

Teaching Philosophy and Career Goals

My professional goal is to obtain a chemistry teaching position at a university with a deep commitment toward excellence in teaching. I have been exposed to and have experience in settings of both small liberal arts schools, as well as medium and large size research universities. Although each possess positive attributes, it is my aspiration to pursue a career where a commitment to outstanding academic achievement remains the foremost priority.

Throughout my formal education to the present time, I have been directly involved in teaching. Since 1987, I have taught at the university level beginning as a graduate student at the University of Kentucky. In 1992, I accepted a teaching position at Wheeling Jesuit University, a small, selective liberal arts school. Since 1997, I have been a professor of chemistry at Appalachian State University. Throughout this time, I have been affiliated with thousands of students at varying levels of their education. As a result, a deep concern of mine is the current overwhelming lack of student interest in science and in particular, chemistry. Along these lines, an alarming observation is the small number of actual chemistry majors in comparison to the total number of students enrolled in chemistry courses. Many of these students are simply fulfilling the schools' science requirements or have predetermined to seek careers in the medical field. In an effort to reverse this trend and draw more students as chemistry majors, I believe student curiosity must be captured in the entry level courses. By presenting general chemistry as both exciting and enlightening, I have been successful at influencing more students to pursue a chemistry degree. My teaching philosophy is based heavily on instilling enthusiasm in the early stages of general chemistry courses.

With such an experimentally oriented science as chemistry, sparking curiosity is readily achievable. Throughout my teaching experience, I have focused largely on exciting, yet pertinent classroom demonstrations to instill this missing enthusiasm. Not only is this a valuable learning tool, but also presents chemistry as the hands-on science that it is, and should be approached as such. This style of instruction consequently introduces learning as an adventuresome affair, rather than a tedious ordeal. I am so committed to in-class chemical demonstrations, that I have prepared a demonstrations manual and "ready to go" classroom demo containers. These boxes contain all the reagents and glassware necessary for each demo and they are available for all faculty who teach introductory courses (general chemistry) here at Appalachian.

After student attention is captured and curiosity amplified, my lecture format is balanced to include the presentation of chemical principles while emphasizing the essence of problem solving. The ultimate goal is more than developing scientifically literate pupils, but rather teach them to think critically and problem solve through each situation that will arise in their future. Relatively small classroom formats allow substantial student participation, which subsequently benefits the student, as learning is an active, rather than passive process. Additionally, my lectures are highly energetic because I believe wholeheartedly that enthusiasm is contagious. I have been rewarded by having the highest teaching evaluations of all faculty in the department of chemistry the majority of the semesters while at Appalachian. I have been awarded prestigious teaching awards while at Appalachian including the College of Arts and Sciences Academy of Outstanding Teaching Award in October of 2002. In September of 2004, I was a finalist and

awarded one of the highly celebrated University of North Carolina state wide Board of Governors' Award for Excellence in Teaching at Appalachian State University. This award brought induction into the "Appalachian Faculty Hall of Fame" for the 2003-2004 academic year. Details can be found at: <http://www.hubbard.appstate.edu/fame/fame04quotes.html>. My strong desire is to carry on this tradition of teaching excellence at a university that truly values educating their students.

