Sean Collins

EDUCATION

2010 **M.S.,** Texas A&M University, College Station, TX
Chemistry
Advisor: D. A. Singleton, Ph.D.
Committee: W. Liu, Ph.D., D.E. Bergbreiter, Ph.D., J.-P. Pellois, Ph.D.
Thesis: Mechanistic Investigation into the Sommelet-Hauser Rearrangement of an Allyl Ammonium Ylide Through Determination of ^{13}C KIEs.

2007 **B.S.,** Schreiner University, Kerrville, TX

Chemistry, *summa cum laude*

ACHIEVEMENTS & AWARDS

2006 – Present	Kappa Mu Epsilon Mathematics Honor Society
2005 – Present	Alpha Lambda Delta Freshman Honor Society
2005 – Present	Alpha Chi National Honor Society
2004 – 2007	Schreiner University President's List
2004 – 2007	TILF Welch Foundation Scholarship
2004	BSA Eagle Scout Award

EXPERIENCE

TEACHING EXPERIENCE

2024 – Present **Per Course Lecturer of Chemistry,** Texas State University, TX
Chem 1341: General Chemistry I

- Developed and delivered lectures and graded material

2023 – Present **Associate Professor of Chemistry,** Austin Community College, TX
Chem 1305: Introductory Chemistry I

- Developed and delivered lectures and graded material
- Worked to pilot active learning systems in the classroom
- Piloted adapting content delivery to a Hybrid Flexible model

Chem 1311 & 1312: General Chemistry I & II

- Developed and delivered lectures and graded material
- Worked to pilot active learning systems in the classroom
- Piloted adapting content delivery to a Hybrid Flexible model

Chem 1105: Introductory Chemistry I Lab

- Organized and conducted laboratory sessions
- Piloted a departmental self-published manual

Chem 1111 & 1112: General Chemistry I & II Lab

- Organized and conducted laboratory sessions

2016 – 2023 College, TX

Assistant Professor of Chemistry, Austin Community

Duties as described above in Associate Professor

Chem 1309: Engineering Chemistry

- Developed and delivered lectures and graded material
- Worked to pilot active learning systems in the classroom

Chem 1109: Engineering Chemistry Lab

- Organized and conducted laboratory sessions

Chem 1311/1111/1312/1112/1305/1105

- Established Blackboard resources for online instruction following the COVID-19 outbreak, which were shared with other faculty

2013 – 2016

Instructor of Chemistry, Wharton County Junior College, TX

Chem 1405: Introduction to Chemistry

- Developed and delivered lectures and graded material
- Organized and conducted laboratory sessions

Chem 1411 & 1412: General Chemistry I & II

- Developed and delivered lectures and graded material
- Organized and conducted laboratory sessions
- Supervised Supplemental Instruction Coordinator
- Redesigned and rewrote laboratory material to update curriculum
- Restructured lecture curriculum to address new learning outcomes
- Instructed faculty in new experiments and instruments
- Established Blackboard shell online to distribute laboratory materials

Chem 2423: Organic Chemistry I

- Developed and delivered lectures and graded material

- Selected laboratory content for all 2423 sections and ordered supplies
- Organized and conducted laboratory sessions

Chem 2425: Organic Chemistry II

- Developed and delivered lectures and graded material
- Selected laboratory content for all 2425 sections and ordered supplies
- Organized and conducted laboratory sessions

2011 – 2013 **Part-Time/Temporary Full Time Instructor of Chemistry,** WCJC

Chem 1405: Introduction to Chemistry

- Developed and delivered lectures and graded material
- Organized and conducted laboratory sessions

Chem 1411 & 1412: General Chemistry I & II

- Developed and delivered lectures and graded material
- Organized and conducted laboratory sessions
- Worked with department chair to coordinate material
- Organized and inventoried laboratories

2010-2013 **Substitute Teacher,** Lamar CISD, TX

- Provided substitute classroom instruction at the High School level

2007-2010 **Graduate Assistant,** Texas A&M University, TX

Chem 112: General Chemistry II Laboratory

- Instructed laboratory
- Graded papers and proctored exams

Chem 237 & 238: Organic Chemistry I & II Laboratory

- Instructed laboratory
- Constructed pre-laboratory quizzes
- Graded papers and proctored exams

Chem 234: Organic Synthesis and Analysis

- Supervising TA - maintained the laboratory and prepared experiments.

ADMINISTRATIVE EXPERIENCE

2023 – Present **Associate Professor of Chemistry,** Austin Community College, TX Member: Departmental Assessment Committee

- Worked to develop and coordinate assessment

2016 – 2023 **Assistant Professor of Chemistry,** Austin Community College, TX Member: Departmental Assessment Committee

- Worked to develop and coordinate assessment

2013 – 2016 **Instructor of Chemistry,** Wharton County Junior College, TX

Assistant Department Chair Chemistry

- Redesigned curriculum
- Maintained instructional laboratories, inventory, and ordered supplies
- Coordinated course scheduling and assessment
- Assisted with budget development
- Assisted in the writing and publication of a laboratory manual, *General Chemistry Lab Manual Wharton County Junior College* through Macmillan Learning (not now in print)

RESEARCH EXPERIENCE

2007 – 2010 **Graduate Assistant,** Texas A&M University, TX

- Performed synthesis, purification and analysis
- Measured experimental ^{13}C KIEs at natural abundance
- Determined theoretical ^{13}C KIEs from model transition states

THESIS

Mechanistic Investigation into the Sommelet-Hauser Rearrangement of an Allyl Ammonium Ylide Through Determination of ^{13}C KIEs.

[2,3]-sigmatropic rearrangements were investigated, due to evidence of a forbidden [1,2] process sometimes seen in these reactions, believed to originate from dynamic effects. While the observed system yielded no [1,2] product, this study has laid the foundation for successful further research into these rearrangements.

SKILLS

Experienced with LC, NMR, TLC, GC, IR and UV techniques. Conducted mechanistic determination via molecular modeling through the use of Linux programs Guassian 03 and Gaussian 09, and employed MS Office.

PUBLICATIONS

"Dynamics and a Unified Understanding of Competitive [2,3]- and [1,2]-Sigmatropic Rearrangements Based on a Study of Ammonium Ylides," B. Biswas , S. C. Collins , and D. A. Singleton* *J. Am. Chem. Soc.*, **2014**, *136* (10), 3740–3743.

PROFESSIONAL SOCIETIES

2015 – Present **Member**, American Chemical Society

2011 – Present **Member**, Texas Community College Teachers Association

2015 – 2016 **Member**, Texas Academy of Science