Biology Department
Vassar College
Poughkeepsie NY 12604
845.437.7430
caitken@vassar.edu

Education

2003-2010 Stanford University: Ph.D., Biophysics

1999-2003 Wesleyan University: B.A. with High Honors, Molecular Biology & Biochemistry, French Studies

Research Training

2010-2017 Johns Hopkins University School of Medicine & NICHD, National Institutes of Health / Dr. J.R. Lorsch: Postdoctoral research interrogating the mechanics of eukaryotic translation initiation. Led installation of laboratory at NIH: Equipment acquisition, lab organization, logistics

2003-2009 Stanford University / Dr. J.D. Puglisi: Graduate thesis research exploring the ribosome dynamics using single-molecule techniques. Designed and built single-molecule microscope

2002-2003 Wesleyan University / Dr. D.L. Beveridge and Dr. I. Mukerji: Undergraduate thesis research investigating conformational transitions in DNA with spectroscopic approaches

2002 Institut de Biologie Physico-Chimique (CNRS) / Dr. R. Lavery: Computational modeling of DNA sequence effects in protein-DNA interactions

2001 Biotechnology Core, Corning Inc. / Dr. J. Peng: Development of high-throughput proteomic tools

2000-2001 Wesleyan University / Dr. S. Holmes: Genetic investigation of gene silencing in *S. cerevisiae*

Scholarly work

Aitken CE[Author] Pubmed Results

* Denotes shared primary authorship
***** Denotes co-corresponding authors
Denotes Vassar undergraduate student

Pre-prints

2. Ide, N.A.*, Gentry, R.C.*, **Rudbach, M.A., Yoo, K., Velez, P.K.** Comunale, V.M., Hartwick, E.W., Gonzalez, R.L.*****, and **Aitken, C.E.*** "A dynamic compositional equilibrium of eIF3 regulates mRNA recognition." *bioRxiv* 2024 *doi: 10.1101/2024.04.25.581977* (submitted to *Molecular Cell*)

1. Koubek, J., Bhandarkar, S., Kaur, J., Lewis, C.J.T., Niederer, R.O., **Stanciu, A., Aitken, C.E.*** and Gilbert, W.V.***** "Cellular translational enhancer elements that recruit eukaryotic initiation factor 3" *bioRxiv* 2021 *doi: 10.1101/2021.07.15.452589* (under review at *RNA*)

Peer-reviewed publications

15. **Stanciu, A.**, **Luo, J.**, **Funes, L.**, **Galbokke Hewage, S.**, and **Aitken, C.E.** "eIF3 and its mRNA-entry-channel arm contribute to the recruitment of mRNAs with long 5'-untranslated regions." *Frontiers in Molecular Biosciences* 2022 (Corrigendum to add additional author)

14. Beznosková P, Pavlíková Z, Zeman J, **Echeverría Aitken C**, Valášek LS. "Yeast applied readthrough inducing system (YARIS): an invivo assay for the comprehensive study of translational readthrough." *Nucleic Acids Res*. 2019 Jul 9;47(12):6339-6350.
13. Yourik, P., **Aitken, C.E.**, Zhou, F., Gupta, N., Hinnebusch, A.G., Lorsch, J.R. (2017) "Yeast eIF4A enhances recruitment of mRNA regardless of their structural complexity." *eLife*. 10.7554/eLife.31476
12. Jinsheng, D., **Aitken, C.E.**, Lorsch, J.R., and Hinnebusch. A.G., and (2016) "Rps3/uS3 residues in the 40S ribosomal entry channel stabilize preinitiation complex assembly at initiation codons in vivo." *PNAS*. 114(11)E2126-E2135.
11. **Aitken, C.E.**, Beznosková, P., Vlčkova, V., Chiu, W.L., Zhou, F., Valášek, L., Hinnebusch. A.G., and Lorsch, J.R. (2016) "Distinct roles for eIF3 at the pre-initiation complex entry and exit channels." *eLife*. 10.7554/eLife.20934
10. Llácer, J.L.*, Hussain, T.*, Marler, L., **Aitken, C.E.**, Thakur, A., Lorsch, J.R., Hinnebusch, A.G., and Ramakrishnan, V. (2015) "Conformational differences between open and closed states of the eukaryotic translation initiation complex." *Molecular Cell*. 3(2):497-508.
9. Tsai, A., Uemura, S., Johansson, M., Puglisi, E.V., Marshall, R.A., **Aitken, C.E.**, Korlach, J., Ehrenberg, M., and Puglisi, J.D. (2013) "The impact of aminoglycosides on the dynamics of translation elongation." *Cell Reports*. 3(2):497-508.
8. Lucent, D., Snow, C.D., **Aitken, C.E.**, and Pande, V.S. (2010) "Non-bulk-like solvent behavior in the ribosome exit tunnel." *PLoS Comput Biol*. 6(10).
7. **Aitken, C.E.**, and Puglisi, J.D. (2010) "Following the intersubunit conformation of the ribosome during translation in real time." Nature Structural and Molecular Biology. 17: 793-800.
6. Uemura, S., **Aitken, C.E.**, Korlach, J., Flusberg, B.A., Turner, S.W., and Puglisi, J.D. (2010) "Real-time tRNA transit on single translating ribosomes at codon resolution." Nature. 464(7291): 1012-7.
5. Marshall, R.A.*, **Aitken, C.E.***, and Puglisi, J.D. (2009) "GTP hydrolysis by IF2 guides progression of the ribosome into elongation." Molecular Cell. 35(1):37-47.
4. Knee, K.M., Dixit, S.B., **Aitken, C.E.**, Ponomarev, S., Beveridge, D.L., and Mukerji, I. (2008) "Spectroscopic and molecular dynamics evidence for a sequential mechanism for the A-to-B transition in DNA." Biophysical Journal. 95(1):257-72.
3. **Aitken, C.E.***, Marshall, R.A.*, and Puglisi, J.D. (2007) "An oxygen scavenging system for improvement of dye stability in single-molecule fluorescence experiments." Biophysical Journal. 94(5):1826-35.
2. McKenna, S.A, Lindhout, D.A., **Aitken, C.E.**, Shimoike, T., and Puglisi, J.D. (2007) "Viral dsRNA inhibitors prevent self-association and autophosphorylation of PKR." Journal of Molecular Biology. 372(1): 101-13.
1. McKenna, S.A, Kim, I., Viani Puglisi, E., Lindhout, D.A., **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2007) "Purification and characterization of transcribed RNAs using fast performance liquid chromatography." Nature Protocols. 2(12): 3270-7.

