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January 31, 2014

Dr. Joyce Weinsheimer
Center for Enhancement of Teaching and Learning

Dear Dr. Weinsheimer:

On behalf of the School of Biology, I am truly pleased to nominate Dr. Brian Hammer, Assistant Professor, for the CETL/BP Junior Faculty Teaching Excellence Award. Brian has been teaching at Georgia Tech since Fall 2009, as the sole instructor in senior-level elective courses such as Biol 4608 Prokaryotic Molecular Genetics, and as a co-instructor in Biol 1510, the first-semester Introductory Biological Principles course. I have been fortunate to observe his teaching as his co-instructor for Biol 1510, and also in my capacity as the Director of Teaching Effectiveness for the School of Biology.

In both the large freshman lecture class and in the senior level elective classes, Brian seizes every opportunity to enliven the classroom with illustrations, examples, and even physical objects from his research on *Vibrio* species, including the species responsible for cholera. In one class, he brought and passed around Petri plates from his lab with blue and white colored bacterial colonies, as concrete examples of how a particular gene cloning technique works.

Brian's classes always engage the students. In one class I observed, he posed a question and asked students to write their answers on an index card, then had the students display their answers, and finally pair up to discuss their differences. He regularly calls upon students by name to answer questions and grades their verbal answers on the spot. As a result, his students come to class prepared. He makes minimal use of Powerpoint slides, and prefers dynamic illustrations, where he interacts with students while he draws and revises. He works hard to understand where his students have the greatest difficulties, and to address them. Despite his rigorous exams, Brian consistently receives some of the highest student evaluations.

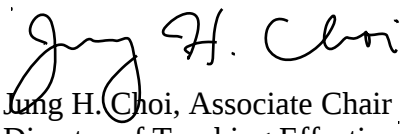
Last summer (2013), Brian attended the National Academies Regional Summer Institute, a week-long workshop where faculty learn the principles of scientific teaching grounded on evidence from discipline-based education research, and design and demonstrate a lesson using backwards design, complete with learning objectives, formative and summative assessment, and student-centered learning activities. He has taken these lessons to heart, and works to infuse them in all of his classroom teaching, as I have observed. He also actively participates in our science education research journal club. Clearly, Brian cares deeply about effective teaching and learning.

Brian is also a wonderful mentor to undergraduate students in his research laboratory. His laboratory is adjacent to my office. I have overhead many impromptu one-on-one sessions where he is patiently tutoring, explaining, motivating, and getting excited along with his students. His is one of the most sought after labs for students seeking undergraduate research experience. He has a superb track record of undergraduate students from his lab publishing papers, and going on to graduate school and medical school.

Brian has also volunteered his time to enhance the Georgia Tech undergraduate experience beyond the classroom and the lab. He is the faculty advisor for Georgia Tech's student chapter of the American Society for Microbiology. He co-advised the iGEM team that won a silver medal in 2012.

Brian is dedicated, passionate, innovative and highly successful in both teaching and research. Georgia Tech's students have already recognized his excellence by naming him the 2011 Georgia Griffin Undergraduate Faculty of the Year. Brian's continual efforts to improve his teaching and mentor his students makes him amply deserving of the CETL/BP Junior Faculty Teaching Excellence award.

Sincerely,



Jung H. Choi, Associate Chair
Director of Teaching Effectiveness

Endorsed by:

Terry Snell, Professor and Chair
Elizabeth Smithgall Watts Chair in Animal Behavior and Conservation

Teaching Reflection

My research experiences as a laboratory technician and later in my postgraduate training, rather than my course lectures or laboratory sections, inspired me to become a biologist. Georgia Tech fosters an interdisciplinary environment for faculty to thrive as teacher/scholars, so as an assistant professor I am passionate about enabling students to experience the excitement of discovery - as participants not as spectators. I promote active learning and critical thinking in my classrooms, my laboratories, and beyond campus. I engage students in the theory and practice of molecular microbiology while immersing them in the amazing and intricate relationships between microbes, their environments, and human health. I enjoy building biologists.

