Annelise H. Gorensek-Benitez, Ph. D.

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Education and Professional Experience

Lecturer, 07/2021-present Department of Chemistry & Biochemistry, Colorado College

Visiting Assistant Professor, 07/2019-06/2021

Department of Chemistry, Davidson College

Teacher-Scholar Postdoctoral Research Fellow, 06/2017-06/2019

Department of Chemistry, Wake Forest University Advisor: Rebecca W. Alexander

Ph.D. in Chemistry, 08/2012-05/2017

Department of Chemistry, University of North Carolina at Chapel Hill Dissertation: Small and large cosolutes modulate enzyme activity and protein folding kinetics Advisor: Gary J. Pielak

B.S. in Chemistry with Science Education concentration, 08/2008-05/2012

Summa cum laude Department of Chemistry, Furman University Advisor: Karen L. Buchmueller

Teaching Experience

Instructor, Colorado College (Fall 2021-present)

- General Chemistry I, CH 107 Lab (9)
- General Chemistry II, CH 108 Lab (3)
- Biochemistry I, CH 382 Lab (6)
- General Chemistry I, CH 107 (1)
- Dyeing to Be Purple, Summer Bridge Course (1)

Instructor, Davidson College (Fall 2019 – Spring 2021)

- Dyeing to Learn Chemistry, CH 106 (4)
- Principles of Chemistry, CH 115 (2)

Instructor, Wake Forest University (Fall 2017 – Spring 2019)

- Biochemistry I, CH 370 (2)
- Advanced Biochemistry Lab, CH 371L (2)

Instructor, Meredith College (Fall 2016)

• Biochemistry I Lab, BIO 373 (1)

Mentoring Experience

Co-research mentor, Myers Lab, Davidson College, 2019-2021 **Mentees:** Jay Min, Meghan Matheny, Nikhil Virani, Bryan Kirk

Postdoctoral mentor, Alexander Laboratory, Wake Forest University, 2017-2019 Mentees: Sam O'Connor, Kia Hutchins, Francis Sto. Domingo

Graduate mentor, Pielak Laboratory, UNC-CH, 2013-2017

Mentees: Gerardo Perez Goncalves (UNC Summer Undergraduate Research Fellow (SURF), 2016; SERMACS Best Poster Award, 2016; Caltech Summer Research (WAVE) Fellow, 2017); Luis Acosta (UNC Summer Undergraduate Research Fellow (SURF), 2015) ; Beth Williard

Publications

<u>Gorensek-Benitez, A.H.</u>, *Kirk, B. and Myers, J.M. "Protein Fibrillation under Crowded Conditions." *Biomolecules*. 2022. 12(7), 950.

King, A.G. and <u>Gorensek-Benitez, A. H.</u> "Teaching undergraduate chemistry through fibers and dyes." In *Chemistry in Context: Teaching chemistry concepts in the context art and archeology;* Braun, K. and Labby, K., Eds.; *ACS Symposium Series.* 2021. 1386, 357-380.

Anstey, M. R., Carroll, F. A., <u>Gorensek-Benitez, A. H.,</u> Hauser, C. D., Key, H. M., Myers, J. L., Stevens, E P., Striplin, D., Holck, *H. W., *Montero-Lopez, L. M. and Snyder, N. L. "#DavidsonTrue: Transitioning to Remote Teaching while Maintaining our Values as a Liberal Arts College During the COVID-19 Pandemic at Davidson College." *Journal of Chemical Education*. 2020. 97:2800-2805.

Acosta, L.C.,* Perez Goncalves, G. M.,* Pielak, G. J. and <u>Gorensek-Benitez, A. H.</u> "Large cosolutes, small cosolutes and dihydrofolate reductase activity." *Protein Science*. 2017 26:2417-2425.

<u>Gorensek-Benitez, A. H.</u>, Smith, A. E., Stadmiller, S. S., Perez Goncalves,* G. M. and Pielak, G. J. "Cosolutes, crowding and protein folding kinetics." *Journal of Physical Chemistry B.* 2017. 121: 6527-6537

Stadmiller, S. S., <u>Gorensek-Benitez, A.H.</u>, Guseman, A. J. and Pielak, G. J. "Osmotic-shock induced protein destabilization in living cells and its reversal by glycine betaine." *Journal of Molecular Biology*. 2016. 429:1155-1161.

