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February 2, 2014

Dr. Joyce Weinsheimer  
Center for Enhancement of Teaching and Learning

Dear Dr. Weinsheimer:

I am delighted to nominate my colleague and co-instructor, Dr. Chrissy Spencer, Academic Professional in the School of Biology, for the CETL Undergraduate Educator Award. I have had the genuine pleasure of co-teaching Biol 1510 Introductory Biological Principles, for three semesters (Fall 2010, Fall 2011, and Fall 2012), with Dr. Spencer. We attended nearly all of each other's class sessions, so I have first-hand knowledge of Dr. Spencer's teaching excellence.

Biol 1510, with enrollments of over 200 students, was Dr. Spencer's first experience teaching a class larger than about 25 students. She rose to the challenge magnificently. She projected energy and enthusiasm in the large lecture hall. She learned how to use clickers for both in-class formative assessment and for exams. She never let technical problems (dead projector, dying microphone, etc.) appear to faze her, overcoming and sidestepping such issues with grace and infectious humor.

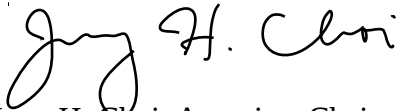
Most importantly, she rapidly and radically adapted her teaching from year to year to become far more student-centered, with active learning as the core principle. She started in Fall 2010 with mostly lecture interspersed with occasional clicker questions, and now she has activities to engage students in every class session. She borrowed, adapted, and created some of her own in-class case studies for students to explore and learn not just the basic concepts, but their interconnections and applications. She revised the group projects in the course to have students make videos and post them on YouTube and the class web site, with peer viewing and evaluation. These were highly successful, with some very creative videos explaining recently published research on course topics.

Besides Biol 1510, Dr. Spencer has converted Biol 2345 Genetics Laboratory from majority computer simulations to a hand-on wet lab experience. She leads Biol 2355 Honors Genetics Laboratory students through a project-based investigatory laboratory experience using her own research system, experimental evolution in *Escherichia coli* bacteria, to explore basic genetics questions, and thereby cover basic genetics techniques. In Biol 2400 Math Models in Biology, students engage in group problem-solving throughout the semester and model a biological question in a final group project. In all of her classes, Dr. Spencer brings a student-centered approach. She coaches struggling students to improve their study habits. In Biology 1510, she organized and met with a group of student representatives for mid-course focus-group type evaluations and discussions regarding any student issues and ways to improve the student learning experience.

Dr. Spencer is also a prominent member of the community of teacher-scholars in the School of Biology and campus-wide. She attended the 2012 National Academies Regional Summer Institute. This is a week-long workshop where faculty from research universities learn about Scientific Teaching, active learning, mentoring and assessment. They practice backwards design by developing a teaching module complete with learning objectives, formative and summative assessments, and student-centered learning activities. She and Dr. Linda Green put on a series of workshops the following academic year for Biology faculty and postdocs about Scientific Teaching and active learning. Drs. Spencer and Green also co-founded the Grapes of Wrath book club, co-sponsored by CETL, where interested faculty from all across campus meet to discuss a book on teaching and learning.

All of the above are in addition to her Academic Advisor duties, for which she won the Outstanding Academic Advisor award last year. Because of her dedication to teaching and learning, and her focus on student outcomes, I am proud to nominate Dr. Chrissy Spencer for the Undergraduate Educator Award. I hope I get to co-teach with her again next year!

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

# **Nomination of Dr. Chrissy Spencer for the 2014 Undergraduate Educator Award**

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2 February 2014

Dear Joyce and the CETL Awards Committee,

As I wrap up one of the busier months that I've had as teaching faculty, I find that this opportunity to reflect on my teaching practice as part of the CETL Undergrad Educator Award nomination is not only welcome but necessary. This January I've been the lead instructor in three courses—a large-lecture section of Introductory Biology (BIOL 1510) and two different core Biology courses that both meet on Tuesday/Thursday and are new preps for me. Needless to say, it's been a busy month!