Other scientific publications

8. **Aitken, C.E.** "Long-Lost Cousins? eIF3 Recognition of the HCV IRES and Cellular mRNAs." *Journal of Molecular Biology* (2020). Invited Commentary Article
7. **Aitken, C.E.**, and Lorsch, J.R. (2012) "A Mechanistic Overview of Eukaryotic Translation Initiation." Nature Structural and Molecular Biology. 19(6):568-76. *Invited Review*
6. Mitchell, S.F., Walker, S.E., Rajagopal, V., **Aitken, C.E.**, and Lorsch, J.R. (2011) "Recruiting knotty partners: The roles of translation initiation factors in mRNA recruitment to the eukaryotic ribosome." In: Ribosomes: Structure, Function and Dynamics, Springer, Heidelberg 155-170. *Invited Review*

5. **Aitken, C.E.**, Petrov, A., and Puglisi, J.D. (2010) "Single Ribosome Dynamics and the Mechanism of Translation." Annual Review of Biophysics. 39:491-513. *Invited Review*

4. **Aitken, C.E.**, Marshall, R.A., Dorywalska, M., and Puglisi, J.D. (2009) "Single Molecule Studies of Prokaryotic Translation." Single Molecule Biology. Ed. Alex Knight. Academic Press: New York. *Book Chapter*

3. Marshall, R.A., **Aitken, C.E.**, Dorywalska, M., and Puglisi, J.D. (2008) "Translation at the single-molecule level." Annual Review of Biochemistry. 77:177-203. *Invited Review*

2. Lindhout, D.A., McKenna, S.A., **Aitken, C.E.**, Liu, C.W., and Puglisi, J.D. (2007) "PKR: A NMR Perspective" Progress in Nuclear Magnetic Resonance Spectroscopy. 51(3): 199-215. *Invited Review*

1. McKenna, S.A, Lindhout, D.A., **Aitken, C.E.**, and Puglisi, J.D. (2007) "Molecular insights into PKR activation by viral double-stranded RNA." Structure and Biophysics - New Technologies for current Challenges in Biology and Beyond. Chapter 8; 93-104. Springer Publishing: New York. *Book chapter*

Invited and Selected Presentations

10. **Aitken, C.E.**, Ide, N.A.*, Gentry, R.C.*, **Rudbach, M.A.**, **Yoo, K.**, **Kai Velez, P.**, Comunale, V.M., Hartwick, E.W., Kinz-Thompson, C.D., and Gonzalez Jr., R.L. (2023) "A dynamic compositional equilibrium governs mRNA recognition by eIF3" Translational Control Meeting. Cold Spring Harbor, NY. *Selected Presentation*

9. **Aitken, C.E.**, **Noorwez, S.**, **Stanciu, A.**, **Galbokke Hewage, S.**, **Funes, L.**, **Huang, A.**, **Dong Tian, H.**, **Anderson, S. Zhong, Y.**, **Freedman, R.**, **Rudbach, M.A.** **Kai Velez, P.** **Dong Tian, H.**, **Anderson, S.**, **Xu, C.**, **Benson, K.**, Ide, N.A., and Gonzalez, R.L. (2023) "Where to begin: disentangling the roles of eIF3 and its subunits to translation initiation" DiscoverBMB (American Society for Biochemistry and Molecular Biology) Annual Meeting. San Antonio, TX.. *Selected Presentation*

8. **Aitken, C.E.**, **Noorwez, S.**, **Stanciu, A.**, **Galbokke Hewage, S.**, **Funes, L.**, **Huang, A.**, **Dong Tian, H.**, **Anderson, S.**, (2023) "Where to begin: disentangling the roles of eIF3 and its subunits to translation initiation" RNA at PUI Salon (Sponsored by RNA Society). Remote Symposium. *Invited Presentation*

7. **Aitken, C.E.**, **Noorwez, S.**, **Stanciu, A.**, **Galbokke Hewage, S.**, **Funes, L.**, **Huang, A.**, **Dong Tian, H.**, **Anderson, S.**, (2023) "Where to begin: disentangling the roles of eIF3 and its subunits to translation initiation" DiscoverBMB (American Society for Biochemistry and Molecular Biology) Annual Meeting. Seattle, WA. *Selected Presentation*