Critical analysis. Irrespective of whether students pursue a biology career or another profession, I believe the ability to critically evaluate data is a useful life skill. In my laboratory I model how to examine and critique previous results and conclusions from our laboratory and others to aid in experimental design. In the classroom, I focus on critical analysis by guiding students in dissection of the methods, assumptions, and conclusions of historic and recent research papers. I challenge students to propose alternative explanations and models for data presented.

Interdisciplinary collaboration. The benefits of learning to communicate with people who have different views are invaluable for scientists and non-scientists alike. Effective communication and collaboration with colleagues of different disciplines is essential for tackling the complex questions posed in modern biomedical research. I promote interdisciplinary interactions in my classroom by coupling students from the College of Science and the College of Engineering for group activities and oral presentations. In 2012 I served as faculty advisor for Georgia Tech's iGEM (international Genetically Engineered Machine) cross-disciplinary team of biology and engineering students, who earned a silver medal at the iGEM competition in Pittsburgh PA. In my own lab, my students and I benefit from my collaborations with biomedical and electrical engineers on our campus and public health experts at the Centers for Disease Control and Prevention. I believe student involvement in these endeavors broadens their capabilities and builds excellent team skills that will be used within and outside of campus.

Research skills. I think students must be familiar and comfortable with the basic tools available to biologists today. In laboratory sections, I engage students in interesting exercises using methods and technologies that challenge them to demonstrate their knowledge and comprehension of the subject matter. Application of these skills in laboratory exercises also fosters confidence in the mastery of new techniques as they become required. In my own research, I study disease-causing bacteria and their harmless "glow-in-the-dark" (bioluminescent) relatives that use a process of "quorum sensing" to coordinate behaviors by "talking" (via chemical signal molecules). In both the classroom and lab I commonly use and discuss techniques that exploit these visually captivating organisms to entice students, while discussing the fundamental concepts that underpin the biology.

Outreach and personal attention. My teaching does not stop at the door of my own lab and classrooms. I actively organize and participate in service and outreach programs that engage community members both on and beyond campus with provocative biology discussions and activities; opportunities reminiscent of hands-on learning that first brought me into science. I judge at local science fairs, and present activities at science expos. In my on-going NSF-sponsored outreach with City of Decatur schools, I connect K-12 teachers and their students with modern bacteriology research that stimulates curiosity about microbial cellular processes. Importantly, Georgia Tech students commonly join me on these outings, benefiting for the experience of serving as the expert. My GIFT-sponsored middle school teacher and I presented at the National Science Teachers Association meeting in Atlanta in 2012, sharing new biology exercises developed in my lab with educators from Metro Atlanta and beyond. Finally, when teaching in these and other settings, I insist on "knowing my audience" and personalizing my instruction to the diverse needs of the learners, using a range of instruction formats including written, oral, and visual.

Communication and the learning environment. Because good written and oral communication skills are an integral part of science, my lessons include both written assignments and oral presentations by students in front of their peers. The opportunity to present one's work or that of others helps build confidence and also provides the basis for articulating science in academic and societal settings. Finally, I strive to create a comfortable rapport with my students by being easily accessible; creating an informal, non-threatening, learning environment allowing even the most timid of students the opportunity to express opinions and actively participate. I have even become that Georgia Tech professor who each day in Prokaryotic Molecular Genetics plays a classic rock song related to the day's topic. Like I said, I enjoy building biologists.

ILLUSTRATIONS OF TEACHING EXCELLENCE AND IMPACT ON STUDENT LEARNING.

My commitment to teaching excellence is illustrated with examples below of my impact on student learning and by numerous activities on and off campus. Specifically, I indicate below: selected CIOS course comments, career ambitions of students from my lab, evidence of challenging students to research excellence, examples of my engagement with the community, and my prior recognition of teaching.