Having directed the general chemistry program at Wheeling Jesuit University and the introductory chemistry program at Appalachian State University, I find myself passionate about delivering a top notch chemistry experience to entry level students. General chemistry does NOT have to be a drudgery for the student or a "weed out service class" for other departments. It can be a vibrant and rewarding experience for the students as well as the instructor. In this light, I believe that general chemistry lectures should be relevant and exciting and focused on problem solving skills. Labs should be coordinated with lecture material and force students to think critically to solve problems. Labs should also be exciting, yet safe and should include the preparation of lab reports as the avenue to deliver information to the instructor of record for grading. I have spent almost 15 years learning how to direct general chemistry programs and I remain convinced that it THE most important function any chemistry department performs. General chemistry is often the only exposure many students have to chemistry during their lifetime. The perception of chemistry that is carried the rest of their lives is typically established in these entry level chemistry courses. Judging by the staggering phobia against chemistry in the general population, we have not done a satisfactory job at instilling interest to many students' first exposure to chemistry. I believe, wholeheartedly, that the battle for not only chemistry majors, but for a scientifically literate public is won or lost in the general chemistry classroom. Students are either "turned on" or "turned off" to chemistry in these entry level courses. My vast experience in teaching undergraduates over the past 16 years coupled with directing general chemistry programs at a small liberal arts university (Wheeling Jesuit) and a large size state institution (Appalachian State) has prepared me to meet the challenges of establishing a top notch general chemistry program where it is both desired and valued.

As Introductory Chemistry Coordinator at Appalachian, I wrote every experiment incorporated in both first and second semester general chemistry. I was responsible for its publication (nonrefereed) and distribution to our university bookstore for each academic year. I was responsible for preparing instructions for each experiment (in terms of chemical quantities, equipment and special needs) for the stockroom personnel in weekly preparation of the Introductory labs. Handouts of "laboratory instructors' information", "lab report grading point distribution", "instructors example calculations", "solutions to end of lab problems", "student lab report information" were prepared and disseminated to all lab instructors on a weekly basis. I developed an elaborate online delivery system for all information for the Introductory Chemistry labs using WebCT as the delivery platform. I oversaw the preparation, distribution, collection and grading of unknown components to all introductory lab experiments. Each semester, I wrote and administered a laboratory cumulative final exam which is simultaneously given to all general chemistry students at the end of the semester. I was responsible for grading and distributing the final exam grades as well as unknown grades to each laboratory instructor of record at the end of each semester. In conclusion, many in academia are creative. However, my strength is innovation. I have been successful at actually implementing many of the fruitful, aforementioned

ideas into practice. I have skills to supervise and manage laboratory activities as well as oversee lab instructors and teaching assistants. The most satisfying experience I've had throughout all my years in academia has been to provide an exciting yet challenging experience for undergraduates in general chemistry. I believe I've succeeded in turning a course that is feared and despised (nationwide) into an encounter that is meaningful and productive. Ultimately, my goal is to continue in this arena at a school that values training up students as much as I do.

In terms of research, I am a trained inorganic photochemist. My research is based on the preparation, classification and investigation of numerous metal centered doubly-bidentate chromophoric species. Since a wide array of powerful techniques are so readily incorporated in this type of research (NMR, IR, UV-Vis, fluorescence, electrochemistry), functional training is acquired, thus preparing individual students for the next career step of either education through graduate studies or employment at industrial positions. Having directed numerous students in various research projects over the years has led me to develop a philosophy of undergraduate research. That is, I believe undergraduate research should compliment education rather than supplement it. I have observed that the goal administrators tend to set for relevant research is refereed publications. I concur that an undergraduate whose research achieves that of a refereed journal article is highly commendable (not to mention marketable). But this should not be the ultimate yardstick as to whether success of the project was achieved. In my judgment, the most important goal for the undergraduate researcher is to take ownership of a project, see it through, all the while learning how to make independent choices as to the direction of the project. My very first research student at Appalachian is finishing her PhD in Biochemistry at Duke University. My second research student finished his PhD in polymer science at Southern Mississippi a year ago and is now a research chemist at Tate and Lyle in Decatur, Illinois. My third research student at Appalachian graduated from the University of Connecticut, School of Dental Medicine (one of the premier dental schools in the country) and is now a successful practicing dentist in Greenville, Tennessee. My latest research student has graduated and decided to work in the mission field. I tell you this to demonstrate the wide diversity of career paths chosen by students who have trained under me. They are taught to think independently such that they are prepared to succeed in various endeavors and not just chemical research. That is my perception of a successful undergraduate research program.