REFLECTIVE STATEMENT ON TEACHING AND LEARNING

Judy Awong-Taylor, Armstrong Atlantic State University

In this reflective narrative I will attempt to convey to you my thoughts, ideas, beliefs and philosophies on teaching and learning. What may be more difficult to do is to convey to you the love, passion and dedication that I have for my profession. My teaching career started when I was just fifteen years old and had recently completed my senior year AO-level@ exams (British system). I was asked to be a substitute math teacher (5th grade equivalent) for a teacher on medical leave. At the time, I did not think anything unusual about this request. Throughout my high school career, I had the knack of explaining difficult concepts to classmates (especially in math) and on many occasions was asked by teachers to Acome up and explain to the class@ a particular topic. When I graduated from high school, I did not consider teaching as a career option. Instead, I had grand plans of becoming a leading scientist whose work would benefit mankind and the world! It was not until graduate school that I had the opportunity to become a philosophies

have not changed, but I have discovered that teaching is not just Aone tool,@ but instead consists of a variety of tools, each serving a unique purpose. To be an effective teacher, one must realize that not all students learn the same way. It is important to be able to discern these differences and provide a variety of teaching styles and learning tools for students. Teaching tools should vary depending on the course and the intended audience. Is the course an introductory, non-science course, an upper-level biology course or a service-related course for another department? Is the course an Honors course or a traditional course? Is the course a lab-oriented or lecture oriented course? Are the students traditional or non-traditional students? Different situations require different pedagogical approaches. The ultimate goal however remains the same, to inspire my students to learn and succeed, to be excited about biology, and to realize

Laboratory (BIOL 30101) a required core-biology course, and Molecular Biology (BIOL 4090) an upper division elective. These courses incorporate many of

In addition to my teaching and research responsibilities, I also serve as Advisor to the Biology Club and the *Beta Beat Beta* Biological Honor Society. Over the years, I have been able to use my role as advisor as an effective teaching tool. I believe that a student=s education is not only about acquiring new skills and knowledge obtained from the classroom but should also include learning about morals and values that will allow them to become better citizens and leaders in the community. As advisor to the Biology / *Beta Beat Beta* Club I can help to accomplish this. I use this role as an opportunity to teach responsibility, resourcefulness, time-management, compassion and caring, corporations, and at the same time emphasize leadership ability among students. I am truly proud of the activities and accomplishments of the Biology / *Beta Beta Beta* Club, which includes free tutoring for our introductory biology courses, charitable community events, volunteer work, and involvement with numerous campus activities.

At this point, I would like to comment briefly on my involvement in PRISM (Partnership for Reform in Science and Mathematics). PRISM is a NSF-funded Math Science Partnership grant intended to raise expectations and student achievement in science and math in P-12 schools. The grant encourages the interactions between higher education faculty and P-12 school teachers. I have embraced the concept of PRISM from it=s beginning. Here was an opportunity for me to help shape the lives and future careers of our youngest students. I have spent many hours working with P-12 teachers and also with their students and it=s gratifying to know that I have played a role in the education of our future generation.

In summary, my teaching philosophy in many ways is deeply rooted in tradition. I believe in many of the simple yet effective strategies that have been successfully used in classrooms for centuries. I try to provide rigorously and intellectually challenging courses to my students, yet at the same time promote a supportive and exciting learning atmosphere for them. I care deeply about the progress of my students and for many I try to be an effective mentor and advisor. I also try to instill a sense of respect, compassion and understanding both in and outside the classroom. I have enjoyed my role as an educator, mentor, and advisor, and along the way have developed close friendships with many of my students. My students have all succeeded in their chosen careers. Many have obtained their Ph.Ds and are actively involved in cutting edge research. I choose teaching as my career, but it is through my students that I continue to fulfill my childhood ambition to be a great scientist and to make a difference in society.

I would like to end this narrative by thanking Armstrong Atlantic State University for the tremendous support I have received over the years and for its commitment to excellence in

CONDENSED CURRICULUM VITAE

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EDUCATION

Doctor of Philosophy. University of Florida, Gainesville, Florida (1985-1990).
Master of Science. University of Florida, Gainesville, Florida (1981-1984).
Bachelor of Science. University of the West Indies, St. Augustine, Trinidad, West Indies (1974-1978).