1. **CIOS (Course-Instructor Opinion Survey) comments.** CIOS comments from two courses I teach indicate my enthusiasm for the material, ability to engage students in critical thinking and problem solving, and my eagerness to assist and inspire struggling students (such as Christine Amuzie***** who wrote an accompanying letter of support). A sample of comments is provided.

   BIOL4608 Prokaryotic Molecular Genetics. undergraduate section (CIOS "Q10":4.5-5.0) taught 2009-pres

   "I can honestly say that Dr. Hammer has been one of the three best teachers I've had at Tech and this has been by far one of the most enjoyable classes I've taken at this school."

   "I really enjoy classes that are more about applying knowledge than just memorizing facts. As such, this was one of my favorite classes I've ever taken."

   "I learned more in this class than I have ever learned in any advanced biology class at Georgia Tech, and not just information but useful methods and ways of thinking to approach problems."

   "He was fantastic at helping us tie concepts together which is usually the hardest part about courses with such detailed information-heavy material as this one does. He challenges us to think critically and not just to memorize tons of specific information but to recognize patterns and general motifs that are seen across not only prokaryotes but even across eukaryotes (skills more than straight information). He pulls from multiple examples and not one particular organism the whole time."

   "He is a phenomenal teacher who has a great concern and care for his students. If anything, it would be the nature of the course material that made this class so difficult."

   "It challenged me more than any class I've ever taken and even though I'm not doing as well as I would have liked, I feel like I've actually learned a ton."

   "Dr. Hammer was excited to teach the course. He provided interesting papers to supplement reading assignments. He was able to take some very complex ideas and break them down into more understandable concepts."

   BIOL6608 Prokaryotic Molecular Genetics. graduate section (CIOS "Q10":4.4-5.0) taught 2009-pres

   "He was the best teacher I've had in US."

   "Easily one of the best courses I've taken at Georgia Tech."

   "Dr. Hammer is a dedicated teacher. He is wonderful."

   "Dr. Hammer you rock. You made this course so exciting that every day I looked forward to you class."

   "Knowledgeable, helpful, enthusiastic, kind, understanding, respectful, available for feedback, tries to explain in different ways and approach you from different perspectives for you to understand; when addressing questions in class, if you didn't understand it in one way, changes the wording of the question to make sure you understood it and thus help you answer it."

   "Very willing to give extra assistance. He went through lectures with me on his own time. Very excited about the course and the material, which made it easy to be engaged in class."

   "I can't stress enough how much this class helped me in my research. With little background in biology, I was able to learn and understand many of the tools and methodologies available in molecular genetics and directly apply things I learned to my work."

   BIOL3381 Intro Microbiology lab. (CIOS "Q10": 4.8) taught 2012

   "Dr. Hammer's lectures in the laboratory were so engaging and energized! He was able to clearly explain the details of our experiments and was very respectful."

   "His great enthusiasm for the course was addicting!"

2. **Career ambitions of students trained in my lab.** My students are inspired to engage in biology careers.

   11 undergraduate students. Each undergraduate student in my lab learns molecular biology and microbial genetics while working on an independent project. Several are now in graduate school (Brian Duke*****, UMass medical school, PhD program) and medical school (Maria Nellessen, University of Michigan Medical School, MD program). Of 3 current undergraduates, Joseph Elsherbini***** and Sarah Wilson are interviewing for PhD programs in Microbiology at prestigious institutions (i.e. Emory, MIT, Tufts Medical

School, and UC Berkeley). Several new students (1 MS in Biology, and 2 undergraduates in BME) are currently attending my lab meetings with an interest in joining my lab next semester.

