



May 1, 2009

Dr. Linda Noble  
Assistant Vice Chancellor for Faculty Affairs  
Board of Regents  
University System of Georgia  
270 Washington Street, SW  
Atlanta, GA 30334-1450

Dear Dr. Nobel:

I would like to present the enclosed portfolio for the USG teaching award. This portfolio reflects the outstanding accomplishments of Dr. Candace Timpte, Associate Professor of Biology. Dr. Timpte's performance at Georgia Gwinnett College leads me to conclude that she is best-qualified to serve as our nominee.

A review of the enclosed documents will reveal that Dr. Timpte's level of student engagement ranges from nurturing students to experiential learning opportunities. In addition, the portfolio includes documentation from both colleagues and a student, which address her commitment and enthusiasm for teaching in the field of biology. You will find from the evidence provided that this professor's life is dedicated to enhancing the lives of her students.

I believe Dr. Timpte represents the new spirit of educators in Georgia. The work of educators such as Dr. Timpte will place Georgia in the forefront in the areas of biology, chemistry and biotechnology. Please note that I am especially proud to have Dr. Timpte working as a faculty member at Georgia Gwinnett College. On behalf of the institution, I appreciate having the opportunity to provide you with documentation demonstrating her outstanding performance in teaching and student engagement.

Sincerely,

Stas C. Preczewski  
Vice President



May 4, 2009

Dr. Linda Noble  
Assistant Vice Chancellor for Faculty Affairs  
Board of Regents of the University System of Georgia  
270 Washington Street, SW  
Atlanta, GA 30334-1450

RE: Candace Timpte

Regents' Teaching Excellence Award Committee,

I wholeheartedly support the nomination of Dr. Candace Timpte for Regents' Teaching Excellence Award. The School of Science and Technology has so many excellent teachers it is hard to single out the accomplishments of a single faculty member. However, Dr. Timpte has shown herself to be a truly exceptional teacher. I have known Dr. Timpte since August 2007 when she joined the faculty at Georgia Gwinnett College as one of our early faculty hires. Dr. Timpte is one of the most active, vibrant, engaged, and dedicated members of the GGC faculty. I have also watched with admiration as she has begun to establish her reputation as one of our most gifted and valuable faculty members. In my opinion, Dr. Timpte exemplifies all of the attributes that we seek in our best faculty members at Georgia Gwinnett College. Because GGC is a new college, we need scholar-leaders among our faculty. Dr. Timpte is just such a faculty member.

Dr. Timpte has been an outstanding teacher, engaging students in a breadth of courses including a First Year Seminar course, non-majors biology courses, and advanced biology courses. Her versatility of

teaching is one of her greatest strengths. As one of our early faculty hires, she has had to develop new courses throughout the general education program as well as the biology major. In doing so, she has incorporated the latest concepts from the academic literature, the most appropriate practical applications, and cutting edge educational technology. She has incorporated active learning throughout the courses she offers. In addition to teaching, she has been instrumental in developing learning outcomes and assessment measures throughout the biology program. That her students repeatedly rank her as an excellent classroom teacher is ample evidence of her dedication to the teaching profession.

Most notably, Dr. Timpte has distinguished herself in the design of the capstone course for the biology major. This course, BIOL 4700 Interdisciplinary Applications of Biology, asks students to consider real world issues from social, economical, political, and scientific perspectives. The capstone project for the course requires students to analyze a bill, law, or treaty that has scientific implication (e.g. Clean Water Act) from these multiple perspectives. Actually, I co-taught this class with her. She created an atmosphere of trust and acceptance in the classroom so that she could push the students to consider all sides of a difficult topic.

Dr. Timpte exemplifies all the attributes that we expect in our faculty. She provides an outstanding model that other faculty members strive to emulate, that is, a commitment to teaching and student engagement. I recommend in the strongest possible terms that Dr. Candace Timpte be selected for the Regents' Teaching Excellence Award.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Mundie', with a large circular flourish at the end.

Thomas G. Mundie, Ph.D.  
Dean



April 27, 2009

Dear Colleagues,

It is with great pleasure that I write to you to offer my full and unreserved support for Dr. Candace Timppte's nomination recognizing her excellence in teaching. Dr. Timppte has twice served as a guest lecturer in my English classes and has twice worked with me on Partners in Active Learning (PALs) projects here at GGC. In each case, her teaching has been exemplary. She regularly engages students both in and out of the classroom using a range of methods, a variety of educational materials, and active learning projects that accommodate students with varied learning styles, and her efforts have yielded great results.

Teaching Biology to novice classes, particularly English 1101 and 1102 classes, may well rank as one of the truest tests of a teacher's range and skills, and Dr. Timppte has done this to great effect in my classes, teaching the students about virology in one course and genetically modified foods and organisms in another.

In my English 1102 classes, I use *The Hot Zone*, a book about Ebola outbreaks in the 1980s and 90s, as a prompt for critical thinking and analysis as well as an idea source for scholarly research the students might conduct. Students reading the book inevitably discover that they have many questions about Ebola and viruses in general, but most students in my classes have not taken a college-level science class, much less a Biology course. What's needed for them is an instructor who can immediately gauge their knowledge level and provide them with a challenging yet calibrated overview of a topic that helps them find informed points of interest they can study further.

Dr. Timppte's teaching style and her presentation materials fit the bill precisely. She can take a classroom of English students with very little background knowledge and capture their attention with clear exposition, real world examples, and a dynamic and informative presentation. By interspersing discussion with question and answer sessions, and with multiple explanatory images and film clips, she makes what might seem a daunting topic quite understandable for the students, and her easy delivery and conversational approach not only keep students

engaged but also encourage them to ask questions and explore topics more thoroughly.

