Kelly Lancaster, PhD

Instructional designer with over 15 years of experience creating interactive, engaging, and accessible digital learning tools in academic, startup, and corporate settings

Work Experience

Assistant Professor of Instruction

Texas State University, San Marcos TX, 2023—present

Achievements

- Taught online large-enrollment introductory chemistry courses, along with hybrid general and physical chemistry courses, all with excellent student evaluations and success rates
- Presented in the “Engaging Students in Physical Chemistry” symposium at the 2024 Biennial Conference on Chemical Education
- Received a library grant to implement open educational resources in General Chemistry
- Awarded a faculty fellowship to integrate computing in Physical Chemistry, and invited to a working group for the PhET Quantum Education Initiative
- Awarded the 2025 Outreach Volunteer of the Year for the Central Texas Local Section of the American Chemical Society

Lecturer (Part-Time)

Texas State University, San Marcos TX
2021—2023

- Taught online and hybrid introductory and physical chemistry courses
- Participated in a General Chemistry course transformation pilot program
- Received the 2023 College of Science & Engineering Part-Time Faculty Excellence in Teaching Award

Instructional Designer (Part-Time)

Catalyst Education, Austin TX
2020—2021

- Created randomizable visual data to support virtual undergraduate chemistry laboratories
- Presented accessibility work in the Diversity, Equity, and Inclusion session at the 2021 Southwest Regional ACS Meeting

Service

- Organized virtual, hybrid, and in-person science fairs at Bryker Woods Elementary School as the multi-year parent chair
- Organized the first Central Texas ACS Illustrated Poem Contest for Chemists Celebrate Earth Week, with a national winner

Lead Interactives Designer & Interactives Product Owner

Macmillan Learning, Austin TX, 2012—2020

Design Achievements

- Designed and led the development of over 200 interactive assets for STEM courses in collaboration with subject matter experts
- Led user experience research with students and instructors, using moderated and unmoderated usability tests, surveys, focus groups, and click data analysis
- Authored and edited formative assessment items with targeted feedback in the Sapling Learning online homework platform

Product Achievements

- Governed the design and development of all interactive assets across all disciplines to ensure compliance with product standards, including accessible & responsive behavior
- Managed an internal team of front-end developers and an international team of vendors using a sprint workflow as a Certified Scrum Product Owner
- Presented at both the CSUN Assistive Technology and Accessing Higher Ground conferences and led highly-rated, invited workshops on sonification and voice & gesture input at AccessU

Service

- Volunteered at multiple Central Texas ACS educational outreach events for National Chemistry Week and Chemists Celebrate Earth Week

Physics Education Technology Postdoctoral Research Associate

University of Colorado Boulder, 2009—2012

Research

- Designed and led the development of research-based interactive chemistry simulations, including the widely-used PhET Build an Atom game
- Observed over 400 hours of student and teacher usage of simulations in interview and classroom settings to inform design principles
- Published research in peer-reviewed journals as well as a lead-author, invited chapter and cover for the book *Pedagogic Roles of Animations and Simulations in Chemistry Courses*
- Presented research at various national conferences, such as the Biennial Conference on Chemical Education and the Gordon Research Conference on Chemistry Education Research & Practice

Instruction

- Led workshops for educators on best practices for using interactive simulations at various teacher conferences, including the International Association for K-12 Online Learning Symposium

Service

- Volunteered as a mentor in the Partnerships for Informal Science Education in the Community Program

Education

PhD in Computational Chemistry & MS in Physical Chemistry

Georgia Institute of Technology, 2003—2009
4.0 GPA

Research

- Received the ACS Chemical Computing Group Research Excellence Award for work in organic electronics
- Published research in peer-reviewed journals, including a lead-author, highly-cited article in the Journal of the American Chemical Society

Instruction

- Awarded a National Science Foundation Graduate Teaching Fellowship to develop an Advanced Placement Chemistry course at Tri-Cities High School
- Directed the laboratory for a General Chemistry course as an Adjunct Instructor at Georgia Perimeter College
- Developed a summer professional development workshop for Middle School Physical Science teachers from Gwinnett County Public Schools

Service

- Volunteered at various outreach programs, such as Georgia Tech's Kids Interested in Discovering STEAM club and the Discovery Program at Parklane Elementary School

BS in Chemistry

North Carolina State University, 1999—2003
Summa Cum Laude

Academics

- Completed the University Scholars Program and a Minor in Mathematics

Instruction

- Tutored over 800 hours in STEM subjects at the University Tutorial Center
- Directed study sessions for a Physical Chemistry course as a Supplemental Instruction Leader