TEACHING PHILOSOPHY

I believe the mission of higher education is to develop a globally engaged citizenship that is broadly literate in liberal studies and deeply competent understanding in a specialized field of interest.

To meet this goal, a university must provide structure and balance. As structure, the institution should strive to maintain state-of-the-art facilities and open and accessible to a diverse student population. In seeking balance, the institution must reward teaching innovation and excellence on a par with advancement of knowledge. An institution should have a universal plan for continual improvement with measurable yet flexible and adaptive benchmarks.

Students ultimately determine their own destiny. Without the desire to learn the material, a student will find chemistry a “hard science”. As the teacher, my role is to engage my students in the learning process and to encourage and teach them how to make their own connections between their interests and the course material. As part of this process I will integrate and share with my students my varied research experiences in industrial and academic settings as they relate to student interests.

Student assessment is more than the final grade. In my classes, I assess student learning through both graded and non-graded processes. Graded exams and laboratory reports, the traditional methods of student evaluation, allow for summative grades to be awarded at the end of the term. However, during the term, I use non-graded in-class quizzes, questions, and workshops to help students assess their mastery of the material and encourage interest in the material by the use of “real world” examples. The quizzes and student questions also provide me with an assessment of how my teaching methods are connecting with student learning. I am comfortable teaching with traditional lecture, small group discussions and peer led team learning techniques in a variety of class sizes. I also have experience in a computer lab class setting.

I see research as a vehicle for learning for all students. Future scientists experience the depth of understanding that comes from focusing on one research question and will gain valuable experience in the use of the scientific method. Pre-professional and non-chemistry students gain an appreciation of the benefits of a cross-discipline team environment that has been my experience in the work place. In my own research labs I intend to actively recruit a wide variety of student researchers to meet these ends.

I believe teaching in a university extends beyond the classroom and the laboratory. I see myself as a role model for the students I come in contact with. Students entering higher education do so at a time of great change and decision in their lives. As a teacher and a member of the university academic community I plan to be available to students to discuss these choices and their academic goals. I hope to create a non-threatening environment in the classroom and in my interactions with all students that will encourage them to participate in the classrooms, to become active in the community of scholars, and to become responsibly involved citizens in our society.
Knowledge is valuable and I believe in sharing the knowledge I have acquired over years not just by researching in a laboratory but also by educating the next generation of students. My teaching philosophy is to promote independent learning with emphasis on communication and written skills integrated with the subject matter. My ultimate goal as a teacher is to provide the students with a set of skills that will help them to succeed inside and outside the classroom.

Teachers play a key role in the development of an “educated person” and my main purpose as a teacher is to stir up the desire to learn science in every student. Getting students interested in learning is the first and most important step. By accomplishing this step the next step of transforming them into independent learners with good grasp of subject matter will follow easily. I understand that the student population is diverse in a classroom; some that are independent learners and some others requiring extra efforts from their teachers to motivate them. By careful planning and organization of lecture material I hope to cater to all type of students. Depending on the course level, I will change my teaching strategy. If I am teaching lower division undergraduate classes, I will provide students with excellent handouts so that the students do not lose focus in trying to jot down everything that is written on the blackboard or on the overhead, instead concentrate on learning. If it is an upper division undergraduate or graduate class, my lectures will be tailored toward students becoming independent learners and I will act as a mentor who they can go to with their problems in learning. Often students wonder if what they learn in class will ever be useful in the outside world. By using interdisciplinary approach when applicable I will be able to demonstrate how the subject matter learnt in class fit in with the big picture. Since I have a diverse subject background with training at the chemistry biology interface I will be able to relate to students with varied subject background.

Students need to be stimulated to think on their own. Researching, which I believe, is an integral part of learning can provide the stimulation and will help the students to become mature independent learners. I consider the research I did as an undergraduate student motivated me to pursue a career in science. I will encourage and provide assistance to undergraduate students to do research in laboratories. Doing lab work along with learning material in lectures will help the students to understand the contents and appreciate the subject better. While doing lab work students are exposed to a wide range of topics and scientific journals which will widen their knowledge base. Researching will give undergraduate students a chance to present their work in scientific meetings, which will improve their communication and written skills.

Innovation is an important part of teaching. In this technologically advanced age, I will use new teaching aids when it is appropriate. Every course I teach, I plan to allot a small portion of lecture hours to experiment with new methods of teaching. For instance, I have been invited to guest lecture on more than one occasion to freshmen general chemistry class on “metals in biology and medicine” after they learn the periodic table of elements. My personal experience has been so positive as the lectures sparked a lot of interest and discussion in the classroom. Several undergraduate students approached me after the lectures wanting to do research. This is the kind of interest I hope to kindle in students. The idea of demonstrating the application of what they learn in class is something I want to use in my classroom to emphasize the importance of the subject matter learnt.

