

Statement of Teaching Philosophy (with highlighted Main Themes): JoAnne B. Pumariega

- Career focus on the special needs of non-majors: Teaching mathematics has been my lifelong dedication and passion. My teaching has especially focused on the needs of non-math and non-STEM majors, and more recently at-risk college learners facing educational disparities. This comprises the majority of college students, and they have had the most ambivalent relationships with mathematics over their lives. Always keeping these ideas in mind, I ask myself the question: What can I do differently from other teachers to make me a more effective instructor in reaching non-majors? My joint background in mathematics and education has prepared me well, including formative learning from such classics as A. S. Neill's *Summerhill* and John Holt's *Why Students Learn* and *Why Students Fail*. I have also been influenced by the literature on "math anxiety", which points to sociological and psychological barriers for most math learners. Over time, I myself have been a life-long learner, incorporating new developing techniques and approaches into my own core principles, beliefs, and practices in teaching.

- Engagement with students: Mathematics can be a difficult discipline to engage with, thus placing an added responsibility for those who teach it to maximize relationships with students. I believe in the importance of having a professional demeanor with the students at all times in my self-representation. As an instructor I make myself available for one-to-one assistance, whether this occurs in my office hours, in the learning center, or over the internet. However, I also strive to be approachable to students through my engagement as a citizen of the campus community. This includes being involved in campus initiatives around diversity, student life, and serving challenged learners; attending campus cultural and enrichment events and interacting with my students at all of them; and providing socio-emotional support to my students in all their endeavors. I believe this level of engagement makes me approachable, accessible, and much more effective in teaching mathematics.

- Relevance and application of mathematics in daily life: One of my strong beliefs is that non-majors can gain mathematical concepts and skills in the classroom and achieve success through learning the relevance and application of math in their daily lives. Through the teaching of probability and statistics, I have realized the importance of real world examples and relating mathematics to current events in the classroom. For example, when teaching confidence intervals and calculating them, I would give samples of my own cholesterol levels to compute. I also incorporate graphs and research cited in the popular media. I also work to illustrate the application of mathematical principles in non-STEM disciplines such as psychology, sociology, business, health, etc., which relate to the fields of study of non-majors, thus showing the necessity of mathematics in our modern world.

- Promotion of collaborative learning: Consistent with adult learning theory, I strive to get students to be pro-active independent learners. I lay out expectations for courses on the front end within the context of a student-teacher contract within the syllabus. I also utilize group learning techniques (team assignments within small groups), so that math can be viewed as a collaborative exercise and not a solitary one. I am also open with students about the limits of my knowledge, so they may feel comfortable in sharing their imperfect knowledge and we can "learn together" to solve problems and pursue course objectives. At those times, I apply my individualized tutoring skills, which began my educational career and are very enjoyable for me.

- Multi-modality and multisensory approaches: Understanding mathematical concepts requires sustained attention as well as the ability to manage abstract concepts. In order to accomplish this, I have to overcome the common stereotypes about mathematics instruction as being too technical for the average person, too serious in its tone, and too dry in its presentation. My actress daughter has reflected on my style in the classroom as being akin to "performance art". I make the classes somewhat entertaining, but not superficial or "trite", so what is entertaining is relevant to the subject. I plan lessons carefully, using multiple sources and technologies, but have learned not to be rigid in pursuing these, adding elements of improvisation and flexibility to my presentations. I make use of multiple sensory modalities for learning, including auditory, visual, and kinesthetic/ hands-on group experiences in the classroom whenever possible. In recent years, I have worked to master online educational technology, and integrate it with personalized multi-modality strategies. This is critical in today's world since mathematics is largely applied in the context of technological application. My goal is to develop an "individualized online presence" as an instructor, much as with my live teaching presence. I worked with a math colleague and web and media designers to develop college algebra hybrid and fully online courses over the past six years, with the benefit of two grants (as well as unfunded work). These courses have been quite successful, as reflected by formal evaluation assessments and student instructional ratings, and have led to other online teaching endeavors (in Spanish and Education).