In fact, in one of my evening classes, the students were so engaged, they kept Dr. Timpte long past the hour, and I'm pretty sure they would have been happy to keep talking and learning more all night. She taught them the basics so well that the students returned to her presentation materials as a guide and talked about her introduction to viruses multiple times in the weeks following. Several students decided to follow up with more research and write papers on related topics because of the discussions she led, and more than a few later asked me what Biology classes Dr. Timpte taught because they hoped to take classes from her. She so clearly communicated not only the topic at hand but also her passion for Biology in general that the students wanted to learn more.

I also appreciate the way Dr. Timpte uses a student-centered approach that draws upon not only traditional scholarship but also her experiences as a researcher and teacher and even experiences from everyday life. While working on PALs projects with Dr. Timpte, I've had the opportunity to see her interact with many levels of students in Biology as well as other disciplines, and she has a real knack for relating scientific concepts and practices to stories of her own work as a scientist in such a way that she enables students to envision how science affects multiple aspects of our everyday lives. Students working with her learn literally how scientific study applies in their daily routines as she helps them make connections and then asks them not only to learn but also "do." Her classes are very much "hands on" experiences in which students are continually asked to put into practice the concepts studied via field trips, labs, coordinated activities with other classes, peer mentoring, and more.

I would add, too, that Dr. Timpte also serves as a mentor to her students. I frequently find myself in A building near her office, and her door is always open. Students seem to know this just as well as I do, because they seek her out for frequent conversation and assistance with their classes. I consistently hear students praise her. They tell me she is a demanding yet fair professor who genuinely cares about their studies and their well-being.

Having worked with Dr. Timpte in a range of classes and on a range of educational projects these last two years, I find her to be a wonderful asset to GGC, and this is in no small part because at a college where teaching comes first, she is nothing less than a first-rate teacher. I sincerely hope you will agree.

Best wishes,

A handwritten signature in black ink, appearing to read "Jen Wunder", with a long horizontal flourish extending to the right.

Jen Wunder

Jennifer N. Wunder  
Assistant Professor of English  
School of Liberal Arts  
Georgia Gwinnett College



Georgia Gwinnett  
COLLEGE

1000 University Center Lane  
Lawrenceville, GA 30043  
P: 678-407-5000  
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April 24, 2009

Georgia Gwinnett College  
1000 University Center Lane  
Lawrenceville, GA 30043

To Whom It May Concern:

It is my pleasure to write this letter in support of Dr. Candace Timpte for the faculty teaching award. Over the last 2 years, I have become very familiar with Dr. Timpte as a teacher. Accordingly, I am writing this because it is my sincere belief that she is eminently qualified and deserves to receive the Georgia Gwinnett College Annual Excellence in Teaching Award.

In the short time that Dr. Timpte has been at Georgia Gwinnett College, she has proven herself to be an excellent instructor and colleague. She makes herself available to students when they need help outside of class. She structures her courses so that the students get the necessary information in a way that makes it easy to understand. In addition, Dr. Timpte has joined the Partners in Active Learning to encourage her students to think in an interdisciplinary manner to augment their science knowledge. She has also joined with Dr. David Pursell to develop biochemistry flash cards that can be uploaded to cell phones to aid in studying.

Dr. Timpte has worked diligently to improve the laboratory exercises offered to the introductory students as well as her biochemistry students. She has created labs that make the students think about what they learned, not just follow steps in a cookbook.

Taking a course from Dr. Timpte will definitely challenge students and as a result, they will learn a great deal about biology. Her exams are designed to show what the students know, not what they don't know.

In addition to teaching, Dr. Timpte excels at advising and mentoring in terms of the academic activities, career objectives, and personal welfare of students. She is an excellent source of information for students trying to figure out what they want out of a biology degree to enhance their future. Her office door is always open to any students with questions.

Dr. Timpte is also a wonderful mentor to other faculty members. She has been a great resource for faculty teaching new courses that she has experience with. She is always willing to extend her expertise to help them become better teachers.

Sincerely,

Alexandra Massey Kurtz  
Assistant Professor of Microbiology  
Georgia Gwinnett College  
lkurtz@ggc.usg.edu

Dear Georgia Gwinnett College Teaching Award Committee:

I am honored to write a letter on behalf of Dr. Candace Timpte. In my second semester at GGC, I took Biochemistry with Dr. Timpte. The course material was very challenging, and Dr. Timpte really engaged me to learn the material. We would have group discussions where Dr. Timpte would call on students to come to the board and explain complex biochemical processes, this type of learning built my confidence, and really encouraged me to learn the material. Dr. Timpte encouraged team work by assigning us to groups where we would analyze case studies and, and share the results with the other groups. Dr. Timpte also encouraged us to be able to explain biochemistry to others, and how to apply our knowledge to our everyday lives. She had each of us explain the labels on a nutritional supplement to the class and explain why and how the supplement would work, or if it would not work at all. These opportunities to teach classmates helped to build my confidence in the new material I was learning. In the laboratory she challenged all of us every meeting time. Dr. Timpte provided detailed expectations, and expected us to know what we were working on. She had us do a lab that required protein purification, and taking the results of our research paper and writing our own original formal research paper based on the results of our experiment. Dr. Timpte was available before class, after class, and anytime any student needed help..and all of us needed extra help!

