019 (Spring/Summer)
Visiting Scholar
German Center for Neurodegenerative Diseases, Göttingen, Germany
Max Planck Institute for Biophysical Chemistry
Laboratory of Prof. Markus Zweckstetter

2018 (Fall) Visiting Scholar
University of Colorado Anschutz Medical Campus
School of Pharmacy, Department of Pharmaceutical Sciences
Laboratory of Dr. Colin Shearn

2010 - 2017 Assistant Professor
University of Colorado Denver
Department of Chemistry

2006 - 2010 Postdoctoral Research Associate, University of Colorado, Boulder
Department of Chemistry and Biochemistry
Laboratory of Prof. Joseph Falke

2001 - 2006 Graduate Student, Yale University
Department of Molecular Biophysics and Biochemistry
Laboratory of Prof. Andrew Miranker

2000 Research Summer Associate, Pfizer Global Research and Development
Laboratory of Dr. Roger C. Adami

1997 – 2000 Undergraduate Research, University of North Carolina
Chemistry Department
Laboratory of Prof. Dorothy A. Erie

1999 Undergraduate Visiting Research Student, Institute for Molecular Biotechnology, Jena, Germany
Laboratory of Prof. Frank Grosse

Peer-Reviewed Publications

Peer-reviewed original articles (supervised students underlined; corresponding author in bold)

2024 Chon, N.L., Tran, S., Miller, C.S., Lin, H., and **Knight, J.D.** A Conserved Electrostatic Membrane-Binding Surface in Synaptotagmin-Like Proteins Revealed Using Molecular Phylogenetic Analysis and Homology Modeling. *Protein Science*, 33, e4850. https://doi.org/10.1002/pro.4850

2021 **Knight, J.D.,** Budd, S., Bruehl, M., and Pan, D. A Paired Set of Biochemistry Writing Assignments Combining Core Threshold Concepts, Information Literacy, and Real-World Applications. *J Chem Educ* 98, 3758-3766. https://doi.org/10.1021/acs.jchemed.1c00115

2021 **Pan, D.**, Budd, S., **Bruehl, M., and Knight, J.D.** Tracking Information Literacy in Science Students: A Longitudinal Case Study of Skill Retention from General Chemistry to Biochemistry. *J Chem Educ* 98, 3749-3757. https://doi.org/10.1021/acs.jchemed.1c00114

2021 Alnaas, A.A., Watson-Siriboe, A., Tran, S., Negussie, M., Henderson, J.A., Osterberg, J.R., Chon, N.L., Harrott, B.M., Oviedo, J., Lyakhova, T., Michel, C., Reisdorph, N., Reisdorph, R., Shearn, C.T., **Lin, H., and Knight, J.D.** Multivalent lipid targeting by the calcium-independent C2A domain of synaptotagmin-like protein 4/granuphilin. *J Biol Chem* 296, 100159, 1-17. https://doi.org/10.1074/jbc.RA120.014618

2019 Tran, H.T., Anderson, L.A., and **Knight, J.D**. Membrane Binding Cooperativity and Co-insertion by C2AB Tandem Domains of Synaptotagmins 1 and 7. *Biophysical Journal* 116, 1025-1036. doi: 10.1016/j.bpj.2019.01.035

2018 Schenk, N.A., Dahl, P.J., Hanna, M.G., Audhya, A., Tall, G.G., **Knight, J.D., and Anantharam, A.** A simple supported tubulated bilayer system for evaluating protein-mediated membrane remodeling. *Chemistry and Physics of Lipids* 215, 18-28. doi: 10.1016/j.chemphyslip.2018.06.002

2018 Bendahmane, M., Bohannon, K.P., Rao, T.C., Schmidtke, M.W., Bradberry, M.M., Abbenini, P., Chon, N.L., Tran, S., Lin, H., Chapman, E.R., Knight, J.D., and **Anantharam, A.** The synaptotagmin C2B domain calcium-binding loops modulate the rate of fusion pore expansion. *Mol Biol Cell* 29, 7, 834-845. doi: 10.1091/mbc.E17-11-0623

2017 Hamilton, D., Coffman, M., **Knight, J.D., and Reed, S.M.** Lipid-Coated Gold Nanoparticles and FRET Allow Sensitive Monitoring of Liposome Clustering Mediated by the Synaptotagmin-7 C2A Domain. *Langmuir* 33, 9222-9230. http://pubs.acs.org/doi/10.1021/acs.langmuir.7b01397

2015 Osterberg, J.R., Chon, N.L., Boo, A., Maynard, F.A., Lin, H., and **Knight, J.D.** Membrane Docking of the Synaptotagmin 7 C2A Domain: Electron Paramagnetic Resonance Measurements Show Contributions from Two Membrane Binding Loops. *Biochemistry* 54, 5684-5695. http://pubs.acs.org/doi/abs/10.1021/acs.biochem.5b00421

2015 Chon, N.L., Osterberg, J.R., Henderson, J., Khan, H.M., Reuter, N., **Knight, J.D., and Lin, H.** Membrane Docking of the Synaptotagmin 7 C2A Domain: Computation Reveals Interplay between

Electrostatic and Hydrophobic Contributions. *Biochemistry* 54, 5696-5711. http://pubs.acs.org/doi/abs/10.1021/acs.biochem.5b00422

2014 Vasquez, J.K., Chantranuvatana, K., Giardina, D.T., Coffman, M.D., and **Knight, J.D.** Lateral diffusion of proteins on supported lipid bilayers: Additive friction of synaptotagmin 7 C2A-C2B tandem domains. *Biochemistry* 53, 7904–7913. http://pubs.acs.org/doi/abs/10.1021/bi5012223

2014 Lyakhova, T.A. and **Knight, J.D.** The C2 domains of granuphilin are high-affinity sensors for plasma membrane lipids. *Chemistry and Physics of Lipids,* 182, 29-37. Invited submission for special issue on phosphoinositides. http://www.sciencedirect.com/science/article/pii/S0009308413001370

2014 Ziemba, B.P., Li, J., Landgraf, K.E., Knight, J.D., Voth, G.A., and **Falke, J.J.** Single-molecule studies reveal a hidden key step in the activation mechanism of membrane-bound protein kinase C-α. *Biochemistry* 53, 1697-1713. http://pubs.acs.org/doi/abs/10.1021/bi4016082

2013 Yamamoto, T.M., Cook, J.M., Kotter, C.V., Khat, T., Silva, K.D., Ferreyros, M., Holt, J.W., Knight, J.D., and **Charlesworth, A.** Zar1 represses translation in *Xenopus* oocytes and binds to the TCS in maternal mRNAs with different characteristics than Zar2. *Biochimica et Biophysica Acta – Gene Regulatory Mechanisms,* 1829, 1034-1046.

2012 Brandt, D.S., Coffman, M., Falke, J.J., and **Knight, J.D.** Hydrophobic contributions to the membrane docking of synaptotagmin 7 C2A domain: Mechanistic contrast between isoforms 1 and 7. *Biochemistry* 51, 7654-64. http://pubs.acs.org/doi/abs/10.1021/bi3007115

2012 Ziemba, B.P., Knight, J.D., **Falke, J.J.** Assembly of Membrane-Bound Protein Complexes: Detection and Analysis by Single Molecule Diffusion. *Biochemistry* 51(8):1638-47.