5 MS students. Each MS student I mentored that graduated is now in medical school or working in the biomedical field. Charlotte (Wiest) Weaver is a software engineer at Janelia Farms, Chandni Desai is a bioinformatics analyst at the Scripps Research Institute, Vani Rajan is a bioinformatics engineer at EdgeBio, and Erika Sigman***** is currently in the MD program at the Mercer University School of Medicine. Current MS student Taylor (Westrick) Griswold was awarded a 16-week "APHL/CDC Bioinformatics in Public Health" fellowship to work with my collaborator Dr. Cheryl Tarr at the CDC in spring 2014.

4 PhD students. In addition to serving on 12 PhD committees (including those of engineering students like Daniel Watstein*****), my first two PhD students defended in spring of 2013. Both are in postdoctoral positions at top tier research institutions; Dr. Xiaonan Zhao at Rockefeller University and Dr. Elena Antonova at UC Berkeley. I currently mentor two 3rd-year PhD students, Samit Watve and Eryn Bernardy.

2 postdoctoral researchers. My first postdoc, Dr. Patrick Bardill, is now a full-time academic professional in the School of Biology at Georgia Tech; while Dr. Jacob Thomas is a research scientist in my lab.

2. **Providing mentees with opportunities to excel.** I challenge my students to seize opportunities to demonstrate excellence.

   President's Undergraduate Research Awards (PURA). Several of my undergraduate students (Brian Duke*****, Sarah Wilson and Joseph Elsherbini*****) have applied for and received PURA research support.

   Research Experience for Undergraduate (REU). Georgia Tech undergraduate Eryn Bernardy was a summer REU student who then joined my lab as a PhD student. REU student David Hu from Swarthmore returned to his campus where he joined the lab of a biochemistry colleague of mine.

   Pre-Teaching Summer Undergraduate Research Experience (PT-SURE). Undergraduates Kajal Patel, Susie Lee, and Andrea Crews each had a paid research experience interacting with my lab members and GIFT teachers to develop and implement hands-on K-12 science activities.

   Association of Public Health Labs/Centers for Disease Control (APHL/CDC) Fellowship. Taylor (Westrick) Griswold received an APHL/CDC fellowship to work with my CDC colleague this spring.

3. **My teaching impact extends beyond the School of Biology and into the community.** In addition to volunteering as a judge at local science fairs and presenter at science expos with my students, I have a long-term outreach program with K-12 teachers in the City of Decatur Schools.

   Georgia Intern-Fellowship for Teachers (GIFT). Since 2009 I have supported several teachers (Shannon Stewart, 5th grade; and David Taube, 7th grade) for 7-week paid internships in my lab where we developed hands-on STEM activities with PT-SURE students, and interacted with lab members. My students and I assist with lessons at their middle schools; and in 2012 Mr. Taube I presented several activities to ~ 100 participants at the National Science Teachers Association (NSTA) meeting in Atlanta.

   International Genetically Engineered Machine (iGEM). I served as faculty advisor in 2012 to an interdisciplinary group of biology and engineering undergraduates who earned a silver medal at iGEM synthetic biology competition.

   American Society for Microbiology (ASM) student chapter. Since 2010 I have served as the faculty advisor for Georgia Tech's student chapter of the ASM.

5. **Recognition of teaching commitment.** I have been recognized for teaching on campus and beyond.

   2011 George Griffin Undergraduate Faculty of the Year Award recipient. I was nominated by Travis Wagner***** and received the "Faculty of the Year" award in 2011 by the Student Government Association.

   2012 Thank a Teacher recipient. I was a "Thank a Teacher" recipient in 2012.

   2013 National Academies Teaching Fellow. I honed my teaching skills as a teaching fellow at the 2013 "Summer Institute" at the University of Georgia sponsored by the HHMI and National Academies.

***** denotes name of a student providing a letter of support

Dear CETL/BP Junior Faculty Teaching Excellence Award Committee,

I'm writing to you in support of the nominee Dr. Brian Hammer. My name is Brian Duke and I'm an alumnus of the Georgia Tech Biology program. I attended two courses taught by Dr. Hammer, and I participated in the undergraduate research program in his lab over the course of a year. I am currently a graduate student at the University of Massachusetts working towards a PhD in immunology, and I owe much of the success in my academic career to the advice, opportunities, and support of Dr. Hammer.