Over the summer in 2008, I took Interdisciplinary applications in biology with Dr. Timpte (and Dean Mundie), a completely different kind of course than Biochemistry. Dr. Timpte encouraged all of us to consider now that we were almost GGC graduates that we needed to be able to communicate with other non-science majors, and we did several small projects to foster these speaking skills, which helped make me feel more confident speaking to others and built my leadership skills. Dr. Timpte brought in an outside speaker from Gwinnett County to talk about Lake Lanier and our local water supply, to engage us in local politics that had applications in biology. She had us do a group presentation project and offered to preview our presentations and offer suggestions. Dr. Timpte really wants her students to be successful, and worked very hard to make sure all of her students were staying on track to be successful. She really cares about each and every student from their academic success to their personal success. Dr. Timpte even brought all of us treats on test days, or when we had student presentations, this brought us together as a group of students when we chatted over cookies. Being able to get along with and work with others is a critical skill, and Dr. Timpte helped foster good relationships between students.

Dr. Timpte also was a very important mentor to me and to others during my time at GGC. Whenever I had questions or difficulties in my coursework, no matter which class, she was (and still is!) there to help. I had trouble getting all of my coursework for graduation approved, and Dr. Timpte, who was not my advisor, went to the committee on my behalf and made sure I was headed in the right direction. Dr. Timpte encouraged me on my career path, and advised me in all areas! She helped me in figuring out a career path, and encouraged me to be a pharmacist, as well as helping me to put a back-up plan in place. In order to help me, and others who had been thinking of teaching, Dr. Timpte pulled together a meeting over spring break to help those of us who were considering teaching this fall so we would have time to get everything together. She worked with the Dean of Education to help coordinate between the two different departments. Dr. Timpte advised me in my personal life when I was going



through, tough times, and kept me thinking positively She is always there to help, and I never had to wait for her to help, she is amazingly efficient! On top of all of this, she is simply a wonderfully optimistic energetic professor, always prepared, always there to help outside of class.

Sincerely,

Christiana R. Weaver

**Candace S. Timppte**

School of Science and Technology

Georgia Gwinnett College

Phone: 678-407-5736/678-472-9280

email: ctimppte@ggc.usg.edu

**Education**

Duke University, Durham NC

Ph.D. Biochemistry: Cell and Molecular Biology

1989

U. of Wisconsin, Madison

B.S. Biochemistry

1983

**Academic Appointments:**

Associate Professor, Georgia Gwinnett College, School of Science and Technology

8/2007- present

Associate Professor, University of New Orleans, Dept. of Biological Sciences

2003- 2007

Assistant Professor, University of New Orleans, Dept. of Biological Sciences

1995-2003

Postdoctoral Fellow, Indiana University, Department of Biology

1989-1995

**Selected Publications:**

Clancy, M.J., Shambaugh, M.E., Timppte, C. and J.A. Bokar (2002) Induction of sporulation in *S. cerevisiae* leads to the formation of N6-methyladenosine in mRNA: a potential mechanism for the activity of the *IME4* gene. *Nucleic Acid Research* 30:4509-4518.

Timppte, C. (2001) Auxin Binding protein: Curiouser and curiouser. *Trends in Plant Science* 6:586-90.

Invited review. *Featured review selection* on the Arabidopsis source website [www.arabidopsis.com](http://www.arabidopsis.com).

Nagpal P, Walker L, Young J, Sonawala A, Timppte C, Estelle M, Reed JW. (2000) AXR2 encodes a member of the Aux/IAA protein family. *Plant Physiol.* 123:563-74.

del Pozo JC, Timppte CS, Tan S, Callis J, Estelle M. (1998) The Ubiquitin-related protein RUB1 and Auxin response in Arabidopsis. *Science* 280:1760-1762

Timppte, CS. (1998) Auxin signal transduction in Arabidopsis. *SAAS Bulletin Biochemistry and Biotechnology* Vol. 11: 69-72.

Timppte C.S., Wilson A.K., and Estelle M.A. (1994) The *axr2-1* mutation of *Arabidopsis thaliana* is a gain-of-function mutation that disrupts an early step in auxin response. *Genetics*,138,1239-1249.

Leyser\* H.M., Lincoln\* C., Timppte\* C., Turner J.C., Lammer D., and Estelle M.A. (1993) The Hormone-resistance Gene AXR1 of *Arabidopsis* is Related to Ubiquitin-activating Enzyme E1. *Nature* 364, 161-164. \*These authors have contributed equally to the work; all are considered first authors.

And 9 other publications in Scientific Journals.

**Previous Grants and Contracts:**

NSF EF-BE Non-announcement Research: "Phage Genome Sequencing for Student Biotech Training" Co PI's Jim Nolan, Wendy Schluchter, Candace Timppte \$362,272 7/1/04-10/07, Grant is under no-cost extension and **has been transferred to Georgia Gwinnett College.**

Louisiana Governor's Biotechnology Initiative: "UNO and USDA-SRRC partnership for research capacity and workforce development in genome-enabled biotechnology" 1/1/03-6/30/10, **indefinite renewal.** Co-PIs: Dr. Candace Timppte, Dr. Mary Clancy, and Dr. J.S. Rogers \$195,000 annually.

Louisiana Board of Regents Support Fund: "Superior Graduate Fellows in Conservation Biology at UNO" co-PIs: Drs. Candace Timppte and Kathleen Burt-Utley. **Seven** consecutive grants funded each for a four-year duration from 8/2001 to 7/2012 totaling \$958,000

**Submitted:** Howard Hughes Medical Institute Undergraduate Science Education Program, "Freshman biology integration and Renovation at UNO" Candace Timppte, PI, \$1,800,000, 12/2005 not funded.