6. **Aitken, C.E.**, **Noorwez, S.**, **Stanciu, A.**, **Galbokke Hewage, S.**, **Funes, L.**, **Huang, A.**, **Dong Tian, H.**, **Anderson, S.**, (2023) "Where to begin: the role of eIF3 in assembling the translational machinery" University of Richmond Biology Department Seminar Series, Richmond, VA. *Invited Presentation*

5. **Aitken, C.E.**, **Stanciu, A.**, and **Dinardo, A.** (2018) "Interrogating the role of eIF3 at the entry- and exit-channels of the ribosome and across the transcriptome" SUNY Albany RNA Institute, Albany, NY. *Invited Presentation*

4. **Aitken, C.E.**, Beznoskova, P., Zhou, F., Valasek, L., Hinnebusch. A.G., and Lorsch, J.R. (2015) "eIF3 stabilizes the pre-initiation complex at the mRNA exit channel and may collaborate with eIF4F at the entry channel." Protein Synthesis and Translational Control. Heidelberg, Germany. *Selected Presentation*

3. **Aitken, C.E.**, Beznoskova, P., Zhou, F., Valasek, L., Hinnebusch. A.G., and Lorsch, J.R. (2014) "Intermediate events during translation initiation, and the role of eIF3." Wesleyan University Molecular Biophysics Retreat. Middletown, CT. *Invited Presentation*

2. **Aitken, C.E.**, and Puglisi, J.D. (2009) “Ribosome Dynamics and Translation." Structure and Biophysics – New Technologies for Current Challenges in Biology and Beyond. Erice, Sicily, Italy. *Selected Presentation*

1. **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2008) “Ribosome Movement and Translation." 11th Annual Stanford University Structural Biology Retreat. Asilomar, California, U.S.A. *Selected Presentation*

Posters

15. **Stanciu, A.**, **Lou, J., Funes, L., Galbokke Sewage, S.,** Kulkarni, S., and **Aitken, C.E.**, (2022) “eIF3 and its mRNA-entry-channel arm contribute to the recruitment of mRNAs with long 5’-UTRs Translational Control Meeting. Cold Spring Harbor, NY

14. **Stanciu, A.**, **Lou, J., Funes, L., Galbokke Sewage, S.,** Kulkarni, S., and **Aitken, C.E.**, (2022) “eIF3 and its mRNA-entry-channel arm contribute to the recruitment of mRNAs with long 5’-UTRs” Ribosomes Conference. Bordeaux, France.

13. **Aitken, C.E.**, **Dinardo**, **A.**, **Stanciu, A.**, **Yoon, K.**, Valasek, L., Ramakrishnan, V., Hinnebusch. A.G., and Lorsch, J.R. (2019) “The role of eIF3 at the mRNA entry- and exit-channels of the ribosome and across the transcriptome” ASBMB Annual Meeting. Orlando, FL.

12. **Aitken, C.E.**, **Stanciu, A.**, Valasek, L., Hinnebusch. A.G., and Lorsch, J.R. (2018) “Mechanistic and transcriptome-wide interrogation of the entry- and exit-channel arms of eIF3” Translational Control Meeting. Cold Spring Harbor, NY.

11. **Aitken, C.E.**., Valasek, L., Hinnebusch. A.G., and Lorsch, J.R. (2018) “Mechanistic interrogation of the entry- and exit-channel arms of eIF3” ASBMB Annual Meeting. San Diego, CA.

10. **Aitken, C.E.**, Beznoskova, P., Zhou, F., Valasek, L., Hinnebusch. A.G., and Lorsch, J.R. (2014) “Dissecting the role of eIF3 during mRNA recruitment and scanning.” Translational Control Conference. Cold Spring Harbor Laboratory, NY.

9. **Aitken, C.E.**, and Lorsch, J.R. (2013) “Following dynamic events during translation initiation in eukaryotes.” Ribosomes Conference. Napa, CA.

8. **Aitken, C.E.**, and Lorsch, J.R. (2012) “Following initial 43S recruitment and scanning during eukaryotic translation initiation.” Protein Synthesis and Translational Control. Cold Spring Harbor, NY.

7. **Aitken, C.E.**, and Lorsch, J.R. (2011) “Interrogating the roles of the individual eIF3 subunits in vitro.” Protein Synthesis and Translational Control. Heidelberg, Germany.

6. **Aitken, C.E.**, and Puglisi, J.D. (2009) “Ribosome Dynamics and Translation." Structure and Biophysics – New Technologies for Current Challenges in Biology and Beyond. Erice, Sicily, Italy. Selected Talk.

5. **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2008) “Ribosome Movement and Translation." 11th Annual Stanford University Structural Biology Retreat. Asilomar, California, U.S.A. Selected Talk.

4. **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2008) “Translation at the Single-Molecule Level.” Gordon Research Conference on Nucleic Acids. Salve Regina University, Newport, Rhode Island, U.S.A.

3. **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2008) “Improved Dye Stability in Single-Molecule Fluorescence Experiments." Stanford Molecular Biophysics Seminar Series. Stanford, California, U.S.A. Selected Talk.