2010 Knight, J.D., Lerner, M.G., Marcano-Velázquez, J.G., Pastor, R.W., and **Falke, J.J**. Single molecule diffusion of membrane-bound proteins: Window into lipid contacts and bilayer dynamics. *Biophysical Journal* 99, 2879-87.

2009 Knight, J.D. and **Falke, J.J.** Single-molecule fluorescence studies of a PH domain: new insights into the membrane docking reaction. *Biophysical Journal* 96, 566-82.

2008 Knight, J.D., Williamson, J.A., and **Miranker, A.D**. Interaction of membrane-bound islet amyloid polypeptide with soluble and crystalline insulin. *Protein Science* 17, 1850-56.

2006 Knight, J.D., Hebda, J.A., and **Miranker, A.D**. Conserved and cooperative assembly of membrane-bound α-helical states of islet amyloid polypeptide. *Biochemistry* 45, 9496-9508.

2004 Knight, J.D. and **Miranker, A.D.** Phospholipid catalysis of diabetic amyloid assembly. *Journal of Molecular Biology* 341, 1175-1187.

2003 Knight, J.D. and **Adami, R.C**. Stabilization of DNA utilizing divalent cations and alcohol. *International Journal of Pharmaceutics* 264,15-24.

2002 Eakin, C.M., Knight, J.D., Morgan, C.J., Gelfand, M.A., **Miranker, A.D.** Formation of a copper specific binding site in non-native states of β-2-microglobulin. *Biochemistry* 41, 10646-56.

Peer-reviewed review articles and book chapters (supervised students underlined; corresponding author in bold)

2022 **Milosevic, I.** and Knight, J.D. Exocytotic SNARE complex assembly, disassembly, and regulation. In *Exocytosis: From molecules to cells*, A. Anantharam and J. Knight, eds. London: IOP Press/Biophysical Society. https://iopscience.iop.org/book/edit/978-0-7503-3771-7

2018 MacDougall, D.D., Lin, Z., Chon, N.L., Jackman S., Lin, H., **Knight, J.D., and Anantharam, A.** The high-affinity calcium sensor synaptotagmin-7 serves multiple roles in regulated exocytosis. *J. Gen. Physiol.* 150 (6), 783-807. http://jgp.rupress.org/content/150/6/783

Non-peer-reviewed publications

Non-peer-reviewed popular articles (supervised students underlined; corresponding author in bold)

2024 **Knight, J.D.**, Lindau, M., and Gillis, K. Reflections on 20 years of the Membrane Fusion, Fission, and Traffic Subgroup. *Biophysical Society Bulletin*. https://biophysics.cld.bz/Biophysical-Society-Bulletin-February-2024/10/

2021 **Knight, J.D.,** Shearn, C.T., and Beauchamp-Pérez, C. A surprising modification lowers the lipid binding affinity of a membrane trafficking protein. *ASBMB Today.* https://www.asbmb.org/asbmb-today/science/082421/a-surprising-modification-lowers-the-lipid

Non-peer-reviewed original articles (supervised students underlined, corresponding author in bold)

2024 Beaven, A.H., Bikkumalla, V., Chon, N.L., Matthews, A.E., Lin, H., **Knight, J.D., and Sodt, A.J.** Synaptotagmin 7 C2 domains induce membrane curvature stress via electrostatic interactions and the wedge mechanism. BioRxIV, https://doi.org/10.1101/2024.01.10.575084.

2022 **Knight, J.D.** and Anantharam, A. Introduction. In *Exocytosis: From molecules to cells*, A. Anantharam and J. Knight, eds. London: IOP Press/Biophysical Society. https://iopscience.iop.org/book/edit/978-0-7503-3771-7

2022 **Soto, P.,** Carter, A.R., Deligkaris, C., Gül, D., **Hamadani, K.,** Knight, J., Matulis, D., Ozturk, T.N., Rivera-Colón, Y., and Yates, E.A. Perspectives on how 1.5 years of the COVID-19 pandemic have impacted biophysicists at Primarily Undergraduate Institutions. *The Biophysicist* 3 (1). https://doi.org/10.35459/tbp.2021.000187

2017 **Pan, D.**, Bruehl, M., Knight, J., and Resendiz M. Enduring Exposure: Methodology from Tracking Information Literacy in Science Students (TILISS). Proceedings from the 12th International Conference on Performance Measurement in Libraries. https://northumbria12.exordo.com/files/papers/37/final_draft/TILISS_proceedings.pdf

Peer-reviewed presentations at meetings (**presenter** in bold, supervised students underlined)

2024 **Knight, J.,** Alansari, N., Giardina, D.T., Huynh, T.N., Saunders, E. Modules for teaching and applying single-molecule total internal reflection fluorescence microscopy in an undergraduate lab course. Abstract selected for oral platform presentation at the Biophysical Society 68th Annual Meeting, Philadelphia, PA.

2022 **Chon, N.L.,** Lin, H., and Knight, J. Using protein structure prediction with molecular phylogenetic analysis to understand membrane interaction in synaptotagmin-like proteins. Abstract selected for oral presentation at 2022 Rocky Mountain Membrane Trafficking symposium, Boulder, CO.

2022 **Beaven, A.,** Chon, N.L., Lin, H., Knight, J., and Sodt, A. Simulating membrane reshaping proteins on fusion/fission pores. Abstract selected for oral presentation at Biophysical Society 66th Annual Meeting, San Francisco, CA.

2018 **Bruehl, M.,** Knight, J., Pan, D., and Resendiz, M. Tracking information literacy in science students: Importance of early exposure in skills retention throughout the undergraduate curriculum. Abstract accepted for oral presentation at Biennial Conference on Chemical Education, South Bend, IN.

2018 **Chon, N.L.**, Knight, J.D., and Lin, H. Computational and experimental insights on membrane binding properties of synaptotagmin isoforms. Abstract accepted for oral presentation at 1st Rocky Mountain Membrane Trafficking symposium, Aurora, CO.

2017 **Tran, H.T**., Anderson, L., and Knight, J.D. Comparing the cooperativity of membrane insertion between C2AB tandem domains of synaptotagmin-7 and synaptotagmin-1. Abstract accepted for oral presentation at 2017 American Chemical Society Rocky Mountain Regional Meeting, Loveland, CO.

2017 **Knight, J.D**., Dahl, P., Schenk, N., Ranski, A., Hanna, M., Audhya, A., Anantharam, A. Supported Tubulated Bilayers (STuBs): an experimental platform for monitoring protein-mediated membrane remodeling. Abstract accepted for oral presentation at 2017 American Chemical Society Rocky Mountain Regional Meeting, Loveland, CO.

2017 **Chon, N.L.**, Tran, S., Knight, J., Lin, H. Calcium Binding to C2B domains of Synaptotagmin 1, Synaptotagmin 7, and chimeric Synaptotagmin 1/7: A Computational Study. Abstract accepted for oral presentation at 2017 American Chemical Society Rocky Mountain Regional Meeting, Loveland, CO.

2017 **Spotts, T.**, Watson-Siriboe, A., Knight, J.D. Divalent metal cation effects on the membrane binding of the Slp-2 C2A domain. Abstract accepted for oral presentation at 2017 American Chemical Society Rocky Mountain Regional Meeting, Loveland, CO.