**Recent presentations at Professional Meetings:**

“Adapting to Student Learning Styles: Using Cell Phone Technology in Undergraduate Science Instruction,” C. Timpte, D.G. Sauder, R. Pennington, M.Y. Tsoi, J. Paredes, D.P. Pursell. 16<sup>th</sup> Georgia Conference College & University Teaching [http://www.kennesaw.edu/cetl/conferences/gaconf/2009/ga\\_conf.html](http://www.kennesaw.edu/cetl/conferences/gaconf/2009/ga_conf.html), February 13, 2009, Kennesaw State University.

“Making PALs: Partners in Active Learning Across the Curriculum” Candace Timpte, Thomas Hancock, Stella Smith, Jennifer Wunder. 16th Annual Georgia Conference on College & University Teaching [http://www.kennesaw.edu/cetl/conferences/gaconf/2009/ga\\_conf.html](http://www.kennesaw.edu/cetl/conferences/gaconf/2009/ga_conf.html), February 13, 2009, KSU.

Bringing Bioinformatics and Genome Sequencing to the Classroom: Candace Timpte, Jim Nolan  
MCBIOS (Mid-South Computational biology and Bioinformatics Society Conference) March 2006

**Presentations Accepted:**

“Educating the Whole: Integrating a College and a Community” T. Hancock, C. Timpte, S. Smith, J. Wunder  
10<sup>th</sup> Annual National Outreach Scholarship Conference Athens Ga October 2009

“Reaching beyond the Classroom” Jennifer Wunder, Thomas Hancock, Candace Timpte, Stella Smith  
Association of American Colleges and Universities Conference Integrative Learning: Addressing the Complexities [http://www.aacu.org/meetings/integrative\\_learning/index.cfm](http://www.aacu.org/meetings/integrative_learning/index.cfm) October 2009

“Developing an Architecture of Vertically Integrated Student Learning Outcomes: Institution to Course”  
David Pursell, Candace Timpte, Thomas Mundie and Juliana Lancaster. Commission on Colleges of the Southern Association of Colleges and Schools, Annual Conference to be held December 5–8, 2009. This roundtable discussion highlights the assessment strategies and hierarchy of GGC.

**College Service:**

	Committee/Task Force	College or School	Member or Chair
1	Biology Program Outcome Goals	SST	Co-Chair
2	COPS	SST	member
3	Biochemistry Task Force	SST	member
4	Biology Secondary Education Task Force	SST	Chair
5	Faculty Student Activities Committee	College	member
6	Biology Faculty Search Committee	SST	member
7	Biology Academic Advisory Council	Georgia System	member

**Other Scholarly Activities**

First ever GGC submission to Genbank, the national database of DNA sequences, April 28, 2009

Reviewer, Wiley Publishers 2008, 2009

Math and Science Institute, July 2006, two presentations (invited) “Biotechnology” and “Genes and Disease”: an international meeting for secondary school educators and features presenters from across the nation.

NSF, Eucaryotic Genetics, Ad hoc reviewer fall 2000, 2002, 03, 04, 05.

USDA ad hoc reviewer Spring 1998, 1999, 2002, 2003

NSF-EPSCOR program: Ad Hoc reviewer Spring 2002.

NSF panelist, Fall 2001 Eucaryotic Genetics panel.

NSF Ad hoc review, for Genetics 2010 program spring 2001, 2004

Reviewer for The Plant Journal, 2002, 2003, 2006

## Teaching Philosophy Statement

Incoming students often state that they 'hate biology' because they assume that memorizing all the scientific vocabulary and using math seems too hard. My goal is to convince them that biology is relevant to their lives, and learning some of the facts and processes can be fascinating and even fun. Even though the discipline of biology does require mastery of basic facts and processes, a little biology understanding confers the power to evaluate the trendy diet fad, understand the blog on the latest drug and explain grandma's blood pressure. Indeed, a solid understanding of biology is invaluable to navigate life in the 21<sup>st</sup> century.

Thus, in my capacity as snake oil salesman, getting non-majors and freshmen to buy something they think they don't like, I strive to engage and entertain students through citing real world examples and applying biology content material. At this level, students build a foundation of basic concepts and develop the critical skill of using the scientific method; amassing and memorizing biological facts is not my goal for students.

Successful upper division students then flesh out basic concepts with details and assemble a clear picture of the integrated processes of cells. Budding biologists refine synthetic thinking skills to pull concepts from their chemistry training and apply them to biological models in order to extend their working knowledge of the cell through its DNA replication, protein synthesis and metabolism. Both upper and lower division students must acquire the general context of scientific literacy in order to seek answers to their own questions as life-long learners of biology. My role is to provide tools, roadmaps and encouragement to attain scientific literacy.

### Teaching Methodologies

Since biology and particularly biochemistry encompass huge amounts of content material, it is tempting to teach only using didactic lectures. Every class session, I try to be aware of

- *Effective communication:* I attempt to present material in an accessible manner such as describing certain intricate protein structures as peanut butter and jelly sandwiches, then move toward the scientific vocabulary.
- *Student reception:* An effective teacher must tune in to the learners and be aware of their engagement. When addressing particularly complicated material, I often have students move around the room, sometimes to 'act out' a part of the cell, other times just to jump up and down to regain alertness to concentrate on material. Think-share-pair exercises help students feel in control of the material and engaged.
- *Presentation and Involvement:* My enthusiasm and obvious love for biochemistry frequently evokes comments from students about my 'nerdiness'; they are astounded that I reflect on biochemistry material in my daily life. Later they feel empowered to also consider, for instance, how the sugar in their energy drink is metabolized by their cells. Through case studies, I emphasize how relevant biochemistry is to everyone's daily life and that it holds the answers to many questions.
- *Role Model and Mentor:* I am acutely aware that female students, even in this enlightened 21<sup>st</sup> century, seek permission to be scientists, and search for validation that family life is compatible with the pursuit of science. Consequently, I sometimes use my children as examples to demonstrate that science touches us all, and to remind them that I am very much a human, a mother and a scientist. I try to be genuinely approachable, inviting students to my office or to my campus walkabouts, to foster questions and discussions informally.