2. **Aitken, C.E.**, Marshall, R.A., and Puglisi, J.D. (2007) “Improved Single-Molecule Methods." 12th Annual Stanford University Structural Biology Retreat. Stanford, California, U.S.A.

1. **Aitken, C.E.**, and Puglisi, J.D. (2005) “Towards Single-Molecule Studies of Eukaryotic Translation." Structure and Biophysics – New Technologies for Current Challenges in Biology and Beyond. Erice, Sicily, Italy.

Funded Research Proposals

2024	NIH AREA (R15) Grant Renewal, "The role of eIF3 in mRNA recruitment." ($300,000 direct costs, $396,297 total costs)
	Contributed to Vassar's renewal Application to Beckman Scholars Institutional Grant
2021	Contributed to Vassar's Application to Beckman Scholars Institutional Grant
2020	NIH Instrumentation Supplement, "A state-of-the-art multimodal imaging system for the interrogation of the molecular mechanics of translation initiation." ($50,000 total costs)
	NIH AREA (R15) Grant, "The role of the mRNA-entry-channel arm of eIF3 in mRNA recruitment." ($250,000 direct costs, $360,450 total costs)
2019	Frances D. Fergusson Faculty Technology Exploration Fund, "Creating Durable Mini-Lectures." ($1,466)
2018	Vassar College Committee on Research Grant, "In vitro dissection of the eIF3 complex" ($5,000)

Teaching and Mentorship experience

2024	Instructor, BIOL/CHEM 272, BIOL 324, BIOL 107, and BIOL 393 (Conversations with Scientists)
	Mentor to Sophie Anderson (2024, thesis): next-generation sequencing analysis of an eIF3d deletion mutation in *S. pombe*
	Mentor to Christine Xu (2025), Kyle Benson (2026), and Jared Fiske (2026): in vitro confirmation of ribosome profiling results
	Mentor to Sufana Noorwez (2024, thesis), Margaret Rudbach (2024, thesis), Paloma Kai Velez (2024, senior research project), Jill Wong (2025), and Karina Mangru (2027): in vitro reconstitution of the eIF3 complex from recombinantly expressed subunits
	Mentor to Robert Freedman (2024, senior research project), Yilin Zhong (2024, thesis), Matteo Roman (2025), Posey Whidden (2025), and Colin Mikulski (2025): identification of the specific 5'UTR elements underlying sensitivity to disruption of eIF3 using long-read nanopore sequencing
	Mentor to Chi Nguyen (2026) and Daniel Wunschel (2026):monitoring the effects of eIF3 disruption on the proteome using tandem-mass-tag mass spectrometry
	Mentor to Caris Lee (2025), Eve Braverman (2025), and Cassandra Koyamatsu (2025): Investigation of the effects of mutations targeted the mRNA-entry- and mRNA-exit-channel arms of eIF3 using ribosome profiling and polysome-seq
2023	Instructor, BIOL/CHEM 272, BIOC 356
	Mentor to Joshua Kim (2023) and Sophie Anderson (2024): next-generation sequencing analysis of an eIF3d deletion mutation in *S. pombe*
	Mentor to Shanya Galbokke Hewage (2023), Lucy Funes (2023), Amber Huang (2023, thesis), Christine Xu (2025), and Kyle Benson (2026): in vitro confirmation of ribosome profiling results
	Mentor to Hao Dong Tian (2023, thesis), Sufana Noorwez (2024, Beckman Scholar), Margaret Rudbach (2024), and Paloma Kai Velez (2024): in vitro reconstitution of the eIF3 complex from recombinantly expressed subunits
	Mentor to Robert Freedman (2024) and Yilin Zhong (2024): identification of the specific 5'UTR elements underlying sensitivity to disruption of eIF3 using long-read nanopore sequencing
	Mentor to Areebah Aziz (2026):monitoring the effects of eIF3 disruption on the proteome using tandem-mass-tag mass spectrometry