To cultivate independent learning and evaluation, I will have quizzes that do not count towards the grade, where the students grade their own quizzes to correct their mistakes and identify their weakness. As a student, I really liked this method employed by one of my teachers. To evaluate students for their learning accomplishments, I will use exams besides allotting a
small percentage of the grade for class participation and writing assignments. My exams will test their ability to apply concepts learnt in class rather than reproduce something that is already in the textbook or handouts. Assigning a score for class participation will promote discussions and help to build their confidence in the sheltered setting of a classroom.

Scientific writing is important for anyone seeking a career in science. I will assign a small percentage of the grade to help build their scientific writing skills at the undergraduate level by providing the students with assignments that will involve writing short articles on science topics.

In summary, my courses will help students to learn the subject matter and become independent learners besides building other essential skills, which are vital to any scientific career.
Teaching involves much more than the transfer of important knowledge and skills. An educator can guide students to learn how to learn. The most meaningful lesson for me as an undergraduate was learning how to learn. I learned how to pay attention and engage in study habits to learn as much as I could. I learned how to ask good questions and find available resources. I learned how to make decisions and pursue outside research projects. I learned how to problem-solve and communicate my ideas with others which ultimately deepened my own understanding. I believe this level of learning is fostered by an educator who cares about each individual’s progress, makes the extra effort, and establishes an environment suitable for student growth.

During the exchange of knowledge, an educator may also share their energy, values and interests. 1) Enthusiasm is infectious and prompts self-motivation and growth. I am enthusiastic and curious about subject matters pertaining to the biological sciences, and I have conveyed this successfully to my previous students. 2) An educator should promote an environment of respect for and value of the individual. It is important to know the name and the face of each student and support them in their scientific endeavors as well as their academic careers. I believe in promoting the biological sciences as a realistic career option for anyone who so desires. I will be serving as a model of professionalism and compassion in the community. I consider it an honor to teach. 3) I have a passion for teaching about medically-relevant organisms and health-related issues from the personal and global perspective. I am interested in promoting awareness and healthy living.

The biological sciences are rich with information that is important for majors and non-majors alike. The subject matter of each class may be presented in an accessible way to facilitate the students’ understanding of basic scientific concepts. Each student should come away from the classroom or laboratory with the background and cognizance necessary to make decisions in our modern society. Biology, however, does not stand alone and it is important to teach from a broader perspective. My instructional goals include facilitating science education at the introductory level, preparing and advising science majors for professional training and enhancing the students’ liberal arts education. For example, written communication is a vital skill; proficiency will be emphasized by carefully-graded writing exercises and short answer/essay questions on exams. I have extensive experience in editing manuscripts and grants, and I will provide supportive feedback on all writing exercises. Oral communication is equally as important and will be prioritized during in-class presentations. For example, I participated in an undergraduate senior seminar requirement for each student engaged in research. I benefited greatly by exploring how to design, organize, practice and present a formal research seminar. I will try to emulate this kind of experience for the students in my classes.

I will accomplish my teaching goals and values by designing and implementing my teaching practices. Lower-level courses taught by lectures, laboratories and discussions can be enhanced by drawing on examples from daily life. Current events, newspaper articles and ads will be brought into the classroom to facilitate scientific discussion and small group interactions. Students will be encouraged to be creative and share personal experiences or ask questions (e.g. someone traveling abroad could elaborate on required vaccinations or prophylactic medications). Upper level courses will include lectures, laboratories, and exercises to expand their student understanding of hypothesis formation.
and the scientific method. Problem solving, critical analysis of scientific literature, and mini-grant writing/anonymous peer review may be utilized. Students will be encouraged and guided to find outside research projects, internships, and pre-professional experiences (including service to the community). Out-of-classroom study groups and pre-exam review sessions will be offered. The internet is an excellent resource, and methods such as scientific literature searches and protein/nucleic acid sequence analysis may be taught.

Assessment and evaluation of student learning includes examinations, writing exercises, and attention to the students. Exams, quizzes and practice will be well-crafted, fair and include short answer and essay questions. For lower level courses, testing more frequently during the term will allow the instructor to monitor individual progress and determine if special assistance is needed. I have been successful in developing an open and interactive rapport with students in and out of the class. I like to ask questions and allow students to respond. These interactions can give an indication of the students’ grasp of concepts and the effectiveness of my teaching.