Whenever I feel overwhelmed with teaching, I think back to my first semester teaching full time—it was at Lees-McRae College in North Carolina in 2008. I'd had no exposure to Teaching and Learning beyond what I had taught myself and observed from others. That semester was tough. I taught three classes and spent all of my free time preparing beautifully crafted lectures. I lived at my kitchen table and barely got out to see the beautiful Appalachian Mountains I'd moved to for the job. I made almost no new friends among my new colleagues in that first semester. I told one of my best friends that she should not come visit me on her maternity leave because I just didn't have time. Reflecting back to a time when I couldn't breathe for the need to be prepared to impart knowledge to others, I am so grateful for all that I've learned in the interim about effective methods of student learning.

Thankfully, this current semester—while busy—is nothing like that first one. I attribute this shift in perspective not to the passage of time, though six years have gone by, but rather to how I approach teaching, or rather learning, even in courses new to me, when my gut instinct is still to craft that beautiful lecture to help myself learn the material and “know the answers.” If prepping that lecture will help me learn it, then the act of preparing materials is what my students should do to learn that material. Now, in my new courses, I am fearless to have my student try new things. Last week, I had my 3000-level students work in group with their texts to answer a set of questions based on my learning objectives for them. In essence, I moved the learning off myself and onto them. In this, I am still learning loads of great Biology, and so are my students.

In my large-lecture Introductory Biology course, I've moved from lecture interspersed with clicker questions to case studies, including one developed by my team at the Southeast Summer Institute (SSI) co-sponsored by the Howard Hughes Medical Institute and the National Academies of Science. Our Intro Biology curriculum recently made the shift from clickers to Learning Catalytics, and so far this semester I am enthusiastic about the flexibility of this platform and how engaged students—non-majors for the most part—are when answering open-ended questions. I've had groups submit short answer and even draw phylogenetic trees that explain their conceptualization of how species are related to each other, based on provided evidence. Learning catalytics allows me to see how individual students or groups are progressing in their biological thinking, and this progress is easier to estimate when students use their own words rather than attempting multiple choice questions. This platform's functionality will also help with another project I've been working on—increasing the performance of underrepresented minorities in Intro Biology, which I'll elaborate on below.

From a series of sources, including CETL workshops, Teaching Scholars, teaching CETL 2000, and attending the SSI, I became aware that underrepresented minorities in Biological Principles (BIOL 1510) were more over-represented in students underperforming on the first midterm exam, of four. After the exam, I personally invite all students who underperformed to create an OMED study group, tutored for the past few semesters by an African-American graduate student from Biomedical Engineering. My personal invitation seemed to have a second effect. By emailing each student, I implicitly communicated to them that I cared how they did in the course, and then I started seeing underrepresented minority students attending my office hours, even those in majors outside Biology, even outside of science.

Within the Biology major, I have stepped into a regular rotation to teach our graduate and undergraduate TA training courses (CETL 2000 and BIOL 4697), which is very rewarding and allows me to reconsider my own teaching practice, as co-teach with new instructors in the Biology curriculum. Last semester I worked with my colleague Dr. Shana Kerr to add a 1 hour Bioethics Advanced Reading Course to supplement our usual 2 hour Bioethics biology elective, a very popular course. Shana and I donated our teaching time to this effort above our usual teaching loads because we saw a need in our program and the potential value to our majors. The course was immensely rewarding for us and for the students, according to their CIOS comments and ratings. I enjoyed it all the more because I sometimes miss the liberal arts format of Socratic debate and discussion of ideas that are larger than the science of Biology. The connections we made with this group of students were empowering to the students and to us. Hearing students discuss ethics and rise to challenges in that discussion revealed the thinking that our students are really capable of, and I'm learning that our majors have amazing breadth and depth of thought on bioethics issues, and other issues.

In reminding myself of the journey to shift from teacher-centered to student-centered education, to forge connections with students, and to donate time to teach in an area that lets students show their potential outside the core area of biology knowledge, I have also been reminded in a timely way of why I value this job so highly. I appreciate my nomination for this award from the School of Biology, and hope that I continue to grow in my appreciation for student learning and the best teaching practices that accompany good student learning.

A handwritten signature in cursive script that reads "Chrissy Spencer". The signature is written in black ink and is positioned above the typed name and title.