ACADEMIC APPOINTMENTS

Interim Department Head, Biology Department, Armstrong Atlantic State University (Jan 2006-present)
Associate Professor of Biology, Armstrong Atlantic State University, Savannah, GA. (1993-present).
Associate Professor of Biology, Savannah State University, Savannah, GA. (1993).

TEACHING

Courses Taught: Principles of Biology I (BIOL 1107); Honors Principles of Biology I (BIOL 1107H) Microbiology: Organisms & Diseases (BIOL 2275); Microbiology (for majors) (BIOL 2010); Principles of Modern Biology (BIOL 2500); Modern Biology Laboratory (BIOL 3010); Bacteriology (BIOL 3510); Molecular Biology (BIOL 4090); Senior Seminar (BIOL 4800); Principles of Pharmacology (HLPR 2400), Research I (BIOL 4910); Research II (BIOL 4920); Internship I (BIOL 4950); Internship II (BIOL 4960)

Courses Developed: Honors Principles of Biology I , Microbiology (majors), Modern Biology Laboratory, Molecular Biology, Senior Seminar. The following courses were collaboratively developed: Principle of Pharmacology (HLPR 2400), Tropical Biology (new course for Summer 2006).

Lab Manuals Developed: *Modern Biology Laboratory Manual*; *Investigations in Biology I: Laboratory Manual, 2nd Ed.,* Outernet Publishers, and *Investigations in Biology II: Genetics, Evolution and Biological Diversity Laboratory Manual,* Outernet Publishers.

Learning". AASU Internal Faculty Research and Scholarship Grant. Awarded $1,033.00.

1997 Larson, B., Awong-Taylor, J., Guillou, L., Thorne, F., and Beumer, R.. USG Teaching and Learning Grant entitled "Use of HyperCELL in Upper Level Biology Courses". Awarded $19,000.

1996. Awong-Taylor, J. and Larson, B. NSF-ILI Grant Proposal entitled "Improvement of a Molecular Biology Laboratory that Enhances Core Curriculum Instruction". Awarded $43,023.44.

AWARDS & HONORS

2005 AASU's nomination for the Regent's Teaching Excellence Award

2005 Research selected and highlighted for ASM press release. 150th General Meeting of the American Society for Microbiology, Atlanta GA.

2005 Research selected and highlighted for ASM MicrobeWorld. 150th General Meeting of the American Society for Microbiology, Atlanta GA.

2004 AASU's nomination for the Regent's Teaching Excellence Award

Biology and Conservation, Crete, Greece.

Griffiths, L., Bass, C., Muscarella, M., Awong-Taylor, J., and Craven, K. 2006. Using traditional and Molecular Techniques to Determine if Microbial Contamination Plays a Role in Embryonic Death of Loggerhead Sea Turtle Eggs.. Florida Academy of Sciences, Melbourne, FL.

Whitehead, E. and Awong-Taylor, J. 2006. Broth Microdrop assay: A More Sensitive Test for Determining Antimicrobial Properties of Viscous Substances. AASU's 12th Annual Student Research and Scholarship Exhibition.

, Judy Awong-Taylor, and Kathryn Craven. 2005. *"Microbial Characterization of Unhatched Loggerhead sea Turtle Eggs and Its Implication in Embryonic Development and Death"*. 11th Annual AASU Student Scholarship Symposium.

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EVIDENCE OF TEACHING SUCCESS

1. Student Success:

I this section I will address not only my students' success but the department's general success as well. The Biology Department at AASU has seen a steady increase in the number of majors over the last ten years. The rise in majors can be attributed to a variety of factors, including a rigorous and challenging curriculum, a commitment to excellence in teaching, new and updated facilities, state of the art equipment and restructuring of the curriculum. I take great pride in knowing that I have played a significant role in the growth and development of the department. Over the years, I have developed and revamped new courses, some of which are now required courses for biology majors. I have authored or co-authored several equipment grants (totaling over $90,000) for our teaching labs. Most recently, I instigated the restructuring of our Introductory Biology curriculum. This collaborative effort by the faculty resulted in the publication of two laboratory manuals specifically written and designed to address and incorporate the scientific method, problem solving processes, active learning activities and group interactions. I also continue to encourage the integration of research into the undergraduate teaching curriculum. As advisor to the Biology Club and the Beta Beta Beta Biological Honor Society, I also spend a significant amount of time interacting with students and participating in student-based activities.