As Dr. Hammer's student in two courses, I was deeply impressed with the knowledge and excitement he brought into the classroom. The courses were distinct in their style, and they each encouraged me to learn in new ways. The first course I attended was a siRNA 'journal club' where we discussed pre-selected scientific papers as lead by a different pair of students each class. It was through this course that I truly started to learn how to analyze and discuss scientific literature as a new source of information and work to effectively present that in a comprehensive presentation. Dr. Hammer encouraged less experienced students to talk with him and discuss the paper prior to presenting and gave us helpful advice for our presentations. He also gave us the recordings of our presentations and allowed us to critique ourselves as a method to improve our presentation skills.

The second course I attended was prokaryotic molecular genetics. This was more of a traditional lecture style course. Dr. Hammer's enthusiasm about the material he taught made it a much more enjoyable learning experience. For our tests, Dr. Hammer would give us questions that were scenarios one might experience in the laboratory setting. Instead of encouraging rote memorization, it challenged us to use what we learned throughout the class to pursue new information and try to solve realistic problems. This really stuck with me because it was the first test that I had taken that really helped develop thought processes that I still use today.

As an undergraduate research student in his lab, I got hands on training and guidance from Dr. Hammer. There, I learned many basic scientific skills and techniques that still serve me well today. He gave me advice and helped me set goals for a career in scientific research. He encouraged me to speak up and ask questions during lab meetings. By the time my year in his lab was over, I was able to offer insightful experimental ideas and interpretations of data for both myself and other members in the lab. When I was applying for graduate schools, I was quite clueless on where to look or what to expect. Dr. Hammer was an excellent source of information for where I could apply and what programs I should apply for. Additionally, he offered great advice and coaching for my graduate school interviews. Without his time and efforts, I don't think my interviews would have gone nearly as well as they did!

Outside of the Georgia Tech campus, Dr. Hammer has taken part in excellent public outreach. He had a charter school teacher work with the lab over the course of a summer to develop new and exciting science teacher's plan. Additionally, in my

time working in Dr. Hammer's lab, there were multiple occasions in which he visited surrounding schools and taught a lesson about bacteria. I attended one of these trips and helped the elementary school students draw out a design in a petri dish using bioluminescent bacteria. This was a great experience for me as it showed me how much fun it could be encourage children to be curious and enjoy science.

I believe wholeheartedly that Dr. Hammer is deserving of this award. He is a wonderful teacher and mentor, and will always be one of my role models. I'm certain that I am not the only one who has appreciated the dedication and excitement for teaching he brings with him every time he steps into the classroom.

Brian Duke

Graduate Student

University of Massachusetts Medical School

January 31, 2014

To whom it may concern,

I am writing to express my support for Dr. Brian Hammer to receive the an award for his outstanding teaching. I graduated from Georiga Tech with my B.S. in Biology in December 2013, and have had the pleasure of working with Dr. Hammer since Spring of 2009. In that time he has been my boss, my teacher, and most importantly my mentor.

Dr. Hammer gave a short talk on his work to my GT1000 class my first semester at Georgia Tech. I reached out to him to see if it would be possible to do research in his lab. I became his first undergraduate student, starting in his lab his second semester at Tech. I learned an incredible amount my first semester because he took lots of time to train me himself and answer all of my questions. He pushed me to give a talk my first semester at the first annual Undergraduate Research Kaleidoscope. I was able to practice in front of him several times and get lots of feedback on creating the slides. He attended the talk and was incredibly supportive.