2017 **Pan, D.**, Bruehl, M., Knight, J., and Resendiz M. Enduring Exposure: Methodology from Tracking Information Literacy in Science Students (TILISS). Abstract accepted for oral presentation at the 12th International Conference on Performance Measurement in Libraries, Oxford, United Kingdom.

2015 **Knight, J.,** Giardina, D.T., Bonham, A.J., and Maroń, M.K. Incorporation of Single-Molecule FRET Measurements into an Undergraduate Physical Biochemistry Laboratory Course. Abstract accepted for oral presentation at American Chemical Society National Meeting, Denver, CO.

2015 Watson-Siriboe, A., Lyakhova, T., **Knight, J**. Molecular basis of high-affinity membrane binding by the C2A domain of granuphilin. Abstract accepted for oral presentation at American Chemical Society National Meeting, Denver, CO.

2015 **Osterberg, J.R.,** Chon, N.L., Boo, A., Maynard, F., Lin, H., Knight, J. Docking model of synaptotagmin 7 C2A via electron paramagnetic resonance. Abstract selected for oral presentation at American Chemical Society National Meeting, Denver, CO.

2014 **Vasquez, J**., Chantranuvatana, K., Knight J. Frictional Additivity of Lateral Diffusion on Supported Bilayers: Influence of Linker Length in Synaptotagmin 7 C2A-C2B Tandem Domains. Abstract accepted for oral presentation at American Chemical Society 247th National Meeting, Dallas, TX.

2014 Lyakhova, T.A. and **Knight, J.** Molecular mechanisms of high-affinity phosphoinositide binding by the tandem C2 domains of Granuphlilin/Slp-4. Abstract selected for oral presentation, Biophysical Society 58th Annual Meeting, San Francisco, CA.

2013 Salazar, B., Brandt, D.S., Coffman, M.D, Osterberg, J.R., Chantranuvatana, K., Falke, J.J., and **Knight, J.D.** Probing the structural origins of unusually strong target membrane affinity of synaptotagmin 7 C2A and C2AB domains. Abstract selected for oral presentation, Biophysical Society 57th Annual Meeting, Philadelphia, PA.

2012 Brandt, D.S., Coffman, M.D, Falke, J.J., and **Knight, J.D.** Hydrophobic contributions to the membrane docking of synaptotagmin 7 C2A domain: Mechanistic contrast between isoforms 1 and 7. Abstract selected for oral presentation, American Chemical Society 2012 Rocky Mountain Regional Meeting, Westminster, CO.

2012 **Liakhova, T**., and Knight, J.D. Molecular interactions and membrane targeting of granuphilin C2 domains: a preliminary study. Poster presentation, Beta Beta Beta Honors Society National Meeting, Mayaguez, Puerto Rico. ***Earned 2nd place in national undergraduate poster competition.***

2012 Brandt, D.S., Coffman, M., Falke, J.J., and **Knight, J.D.** Synaptotagmin C2 Domain Membrane Targeting: Kinetic and Mechanistic Diversity Among Isoforms from Different Cell Types. Abstract selected for oral presentation. Biophysical Society 56th Annual Meeting, San Diego, CA.

2011 Knight, J.D., **Brandt, D.S.**, and Falke, J.J. Mechanistic diversity in membrane binding by C2A domains of synaptotagmin isoforms. Abstract selected for oral presentation. American Chemical Society 241st National Meeting, Anaheim, CA.

2011 **Knight, J.D.,** Lerner, M.G., Marcano-Velasquez, J.G., Pastor, R.W., Falke, J.J. New Insights into Protein-Membrane Interaction from Single-Molecule TIRF Microscopy. Abstract selected for oral presentation. American Chemical Society 241st National Meeting, Anaheim, CA.

2009 **Knight, J.D.** and Falke, J.J. Single molecule fluorescence studies of membrane targeting proteins: lateral diffusion in supported bilayers reveals additional lipid binding sites. Abstract selected for oral presentation. Biophysical Society 53rd Annual Meeting, Boston, MA.

2005 **Knight, J.D.** and Miranker, A.D. Structural transitions of membrane-bound islet amyloid polypeptide. Abstract selected for oral presentation. 8th Yale Graduate Student Research Symposium, New Haven, CT.

2004 **Knight, J.D.** and Miranker, A.D. Phospholipid catalysis of diabetic amyloid assembly. Abstract selected for oral presentation. NIDDK Conference: Protein Misfolding and Misprocessing in Disease, Rockville, MD.

Non-peer-reviewed presentations at meetings (**presenter** in bold, supervised students underlined)

2025 **Soto, D.,** Kabre, P.N., Alnaas, A.A., Beauchamp-Perez, C., Saunders, E.F., Shearn, C.T., and Knight, J. C2 domains react with malondialdehyde to decrease membrane binding. Poster presentation at Biophysical Society 69th Annual Meeting, Los Angeles, CA.

2024 **Soto, D.,** Kabre, P.N., Beauchamp-Perez, C., Saunders, E., Shearn, C.T., and Knight, J. Oxidative stress compounds react with secretory C2 domains to decrease membrane binding. Poster presentation at 2024 Rocky Mountain Membrane Trafficking meeting, Aurora, CO.

2024 **Chon, N.L.**, Tran, S., Miller, C.S., Lin, H., Knight, J.D. Conserved Evolutionary Electrostatics: Bioinformatics and Phylogenetic Insights into Membrane Binding in the Synaptotagmin-like Protein Family. Poster presentation at American Chemical Society National Meeting, Denver, CO.

2024 **Soto, D.,** Saunders, E., Kabre, P.N., Beauchamp-Perez, C., Shearn, C.T., and Knight, J. Malondialdehyde modification decreases membrane binding by secretory C2 domains. Poster presentation at Biophysical Society 68th Annual Meeting, Philadelphia, PA.

2023 Saunders, E., Lowe, I., Soto, D., Bikkumalla, V., Tran, N.Y., Shearn, C.T., and **Knight, J**. Carbonylation of secretory proteins induced by oxidative stress compounds in insulin-secreting cells. Poster presentation at Biophysical Society meeting on Membrane Fusion and Budding, Estes Park, CO.

2023 Irlbeck, E.M., Spotts, T.A., Flores, D., Watson-Siriboe, A., Beauchamp-Pérez, C., Zweckstetter, M., and **Knight, J**. Calcium inhibits membrane binding by synaptotagmin-like protein 2 through competitive interactions with anionic lipids. Poster presentation at Biophysical Society meeting on Membrane Fusion and Budding, Estes Park, CO.

2023 **Matthews, A.**, Bikkumalla, V., Beaven, A., Maynard, F., Sodt, A., and Knight, J. Effects of cholesterol on membrane binding by synaptotagmin-7 C2 domains. Poster presentation at American Chemical Society Rocky Mountain Regional Meeting, Laramie, WY. Also at Rocky Mountain Membrane Trafficking Meeting, Fort Collins, CO.

2023 **Lowe, I.,** Saunders, E., Tran, N., Bikkumalla, V., Shearn, C., and Knight, J. The effects of oxidative stress and reactive lipid aldehydes on insulin secretion in β-cells. Poster presentation at Rocky Mountain Membrane Trafficking Meeting, Fort Collins, CO.