An educator is constantly revising, adjusting and updating teaching methods and information to meet the needs of the students and expectations of society. Documentation and reflection on my teaching are essential tools for improvement. I need to know if I am an effective and fair instructor. Student input and course evaluations given mid-term and at the end of the course will be utilized. Evaluations of my teaching methods and written exams from faculty colleagues will be highly encouraged. I will monitor my progress towards my instructional goals and examine my strengths and weaknesses for continued improvement. To teach is to learn, and I look forward to the dynamic progression of my teaching career and personal growth. Science as a field is challenging and invigorating due to constant discoveries and the development of novel technologies. It is imperative for the science educator to stay updated and bring new and refreshing ideas into each course.

My current views on undergraduate education were enormously influenced by my undergraduate experience at North Central College, a small liberal arts college. I have firsthand knowledge of the great advantages offered within a liberal arts framework. My professors at North Central were dedicated to my learning and they played key roles in my development and scientific career. That is the path I will follow as a professor. I not only place the highest value on being an educator, but I am committed to the learning environment found at a small liberal arts college like Mount St. Mary’s College. My motivations are to bring inspiration, professionalism and enthusiasm to science education in a diverse community. I am dedicated to the teaching profession and supportive of the role of the College in science education, the community and our society.
The most important goal of education is learning. I believe learning takes place in a mentor-guided environment where students are encouraged to participate. I am a firm believer in multiple intelligence theory; different people use different intelligences (relatively independent mental abilities) to know and experience things. In order to provide the best possible learning environment for the greatest number of students I like to present material in a variety of ways so that these multiple intelligences can be reached. While learning has classically taken place in a large lecture format, this style of instruction often caters only to one type of intelligence or learning modality, mainly auditory. As the majority of students are not auditory dominant learners I believe it is vital to teach a concept by utilizing a variety of modalities of multiple intelligence as possible. Demonstrations are often useful tools for stimulating creative and higher level reasoning as well as presenting concepts to many senses (visual, auditory, olfactory, etc.). Demonstrations are an excellent way to involve visual-spatial learners and logical-mathematic learners as well as auditory learners and to encourage students to interact by having them predict outcomes to themselves or each other and discuss the results of the demonstration in small groups. If the small groups focus on answering questions about the lesson as it pertains to the demonstration, not only are they interacting with other students but they can use logical and mathematical modalities with reinforcement and aid from their peers. And as peers are usually in a similar zone of proximal development this student interaction helps to facilitate learning. Lab and discussion sections are ideal settings for this type of activity. The large group follow up then allows a teacher an opportunity to tie the concepts together and relate the lesson's ideas to the broader picture of biology in general. In return, I expect students to come to class ready and eager to learn. A general interest or curiosity about the subject matter would be helpful but not necessary, as I like a challenge too.

In my courses I like to provide a variety of graded and non-graded assignments. The non-graded assignments such as pop quizzes, worksheets and demonstration inquiries give students instant feedback as to where they stand in the class and what areas they are still weak in. It also helps reinforce key words and concepts; the more often a person hears something the more likely it is to stick. These types of tools are important also for helping students develop their own method of self-assessment. By comparing how well they are doing on non graded activities to how well they are doing on graded exams they will start forming an idea of where they stand in the class prior to the final exam.

I also like the use of non-graded assignments such as the demonstration inquires because they give students a chance to be wrong without being punished. I think this a very powerful concept in science, because you can learn as much from being incorrect and you often times remember it more. In this way a student becomes comfortable with making predictions because they are not penalized for being wrong. This enables them to become comfortable with thinking about science and not just memorizing it. This concept of learning from mistakes in science I like to carry over into the lab as well. Many famous scientists have made important discoveries that spawned from experiments gone wrong. For students, it is inevitable for some lab experiments to go poorly. I believe that lab reports are a very important tool in developing scientific reasoning in students. These
reports contribute largely in my grading for laboratory classes. The lab report enables the student to account for incorrect or unexpected data. If they can explain why their data differs from the expected outcome using the scientific theory behind the experiment, I feel that they have probably learned just as much valuable information as in an experiment that was performed correctly.

As for other graded material, I generally use homework assignments (problem sets), projects and exams. While exams give a good overall view of the student’s knowledge of the subject matter, projects and homework assignments give an indication of how the student is progressing throughout the semester, and they allow me to view their competence in the material in different settings: stressful conditions, oral presentations, and cooperative learning situations. In regards to grading, I use all these elements together to give me a picture of the student’s competency with the material obtained in the course. I do not like to assess students against each other, but prefer to base grades on a mastery of the course material. This is not an arbitrary assessment, but is based on a carefully thought out list of material and lab competency which mastery must be shown in for each letter grade in each course.

Grading and assessment for each course for each semester is not limited to student assessments, but also includes an opportunity for me to evaluate my performance as well. My written exams contain questions assessing different levels of Bloom’s taxonomy. By analyzing student performance on different questions I receive feedback on which questions can be better written and which areas of the material I need to do a better job of presenting. Lab reports also provide invaluable insight into this question as well as into the question of how well I have tied lab concepts to lecture theories. Homework assignments and quizzes provide me immediate feedback on a student’s grasp of a concept. Assessment of student learning in a course is the most powerful tool I have for improving the course each and every year.