I left Georgia Tech for two years after my first semester in the Hammer Lab to do AmeriCorps through the Hands On Atlanta program in Atlanta Public Schools. When I came back to Georgia Tech, the Hammer Lab had grown. Dr. Hammer graciously allowed me back into the lab and continued to mentor me. I presented regularly at our lab meetings, and had real expectations placed on me which forced me to continue learning new techniques and read relevant literature deeply. In all of my classes I felt I had a huge leg up because I had been reading primary literature, doing research hands on, and presenting it on a frequent basis. Dr. Hammer continued to raise his expectations of me, while at the same time being very supportive and understanding when I needed to work less specific weeks to focus on my classwork.

In Fall of 2011, I took Dr. Hammer's Prokaryotic Molecular Genetics class. The class is crosslisted as both Graduate and Undergraduate, and had students not only from the Biology Department, but also from Computer Science, Chemistry, and Biomedical Engineering. The lectures were extremely polished, and Dr. Hammer had high expectations of the students. He did a great job of teaching the material to the diverse audience. What impressed me most about the course were the take home tests. They managed to assess the material we learned in class while also requiring critical thinking and synthesizing information from many chapters in order to arrive at the correct answers. The questions were truly problem solving rather than just regurgitation.

In Spring of 2012 I participated on Georgia Tech's iGEM team. iGEM is a synthetic biology competition that culminates in a Jamboree where students from around the country give talks on their project and present posters. Our team was mentored by Dr. Hammer, Dr. Patrick Bardill, and Dr. Mark Styczynski. He again spent so much time helping our team prepare for the competition. We were able to practice our full presentation at least three times and get feedback. We received a silver medal at

the regional Jamboree.

My last semester Dr. Hammer gave lots of advice on graduate school applications and my application for an NSF graduate fellowship. He also wrote letters of recommendation for all of my applications. I now have interviews with MIT, Cornell, and Tufts, and I am incredibly grateful to Dr. Hammer for all of his advice and help throughout the application process, not to mention the years of mentoring and training. I recommend him wholeheartedly for this award, he has time and again gone above and beyond as a lab manager, a teacher, and a mentor.

Thank you for your time and consideration,

Joseph Elsherbini

To the selection committee for the CETL/BP Junior Faculty Teach Excellence Award:

Being an educator, especially at the university level, can often be a thankless and stressful job. As a student, frustration builds when a professor is more focused on their research and next grant than teaching you the fundamental skills on which their course is based. There is no uniqueness to this story. However, every now and then you get a professor who is different. One who cares more about you, your learning, your development, and success than the grant proposal that is sitting on their desk. For me, that professor was Dr. Brian Hammer.

I first had Dr. Hammer for Prokaryotic Molecular Genetics, an upper level biology course that delves into the complexities of microorganisms and the basis on life. To this day, it was one of the hardest classes that I have ever taken. I worked countless hours on homework and test, but never once minded because of the enthusiasm and passion that Dr. Hammer embodied for the subject and instilled in us as students.

When I was struggling in the course and working with Dr. Hammer in his office he iterated to me that to be successful in the course- and life- I couldn't think like a student, I had to think like a scientist. It was at this point I began to truly appreciate the excellence of his teaching. His lectures were designed to integrate the material and real world applications of current cutting edge research in a very unique and innovative way.

I enjoyed the experience of his class so much, that I registered for every class he taught that fit my schedule in my remaining semesters at Tech. While I knew they were challenging, I knew that he would provide an experience of personal and academic growth that was well worth the endeavor.

After I finished at Tech and was looking for my next opportunity, Dr. Hammer still took time to invest in me and help me grow. Whenever I needed motivation or an encouraging word, Dr. Hammer was one of the first people I contacted. He was never hesitant to make room on his calendar for me to help mentor me and provide advice. In our conversations, he continued to provide advice about life and career. He shares with his students all of their success and failures and helps us learn from our failures in a constructive way. He promotes self awareness and personal reflection for improvement and understands the benefits of constructive criticism and hard truths.

Dr. Hammer has, and will always be an influence in my life. While I was working at the CDC, it was the knowledge from his class and experiences that I gained through him as a professor and mentor that I used most. Now that I am in medical school, I

still call upon information from his class, but now more so the skills that he taught me about thinking like a scientist.