### Active Learning in the classroom

In introductory biology courses, case studies provide real world applications and reinforce study of material. Many students appreciate the implications of course content embedded in the context of a case study. My

favorites cases include “Do cell phones cause cancer?”, “Sex Determination in Athletes” and the always popular “Who’s your Daddy?” DNA paternity test cases. Each case relies on a fundamental understanding of a biological process and includes advanced technology applications. With the more scientifically mature students in Biochemistry, we investigate websites selling real snake oil, particularly nutritional supplements and metabolism enhancers; the students dissect the effects of the metabolites and critically evaluate these products in the context of cell metabolism. Generally, they are shocked to learn that eating ATP will not give more energy and that they had never considered applying their biology knowledge to TV advertisements.

Good storytellers use stories to illustrate a concept and then return to the topic at hand; I attempt to present a biological process, enliven it with a story, even so simple as to ‘imagine the thick medium of the nucleus as setting gelatin’ to give an appreciation of the difficulty of making new DNA, and return to the topic to reiterate. I dance in circles, presenting, enlivening and reviewing. Biology is a discipline that easily integrates into the daily life of a student, so I frequently give ‘take home nuggets’ in class, some outrageous fact or process for them to share with friends over lunch. Non-major students especially have responded positively to these nuggets, later reporting questions from their friends.

I hope to develop critical thinking skills and move biology students beyond simple memorization of facts and processes. To achieve this end, in freshman classes, I provide 5-8 challenging essay questions one week prior to each exam with the promise that 2-3 of these questions will be on the exam. Students may use any resources available to craft answers to these challenges, including discussion with me. These questions force them to move beyond memorization and into understanding; students do their best learning in preparing answers to these questions. Furthermore, students have more confidence walking into an exam since they already know, and have prepared the answers to, several questions on the exam.

### **My Goals**

It is my goal to provide students with a supportive and engaging atmosphere to learn biology with enthusiasm. I hope to establish, in my students, a framework of knowledge and confidence for them to critically assess new information and ideas as life-long biologists. I attempt to provide tools for students to ask questions and find the answers and then to communicate answers effectively to their peers. Finally, I hope to cultivate an attitude of scientific curiosity and share my amazement at the wonders and joys of biology.

## Courses Taught at GGC

**GGC1000 Freshman Experience Seminar:** I had the honor of teaching GGC1000 the first semesters it was offered at GGC. I prepared learning materials in accord with course guidelines to acquaint students with the college culture expected at GGC, and to include the signature assignments of two reflection papers, an oral presentation, a career project and a diversity project. Introducing freshman to college culture at GGC is an interesting and fun teaching exercise and allowed me to experiment with some techniques that I wanted to try in my biology courses. Since then, I have served on the committee working to refine this course. (Fall 2007)

**Biol1101 and 1101 Lab. Introduction to Biology:** I taught this Biology for non-science majors in its initial semester at GGC. In collaboration with three other faculty, we considered what non-science majors needed to know for scientifically literate lives and designed lecture topics accordingly. I constructed several projects for students to complete including a research paper and lab exercises to develop science literacy skills and develop some of their own interests. I coordinated the lab for all instructors with the lab prepatuer. (Fall 2007)

**Biol1107 and 1107 Lab. Principles of Biology:** Introductory biology for biology majors. This core biology course had been taught before at GGC, but required a substantial overhaul. In coordination with the previous instructor, we determined which topics were appropriate for this course and coordinated with instructors of other courses to complement these topics in upper division courses. I developed interactive exercises for content material and introduced several lab exercises and projects to create a more interactive, accessible course for our students. I've had the privilege of teaching this course for several semesters and have refined many aspects of it and shared my materials with other instructors. (Fall 2007, Spring 2008 and Fall 2008)

**Biol3200 Genetics:** Teaching this upper division course was a challenge since the course is designed to have a lab but I ascertained during the semester that laboratory time was better utilized as break out problem sessions. Several of the lab exercises were computer based which allowed use of lab time for interactive problem solving. (Fall2008)

**Biol3100 Biochemistry:** I designed and implemented the first ever GGC Biochemistry course and labs. Revisions are underway in Spring 2009 as GGC purchases more laboratory equipment and increases the stock of available chemicals and reagents. I designed all of the laboratory exercises from scratch as there is no standard type of laboratory manual for this advanced course. I tried to cover relevant exercises and repeat some skills so that students could master several techniques. Students particularly enjoyed a series of exercises to evaluate different varieties of beans or seeds for use as animal feed; students measured the protein and carbohydrate content of four different types of beans and critically analyzed the results. (Spring 2008, Spring 2009)

**Biol4700 Interdisciplinary Applications:** Students explored various biological and current issues using perspectives from technology, ethics, political and economic disciplines. The capstone project is to examine Federal or State Law from the four perspectives and write a team research paper on the topic. The capstone project is also presented in a multimedia format to other students. I have taught this course using many case studies and different writing assignments. (Summer 2008, Spring 2009)

## Evidence of Quality Teaching

**Biol4700 Interdisciplinary Applications of Biology:** I have been privileged to teach the Biology Capstone course twice. The charter students requested Dean Mundie to ask me to teach Biol4700 during the summer of 2008 so that they could complete this graduation requirement. What an honor to have students request me to teach a course! However, the condensed summer term did not provide sufficient time for the capstone project and Dr. Mundie and I determined that GGC would not offer this course again in the summer.