2022	Instructor, BIOL/CHEM 272
	STEPP partners with Faith Northern for BIOL/CHEM 272
	Mentor to Joshua Kim (2023) and Sophie Anderson (2024): next-generation sequencing analysis of an eIF3d deletion mutation in *S. pombe*
	Mentor to John Goll (2023), Shanya Galbokke Hewage (2023), Lucy Funes (2023), Amber Huang (2023), Tanveer Singh (2022, thesis), Kashaf Zaheer (2022, thesis), Areeba Zaheer (2023), Christine Xu (2025), and Kyle Benson (2026): in vitro confirmation of ribosome profiling results
	Mentor to River Zhao (2022, thesis), Nikolas Pham (2022), Hao Dong Tian (2023) and Sufana Noorwez (2024, Beckman Scholar): in vitro reconstitution of the eIF3 complex from recombinantly expressed subunits
2021	Instructor, BIOL 107, BIOC 356
	STEPP partners with Yaser Peña (Fall) and Kiah Matherson (Spring) for BIOL 107
	Community-Engaged Learning Mentor to Shanya Galbokke Hewage: contact-tracing and community outreach on pandemic-related issues
	Mentor to Andrew Luo (2021, thesis) and Andrei Stanciu (2021, thesis, co-advised by Marc Smith in Computer Science): computational analysis of next-generation sequencing datasets
	Mentor to Brent Shimoda (2021, thesis), Joshua Kim (2023), and Sophie Anderson (2024): next-generation sequencing analysis of an eIF3d deletion mutation in *S. pombe*
	Mentor to Andrea Tellez (2021, senior research project), Shanya Galbokke Hewage (2023), Lucy Funes (2023), Amber Huang (2023), Tanveer Singh (2022), Kashaf Zaheer (2022), and Areeba Zaheer (2023): in vitro confirmation of ribosome profiling results
	Mentor to River Zhao (2022), Nikolas Pham (2022), and Hao Dong Tian (2023): in vitro reconstitution of the eIF3 complex from recombinantly expressed subunits
2020	Instructor, BIOL/CHEM 272, BIOL/FFS 294b (Le Labo: The Culture and Language of French Labs)
	STEPP partners with Alix Gonzalez for BIOL/CHEM 272
	Mentor to Yoon Yoo (2020, thesis): in vitro biochemical interrogation of the mechanisms of protein synthesis
	Mentor to Andrew Luo (2021) and Andrei Stanciu (2021): computational analysis of next-generation sequencing datasets
	Mentor to Tara Edwards (2020), Kevin Moti (2020), Dominic Lanni (2020), Brandon Impastato (2020): creation of eIF3 mutants for recombinant expression
	Mentor to Andrea Tellez (2021), Shanya Galbokke Hewage (2023), and Lucy Funes (2023): in vitro confirmation of ribosome profiling results
	Mentor to Brent Shimoda (2021) and Joshua Kim (2023): next-generation sequencing analysis of an eIF3d deletion mutation in *S. pombe*
2019	Instructor, BIOL/CHEM 272
	Mentor to Yoon Yoo (2020) and Acadia DiNardo (2019, thesis): in vitro biochemical interrogation of the mechanisms of protein synthesis
2019	Mentor to Andrew Luo (2021): computational analysis of next-generation sequencing datasets
	Mentor to Tara Edwards (2020), Kevin Moti (2020), Dominic Lanni (2020), and Ella Johnson (2021): creation of eIF3 mutants for recombinant expression

2018	Instructor, BIOL/CHEM 272 and 324, BIOL 106
	Mentor to Matthew Marcelino (2018), Sean Lu (2018), Acadia DiNardo (2019), Yoon Yoo (2020): in vitro biochemical interrogation of the mechanisms of protein synthesis
	Mentor to Andrei Stanciu (2021): guided processing and analysis of large dataset obtained from next-generation sequencing experiment
2017	Instructor, BIOL/CHEM 324
	Mentor to Anne-Marie Abban-Demitrus (2021) and Adriana Buller (2021): guided research, acquisition, and installation of lab equipment and supplies
	Mentor to Andrei Stanciu (class of 2021): guided processing and analysis of large dataset obtained from next-generation sequencing experiment
2014	Course Director and Instructor, "Becoming an effective scientist." Graduate-style course for post-baccalaureate students at NIH
2012	Mentor to Paul Yourik (graduate student): advised research planning and data interpretation; critiqued and edited manuscript drafts, poster drafts, and practice talks. Provided radiation safety training
2012	Johns Hopkins Postdoctoral Association: member of the policy and advocacy committee. Created and directed "Science in the Public Square" seminar series and organized group's involvement in Research!America Capitol Hill advocacy day
2011	Mentor to Petra Beznosková (visiting master's student, co-author on Aitken et al., 2016): provided training in protein purification, radiation safety, and other biochemical methods, critiqued manuscript drafts
2010-2012	Mentor to Anthony Muñoz (graduate student): guided research planning and data interpretation; critiqued manuscript drafts, poster drafts, practice talks; held mock defense. Provided radiation safety training
	Graduate rotation mentor to Aditya Radhakrishnan, Alexia Miller, and Chris Mitchell: provided training in biochemical and biophysical techniques; guided research
2009	Mentor to Albert Tsai (graduate student, co-author on Tsai et al., 2013): provided training in single-molecule fluorescence techniques and data analysis; guided research
2008	Mentor to Guy Kornberg (undergraduate summer student, master's student): provided training in single-molecule fluorescence techniques; advised experimental planning
2005	Teaching assistant for introductory bioengineering course: created lecture presentations, held office hours, and led review sessions
2004-2005	Supervised and mentored undergraduate and high school students pursuing research projects
2004	Graduate rotation mentor to Peter Anthony and Del Lucent (co-author on Lucent et al., 2010): Provided training in single-molecule fluorescence techniques; guided research
2000-2002	Wesleyan University 3000 by 2000 program: mentor to fellow minority students in the sciences

Departmental and Program Service

2024	Member, Seminar Committee
	Member, TT Search Committee
	7 Biology major advisees: Kyle Benson, Alex Kaye, Karina Mangru, Matthew Peeples, Jolie Walker, Jack Weidenbach, and Eli Wenger