2023 **Saunders, E.**, Lowe, I., Bikkumalla, V., Shearn, C.T, and Knight, J. The Effects of Reactive Lipid Aldehydes on Insulin-Secreting Cells. Poster presentation at University of Colorado Diabetes Day, Aurora, CO.

2023 **Bikkumalla, V., Matthews, A.**, Beaven, A., Maynard, F., Sodt, A., and Knight, J. Effects of cholesterol on membrane binding by synaptotagmin-7 C2 domains. Poster presentation at Biophysical Society 67th Annual Meeting, San Diego, CA. ***VB: Travel Award winner.***

2022 **Knight, J.** Single-molecule measurement of protein-membrane binding in an undergraduate lab course. Oral presentation at Colorado Single Molecules and Membranes Meeting, Denver, CO (M. Knowles, organizer).

2022 **Knight, J.** Chemistry of interfacial protein-membrane interactions central to exocytosis. Poster presentation at 2022 Dreyfus Symposium, New York, NY.

2022 **Chon, N.L.,** Lin, H., and Knight, J. Using protein structure prediction with molecular phylogenetic analysis to understand membrane interaction in synaptotagmin-like proteins. Oral presentation for CU Denver 2022 Data Science Symposium, Denver, CO.

2022 **Kabre, P.N.,** Beauchamp-Perez, C., Michel, C., Shearn, C.T., and Knight, J. Diminished C2 domain binding to lipids after covalent modification by malondialdehyde. Poster presentation at 2022 CU Diabetes Research Center Symposium, Aurora, CO.

2022 **Saunders, E.**, Tran, N., Bikkumalla, V., Shearn, C., and Knight, J. The effects of oxidative stress and reactive lipid aldehydes on insulin secretion in β-cells. Poster presentation at 2022 Rocky Mountain Membrane Trafficking meeting, Boulder, CO.

2022 **Irlbeck, E.M.,** Flores, D., Watson-Siriboe, A., Zweckstetter, M., and Knight, J.D. Mechanism of Ca^{2+}-inhibited membrane binding by the synaptotagmin-like protein 2 C2A domain. Poster presentation at 2022 Rocky Mountain Membrane Trafficking meeting, Boulder, CO.

2022 **Alansari, N.** and Knight, J. Single-molecule imaging of Annexin A5 membrane binding: Improving an experiment for an undergraduate lab course. Poster presentation at 2022 Rocky Mountain Membrane Trafficking meeting, Boulder, CO.

2022 **Beauchamp-Pérez, C.C.,** Kabre, P.N., Shearn, C.T., and Knight, J. C2 domain lysine clusters are highly susceptible to non-enzymatic post-translational modifications. Poster presentation at Biophysical Society 66th Annual Meeting, San Francisco, CA. ***Travel Award winner. Student Research Achievement Award winner.***

2022 **Knight, J.**, Alansari, N., Giardina, D.T., and Huynh, T.N. Single-molecule kinetics of Annexin V membrane binding in an undergraduate physical biochemistry lab course. Poster presentation at Biophysical Society 66th Annual Meeting, San Francisco, CA.

2022 Chon, N.L., Tran, S., Miller, C.S., Lin, H., and **Knight, J.D.** Using protein structure prediction with molecular phylogenetic analysis to understand membrane interactions in synaptotagmin-like proteins. Poster presentation at Biophysical Society 65th Annual Meeting, San Francisco, CA.

2021 **Knight, J.,** Giardina, D.T., Huynh, T.H., Alansari, N., Urban, A. Total internal reflection fluorescence microscopy and single-molecule kinetics modules for an undergrad lab course. Poster presentation at Biophysical Society 65th Annual Meeting, online.

2021 **Chon, N.L.,** Tran, S., Miller, C.S., Lin, H., and Knight, J.D. Structure prediction and molecular phylogenetic analysis of membrane interactions in synaptotagmin-like proteins. Poster presentation at Biophysical Society 65th Annual Meeting, online.

2020 **Beauchamp-Pérez, C.,** Michel, C., Reisdorph, R., Reisdorph, N., Fritz, K., Shearn, C.T., and Knight, J. Non-enzymatic post-translational modification of lysine clusters in C2 domains. Oral flash presentation at American Chemical Society Rocky Mountain Regional Meeting, online. The same presentation was given at the CU Denver campus research day and won a ***student presentation award***.

2020 **Chon, N.L.,** Tran, S., Miller, C.S., Lin, H., and Knight, J. Mapping electrostatic protein-membrane interactions of Slp-4 C2 domain using molecular phylogenetic analysis and structure prediction. Oral flash presentation at American Chemical Society Rocky Mountain Regional Meeting, online. ***Student presentation award winner.***

2020 **Knight, J.**, Bruehl, M., and Pan, D. Tracking information literacy in science students: a longitudinal study of skills retention through the chemistry curriculum. Oral flash presentation at American Chemical Society Rocky Mountain Regional Meeting, online.

2020 **Negussie, M.,** Tran, S., Chon, N., Oviedo, J., Alnaas, A., Knight, J. and Lin, H. Membrane Interaction of Synaptotagmin-Like Protein 4: Simulations of Mutant C2A Domains. Poster presentation at Biophysical Society 64th Annual Meeting, San Diego, CA.

2020 **Chon, N.L.,** Tran, S., Miller, C.S., Lin, H., and Knight, J.D. Using high-throughput structure prediction and evolutionary alignment to map electrostatic protein-membrane interactions. Poster presentation at Biophysical Society 64th Annual Meeting, San Diego, CA.

2020 Spotts, T., Flores, D., Watson-Siriboe, A., Jones, D.N.M., Zweckstetter, M. and **Knight, J.** Biophysical origins of calcium-inhibited membrane binding by the C2A domain of synaptotagmin-like protein 2. Poster presentation at Biophysical Society 63rd Annual Meeting, San Diego, CA.

2020 **Chon, N.L.** Multivalent lipid targeting by the Ca^{2+}-independent C2A domain of synaptotagmin-like protein 4. Oral presentation at Colorado Single Molecules and Membranes Meeting, Denver, CO (J. Knight, organizer).

2020 **Knight, J.** A simple system for making supported tubulated bilayers (Stubs). Oral presentation at Colorado Single Molecules and Membranes Meeting, Denver, CO (J. Knight, organizer).

2019 **Negussie, M.,** Tran, S., Chon, N., Oviedo, J., Alnaas, A., Lin, H., and Knight, J. Synaptotagmin-Like Protein 4: Membrane Binding Simulations of Single and Triple Mutants. Poster presentation at Rocky Mountain Membrane Trafficking Meeting, Denver, CO.

2019 Tran, H., Anderson, L., and **Knight, J.** Biophysical features underlying the extreme calcium sensitivity of synaptotagmin-7. Poster presentation at Biophysical Society Thematic Meeting: Quantitative Aspects of Membrane Fusion and Fission, Padua, Italy.

2019 **Alnaas, A.**, Oviedo, J., Watson-Siriboe, A., Tran, S., Negussie, M., Lin, H., and Knight, J. Membrane binding by synaptotagmin-like protein 4: site-directed mutagenesis of the lipid interaction surface. Poster presentation at Biophysical Society 63rd Annual Meeting, Baltimore, MD.

2019 **Negussie, M.,** Tran, S., Chon, N.L., Oviedo, J., Alnaas, A., Knight, J., and Lin, H. Membrane binding of synaptotagmin-like protein 4: insight from molecular dynamics simulations. Poster presentation at Biophysical Society 63rd Annual Meeting, Baltimore, MD.