### Excerpts from my Biol4700 syllabus:

**Course Description:** This course is designed to enable students to integrate the entirety of their undergraduate liberal arts education to topical issues in Biology. Students will be challenged to investigate a biology problem politically, economically, ethically, and technically and communicate their findings to peers using a variety of technologies. Completion of this course provides a start for the life long learning process of applying biology content material to real world problems. By choosing topics that transcend traditional boundaries among specialized sub-disciplines of biology and other fields, students are encouraged to view problems from a holistic and integrative perspective. *Be aware that you may be called upon to argue an opinion that you yourself do not hold but to understand and support differing perspectives.*

### Learning Goals:

1. Use library and Internet resources to gather, organize, and understand information
2. Understand the application of biology to real world issues
3. Analyze a real world issue from a scientific, political, economic and social perspective
4. Effectively and clearly communicate scientific information in written and oral form.

**Projects:** Course projects will include many small individual assignments such as:

*Blogging:* read a paper, develop a position and respond to commentary by other students.

*WebCT (V8) discussion board:* on-line discussions of topical material

Write a (mock) *letter to the editor* about an issue.

Write a (mock) *white paper to Congress* presenting an issue.

*Commentary* on a topical issue in another format such as a webpage

Discussions on topical matters

This course will culminate in a *capstone project*, which will be presented as a formal written paper of minimum 20 pages and presented in another format of the group's choosing. This project will examine a law concerning a biological topic from several perspectives.

My motivation in this course is to prepare students to fully utilize their college education and realize their capacity as educated individuals, voters, concerned citizens and perhaps the only juror who understands DNA. First in this course, I have students examine the Tuskegee Untreated Syphilis study. This historical medical study followed a population of African American men with the disease for over 40 years and did not offer to treat the men as medicine advanced successful treatments for syphilis. Students are shocked and horrified by this case study, which generates lots of discussion. This Syphilis project caused the creation of the seminal Belmont Report, which, with the Nuremberg Code, guides ethics in medical and research studies to date. Students dissect components of this case and find that they can discuss race, science, ethics and the value of research. I stress respect for each other and respect for opinions of others during this discussion.

Other assignments in this course enjoin students to examine many sides of an issue; one of the assignments they most appreciated was writing mock letters to the editor. In WebCT, I required each student to post a letter taking a stand on land conservation from a case study and to reply to two other letters. They first researched letters to the editor by reading the AJC; many students had never broached the editorial page of the newspaper. Thus prepared, students had great fun assuming different personas and crafting witty or indignant replies while incorporating scientific, economic or political arguments to support their position.

I am teaching Biol4700 again in Spring 2009; this time I have integrated the Partners in Active Learning Project, as discussed below. I have no official student evaluations of this course in progress; however several students have remarked on how much they have learned this term.

**From Biol4700 Summer 2008 Course Evaluations:**

Candace Timpler, Interdisc Appl of Biol

**Comments Report**

**The thing I liked best about this course was:**

- The open discussion format. (1 Count)
- The open discussions. (1 Count)
- This course was a great synopsis of how a biologist has an obligation to be able to share his or her knowledge with others in a way they can understand. This course also encourages students to apply their knowledge and understanding of biology to every day life. Science is such a huge part of our modern society, and it can be difficult to put all the pieces of science together in the real world applications. Grant money for our research a lot of politics to get to our laboratories. (1 Count)
- Discussions were interesting. (1 Count)

**The thing I liked least about this course was:**

- The 20 page paper. It was overkill! (1 Count)
- The research paper is a huge undertaking. My group has logged in over 60 combined hours. WOW what a lot of work. It has been quite interesting however, and I have enjoyed looking at all of the different angles involved. (1 Count)
- The final research paper and presentation. We should have a choice as to do one or the other. (1 Count)
- The presentation-ugh! (1 Count)

**Additional Comments or Suggestions**

- I would be nice to have more time for big projects. (1 Count)
- Please decrease the length of the paper. Ten pages would be enough to get in the pertinent info. (1 Count)
- I really appreciate the staff who sacrificed their summer to help the students who needed this class to graduate in the fall. (1 Count)

**Biol3100 Biochemistry:** Biochemistry is the course that even the most dedicated premedical students dread because it is reputed to be a difficult course. Personally, I find the material fascinating, and something interesting is never too hard. Thus, although this might be the most content heavy course students will encounter, it is a course of cathartic joining of chemistry and biology and the basis for understanding all of cell biology. My memorization requirements are few but my thought requirements are huge; students must really know and understand the material to think about it. Some love this challenge, others are frustrated and would rather simply memorize biochemical pathways. Comments from the Spring 2008 Biochemistry course are included below. Although I have informal evaluations from this Spring2009 course, I solicited comments with the assurance that they were only for my use to improve the course.