2024 (cont'd)	13 Biochemistry major advisees: Ethan Benjamin, Anna Diamond, Maya Eberle, Andrew Erickson, Phoebe Florence, Sabiha Hossain, Lukas Johnson, Colin Jones, Jaden Millstein, Kalista Ringler, Jack Rufa, Jordan Scherer, Jack Silvera
2023	Member, Procedures Committee
	7 Biology major advisees: Shanya Galbokke Hewage, Alex Kaye, Hailey Osika, Matthew Peeples, Jack Weidenback, Eli Wenger, and Kali vom Eigen
	15 Biochemistry major advisees: Ethan Benjamin, Anna Diamond, Maya Eberle, Andrew Erickson, Sabiha Hossain, Lukas Johnson, Nathan Johnson, Colin Jones, Jaden Millstein, Kalista Ringler, Jack Rufa, Jordan Scherer, Jack Silvera, Hao Dong Tian), and Jolie Walker
2022	Member, Procedures Committee
	9 Biology major advisees: Joana Cardoso, Shanya Galbokke Hewage, Hailey Osika, Matthew Peeples, Jack Weidenbach, Kali vom Eigen, Arthur (Alex) Kaye, Gianna Trunfio, and Eli Wenger
	17 Biochemistry major advisees: Ethan Benjamin, Max Deak, Anna Diamond, Andrew Erickson, Maya Eberle, Sabina Hossain, Lukas Johnson, Nathan Johnson, Colin Jones, Jaden Millstein, Jordan Scherer, Jack Silvera, Hao Dong Tian, Emily Tincher, Kalista Ringler, Jack Rufa, and Jolie Walker
2021	Member, Building Committee
	9 Biology major advisees: Joana Cardoso, Shanya Galbokke Hewage, Ella Johnson, Hailey Osika, Calvin Trebing, Jack Weidenbach, Bailey Wilder, Sadie Rafanello Stumm, and Kali vom Eigen
	9 Biochemistry major advisees: Max Deak, Sean Hsu, Lukas Johnson, Nathan Johnson, Colin Jones, Arthur (Alex) Kaye, Brent Shimoda, Emily Tincher, and Jolie Walker
	2 interim advisees (permanent advisors on sabbatical): Emily Tincher and Weipeng Xie
2020	Biology department representative on Chemistry Search Committee for tenure track Biochemist
	Member, Building Committee
	Second reader for five biochemistry theses: Lukas Harries, Naveed Nikpour, Maxim Jahns, Sharika Hassan, and Justas Rodarte.
	9 Biology major advisees: Bailey Wilder, Joana Cardoso, Ella Johnson, Sadie Rafanello Stumm, Evan Trausch, Connie Zhong, Shanya Galbokke Hewage, Hailey Osika, and Kali vom Eigen
	5 Biochemistry major advisees: Sean Hsu, Brent Shimoda, Milind Joshi, Yoon Yoo, Nathan Johnson, and Arthur Kaye
	7 interim major advisees (permanent advisors on sabbatical): Faith Northern, Ijeoma Okoye, Nicole Pihlstrom, Jessica Rattray, Emma Trasatti, Kashaf Zaheer, and Weipeng Xie
2019	Member, Assessment and Curriculum/Introductory Curriculum Committee (charged with designing new introductory sequence)
	Member, Visiting Professor Search Committee
	Second reader for three biochemistry theses: Maxim Jahns, Naveed Nikpour, and Sharika Hassan
	Four Biology major advisees: Bailey Wilder, Ella Johnson, Sadie Rafanello Stumm, and Evan Trausch
	Three Biochemistry major advisees: Brent Shimoda, Milind Joshi, and Yoon Yoo

2018 Second reader for three biochemistry theses: George Georgiou, Carolina Alvarez, and Alan Gutierrez

Two Biology major advisees: Ella Johnson and Evan Trausch

One Biochemistry major advisee: Yoon Yoo

Assessment and Curriculum/Introductory Curriculum Committee (charged with designing new introductory sequence)

Hosted Ruben Gonzalez (Professor of Chemistry and Director of Graduate Admissions at Columbia University) for Biology Department Seminar and Diversity in STEM discussion and lunch with students

College Service

2024 Co-chair, Engaged Pluralism (EP) Global Campus and Studies Working Group

Member, Engaged Pluralism (EP) Coordinating Committee

Member, Institute for the Liberal Arts Committee

Member, Pre-Health Advising Committee

Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology

Vice President, Phi Beta Kappa Chapter

Member, Phi Beta Kappa Selection Committee

Member, Campus Radiation Safety Committee

Men's Tennis Team Faculty Athletic Support Team (FAST) representative

Women's Soccer Team Faculty Athletic Support Team (FAST) representative

Organized and sponsored attendance (together with Rebecca Pollet and Krystle McLaughlin) to the annual meeting of the American Society for Biochemistry and Molecular Biology (ASBMB) for 15 students: Nisrine (Nina) Jabara, Pranami Patel, Sean Fisher, Sufana Noorwez, Margaret Rudbach, Yilin Zhong, Robert Freedman, Sophie Anderson, Paloma Kai Velez, Shaharia Khan, Ethan Benjamin, Chi Nguyen, Meadow Abate, Jack Story, and Jordan Norman. Sufana, Sophie, and Margaret were awarded travel awards by ASBMB

Five pre-major advisees (Aurelia Cacace, Hannah Knutsen, Elizabeth Lowe, George Oshiro, and Logan Seiss)