I hope that any student who has taken a course with me has left with a clearer understanding of that particular topic in science. For a specific subject I would hope that they were competent in the new concepts presented in the course. Not that they just remembered the flow of material but that they truly understood it and can apply it to a practical situation such as experimental design in the laboratory. I would like to think that they had mastery of the material not just rote memorization. This is vital if they are to progress in science as one subject builds upon the previous. And if my students come to the next course unprepared it will seriously hamper the next instructor’s ability to move forward with new material and will negatively impact the students future success. Beyond the confines of a particular course topic I would hope that I have been able to guide students in making the connection between an individual topic and the subject of biology and life sciences as a whole. What benefits/costs does respiration pose to the cell overall? What role does the cell play in the organism? What role does the organism play in the ecosystem? For science and non-science majors alike concepts about the ecosphere, disease processes, and microorganism-antibiotic interactions are ideas they will have to make decisions about in their own lives and as voting adults. The more knowledge, greater
understanding, and scientific reasoning they have acquired from any science course they
have taken and can bring to bear on these future decision the better we will have done our
job as educators.
REQUIRED QUALIFICATION: Commitment to the community college goals/objectives of providing quality programs and services for students with diverse abilities and interests; personal qualities to work effectively and sensitively in a multicultural student environment; awareness and commitment to the special needs of non-traditional students; ability to communicate clearly and concisely both orally and in writing.

I enclosed my application, resume, and transcripts, for the tenure-track position of chemistry instructor at COLLEGE beginning the 2002-2003 academic year. The referees will send the letters of recommendations separately. I am applying for this position because I am committed to providing quality, affordable education and to empowering students through knowledge and skills. I have experience working with a wide range of people as a teaching assistant (TA) and as a volunteer at a woman’s abuse shelter. When I was a TA, I developed a desire to teach and was very interested in students learning. Working with the women and children, I learned to be sensitive, compassionate, and understanding to people of diverse backgrounds.

I am interested in teaching general chemistry because this course will serve as a building block for the students’ chemistry experience for the rest of their lives. My first three years at UCLA, I served as a TA, and I taught general chemistry laboratory and discussion sections and 2 quarters of instrumental analysis. I graded papers, held review sessions, held office hours, and wrote quizzes. The discussion sections involved explaining key chemical concepts, reviewing homework, and answering lecture questions. For difficult problems, I had students work together as a group. I did not give answers, but rather I had them methodically work out the steps to the problems. This develops thinking skills required to tackle other problems. Laboratory section duties included teaching proper laboratory techniques and data analysis. The instrumental analysis class I taught comprises working on HPLC, anodic stripping voltammetry, X-ray fluorescence, atomic absorption, FT-IR, UV-Vis, GCMS, and inductively coupled plasma. I learned how to properly use all these instruments, how to trouble-shoot problems, and how to teach the students to use the instruments.

The diversity at UCLA have helped me adjust to different student’s learning styles, hence I tailored my teaching methods to the student’s needs. I plan to incorporate computer-assisted teaching, the Internet, online tutoring, and calibration peer-review to aid the student’s learning. Computer software is an indispensable tool to enhance teaching and promote learning.

For the past seven months, I am volunteering at the Center of Pacific Asian Families, an emergency abused woman’s shelter. At the shelter, I organize and conduct science-night activities for the children. I develop programs that excite children about science and teach basic scientific principles. The children do simple chemistry experiments, which use: cream, magnets, red cabbage, lamps, fruits, coins, food coloring, cardboard, and vegetables, to learn concepts about phase changes, matter, pH, electricity, moon phases, chromatography, and capillary action. Working and playing with the
children, I have learned that I must capture their attention within the first five minutes of an activity, involve the kids with the concept by prompting them to answer open-ended questions, explain the concept with diagrams and models, and keep them full of anticipation about what is coming next. I participate in the Family and Friends program. In this program, I take a mother and her children out twice a month for some bonding. I talk to her about her circumstances, how she can succeed, and her decisions and I am a friend to her. I act as a Vietnamese translator during the sessions for mothers. I also help out with the self-defense class. Working with clients at the shelter, I learned to be sensitive to each woman’s situation, I learned to get along with people of different backgrounds, especially in cases where language posed problems. I learned that these women work hard, and that they are thoughtful, intelligent, survivors of domestic violence.

My experiences working with diverse students and people, have prepared me to motivate, inspire, encourage, and teach students from various cultural backgrounds.

Thank you for considering my application; I look forward to hearing from you.