

## Executive Summary

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**Teaching and Advising:** Since starting my academic career in 2002, I taught numerous General Chemistry and Physical Chemistry classes as well as other Chemistry classes. I have a record of teaching both undergraduate and graduate classes. Since my employment at UTC in 2012, my teaching responsibilities consist mainly in General Chemistry I and II lectures (CHEM 1110 & CHEM 1120), Physical Chemistry II lecture (CHEM 3720), Physical Chemistry I laboratory (CHEM 3710L), and Chemistry Research (CHEM 4997). The student credit hour for my classes lies typically in the 250-350 range every semester, in line with other Chemistry faculty. My main goal as an educator is to challenge students and to provide means to achieving their best. I am interested in students understanding the concepts of the subject and not memorizing them, and I have pursued that by giving quizzes and exams that are focused more on critical thinking and solving original problems rather than on reproducing theories or previously presented examples. I used ACS standardized tests as final exams in all my lectures to objectively assess the level of knowledge and skills and to assign grades consistently. The results of my students on these tests were typically better than students from other sections, when comparison was possible. For Physical Chemistry II classes, the results were close the national average. In general, my focus in teaching is not only in student success in the current class but also in the success in the next Chemistry class a student needs to take. When an analysis was performed, I found that students from my General Chemistry II classes typically perform better than their peers in Organic Chemistry I class, the next Chemistry class most of them take. Although my student evaluations were not as high as I would have liked, they improved in time due to changes and adjustments made in teaching approach and class conditions. Since 2013, I have continually advised Chemistry majors (BS Chemistry concentration). The number of advisees is typically in the range of 10-20 students per year.

**Research:** Since my first academic position, I have developed an independent research program covering a wide range of projects, and I have continued to pursue these research interests at UTC. I have a record of 31 peer-reviewed publications, 18 of them as independent researcher. The research carried out at UTC led to three publications in *Bioorganic Chemistry*, one publication in *Journal of Coordination Chemistry*, and one publication in *Inorganica Chimica Acta*. Numerous other research projects were carried out but have not yet led to finalized, publishable results. I submitted research proposals to NSF, to NIH, and to Dreyfus Foundation, as well as internal proposals (Collaborative Research Initiative and Wheeler Research Scholar Award), unfortunately only one (Wheeler Research Scholar Award) got funded. I directed the research of 4 MS students at Tennessee Tech University. At UTC, I supervised the research projects of eight undergraduate students (Jeff Mc Donald, Taylor Dray, Michelle Smith, Antony Iannotti, Dylan Bryant, Charles Thomas, Jake Ewald, and Kevin Lee). Charles Thomas and Kevin Lee finalized Departmental/Honors Thesis under my supervision. I participated in five 10-week Summer Undergraduate Research Programs in the Chemistry Department directing the research of six students (Jeff Mc Donald, Taylor Dray, Dylan Bryant, Charles Thomas, Jake Ewald, and Kevin Lee). The research carried out at UTC was presented by three students (Chris Cho, Charles Thomas, and Jake Ewald) at national ACS conferences and by eight students (Jeff McDonald, Hendrik Greve, Taylor Dray, Dylan Bryant, Charles Thomas, Jake Ewald, and Kevin Lee) at regional SERMACS conferences.

**Service:** Service is an important aspect of academic life, and the range of service activities I have been carrying out is widespread. At the university level, I have served on four different committees, participated in meetings on UTC Strategic Plans and Budget Reduction meetings, and attended Commencement Ceremony activities. At the departmental level, I served or am serving in the BA Chemistry Committee, the Search Committee for the Physical Chemistry Assistant Professor, the Departmental Technology Committee, the Grote Scholarship Committee, the Recruitment and Retention Committee, the Curriculum Committee, and the RTP Committee. I was directing CHEM 1120 recertification process and General Chemistry textbook selection process. I managed Chemistry Department website from 2013 to 2016 and again starting in 2019. I have hosted outside speakers to our departmental seminar almost every year and talked to speakers hosted by other faculty. As professional service, I reviewed numerous manuscripts for research publications and few research proposals. I reviewed the proposed changes to the 2<sup>nd</sup> edition of *Chemistry: A Molecular Approach* by Tro and the 2<sup>nd</sup> edition of *Chemistry: Atoms First* by Burdge and Overby. I created and reviews multiple times Physical Chemistry questions for GRE tests. I attended meetings of the Local Chapter of the American Chemical Society. I participated in community outreach activities organized by the UTC Student Chemistry Club including Science demonstrations at Brown Academy and Chattanooga Creative Discovery Museum. I have served in the Departmental/Honors Thesis Committee for seven students at UTC, and for multiple graduate students at TTU.