While being a physician and professor are seemingly very different professions, at the core of both of them is service, mentorship, and preparing the next generation to carry on the work. As I move along in my education and career, I work to emulate the principles, the enthusiasm, and the passion of Dr. Hammer. In the end, if I can be half the professional as Dr. Brain Hammer, I would consider myself an incredibly successful man.

In Progress and Service,

Glenn Travis Wagner

Glenn Travis Wagner
Alumnus | Georgia Institute of Technology
BS Biology | School of Biology
BS Applied Language and Intercultural Studies | School of Modern Language

CETL/BP Faculty Teaching Excellence Award Committee
266 Fourth Street
Clough Commons, Suite 457
Georgia Institute of Technology
Atlanta, GA 30332-0383

February 3, 2014

To Whom It May Concern,

It is my honor to write a letter in support of Dr. Brian Hammer for the CETL/BP Junior Faculty Teaching Excellence Award. As a former student and mentee of Dr. Hammer's, I believe his enthusiasm for teaching, devotion to mentoring, and outreach to the community makes him an exceptional professor at Georgia Tech.

I first met Dr. Hammer five years ago when he was my professor for a molecular genetics course. From day one, his passion for teaching was palpable. He encouraged students to marvel over discoveries made in the field of molecular genetics by researchers such as Dr. Jon Beck, with just "toothpicks and logic." He was amazed at the tiniest details of organisms we often cannot see, and for the first time, I became interested too. Dr. Hammer's teaching style was dynamic. He did not just sit in front of the class and lecture; he moved back and forth across the room, sometimes waving his hands in excitement. As students, we did not just sit and listen to him talk; he engaged us by calling on us at random, probing for our insight. I had to be prepared to speak in class, and although I was nervous for most of the class period, I believe that it helped me change from a silent listener in the back of the classroom to an active participant.

I have had many professors in my life who seemed enthusiastic about teaching, but when it came time for help outside of the classroom or even a quick discussion after class ended, they were inaccessible or busy with the demands of their research. Dr. Hammer was not only a great teacher in the classroom, but he was also available after class. In fact, there was seldom a time when his door was not open. I remember speaking with Dr. Hammer in his office after the first test. I had not done as well as I had hoped and wanted to clarify some topics. Dr. Hammer welcomed me in his office, turned away from his computer and motioned for me sit at the table in his office with him. After he patiently went through the exam questions with me, he asked me if there was anything he could do differently to facilitate my and other students learning. I believe this is one of the qualities that make him a unique teacher and individual: his willingness to listen to feedback from students and alter his teaching if necessary.

After completing the course, I decided to do research under Dr. Hammer. I wanted to work with someone so passionate about their research. Dr. Hammer became my mentor during this time, and although he encouraged me to think about science research as a career option, he valued my ambition to go to medical school. During this time as my mentor, he made a lasting impression on my own perspective on life. He emphasized to me that although it is important to be passionate about career, it is equally important to make time for loved ones and life outside of work. I needed that advice because at the time I was working a full-time job and working towards a master's degree. I had neglected the importance of balance between work, school and family. Now, five years later, his advice still impacts me as I try to strike a balance between medical school and family.

Dr. Hammer is an excellent mentor, researcher and teacher, but what impressed me most about him was seeing his involvement with the community. Once a semester Dr. Hammer would

take Georgia Tech students to a 5th grade class of a local school and give an interactive lecture on the "good" and the "bad" microbes. He engaged the young students by letting them sample various items in their classroom and plate them on agar. They were amazed at the microbes all around them. Through this, it became clear to me that Dr. Hammer is a person who reaches beyond his expected role as a professor and researcher by engaging the community around him.

For all of these reasons, I believe Dr. Hammer to be an excellent candidate for receiving the CETL/BP Junior Faculty Teaching Excellence Award. He is truly an outstanding professor, and I know he will continue to positively impact Georgia Tech students through his teaching, the field of science through research, and the community through his outreach to young students.