2023 Co-chair, Engaged Pluralism (EP) Global Campus and Studies Working Group

Member, Engaged Pluralism (EP) Coordinating Committee

Member, Engaged Pluralism (EP) Administrator Search Committee

Member, Pre-Health Advising Committee

Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology

Vice President, Phi Beta Kappa Chapter

Member, Phi Beta Kappa Selection Committee

Member, Campus Radiation Safety Committee

Member, Beckman Scholar Selection Committee

Men's Tennis Team Faculty Athletic Support Team (FAST) representative

2023 (cont'd)	Faculty mentor, Beckman Scholars Program
	Led Vassar Science Scholars session for local Poughkeepsie students
	Organized and sponsored attendance (together with Rebecca Pollet) to the 2023 annual meeting of the American Society for Biochemistry and Molecular Biology (ASBMB) for five students: Nisrine (Nina) Jabara, Pranami Patel, Sean Fisher, Sufana Noorwez, and Amber Huang. Nisrine (Nina) and Sean were awarded travel awards by ASBMB
	One pre-major advisee (Sharon Luong)
2022	Member, Prehealth Advising Committee
	Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology
	President, Phi Beta Kappa Chapter
	Member, Campus Radiation Safety Committee
	Co-chair, Engaged Pluralism Initiative (EPI) Global Campus and Studies Working Group
	Member, Engaged Pluralism Initiative (EPI) Coordinating Committee
	Faculty mentor, Beckman Scholars Program
	Faculty Panelist, Transitions Program Wisdom Dinner
	Organized and sponsored attendance to the 2022 annual meeting of the American Society for Biochemistry and Molecular Biology (ASBMB) for three students (Junjie Liu, Vanessa Madrigal and Kathryn Enquist). Junjie and and Kathryn were awarded travel awards by ASBMB
	Participated in the Summer Immersions in the Liberal Arts Program, teaching a mini-course ("We Live in an RNA World") contributing to the STEM experiential program
	Consultant for DataFest
	8 pre-major advisees: Alexa Gwyn, Sofia Mendez, Juan Mercado, Gianna Trunfio, Stephanie Chen, Sharon Luong, Jacob Martinez, and Mila Seifert
	Worked with Molly Renfroe Katz (office of advancement) to provide tour of labs and teaching spaces in BLS and Olmsted for visiting prospective students
	Coordinated (together with Justin Patch and Kerry Stamp) reception for Hamid Al-Saadi, refugee scholar currently hosted by Sarah Lawrence College
2021	Co-chair, Engaged Pluralism Initiative (EPI) Global Campus and Studies Working Group
	Member, Engaged Pluralism Initiative (EPI) Coordinating Committee
	Member, Prehealth Advising Committee
	Member, Campus Radiation Safety Committee
	Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology President, Phi Beta Kappa Chapter
	Co-advised Computer Science (CMPU) Thesis (Andrei Stanciu) with Marc Smith
	8 pre-major advisees: Matthew Peeples, Micaela Primer, Jordan Scherer, Logan Scott, Alexa Gwyn, Sofia Mendez, Juan Mercado, and Gianna Trunfio
	Consultant for DataFest
	Represented Engaged Pluralism Initiative (EPI) at Vassar View event for prospective students
	EPI representative in meetings with Consortium on Forced Migration, Displacement, and Education; Dean of the Faculty Bill Hoynes and President Bradley to develop a strategy to bring

2021 (cont'd) to Vassar scholars or students displaced by the crisis in Afghanistan. These meetings culminated bringing three students (Shakira, Amina, and Hamida Rahimi) to Vassar

Renewed Vassar's participation in the NIH Property Reutilization Program, enabling enrolled faculty to visit the NIH surplus equipment warehouse and obtain (used) scientific equipment for use in their labs free of charge

Organized and sponsored virtual attendance to the annual meeting of the American Society for Biochemistry and Molecular Biology for one student (Milind Joshi). Milind received an ASBMB Student Chapter Awards to fund attendance

2020 Member, Fellowships Committee

Member, Prehealth Advising Committee

Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology

President, Phi Beta Kappa Chapter

Member, Campus Radiation Safety Committee

Member, EPI Global Campus and Studies Working Group

Co-advised Computer Science (CMPU) Thesis (Andrei Stanciu) with Marc Smith

6 pre-major advisees: Arthur Kaye, Hailey Osika, Matthew Peeples, Micaela Primer, Jordan Scherer, and Logan Scot

Organized attendance to the annual meeting of the American Society for Biochemistry and Molecular Biology for two students (Yoon Yoo and William Dwyer). Both students received ASBMB Student Chapter Awards to fund travel and attendance. CONFERENCE CANCELLED AS A RESULT OF THE COVID-19 PANDEMIC

Renewed Vassar's participation in the NIH Property Reutilization Program, enabling enrolled faculty to visit the NIH surplus equipment warehouse and obtain (used) scientific equipment for use in their labs free of charge

Participated in remote Summer Immersions in the Liberal Arts Program

2019 President, Phi Beta Kappa Chapter

Member, EPI Global Campus and Studies Working Group

Member, Campus Radiation Safety Committee

Member, Sigma Xi selection committee

Chapter Advisor, Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology

Together with Teresa Garrett, organized attendance for and accompanied seven students (Acadia DiNardo, Naveed Nikpour, Lukas Harries, Lianne De La Cruz, Maxim Jahns, Yoon Yoo, and Gwynn Marsh-Armstrong) to the annual meeting of the American Society for Biochemistry and Molecular Biology

Organized and led scientific outreach workshop as part of the "Vassar Science Scholars" program

Renewed Vassar's participation in the NIH Property Reutilization Program, enabling enrolled faculty to visit the NIH surplus equipment warehouse and obtain (used) scientific equipment for use in their labs free of charge