Chrissy Spencer, PhD  
Academic Professional  
Georgia Tech School of Biology

1) Teaching Video – Teaching with Chili Peppers

<http://www.youtube.com/watch?v=5wgf1fR6Fv2Q&feature=share&list=PLE7C957F167F93126&index=13>

This short video explains the teaching “tidbit” on evolution that my team at the Southeast Summer Institute created in Summer 2012. Filmed by Jennifer Leavey, it showcases student interactions in the classroom and includes a brief interview with a group of students as they have their “Aha!” moment about the concepts conveyed by the activity.

2) Sample Student video – Diatoms sequester carbon

[http://www.youtube.com/watch?v=L-Kjol\\_GM7Q](http://www.youtube.com/watch?v=L-Kjol_GM7Q)

<http://youtu.be/HMRbZVB-mDI>

<http://www.youtube.com/watch?v=ImoWCJDpPSo>

Beginning in Spring 2012, student projects in Biology 1510 shifted away from the formal “oral presentation” format and toward a format that allows for more creative presentations of selected papers from the biology published literature. Students were invited to crowd-source their own video project rubric on Piazza.com. Groups then tackled their assigned papers and presented key findings in a 3-5 minute video. A few of the more creative examples are highlighted above.

3) Selected Conferences, Presentations, & Professional Development

- 2013 PKAL Atlanta Regional Network Fall Meeting, Georgia Tech, Atlanta, GA. Session Organizer and Presenter, Organizing Committee Member.
- Tech Gets Medieval Symposium, 2012, Georgia Tech, Atlanta, GA. Presented a teaching example using modern human evolutionary genetics and making links back to the Black Death in Medieval Europe.
- Evolution Meeting 2012, Ottawa, ON, Canada. Poster Presentation: Piazza, an on-line learning community, used in large lecture courses to support student learning and in-class engagement.
- Association for Biology Laboratory Education 2012 Conference, Chapel Hill, NC. Participant.
- Southeast Summer Institute 2012, Athens, GA. (Team development of Chili Pepper activity)
- 2011 Panelist, Meeting of the Hesburgh Fellows, Center for Teaching and Learning, Georgia Tech, Atlanta, GA.
- Class of 1969 Teaching Scholars Program, Center for Teaching and Learning at Georgia Tech, Atlanta, GA.

4) Thank-a-Teacher notes selected from various semesters

Fall 2012 – BIOL 1510: “I just wanted to say thanks for being such an engaging professor! You have a rare, energetic positivity that doesn't often radiate from professors at this school, and it put me in a good mood to learn biology every lecture. I've always like biology and so far I feel like I've learned a lot of really cool stuff. This is a heartfelt thanks from one of the quiet back-row kids!”

Fall 2011 – BIOL 1510: “I took honors bio during my high school freshman year and while we covered much of the same material and even used the same textbook, I learned so much more from your class. Additionally, it was much more interesting. I am confident that it will stick w/ me more than high school's did.”

Fall 2010 – BIOL 1511: “Thank you for a wonderful first semester! I learned so much from your class and I am confident that I now have a solid foundation for my upper level biology classes. My favorite topic of the class as your unit about genetic and cystic fibrosis...”

Spring 2013 – BIO 4697: “You have always went above and beyond to offer your guidance and assistance, and have truly enhanced my Georgia Tech experience I have enjoyed having the opportunity to work more

closely with you this year from 4697 and I am grateful for all of your advice regarding reaching. Thank you so much for all that you do!”

Spring 2013 – BIOL 1510: I would just like to send a short letter of gratitude for you as a professor. You demonstrate the qualities I admire in a teacher, which honestly are rare to find all in one person. You have been passionate, engaging, accessible, and fair. I appreciate your efforts in lecture. I can only ponder how hard a morning lecture audience can be—you are basically expected to put on a one-woman show! You, however, take the opportunity to engage students with questions and activities and your passion for biology and a certain care for presenting the material comes across during that hour and the positive effects on my learning remain. You truly make a difference through teaching. Thank you!”