2018 **Knight, J.D.**, Schenk, N.A., Dahl, P.J., Hanna, M., Audhya, A., Tall, G.G., Anantharam, A. A Supported Tubulated Bilayer System Shows Ability of Sar1B to Remodel Membranes. Poster presentation at 1st Rocky Mountain Membrane Trafficking Symposium, Aurora, CO.

2018 **Tran, H.T.**, Anderson, L., and Knight, J. Cooperativity in membrane binding by C2AB tandem domains of synaptotagmin-7 and synaptotagmin-1: a comparative study. Poster presentation at Biophysical Society 62nd Annual Meeting, San Francisco, CA.

2018 **Spotts, T.**, Willstead, S., Watson-Siriboe, A., and Knight, J. Toward understanding the mechanism of calcium-inhibited membrane binding of the Slp-2 C2A domain. Poster presentation at Biophysical Society 62nd Annual Meeting, San Francisco, CA.

2018 Watson-Siriboe, A., **Alnaas, A.**, Henderson, J., Tran, S., Osterberg, J.R., Chon, N.L., Lyakhova, T., Oviedo, J., Lin, H. and Knight, J. Multivalent membrane lipid targeting by the calcium-independent C2A domain of Slp-4/granuphilin. Poster presentation at Biophysical Society 62nd Annual Meeting, San Francisco, CA.

2018 **Bendahmane, M.**, Bohannon, K., Rao, T., Schmidtke, M.W., Abbineni, P., Ranski, A., Bradberry, M., Tran, S., Chon N.L., Knight, J., Lin, H., Chapman, E.R., Anantharam, A. The synaptotagmin calcium-binding loops

modulate the rate of fusion pore expansion. Poster presentation at Biophysical Society 62nd Annual Meeting, San Francisco, CA.

2018 **Schenk, N.,** Dahl, P., Ranski, A., Hanna, M., Audhya, A., Tall, G., Knight, J., Anantharam, A. A supported tubulated bilayer system shows ability of Sar1B to remodel membranes. Poster presentation at Biophysical Society 62nd Annual Meeting, San Francisco, CA.

2018 **Knight, J.** From diffusion on planar supported bilayers to membrane fission with tubulated bilayers. Oral presentation at Colorado Single Molecules and Membranes Meeting (Jeff Knight, organizer), Denver, CO.

2018 **Alnaas, A.**, Watson-Siriboe, A., Henderson, J.A, Tran, S., Lyakhova, T., Oviedo, J., Lin, H., and Knight, J. Multivalent membrane lipid targeting by the calcium-independent C2A domain of Slp-4/granuphilin. Poster presentation at Colorado Single Molecules and Membranes Meeting (Jeff Knight, organizer), Denver, CO.

2018 **Tran, S.M.**, Negussie, M., Chon, N.L., Henderson, J., Knight, J., and Lin, H. Regions of Granuphilin C2A Domain Involved in Membrane Docking. Poster presentation at Colorado Single Molecules and Membranes Meeting (Jeff Knight, organizer), Denver, CO.

2017 **Knight, J.** Supported Tubulated Bilayers (STuBs): an experimental platform for monitoring curvature sensing and vesiculation. Invited oral presentation at meeting entitled Biological Membranes and Membrane Proteins: Challenges for Theory and Experiment (Greg Voth and Scott Feller, organizers), Santa Fe, NM.

2017 **Dahl, P.**, Vasquez, J.; Tran, H.; Knight, J.; and Anantharam, A. A supported tubulated bilayer system shows effects of synaptotagmin-7 on membrane curvature. Poster presentation at Biophysical Society 61st Annual Meeting, New Orleans, LA.

2016 **Knight, J.** Molecular mechanisms of protein-membrane interactions central to insulin secretion. Poster presentation at Gordon Conference: Protein Processing, Trafficking & Secretion, New London, NH. ***Poster Award winner.***

2016 **Hamilton, D.J.**; Knight, J.D.; and Reed, S.M. Lipid coated gold nanoparticles for ultra-sensitive label free detection of protein adsorption to membranes. Poster presentation at Royal Society of Chemistry conference: Nanoparticles with Morphological and Functional Anisotropy: Faraday Discussion, Glasgow, Scotland.

2016 **Dahl, P.;** Vasquez, J.; Knight, J.; and Anantharam, A. A supported tubulated bilayer system for evaluating synaptotagmin effects on membrane curvature. Poster presentation at Society for Neuroscience annual meeting, San Diego, CA.

2016 **Maynard, F.A**.; Salazar, B; and Knight, J. Mechanism of strong membrane binding by synaptotagmin 7 C2A domain: Insight from mutation and lipid composition dependence. Poster presentation at Biophysical Society 60th Annual Meeting, Los Angeles, CA. ***Education Committee Travel Award Recipient.***

2016 **Tran, H.T**.; Giardina, D.T.; Coffman, M.D.; Chantranuvatana, K.; and Knight, J. Differences in Membrane Binding Cooperativity between the Tandem C2 Domains of Synaptotagmin 1 and Synaptotagmin 7. Poster presentation at Biophysical Society 60th Annual Meeting, Los Angeles, CA.

2016 Watson-Siriboe, A.; Henderson, J.; Osterberg, J.R.; Giardina, D.T.; DeLima, M.; Lin, H.; and **Knight, J**. Multivalent membrane lipid targeting by the calcium-independent C2 domains of granuphilin: evidence from computation and experiment. Poster presentation at Biophysical Society 60th Annual Meeting, Los Angeles, CA.

2016 **DeLima, M.;** Giardina, D.T.; and Knight, J. Contribution of low-affinity sites to strong multivalent protein-membrane binding: detection using single-molecule TIRF microscopy. Poster presentation at Biophysical Society 60th Annual Meeting, Los Angeles, CA.

2016 **Dahl, P.;** Vasquez, J.; Knight, J.; and Anantharam, A. The synaptotagmin-7 C2AB domain alters membrane morphology in a Ca^{2+}-dependent manner. Poster presentation at Biophysical Society 60th Annual Meeting, Los Angeles, CA.

2015 **Chon, N.L.,** Henderson, J., Osterberg, J.R., Knight, J., and Lin, H. Ca^{2+}-Induced Membrane Association of C2A Domains from Synaptotagmin 1 and 7: Insight from Molecular Dynamics Simulations. Poster presentation at Butcher Symposium, Westminster, CO.

2015 **Knight, J.** Comparing and contrasting membrane binding by synaptotagmins 1 and 7. Invited oral presentation at meeting entitled Biological Membranes and Membrane Proteins: Challenges for Theory and Experiment (Greg Voth and Scott Feller, organizers), Telluride, CO.

2015 **Chon, N.L., Henderson, J**., Reuter, N., Knight, J., Lin, H. Comparisons of synaptotagmin 1 and synaptotagmin 7 C2A domains in membrane associations by molecular dynamic simulations. Abstract for poster presentation. American Chemical Society National Meeting, Denver, CO. ***Winner of Undergraduate Poster Award for Computational Chemistry division***.