In addition to the steady rise in biology majors, we have also seen an increase in the achievements of our biology majors. For example, at this year's University Awards Convocation, our biology majors received some of the university's most prestigious awards, including the Governors Academic Recognition Day Award (Amanda Svendsen), the President's Cup for both male and female athletes with highest academic achievement (Patrick Sanou and Jeanna Short), and a Silver A Medal (Laura Griffiths) for highest GPA (only five awarded annually). Last year, biology majors Eva Whitehead was awarded the Governors Academic Recognition Day Award and Sarah Bohn and Juan Aragon received Silver A medals. While many people played a role in these students' achievement, I had the honor

2a. The following condensed format is typical of a lecture and lab course. Microbiology is a required core biology course and is taught every semester. Classes meet three hours per week and labs meet twice weekly for a total of three hours. In this course, I encourage students to apply what I teach to their everyday lives. Students who take this course are often a mix of biology majors and health profession students. I therefore try to related the material taught to a wide variety of applications. Exam questions are a mix of multiple choice questions, matching, and true/false questions. Lab exams consist of short answers and a mix of multiple choice, matching, and true/false questions. In the lab component, I developed a protocol that would allow students to identify their unknown bacteria to genus and species. Students use a dichotomous key that I developed as a tool for their identifications. The dichotomous key took me several semesters to fully develop but it was worth the time and effort. This activity introduces problem solving, critical thinking and reinforces all the material covered in labs. More importantly, the students enjoy the activity.

Course Title and Number: Microbiology BIOL 2010

Course Description: This course is designed to introduce the student to some basic concepts in microbiology. Students are expected to have a fundamental background in general biology and some knowledge of basic chemistry. The organisms covered in this course include the bacteria, viruses, protozoa and fungi, with emphasis on the procaryotes. Topics covered include: structure and function, nutrition, growth, metabolism, genetics, microbial relationships, public health and epidemiology, environmental microbiology, food microbiology and industrial microbiology.

Exams: Five exams are given during the course of the semester. All exams are multiple choice, true/false, and matching. Exams 1 - 4 are worth 100 points each. Exam 5 (final lecture exam) is worth 150 points and will be comprehensive. Lab component is worth a total of 150 points. Please note: students must score at least 60% in the lecture exams in order to pass this course. Students must also pass the lab component to pass the course.

Grade Scale: A = 630 pts or greater; B = 560 - 629 pts; C = 490 - 559 pts; D = 420 - 489 pts; F = less than 420 pts.

Exam Policies: Please note that there will be no makeup exams. Any absence from a lecture exam is scored as a zero for the exam unless the absence is excused by the instructor. It is the student's responsibility to arrange with the instructor to take the exam within two days after the missed exam. No make-up exams will be given after this time! Please read your attendance policy handout regarding excused absences.

Attendance policy: Both lab and

Lab Quizzes.....15 pts

2b. Modern Biology Laboratory is a laboratory based course. It is a 1-credit, required core biology course and meets once a week for four hours. Prior to developing this course, the department had no facilities to teach a cell and molecular laboratory. In recent years, molecular biology has become a standard in the field of science and I thought it was essential that all biology majors be exposed to the techniques commonly used in all modern cell and molecular biology laboratories. I therefore developed this course with that goal in mind. I obtained an NSF grant and lobbied for some internal funding to create and fully equip a molecular biology lab. This is a somewhat unusual course in that it is completely lab oriented. Laboratory manuals were not easily available at the time and those that were available were not appropriate for the course. I therefore developed and wrote a lab manual specifically for this course. In this course I focus on lab techniques and emphasize the theoretical aspects of the techniques. I encourage student to discuss their results but make them responsible for their own lab reports and exams. Exams are usually in the format of essays and short answers.

Course Title and Number: Modern Biology Laboratory BIOL 3010

Course Description: This course is designed to introduce students to some of the common laboratory techniques used today in cell and molecular biology. Students are expected to be familiar with materials previously covered in microbiology (BIOL 2010) and cell and molecular biology (BIOL 2500). Although the course is designed as a laboratory course, some general background information will be given at the start of each lab. Techniques covered in this course include micropipetting, DNA isolation and quantification, DNA restriction and electrophoresis, bacterial transformation, DNA fingerprinting and polymerase chain reaction, protein assays and/or immunological techniques.