Smith, A.E., Zhou, L.Z.,* <u>Gorensek, A.H.</u>, Senske, M. and Pielak, G.J. 2016. "In-cell thermodynamics and a new role for protein surfaces." *Proceedings of the National Academy of Sciences USA*. 113: 1725-1730

<u>Gorensek, A.H.</u> 2011.* "The Slovene-American dichotomy: The workers' struggle for agency." *Furman Humanities Review*, 21.

*denotes undergraduate researcher

Honors and Awards

CC Dean of Faculty Summer Curriculum Develop

CC NSEC Divisional Funding to attend Master Cochineal Dyeing Workshop (\$3500), 2023 CC Dean of Faculty Summer Curriculum Development Grant (\$2000), 2022 and \$4000 (2023) Davidson College Faculty and Student Research Grant co-PI (\$4000), 2021 Davidson Arts and Creative Engagement (DACE) Creative Initiative Grant (\$325), 2020 DACE Covid-19 Creative Initiative Grant (\$450), 2020 Protein Society Young Investigator Travel Award, 2016 UNC-BEST (NIH) ImPACT Teaching Fellowship, 2016 Future Faculty Fellow, University of North Carolina Center for Faculty Excellence, 2014 National Science Foundation Graduate Research Fellowship, 2012 John Sampey Award for Excellence in Chemistry, Furman University, 2012 Phi Beta Kappa, Furman University, 2012 Priscilla Carney Jones Scholarship, American Chemical Society, 2011

Research Experience

Visiting Assistant Professor, 07/2019-06/2021

Department of Chemistry, Davidson College, Explored the effects of synthetic polymers and osmolytes on alpha synuclein fibrillation.

Teacher-Scholar Postdoctoral Fellow, 06/2017-06/2019

Department of Chemistry, Wake Forest University Investigated the pre-steady state kinetics of E. coli and S. cerevisiae Methionine tRNA synthetases.

Graduate Research Fellow, 07/2012-05/2017

Department of Chemistry Determined the effects of macromolecular crowding on protein folding kinetics and enzyme activity.

Intern, Center for Hydrogen Technology, 07/2012-05/2017

Savannah River National Laboratory Developed a silver-selective electrode assay for quantifying radioactive iodide in groundwater.

Undergraduate Research Fellow, 05/2011-07/2011

Institute Pasteur de Lille Synthesized and attached a Listeria monocytogenes protein InIB-selective linker to an atomic force microscopy cantilever to assist the study of Listeria monocytogenes pathogenesis of mammalian cells.

Undergraduate Researcher, Furman University Department of Education, 01/2011-05/2011

Furman University Department of Education Studied students' misconceptions about the role of creativity in scientific courses.

Howard Hughes Medical Institute Undergraduate Research Fellow, 05/2009-05/2011

Furman University Assessed the potency of small molecule minor groove-binding inhibitors of the HMGA A/T Hook.

Presentations

Chemistry to Dye For, Chemical Education 2023, University of Guelph, Guelph ON; July 2023 (workshop accepted co-facilitated with Dr. Sara Hubbard, Ouachita Baptist University.

<u>Gorensek-Benitez, A. H.</u> "#Dyeing to Learn Chemistry: Exploring the Chemical Foundation of the Fiber Arts." 2022 Biennial Conference on Chemical Education (BCCE), West Lafayette, IN July 31st-August3rd 2022.

<u>Gorensek-Benitez, A. H.</u> "#Dyeing to Learn Chemistry: Exploring the Chemical Foundation of the Fiber Arts." 2021 Southwest Meeting of the American Chemical Society, Austin, TX, October 31st-November 3rd 2021.

<u>Gorensek-Benitez, A. H.</u> "#Davidsontrue: Building a classroom community during COVID-19." Fall Meeting of the American Chemical Society, Atlanta, GA, August 22-26th 2021.

<u>Gorensek-Benitez, A.H.</u> "Fostering Effective Active Learning Online." Davidson College Summer Digital Learning Institute. July 16, 2020.

<u>Gorensek-Benitez, A.H.</u> "Active Learning for Inclusivity." Fostering Inclusivity and Respect Together (FIRST) STEM Education Hour. June 16, 2020

<u>Gorensek-Benitez, A.H.</u> "Exploring chemistry through fibers and dyes." 2020 Biennial Conference on Chemical Education. Abstract accepted March 31, 2020. Because of the global COVID-19 pandemic, the 2020 Biennial Conference on Chemical Education was terminated on April 2, 2020, by the Executive Committee of the Division of Chemical Education, American Chemical Society; and, therefore, this presentation could not be given as intended.