2015 **Giardina, D.T.,** Vasquez, J.K., Knight, J.D. Lateral Diffusion of Synaptotagmin 1 and 7 on Supported Lipid Bilayers: Assessing the Frictional Additivity of C2A-C2B Tandem Domains. Abstract accepted for oral presentation but presented as a poster at American Chemical Society National Meeting, Denver, CO.

2015 **Watson-Siriboe, A**., Lyakhova, T., Knight, J. Granuphilin C2A domain as a coincidence detector for phosphatidylserine and phosphoinositides. Poster presentation at Biophysical Society 59th Annual Meeting, Baltimore, MD.

2015 **Chon, N.L**., Henderson, J., Osterberg, J.R., Khan, H., Reuter, N., Knight, J., Lin, H. Membrane Association of Synaptotagmin 7 C2A Domain by Molecular Dynamics Simulations. Poster presentation at Biophysical Society 59th Annual Meeting, Baltimore, MD.

2015 Vasquez, J., Chantranuvatana, K., Giardina, D., **Knight J.** Single-Molecule Diffusion Measurements Indicate Independent Membrane Insertion by the Tandem C2 Domains of Synaptotagmin 7. Poster presentation at Biophysical Society 59th Annual Meeting, Baltimore, MD.

2015 Vasquez, J., Chantranuvatana, K., Giardina, D., **Knight J.** Independent Membrane Binding by Synaptotagmin-7 C2A-C2B Tandem Domains Evidenced by Additive Friction in Single-Molecule Diffusion Measurements. Poster presentation at Colorado Single Molecule Membrane Meeting, Denver, CO.

2014 **Maynard, F**., Osterberg, J.R., Chon, N., Boo, A., Lin, H., Knight, J. Investigating the effects of methanethiosulfonate spin labeling on the behavior of the synaptotagmin 7 C2A domain. Poster presentation at Society for Neuroscience Annual Meeting, Washington, DC.

2014 **Maynard, F**., Salazar, B., Knight, J. Investigating the Differences in Lipid-Binding Affinities and Kinetics Between C2A Domains of Synaptotagmins 1 and 7**.** Poster presentation at American Chemical Society National Meeting, San Francisco, CA. ***Eli Lilly Travel Award Recipient***.

2014 **Vasquez, J**., Chantranuvatana, K., Knight J. Frictional Additivity of Lateral Diffusion on Supported Bilayers: Influence of Linker Length in Synaptotagmin 7 C2A-C2B Tandem Domains. Poster presentation at Biophysical Society 58th Annual Meeting, San Francisco, CA.

2014 **Knight, J.D.** Using single-molecule TIRF to track intramolecular protein contacts induced by membranes. Oral presentation at Colorado Single Molecule Membrane Meeting (Jeff Knight and Scott Reed, organizers), Denver, CO.

2014 Chantranuvatana K., **Vasquez J.**, Knight J. Effect of inter-domain linker length on lateral diffusion of the synaptotagmin 7 C2AB domain. Poster presentation at Colorado Single Molecule Membrane Meeting (Jeff Knight and Scott Reed, organizers), Denver, CO.

2013 **Knight J**., Brandt D., Coffman M., Lyakhova T., Salazar B. Protein-membrane interactions in insulin secretory vesicle docking and fusion. Poster presentation at Butcher symposium, Westminster, CO.

2013 **Vasquez, J**., Chantranuvatana, K., Knight J. Frictional Additivity of Lateral Diffusion on Supported Bilayers: Influence of Linker Length in Synaptotagmin 7 C2A-C2B Tandem Domains. Poster presentation at Gamma Sigma Epsilon Chemistry Honor Society 45th Biennial Meeting, Frostburg, MD. ***Awarded 1st prize at undergraduate poster competition***.

2013 **Knight, J.D.** Membrane targeting by synaptotagmin C2 domains. Invited oral presentation at meeting entitled Biological Membranes and Membrane Proteins: Challenges for Theory and Experiment (Greg Voth and Scott Feller, organizers), Snowmass Village, CO.

2013 **Liakhova, T**., and Knight, J.D. Molecular interactions and membrane targeting of granuphilin C2 domains. Poster presentation, Beta Beta Beta Honors Society Regional Meeting, Alamosa, CO; and National Meeting, Mayaguez, PR. ***1st place in Regional Undergraduate Poster Competition.***

2012 **Knight, J.D.** Effect of inter-domain linker length on lateral diffusion of synaptotagmin C2AB domains. Invited oral presentation at Colorado Single Molecule Membrane Meeting (Diego Krapf, organizer), Fort Collins, CO.

2012 **Salazar, B.**, Brandt, D.S., Coffman, M.D, Falke, J.J., and Knight, J.D. Probing the structural origins of membrane affinity differences between C2A domains from synaptotagmins 1 & 7. Poster presentation, Society for Neuroscience Annual Meeting, New Orleans, LA.

2012 **Chantranuvatana, K.** and Knight, J.D. Effect of interdomain linker length on lateral diffusion of synaptotagmin C2AB domains. Poster presentation, American Chemical Society 2012 Rocky Mountain Regional Meeting, Westminster, CO.

2012 Brandt, D.S., Coffman, M.D., Falke, J.J., and **Knight, J.D.** Synaptotagmin C2 Domain Membrane Targeting: Kinetic and Mechanistic Diversity Among Isoforms from Different Cell Types. Poster

presentation. 2nd Annual University of Denver Biophysics Symposium, Denver, CO.

2012 **Liakhova, T**., and Knight, J.D. Molecular interactions and membrane targeting of granuphilin C2 domains: a preliminary study. Poster presentation. Biophysical Society 56th Annual Meeting, San Diego, CA.

2011 **Knight, J.D.** Lateral Diffusion of Proteins with Two Membrane-targeting Domains. Invited oral presentation at Colorado Single Molecule Membrane Meeting (Joe Falke, organizer), Boulder, CO.

2011 **Knight, J.D**., Brandt, D.S., Liakhova, T., Chantranuvatana, K., Coffman, M., Snyder, J., Fulroth, B., Falke, J.J., and Stith, B.J. Protein-Membrane Interactions Involved in Insulin Secretion: Insight from Ensemble and Single Molecule Fluorescence Measurements. Poster presentation. Butcher Symposium, Westminster, CO.

2011 **Knight, J.D.** Viewing protein-membrane interactions one molecule at a time. Invited oral presentation at meeting entitled Biological Membranes and Membrane Proteins: Challenges for Theory and Experiment (Greg Voth and Scott Feller, organizers), Snowmass Village, CO.

2011 **Brandt, D.S.**, Chantranuvatana, K., Liakhova, T., **Coffman, M.**, Falke, J.J., and Knight, J.D. Protein-Membrane Interactions of C2 Domains Involved in Insulin Secretion. Poster presentation. University of Denver Biophysics Symposium, Denver, CO.

2010 **Knight, J.D.** and Falke, J.J. Membrane diffusion of PH domain–PIP_3 complexes: The effects of target lipid stoichiometry on diffusion constant probed using single-molecule fluorescence microscopy. Poster presentation. Biophysical Society 54th Annual Meeting, San Francisco, CA.

2008 **Knight, J.D.** and Falke, J.J. Single molecule studies of PH and C2 domain docking to model membranes. Oral presentation. American Chemical Society 235th National Meeting, New Orleans, LA.