**Linda E. Green, Ph.D.**  
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February 1, 2014

To the Selection Committee,

I am delighted to I write on behalf of Chrissy Spencer, our School of Biology nominee for the CETL Undergraduate Educator Award. Chrissy is completing her fourth year on the teaching faculty at Georgia Tech, and I couldn't be more pleased to recommend her for this award. Chrissy has helped to implement curriculum improvements in multiple courses, sponsors two new student organizations, and greatly improved the academic advising program within and outside of the School of Biology. She is a valuable asset to our School and Institute.

There are several courses that have directly benefited from Chrissy's creativity and strengths in diverse pedagogical approaches. She has developed new in-class problem-based activities for our 200+ introductory biology course, as well as debuted a new approach to the cumbersome and admin-intensive group project assignment that exists in both introductory biology courses. This project involved an outside-of-class group effort to create a powerpoint presentation on a recent research topic. Chrissy saw an opportunity to foster greater student creativity and suggested video submissions. The idea has been highly successful, freeing students to deviate away from a slide presentation to many different types of interactive presentation formats. The process also instigated an evaluation by the intro biology faculty to consider what our learning goals are for the project, helping to substantiate the administrative effort to organize small research groups in large-enrollment classes.

She regularly incorporates local and regional professional development opportunities into her schedule to continue to brainstorm and learn about new methodologies that can be incorporated into our program. In particular, she has collaborated with the intro bio faculty to identify ways to better meet the needs of a very diverse audience. The intro biology course that Chrissy teaches is ~ 85% non-majors (~66% engineers). Consequently, the audience in the intro biology curriculum presents multiple challenges in the classroom in regards to student motivation, preconceptions, scientific literacy, and engagement. Chrissy has been successful in balancing the demands on the curriculum from such a challenge.

Chrissy has implemented new pedagogical approaches to improving student learning in every course she has undertaken. She has become involved in our TA pedagogical training course, developed new units of problem-based learning in our Math Models in Biology curriculum, worked with clickers not only in the lecture but also converting from scantron to clicker-based exams in Intro Biology, revised our regular and honors genetics laboratory curriculum to include more inquiry-based and project-based units, and taught a 60-seat core Ecology lecture course using a modified problem-based learning approach. Chrissy has adapted to multiple teaching approaches held by a variety of co-instructors across these courses. She can adeptly address conflict and arrive at satisfactory compromise when working with multiple faculty.

As you can see, Chrissy is highly valued by the faculty and students in the School of Biology for the positive impact she has had on our curriculum and students' lives. She is continually working on



curriculum development and revision across our courses. She has collaborated with me to develop a faculty book group with CETL, bringing together faculty from across campus to share teaching experiences. We have also co-led a series of workshops for the School of Biology faculty and postdocs on the principles of scientific teaching. Chrissy is passionate about sharing her experiences in the classroom with other faculty, and helping more colleagues find the enjoyment and create the impact that Chrissy experiences in her courses.

I believe Chrissy is an excellent choice for the CETL Best Undergraduate Educator Award.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda E. Green". The signature is fluid and cursive, with a long horizontal stroke at the end.

Linda E. Green, Ph.D.  
Senior Academic Professional, School of Biology  
404.385.6517



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2/3/14

Dear Selection Committee,

I am writing to lend my support for Chrissy Spencer's nomination for the CETL Undergraduate Educator award. I hired Chrissy into her current position as an Academic Professional in the School of Biology and have seen her progress as a leader in teaching over the last few years.

Upon arriving at Tech, Chrissy became immediately involved in teaching-related programming on campus, serving as a CETL teaching scholar, attending regional workshops on mathematical biology, and helping to found and organize the CETL book club. Her commitment to teaching excellence is reflected in the classroom, where I have had the pleasure of observing her teach on many occasions as her co-instructor.

Chrissy is committed to student learning and embraces evidence-based teaching practice in her courses. She makes regular use of active learning techniques such as group problem solving and case studies, and develops many of the activities she uses. She also embraces the use of educational technology. She was an early adopter of Piazza, and regularly used clickers and is now using Learning Catalytics. Of note, Chrissy invested large amounts of time modernizing the group projects assigned in BIOL 1510 and morphing them into video-based assignments. She even presented the results of these activities at the International Evolution Meeting in 2012 in Ottawa.