<u>Gorensek-Benitez, A. H</u>., King, S.B., Bharadwaj, M. and King, A. G. "Integration of the Agilent Seahorse into the Advanced Undergraduate Teaching Laboratory." 25th Biennial Conference on Chemical Education (BCCE), Notre Dame, IN, July 29th-August 2nd 2018.

Workshops + Dyeing Lectures Given

Dyeing Easter Eggs: New Ways for Using Old techniques. Slovenian Union of America (SUA) National Convention, Pueblo, CO; June 17, 2023

Dyeing with Pre-Reduced Indigo segment of Advanced Dyeing Workshop, Hearts on Fiber Yarn Shop, Davidson, NC; July 21, 2022.

"Dyeing to Learn Chemistry," Triad Modern Quilt Guild, Winston-Salem, NC; February 22, 2022

Introduction to Dyeing with Natural Indigo, Hearts on Fiber Yarn Shop, Davidson, NC; July 18, 2020

Pedagogical Training

QuantCrit Workshop: Equity Centered Quantitative Methods #AdvancingEquityinCER, BCCE 2022 An Introduction to Standards-Based Grading in Chemistry, BCCE 2022 Equity and Power Summer Seminar Series, Colorado College, 2022 Summer Digital Learning Institute Davidson College, 2020 Promoting Active Learning Online Course The Association of College and University Educators, 2020 Countering Stereotype Threat Workshop Davidson FIRST Initiative, 2019 Mapping the Undergraduate Curriculum in Biochemistry Workshop, ACS Exams Inst. BCCE 2018 Introduction to POGIL Workshop, BCCE 2018 Summer Reading Series on "Small Teaching," Wake Forest Teaching and Learning Center, 2017 Effective College Teaching Workshop, Richard Felder and Rebecca Brent, UNC-CH, 2016 Advanced Learning through Evidence-Based STEM Teaching, CIRTL Network, 2016 Energizing the Classroom: Integrating Active Learning Seminar, UNC-CH, 2015 Backwards Course Design, Starting From the End Seminar, UNC-CH, 2015 Summer Teaching Series, Training Initiatives in Biological and Biomedical Sciences, UNC-CH, 2015 An Introduction to Evidence-Based STEM Undergraduate Education, CIRTL Network, 2014 Future Faculty Fellows Program, Center for Teaching Excellence, UNC-CH, 2014

Service

Manuscript referee: BBA Advances, European Journal of Biophysics, Journal of Physical Chemistry B, Journal of Chemical Education

Chair, Chemistry & Biochemistry Department ADEI Committee, 2022-2023 Member, Departmental committees (General Chemistry, Safety), Colorado College, 2021-2022 Member, New faculty antiracism book club, and accountability group, Colorado College, 2021-2022 Coordinator, New STEM faculty SWARG writing group, Colorado College, 2021-2022 Member, Slovenian Union of America, 2020-present Faculty Sponsor, WildCrafts undergraduate crafting society, Davidson College, 2020 Founder and Coordinator, Davidson College Crafty 'Cats faculty fiber arts group, 2019-2020 Postdoctoral Representative, Biomolecules in Vivo Subgroup of the Biophysical Society, 2019 Vice President of Programs, Triad Modern Quilt Guild, 2018-2020 Alumni mentor, Furman Connect Pilot Program, 2018-present Education Committee, The Protein Society, 2016-2017 Learning Community Facilitator, Advanced Learning through Evidence-Based STEM Teaching, 2016 Scientific Content Consultant, Periodic Table Project, Kenan Science Library, UNC-CH, 2015-2017 Program Chair, Durham-Orange Quilters, Chapel Hill, NC, 2014-2016 Board member, NC DNA Day Science Festival. UNC-CH, 2014

Outreach

Co-Coordinator, Crafting for Connection during COVID-19 community quilt project, 2020 Volunteer, Evolving STEM Winston-Salem, 2018 Volunteer, Wake Forest Summer High School Immersion Program, 2017-2018 "Expert" Scientist, North Carolina Science Festival Invite-a-Scientist, 2014-2016 Floor Demo Volunteer, Discovery Place, Charlotte, NC, 2015 Exhibitor, NC Science Festival, 2013-2014 Visiting Scientist, NC DNA Day, 2013