Sincerely,

Erika Sigman

Erika Sigman, M.S.

To whom it may concern,

When Dr. Hammer asked me to write a letter of support for a teaching award, I happily agreed. As a graduate student in the department of Chemical & Biomolecular Engineering, I had heard of the award through our internal news because a professor in our department this award every year since I enrolled. Despite that, I'll admit that I was unfamiliar with the details of the award. After looking into it, I realized that I had the good fortune to take classes with three previous recipients of the award. I knew about Dr. Styczynski and Dr. Filler because I went through both of their classes as part of the standard doctoral curriculum in our program and am currently advised by Dr. Styczynski. I had also taken advanced microbial physiology with Tom DiChristina and was not surprised to learn he had also been so honored. All three professors have distinctive styles of teaching and interacting with students but were universally effective at communicating the core concepts of their courses and passion for their work. I can easily say the same of Brian Hammer.

I first interacted with Dr. Hammer in his prokaryotic molecular genetics course. He would start each morning with music playing on the computer as students filed in. Occasionally it was simply music he enjoyed, but most of the time it was directly related to the lecture—the theme to the 90s X-men cartoon for a lecture on mutations or the Transformers theme for bacterial transformation. At first I thought it was corny, but it proved a light-hearted and effective method to set the tone and focus students on the day's topic. Instead of just teaching genetics concepts, Dr. Hammer liked to tell stories with his lectures, explaining how scientists originally discovered genetic features and mechanisms. He would detail labs' journeys of discovery, describing what techniques and experiments were employed to learn what we know today. Part of the material for the lectures was often covered in assigned reading, and Dr. Hammer would build up the story and then randomly select students to explain the key experimental result or the clever experimental design that revealed a crucial piece of information about the subject. If a student was uncertain about some topic or detail, he'd get the class involved in a discussion of how or why things worked, using points of confusion as teaching tools to ensure everyone really understood. Whenever he got the opportunity, he would tie in the subject to his lab's projects, explaining how his students put those same techniques or concepts to practical use to discover new biology. The most memorable feature of Dr. Hammer's class was the exams, which embodied his approach to teaching. Each question was asked as if we were students in a biology lab conducting an experiment. We would either be tasked with interpreting experimental results or describing how we'd design a new experiment to test a hypothesis. These were easily the most effective exams in any course I've taken. Not only did students have to truly understand the concepts covered to explain the results, but, at least for me, the questions generated legitimate interest in the subject as if I were actually invested in the results. I looked forward to sitting down and knocking out the four hour take-home exams because the process mirrored what I did every day. The way the questions were posed we couldn't really know the answers, but we could figure them out. They were a great simulation of actual laboratory research.

I cannot stress how influential Dr. Hammer's class was. I happen to do synthetic biology in *E. coli*, so the material in his course was directly applicable to my project. More importantly, he taught me how to think about problems in genetic systems, directly influencing how I approach my project and design

experiments. I spoke with him numerous times outside of class about how what we were studying might be directly applied to synthetic biology and specific aspects of my project. When I encountered problems in my own work with apparent cellular toxicity and genetic instability with a construct I had made, Dr. Hammer set aside the time to look at my results and discuss my best options. He also helped me find other electives I could take that would help me with my project and was responsible for me taking an excellent course with Dr. DiChristina. My positive experiences with Dr. Hammer ultimately led me to ask him to serve on my doctoral committee. I certainly cannot speak to all of the selection criteria that have been used to judge for this award in the past, but—save for my advisor—Dr. Hammer has had more influence on my graduate education and my doctoral project than any other faculty member at Georgia Tech. I wholeheartedly support his nomination for this award.

Sincerely,

Daniel Watstein

Graduate Research Assistant

Styczynski Lab

Chemical & Biomolecular Engineering

Georgia Institute of Technology