**Additional Comments or Suggestions**

- Dr. Timpler is awesome! She had enthusiasm about biochemistry! She is a great teacher! (1 Count)
- I learned a lot in this course and I felt like the instructor really believes in our individual pote (1 Count)
- enjoyed the class,learned a lot of cool stuff,nice seeing how all the coursework comes together (1 Count)

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	av.
2.1) The instructor was prepared for class.					5	av.=4
2.2) The instructor was enthusiastic about teaching the course.					5	av.=4
2.3) The instructor used multiple teaching approaches in class.					4	av.=3.8
2.4) The instructor stimulated class discussion					4	av.=3.8
2.5) I had opportunities to ask questions in class.					4	av.=4
3.1) The instructor encouraged me to contact him/her outside of class.					4	av.=3.8
3.2) The instructor was concerned about whether I learned the material.					4	av.=4
3.3) The instructor provided clear feedback on my exams and other work.					4	av.=4
3.4) The instructor provided timely feedback on my exams and other work.					4	av.=3.8
4.1) I used the GGC library to locate books or other material for this class.				1	4	av.=2.8

**Biology1107 Principles of Biology :** Freshmen learn quickly in their first majors course that college is different from high school; sometimes this transition is quite difficult and they are astounded at the work outside the classroom that is required for success. I am proud of the insightful comments that some of my



**Biol 1107 students reported in my evaluations:**

Candace Timpfe, Principles of Biology I (BIOL110701)

**Comments Report****The thing I liked best about this course was:**

- how Dr. Timpfe went over and reviewed the lessons from before to refresh our memory. (1 Count)
- The wiki was a good study guide for tests and Dr. Timpfe made the class fun. (1 Count)
- Dr. Timpfe helped me understand biology on a whole new level. (1 Count)

**Additional Comments or Suggestions**

- I would Recommend Doctor Timpfe to anyone taking Biology. (1 Count)

**4.5) The thing I liked best about this course was:**

- the instructor make the class feel lively and she try to explain in details the materials (1 Count)
- I liked how we did interactive studies as in putting the material into modern day uses in the lab and how it applies to real life. (1 Count)
- The teacher was a funny one. She kept us entertained. She made biology fun. When things got tough, she was a good support. (1 Count)
- Dr. Timpfe has a great sense of humor, and I really enjoyed having her as my professor. (1 Count)
- The teacher was energetic and really helped me to learn the material. (1 Count)
- I liked the professor in which she seemed to really care about helping her students understand the material no matter what it took. It is easy to want to do well in a class that you feel like the professor wants you to do well also. (1 Count)
- Dr. Timpfe was an amazing professor, I really enjoyed her class lectures and the way she taught the material. She was challenging, but the amount of fun she created in the class helped me to learn the material in a great manner. She was always enthusiastic about the material she was teaching us and she always made things fun! I enjoy a challenging course and that is exactly what it was! She was easy to contact out of class and she treated her students as a good friend of hers. She helped me through life struggles I have encountered this semester and I am truly grateful! Thanks for all the help and I really enjoyed your class! (1 Count)
- Dr. Timpfe made the class very interactive; never boring. The concepts covered in class were presented on the exams. Dr. Timpfe is very available to her students. She encourages students to come see her or contact her if they need anything at all. She answers e-mail in a matter of minutes most of the time. Great professor! (1 Count)

**Biology3100 Genetics:** Genetics is a sophomore level course, which requires much problem solving and student participation; some students have difficulty because they are accustomed to memorizing material. In this course, I co-opted the laboratory time to involve students in group-problem solving sessions, which the students needed but didn't necessarily enjoy. I passed this suggestion on to the current Genetics instructor and he is successfully integrating lecture and problem solving, with the result that the students seem to have higher comprehension of the material.

**Excerpts from Biol3100 Evaluations, Fall 2008:**

Candace Timpfe, Introduction to Genetics

**Comments Report****4.5) The thing I liked best about this course was:**

- Dr. Timpfe is extremely concerned that we understand the information being taught. She was enthusiastic and always willing to listen to and positively respond to class feedback. She was always more than willing to answer questions and fully ensure that we understood a concept. I really enjoyed her teaching approach/style and her true concern for the learning of concepts by her students. (1 Count)
- The instructor made it easy to understand and was very helpful (1 Count)
- THERE WERE OPPORTUNITIES IN CLASS FOR DISCUSSION AND IF IT SEEMED AS THOUGH WE DIDN'T UNDERSTAND SOMETHING PROFESSOR TIMPFE TOOK THE TIME TO ENSURE THAT WE ALL UNDERSTOOD THE CONCEPT THAT SHE WAS TEACHING BEFORE WE LEAVE FOR THE DAY (1 Count)
- understanding how genetics tie together to our lives (1 Count)
- The class was small, and it allowed the students to engage in a more efficient manner. Also, the professor made sure we learned the material and genuinely wanted all of her students to succeed. (1 Count)
- I liked how Dr. Timpfe correlated genetics with the real world. She really helped me understand the importance of genetics, and related it to Drs; pharmacists, nurses. (1 Count)

**Engagement Outside the Classroom**

**Cell Phone Flashcards:** Together, colleagues from Chemistry and I are investigating the utility of flash cards suitable for use on a student's cell phone or computer as a study aid. In Principles of Biology 1107 and

Biochemistry Biol3100, some important facts, definitions, and structures must be memorized. I compiled these facts into Powerpoint files and made them available for download through WebCT so that students have these study aids at their fingertips. Student response to these cell phone flashcards have been positive, because it allows them to study while riding in the car, while waiting in line, or before another class.

**Excerpts from investigational interview transcripts from a faculty member involved in the study:**

*Students found the cellphone flashcards handy:*

“It was nice. Like if you were out to dinner and you were waiting in the waiting room and you’re like, “Oh, let me pull out my cellphone notecards.”

*Others found them convenient but had suggestions to improve them:*

“I think the electronic ones [flashcards] are better. It saved time and you just look at it. But then, one really bad, you just can’t – if you memorize the whole thing, from one to ten slides, you know which one are...so you can’t shuffle them.”