2008 **Knight, J.D.** and Falke, J.J. Single molecule fluorescence studies of protein domain docking and diffusion on model membrane surfaces. Poster presentation. Biophysical Society 52nd Annual Meeting, Long Beach, CA.

2007 **Knight, J.D.**, Corbin, J.A., and Falke, J.J. Investigation of PH domain-membrane interactions using TIRFM: a feasibility study. Poster presentation. Biophysical Society 51st Annual Meeting, Baltimore, MD.

2005 **Knight, J.D.** and Miranker, A.D. Cooperative binding and structural transitions in membrane-bound islet amyloid polypeptide. Poster presentation. Gordon Conference: Mechanisms of Membrane Transport, Tilton, NH.

2003 **Knight, J.D.** and Miranker, A.D. Insights into the mechanism of islet amyloid polypeptide fibrillogenesis in lipid membranes. Poster presentation. Protein Society Annual Meeting, Boston, MA.

2000 **Knight, J.D.** Practical opportunities for chemistry undergraduates in Jena, Germany. Oral presentation. American Chemical Society National Meeting, San Francisco, CA.

Funded Grants (listed by year of application**)**

External research grants:

2018 Chemistry of interfacial protein-membrane interactions central to insulin secretion. Camille and Henry Dreyfus Foundation, Henry Dreyfus Teacher-Scholar Award #TH-18-061. 9/1/2018 – 8/31/2023. PI: Jefferson Knight. Amount requested: $60,000. Amount funded: $60,000.

2018 Administrative Diversity Supplement for NIH/NIGMS Award #2R15GM102866. NIH/NIGMS. 5/1/2018 – 4/30/2020. PI: Jefferson Knight. Support for: Mikias Negussie (undergraduate student). Amount requested: $38,316. Amount funded: $38,315.

2017 Administrative Diversity Supplement for NIH/NIGMS Award #2R15GM102866. NIH/NIGMS. 7/1/2017 – 6/30/2019. PI: Jefferson Knight. Support for: Julianna Oviedo (undergraduate student). Amount requested: $55,962. Amount funded: $39,352.

2017 Using NMR spectroscopy to determine the structure of a unique calcium-inhibited C2 domain. Fulbright U.S. Scholar Program. 3/1/2019 – 6/30/2019. PI: Jefferson Knight. Amount funded: EUR14,400 plus travel and health insurance. Sabbatical fellowship.

2016 Ca^{2+}-independent and Ca^{2+}-inhibited membrane binding by synaptotagmin-like proteins. NIH/NIGMS, Award #2R15GM102866 - 02. 6/1/2017-8/31/2022. PI: Jefferson Knight. Amount requested: $463,475. Amount

funded: $463,475.

2013 Molecular mechanisms of protein-membrane interactions driving insulin secretion. NIH/NIGMS, Award #1R15GM102866 - 01A1. 2/1/2014-5/31/2017. PI: Jefferson Knight. Amount requested: $426,922. Amount funded: $329,632.

2013 Hydrophobic and electrostatic driving forces for protein-membrane docking: A combined experimental and computational approach. Research Corporation for Science Advancement, Multi-Investigator Cottrell College Science Award #22399. 7/2013-6/2016. PIs: Jefferson Knight and Hai Lin. Amount requested: $75,000. Amount funded: $75,000.

Internal research grants:

2024 Fundamental mechanisms of calcium sensing for insulin secretion. Seed Grant, CU Denver Office of Research Services. 4/1/2024 – 3/31/2025 Total award: $10,000.

2022&2023 Center for Advanced Genomic and Epigenomic Science (AGES). CU Denver Grand Challenges Initiative. 7/1/2022 – 6/30/2024. PI: Xiaojun Ren. Role: Co-investigator/Team Member. Total award $300,000.

2022 Oxidative stress-induced protein damage in β-cell secretory dysfunction. University of Colorado Diabetes Research Center. 5/1/2022 – 4/30/2024. PI: Jefferson Knight. Total award: $99,797.

2020 Identification of SARS-CoV-2 Spike Protein Binding Molecules for Molecular Diagnostics. UCD Office of Research Services. 7/1/2020-6/30/2021. PI: John Fisk. Role: Co-investigator. Amount requested: $30,000. Amount funded: $20,000.

2015 Deciphering the unusual calcium-inhibited membrane binding of a cancer signaling protein. UCD Office of Research Services. 1/15/2016 – 6/30/2017. PI: Jefferson Knight. Total award: $12,500.

2014 Molecular mechanisms of protein-membrane interactions driving insulin secretion. UCD Office of Research Services. 6/1/2014 – 6/30/2015. PI: Jefferson Knight. Total award: $10,000.

2013 CU-Denver College of Liberal Arts and Sciences Dean's Fund for Excellence. Amount requested: $910. Amount funded: $910.

2011 Effects of long-term glucose elevation on the phospholipid compositions of insulin-secreting cells. UCD College of Liberal Arts and Sciences Research Innovation Seed Programs (CRISP) Award, 7/2011-6/2012. PIs: Jefferson Knight and Brad Stith. Total award: $10,000.

2010, 2012, 2016: UCD College of Liberal Arts and Sciences Dissemination Grants

Internal teaching grants:

2020 UCD College of Liberal Arts and Sciences Capital Equipment Grant for purchase of a UV/Vis spectrophotometer to be used in undergraduate teaching and research. Amount requested and funded: $23,481.

2016 UCD College of Liberal Arts and Sciences Capital Equipment Grant for purchase of a fluorescence/absorbance plate reader to be used in undergraduate teaching and research. Amount requested and funded: $50,000.

2015 UCD College of Liberal Arts and Sciences Capital Equipment Grant for purchase of a circular dichroism spectrophotometer to be used in undergraduate teaching and research. Amount requested and funded: $100,000.

2011 UCD College of Liberal Arts and Sciences Capital Equipment Grant for outfitting Biochemistry teaching laboratory. Amount requested and funded: $51,332.

2011 UCD College of Liberal Arts and Sciences Capital Equipment Grant for purchase of a single-molecule Total Internal Reflection Fluorescence (TIRF) microscope to be used in undergraduate teaching and student research. Amount requested and funded: $128,022.

2010 UCD College of Liberal Arts and Sciences Capital Equipment Grant for purchase of a fast protein liquid chromatography (FPLC) system to be used in undergraduate teaching and student research. Amount requested and funded: $38,900.