Grade Determination: Course grade will be based on lab exams, lab quizzes, and lab reports. Exam 1 is worth 25% of your grade and will include materials from Labs 1, 2, 3, 4, & 5. Exam 2 is worth 25% and will include materials from Labs 6, 7, 8, 9, 10, & 11. Lab Results/Reports are worth 25% and will be based on your lab results/lab reports. Lab Quizzes are worth 25% of your grade. Quizzes will be given at the start of each lab! Questions on the quiz will based on material and information from the lab that is scheduled for that day. Please read your labs before coming to class!!

Laboratory Exercises:

Laboratory One:	Measurements and Micropipetting
Laboratory Two:	Sterile (Aseptic) Techniques and Bacterial Culture Techniques
Laboratory Three:	Isolation of Chromosomal DNA
Laboratory Four:	Spectrophotometric Analysis of Isolated Chromosomal DNA
Laboratory Five:	DNA Restriction and Gel Electrophoresis
Laboratory Six:	Effects of DNA Methylation
Laboratory Seven:	Rapid Colony Transformation
Laboratory Eight:	DNA Fingerprinting Simulation: A Whooping Crane Paternity Case
Laboratory Nine:	Detection of an Alu Insertion Polymorphism by Polymerase Chain Reaction
Laboratory Ten:	Detection of a VNTR Polymorphism by Polymerase Chain Reaction
Laboratory Eleven:	Fish Protein Fingerprinting Using Polyacrylamide Gels

2c. Molecular Biology is an upper division elective course. This is a 4-credit, lab oriented course that meets eight hours a week (twice weekly). Since this is an advanced upper division course, I require students to petting

their lab activities. Exams are often in the form of take home essay questions. Discussions are strongly encouraged in this course.

Course Title and Number: Molecular Biology BIOL 4090

Course Description: This course covers both the underlying scientific principles and the wide-ranging industrial, agricultural, pharmaceutical, and biomedical applications of Recombinant DNA Technology. Emphasis is placed on the procaryotic bacterial cell and its genetic system. Eucaryotic and viral systems are discussed, but not in detail. The course focuses on the fundamental techniques used in cloning. Topics covered include: bioluminescence, restriction endonucleases, cloning vectors, construction and screening of genomic libraries, Southern Blots, DNA hybridization, restriction mapping, methods for purifying DNA fragments, Polymerase chain reaction, DNA sequencing, preparation of monoclonal antibodies, strategies for optimizing expression of a cloned gene, and procedures for modifying isolated genes. Applications of Recombinant DNA Technology in microbial and eucaryotic systems are also covered. The lab component of this course is very lab-intensive and is designed to introduce you to a variety of techniques used in molecular genetics and recombinant DNA technologies. In the lab, you will work with bacterial systems. During the course of the semester, you will isolate the *lux* gene from *Vibrio fischeri*, splice the DNA into a vector, and then transfer the recombinant molecule into *E. coli*. You will prepare a genomic library and screen for appropriate clones. You will also carry out plasmid isolations, restriction mapping, Southern Blots and DNA hybridizations. You will also perform polymerase chain reactions and a dry lab DNA sequencing exercise.

Grade Determination: Take-home exam (essay type): 200 points. Restriction mapping problem sets: 100 points. Log-book: 100 points. Research project: 200 points. All projects must be presented as a poster exhibit.

Selected Examination Questions:

1. Describe the mechanism of bioluminescence. Include in your answer how the *lux* gene may operate.
2. What

“Dr. Awong is probably the best professor I have ever had. This is the fourth university that I have had the opportunity to attend and I have taken many classes. She explained some pretty complex material in an easily understandable manner.

“ I enjoyed this class very much. It has encouraged me more to follow my dreams of being a scientist one day”

“Thank you so much for understanding my fear of speaking in front of an audience. I have two more presentations before I graduate in December and this course was a real help!”

“This course was very interesting. One of the best I have taken at Armstrong. It is great to finally get hands-on experience with techniques that I have only read about.”

Since the department does not keep records of students' exit exam scores or GRE scores, I am unable to provide direct documentation of student learning. However, since the majority of my students have been accepted into graduate and professional programs, or working with state and private industry, I would like to consider this a form of direct documentation of student learning.

In this last section I would like to touch on my interactions with students outside the traditional classroom. As I mentioned previously, I consider my activities with students an integral part of my teaching. In addition to teaching a full load and advising students with their research projects, I have been involved with many activities related to student interaction outside the classroom. I have also listed some activities that are indirectly related to student learning outside the traditional classroom setting.

I have been advisor to the