*One student particularly liked that I designed the flashcards:*

“I mean, if she makes them, I don’t care how she gives them to me. She can give them to me on a napkin. As long as they’re HER words and HER answers.”

Students appreciate faculty efforts to try different methods to assist their studying. We, as faculty, must adapt the technologies our students already use and incorporate our content material and skills to these technologies to more effectively reach out to students. We have identified the software methods to shuffle the cellphone flashcards and will be evaluating student satisfaction with those cards in the Fall 2009.

**Interdisciplinary Engagement:** The Partners in Active Learning Project (PALs) aims to engage students across disciplines and involve them in learning beyond their courses. In Fall 2008, Dr. Jennifer Wunder and I developed a collaboration between English 1101 course and Biology 1107 sections to instigate a “BioQuest” about genetically modified foods. My students researched the science and taught the English students a little biology and biotechnology; the English students wrote proposals and other rhetoric to advance the event. Students from both courses worked to produce the BioQuest event in the atrium of B building, where the campus community was invited to learn about genetically modified foods, taste foods for comparison and test their knowledge of biotechnology. Students from both disciplines had a wonderful time and taught each other beyond the curriculum of either course. The biology students learned that they absolutely had to understand their science well in order to explain it to their non-scientist peers. In fact, several heated debates broke out between biologists and advocates of certain weight loss supplements!

This Spring 2009, the PALs project with Drs. Wunder and Hancock partnered with Gwinnett Clean and Beautiful to investigate litter in Gwinnett County. My Biology 4700 Interdisciplinary Applications of Biology students researched the impact of cigarette butts as litter; how the toxins from the cigarettes impact the environment, the butts represent a hazard to wildlife, small children and plant life. My students assembled their research into a short, 10 minute iMovie entitled “Don’t Leave your Butts Behind” and Drs. Wunder and Hancock used the movie to educate their students about the litter impact. We also created an informational poster about cigarette butts that was used at the GGC Science and Technology Expo (4/22/09), in conjunction with an environmental demonstration from Gwinnett Clean and Beautiful. Surveys from the beginning of the semester indicated that my students ‘had never participated in environmental issues’ but an informal show of hands last week indicated that **all** of my students noticed and picked up litter during spring break. Currently, Dr. Wunder’s class is writing proposals to address litter solutions on GGC’s campus and my Biology students are critiquing their science and posing questions to her students using the WebCT discussion board. This discussion board provides an excellent tool for asynchronous communication between students from different classes and is an indispensable tool for the PALs project. While I have no written submissions critiquing this ongoing project yet, the students have gained an enormous education beyond the curriculum, including peer-teaching, scientific research and multimedia presentation experience. Through

this project, they combined chemistry and biology skills to develop a fuller understanding of life-long learning. This litter project is the first time any of my students have used their biology education to address an ongoing civic issue. They are thrilled at the impact they have made on students in Drs. Hancock and Wunder's classes as these students discuss information on WebCT.

**Success of past students:** This year, I have written letters of recommendation for seven different GGC students for admission to professional schools, including medical, pharmacy, physician's assistant, physical therapy and fellowships for summer programs. Writing letters of recommendation is a special and important aspect of my job; students feel comfortable asking me for a letter of support knowing that I will complete a thoughtful recommendation on time. In addition, this past year I have written letters for six students, who were in courses that I taught in Spring 2007 from my previous institution. I am pleased that students from this class of 80 students trusted that I would remember them and invest sufficient time in a letter to support their applications for medical school. Two of these students have been accepted to medical school.

**Mentoring:** At GGC, all faculty mentor students and encourage them to develop into mature, capable college graduates. I take this mentoring very seriously and try to meet with my students twice a semester. In addition to my own mentees, I informally assist students who present needs in my courses or from past courses. This spring I organized a meeting with several biology majors, who are interested in pursuing teaching secondary school with the BS in Biology degree, and Dean of the School of Education, Cathy Moore, to inform students of the steps required to become certified for Georgia Public Schools. Four students attended this meeting with information disseminated to a fifth student. Some were my mentees, some were not, others were recent graduates, but all, including me, found the meeting very informative.

**Assessments:** Biology course goals are mapped to Biology Program Goals and Institutional Effectiveness Goals at GGC. In my courses, students are assessed on course goals through several means including exam questions, multiple choice, short answer and essay, laboratory work, laboratory reports and written assignments. Students in my courses are meeting the Biology Program Goals and the relevant IEE Goals. In the charts below, the percentage listed is percent of students achieving this goal at 75% or greater.

<b>Biology 1107 Principles of Biology Course Goals Fall 2008 (two sections)</b>		
1	Apply biological knowledge to real world problems	71
2	Critically assess and utilize scientific information	80
3	Demonstrate knowledge of the structure, function, and metabolism of macromolecules	68
4	Differentiate between prokaryotic vs. eukaryotic cell structure and function	81
5	Understand the molecular basis of inheritance	83
6	Understand the molecular mechanisms that regulate gene expression	72

<b>Biochemistry Biol3100 Spring 2008 Course Goals</b>		
1	Describe the three dimensional structural and functional relationship of proteins.	91.3
2	Trace intermediary metabolism from macromolecules to CO <sub>2</sub> including both anabolic and catabolic reactions of glucose.	83.9
3	Explain several mechanisms of enzymatic catalysis with regard to chemical and structural details.	82.9
4	Discuss the structure and function of major classes of macromolecules.	90.2
5	Communicate clearly and effectively	88.1
6	Use technological resources at an appropriate level.	94
7	Apply the scientific method to address hypothetical problems.	91