Seminars/Workshops Presented

2024, 2019, 2016 University of Colorado Denver (Denver, CO) Department of Chemistry seminar series

2024 University of North Carolina Wilmington (Wilmington, NC) Dept. Chem & Biochem seminar series

2023 National Institutes of Health (Bethesda, MD) Membrane Biophysics affinity group invited seminar
2023 University of Toledo (Toledo, OH) Department of Neuroscience seminar series
2022 Brigham Young University (Provo, UT) Department of Cell Biology & Physiology seminar series
2019 University of Colorado Denver (Denver, CO) Nobel @ Noon seminar series
2018 University of Michigan (Ann Arbor, MI), Biophysics Program seminar series
2017 German Center for Neurodegenerative Diseases (Göttingen, Germany), informal seminar
2016 University of Denver (Denver, CO) Department of Biology seminar series
2015 Colorado State University (Fort Collins, CO) Biochemistry & Molecular Biology seminar series
2015 Wayne State University (Detroit, MI) Lipids@Wayne seminar series
2014, 2023, 2024 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Barbara Davis Center, Research in Progress Series
2013 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Dept. of Physiology and Biophysics
2012 Wichita State University (Wichita, KS) Dept. of Chemistry seminar series
2011 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Diabetes and Endocrinology Research Consortium, Research in Progress Series
2011 University of Northern Colorado (Greeley, CO) Dept. of Chemistry seminar series
2011 Colorado State University (Fort Collins, CO) Biomedical Engineering Program seminar series
2011 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Diabetes and Endocrinology Research Consortium, Research in Progress Series
2010 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Dept. of Pharmacology
2010 University of Colorado Denver | Anschutz Medical Campus (Aurora, CO) Biophotonics seminar series

Professional Organizations

2006-present Member, Biophysical Society
2023-present Member, American Diabetes Association
2020-present Member, American Society for Biochemistry and Molecular Biology
2019-present Member, Fulbright Association
2017-present Member, American Scientific Affiliation
2016-present Member, Council on Undergraduate Research
2008-2023 Member, American Chemical Society
2003-2005 Member, Protein Society

Books edited:

2022 **Anantharam, A., and Knight, J.D., eds.** *Exocytosis: From Molecules to Cells.* London: Biophysical Society/IOP Press. https://iopscience.iop.org/book/edit/978-0-7503-3771-7

Courses Taught

Biochemistry (CHEM 3810)
Physical Biochemistry Laboratory (CHEM 4548/5548)
General Biochemistry I (CHEM 4810)
General Biochemistry II (CHEM 4820)
Biochemistry of Metabolic Disease (CHEM/BIOL 4825/5825)
Biochemistry Laboratory (CHEM 4828)
Graduate Biochemistry I (CHEM 5810)
Graduate Biochemistry II (CHEM 5830)

Leadership and Service

University of Colorado Denver, Department of Chemistry:

2024 Chair, PhD program proposal steering committee
2023-2025 Associate Chair, Chemistry Department
2023-2025 Director and Advisor, MS Chemistry program
2022-2024 Member, Personnel Committee (chair, Spring 2024)
2022-2023 Advisor, Biochemistry minor
2019-2023 Director, B.S. Biochemistry program

2015-2017 Chair, Biochemistry Development Committee
2015-2016 Member, Program Review Committee
2010-12, 2014-15 (chair), 2015-17 (chair), and 2021-22 (chair): Member/Chair, Faculty Search Committees
2012-2015 and 2018-2021 (Chair 2013-2014) Member/Chair, Chemistry Curriculum Committee
2012-2013 Member, ad hoc Graduate Program Committee
2011-2019 Member, ad hoc Space Committee

University of Colorado Denver|Anschutz Medical Campus and cross-campus initiatives:
2023 Reviewer, CU Anschutz Postdoctoral Association Professional Development Awards Program (PDA-PDA)
2021, 2023, 2024 Mentor (2021/2023), instructor (2021), and interim Program co-Director (2024), Rocky Mountain Science Research Education Experience (RMSREE; NIH-sponsored training program for high school teachers)
2018-present Member, University of Colorado Diabetes Research Center
2010-present Member, Colorado Clinical and Translational Science Initiative
2010-2014 Member, CU Denver Diabetes and Endocrinology Research Consortium

University of Colorado Denver, Downtown Campus and College of Liberal Arts and Sciences:
2023-2024 Member, Graduate Council
2022-2025 Member, CU Denver Faculty Assembly Educational Policies and Planning Committee (Vice Chair 2023-2025)
2022 Member, CLAS Linux Systems Administrator Search Committee
2021-2023 Member, CLAS Information Technology Committee
2021-2022 Mentor, CU Denver Center for Faculty Development IRCF mentorship program
2020-2022 Member, CLAS IRCF Personnel Committee
2019-2021 Member, CLAS Budget and Planning Committee
2018-2019 Member, CLAS ORCA Faculty Research Advisory Group
2017 Member, Director of Undergraduate Research and Creative Activities (DURCA) Search Committee
2017-present Mentor, CU Denver MARC U-STAR program (NIH-sponsored training program for undergraduates)
2015, 2017-2018, 2021,2022 Member, Undergraduate Research Opportunity Program (UROP) proposal review committee (later called Eureca grants)
2015-2016 Member, Masters of Integrated Science Advisory Committee
2013-2015 Member, UROP Steering Committee
2012-present Member/Mentor, CU Denver Integrative and Systems Biology interdisciplinary Ph.D. program
2012-2014 Member, CLAS Educational Policies and Curriculum Committee
2011-2017 Mentor, CU Denver Building Research Achievement in Neuroscience (BRAiN) program (NIH-sponsored training program for undergraduates),
2010-2012 Mentor, CU Denver LABCOATS program (NIH-sponsored training program for undergraduates)

Scientific community:
2023-2026 Executive Committee, Biophysical Society Membrane Fusion, Fission, and Traffic subgroup (Chair 2024-2025)
2019-2025 Member, Biophysical Society Education Committee
2020-2023 Member, Biophysical Society PUI Network Steering Committee
2018 & 2020 Organizer and host, Colorado Single Molecules and Membranes Meeting
2017-present Panelist reviewer: National Science Foundation, National Laboratories, Fulbright Scholars
2014-2016 Co-organizer, Undergraduate Mixer and Poster Fest, Biophysical Society Annual Meeting
2014 Co-chair, platform session on protein-lipid interfacial interactions, Biophysical Society Annual Meeting
2014 Co-organizer, Colorado Single Molecules and Membranes Meeting
2012 Co-moderator, invited session on Physical Chemistry, Rocky Mountain Regional Meeting of the American Chemical Society

2012 Co-chair, platform session on protein-lipid interfacial interactions, Biophysical Society National Meeting
2011-present Ad hoc proposal reviewer: National Science Foundation, Research Corporation for Science Advancement
2010-present Ad hoc manuscript reviewer: *PNAS, Neuroscience Letters, Nature Communications, Biophysical Journal, Chemistry and Physics of Lipids, Macromolecules, PLOS Computational Biology, Structure, BBA-Biomembranes, BBA-General Subjects, Biochemistry*, *Journal of Physical Chemistry*, *Proteins, Journal of Chemical Education, The Biophysicist*

Awards and Honors
CU Denver Undergraduate Research Mentor of the Year, 2023
CU Denver CLAS Excellence in Teaching Award for T/TT Faculty, 2022
Henry Dreyfus Teacher-Scholar Award, 2018-2023
Fulbright Scholar, 2018-2019
Outstanding Service Award, University of Colorado Denver Faculty Assembly, 2015
Predoctoral Fellowship, National Science Foundation, 2001 – 2004
Francis P. Venable Award for Undergraduate Excellence in Chemistry, 2000

Language Skills
English – native
German – proficient
Spanish – intermediate

Research Students Mentored - totals
34 directly mentored students/trainees (including 5 current)
7 co-mentored students/trainees

25 undergraduates
9 Masters students
3 postbaccalaureate students
1 postbaccalaureate non-student trainee
1 visiting international student
1 Ph.D. student
1 postdoctoral trainee
1 high school student

10 from underrepresented minorities
2 veterans
19 women

6 continued to Ph.D. programs
7 continued to careers in scientific industry
10 continued to medical or D.O. schools
1 continued to dental school
1 continued to veterinary school