2018 Together with Teresa Garrett, organized attendance for and accompanied three students (Acadia DiNardo, George Georgiou, and Colin Peros) to the annual meeting of the American Society of Biochemistry and Molecular Biology

Co-chapter advisor (together with Teresa Garrett), Vassar Student Chapter of the American Society for Biochemistry and Molecular Biology

Member, Phi Beta Kappa Selection Committee

Member, Campus Radiation Safety Committee

Traveled to the NIH Property Reutilization Warehouse in Rockville, MD claimed several pieces of working scientific equipment for myself and others within the Biology (Bill Straus and Jodi Schwarz), Chemistry (Krystle McLaughlin), and Physics (Janet Sheung) departments

Led "Exploring College" Science Research workshop for local Poughkeepsie high-school students interested in the biomedical sciences

Four pre-major advisees: Claire Bialek, Seung Wie Jin, Max Lawrence, and Calving Treving

2017 Initiated and coordinated successful application to the NIH Property Reutilization Program, enabling enrolled faculty to visit the NIH surplus equipment warehouse and obtain (used) scientific equipment for use in their labs free of charge

Member, Campus Radiation Safety Committee

Other professional activities

2017-present Reviewer for *Scientific Reports, Biochemistry, BioEssays,* and *Science Reports, ACS Chemical Biology Reviews,* and *eLife*

Ad hoc reviewer for National Science Foundation, Division of Molecular and Cellular Biosciences

Member, Biophysical Society, American Society for Biochemistry and Molecular Biology, RNA Society, and American Association for the Advancement of Science

2024 Member, National Science Foundation, Directorate for Biological Sciences (BIO) Genetic Mechanisms grant review panel

Attended annual meeting of the American Society for Biochemistry (ASBMB)

Attended Translational Control Conference at Cold Spring Harbor Laboratory

Member, RNA at PUI RNA Society Salon

Research collaboration with Ruben Gonzalez, Chemistry Department, Columbia University. Co-advised Nicholas Ide, PhD student

Research collaboration with Wendy Gilbert, Department of Molecular Biophysics and Biochemistry, Yale School of Medicine

2023 Member, National Science Foundation, Directorate for Biological Sciences (BIO) BRC-BIO grant review panel

Member, RNA at PUI RNA Society Salon

Participated in American Society for Biochemistry and Molecular Biology (ASBMB) Inclusive Community for the Assessment of Biochemistry Learning (ICABL) workshop on summative assessment in Biochemistry.

Attended annual meeting of the American Society for Biochemistry (ASBMB)

2023 (cont'd)	Research collaboration with Ruben Gonzalez, Chemistry Department, Columbia University. Co-advised Nicholas Ide, PhD student
	Research collaboration with Wendy Gilbert, Department of Molecular Biophysics and Biochemistry, Yale School of Medicine
2022	Member, RNA at PUI RNA Society Salon Participated in American Society for Biochemistry and Molecular Biology (ASBMB) Inclusive Community for the Assessment of Biochemistry Learning (ICABL) workshop on summative assessment in Biochemistry
	Research collaboration with Ruben Gonzalez, Chemistry Department, Columbia University. Co-advised Nicholas Ide, PhD student
	Research collaboration with Wendy Gilbert, Department of Molecular Biophysics and Biochemistry, Yale School of Medicine
	Attended Translational Control Conference at Cold Spring Harbor Laboratory
	Attended Ribosomes Conference
	Attended annual meeting of the American Society for Biochemistry (ASBMB). Served as a judge for the undergraduate poster competition
2021	Invited Career Speaker for 2021 National Institute of Child Health and Development Fellows Retreat
	Attended Global Engagement in the Liberal Arts (GELA) conference (via zoom) at Wesleyan University
2019	Attended the IMAGE grant-writing workshop organized by the American Society for Biochemistry and Molecular Biology (ASBMB)
	Attended annual meeting of the American Society for Biochemistry (ASBMB). Served as a judge for the undergraduate poster competition
2018	Attended annual meeting of the American Society for Biochemistry (ASBMB). Served as a judge for the undergraduate poster competition
	Attended Translational Control Meeting at Cold Spring Harbor Laboratory. Participated in mentoring event for students and postdocs interested in tenure-track faculty careers
2017	Textbook chapter reviews: Reviewed chapters of Biochemistry by Foley (Oxford University Press) and Biochemistry by Berg, Tymoczko, Gatto, and Stryer (Macmillan)

Awards, Prizes, and Scholarships

2018	ASBMB Early Career Travel Award
2017	ASBMB Undergraduate Faculty Travel Award
2011	Leukemia & Lymphoma Society Career Development Program Fellow
2010	NIH Postdoctoral Minority Research Fellowship
2007	NIH Graduate Minority Research Fellowship
2003	NIH Molecular Biophysics Trainee
2003	The University Honors Prize, Wesleyan University: The highest honor bestowed to a student; only presented in years when a candidate has exemplified the highest ideals of liberal arts education. One of two recipients.
	Hawk Prize (Biochemistry), Wesleyan University

2003 (cont'd)	Undergraduate Thesis with Highest Honors, Wesleyan University
	Phi Beta Kappa, Wesleyan University
	Marshall Scholarship Finalist
2002	HHMI sponsored Hughes fellowship
2000	Chadbourne Prize, Wesleyan University: Outstanding first-year student
	HHMI-sponsored Hughes fellowship