Chrissy regularly teaches BIOL 1510 – Biological Principles, our largest course, but she has also taught almost every course in our core curriculum including Honors Ecology, Mathematical Models in Biology, Evolution, Senior Seminar, and even Microbiology and Genetics Laboratory courses. She is a versatile instructor who is not afraid of the challenge of teaching material new to her.

Great teachers help their students develop the skills necessary to succeed academically and Chrissy is no exception here. Chrissy collaborates with OMED to create study groups for BIOL 1510 and is also a skilled academic advisor who works with her advisees to optimize study strategies and time-management skills.

I often walk by Chrissy's office to chat about teaching because we both work in the same building, but it is rare that she is available. The line of students waiting to meet with her during office hours is often out the door and she takes all the extra time that is necessary to make sure that her students understand the material.

In short, Chrissy is a committed teacher and a valued colleague and deserving of this recognition.

Sincerely,

A handwritten signature in black ink that reads "Jennifer Leavey".

Jennifer Leavey

Zimbra

jc7@mail.gatech.edu

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**Re: Nominating Dr. Chrissy Spencer for Undergraduate Educator Award**

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**From :** Blake Christianson <blakechristianson415@gmail.com> Sun, Jan 26, 2014 01:04 PM  
**Subject :** Re: Nominating Dr. Chrissy Spencer for Undergraduate Educator Award  
**To :** Jung H Choi <jung.choi@biology.gatech.edu>

Dear Dr. Choi,

Dr. Chrissy Spencer has been one of the most caring yet challenging professor I have had during my time at Georgia Tech. Through both Honors Biology my freshman year and Bioethics Reading Course last semester, I have had the opportunity to work with Dr. Spencer many times in a close setting. You can truly see how she impacts student's lives through her genuine interest in their future success. Her motivation is unmatched. Dr. Spencer exudes passion for Biology and that shines through in each of her classes. A student knows that she really wants them to achieve their goals while learning the complexities Biology entails. In her small classes she takes a nontraditional discussion approach which helps facilitate learning and innovation. Some of my most stimulating conversations during my studies occurred last semester in her classroom. She has given me advice many times for my future career as a physician, and I am very grateful. I can confidently say that Dr. Spencer is more than deserving for this year's Undergraduate Educator Award and welcome any further questions.

Sincerely,  
Blake Christianson

30 January 2014

To whom it may concern,

I am thrilled to write a letter of support on behalf of Dr . Chrissy Spencer for the Undergraduate Educator Award. Dr. Spencer was my professor for BIOL 1501: Introduction to Organismal Biology and BIOL 2355: Honors Genetics Lab. Dr. Spencer structured the genetics lab on problem-based learning. Each group had to define their own problem and study the required laboratory techniques used to solve the problem to ultimately develop and carry out our self-designed experiment. Throughout the semester project she provided us with detailed feedback to help us improve. She helped us learn that the experimental part of genetics is about understanding the strengths and limitations of various experimental techniques and using a combination of techniques to supplement each other and build enough evidence to support your argument.

Dr. Spencer not only teaches her students, but also mentors them. She has mentored me throughout my four years at Georgia Tech and has helped me succeed as a student here. Under her guidance, I was able to develop my curriculum vitae and apply for multiple scholarships within the School of Biology and even competitive national scholarships. Dr. Spencer genuinely cares about my success outside of class. She helped me throughout my application process which ultimately led to my success. I believe that this unique quality of Dr. Spencer makes her an outstanding Undergraduate Educator.

Dr. Spencer's commitment to teaching, mentoring and excellence makes her a truly exceptional Professor. I have no doubt that she is the perfect candidate for the Undergraduate Educator award. She is a true asset to the Georgia Institute of Technology and to the many students in the School of Biology like me.

Sincerely,

Divya Kalyani Natarajan  
School of Biology and Bio-medical Engineering  
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It is my pleasure to express my support for Dr. Chrissy Spencer for this year's Undergraduate Educator Award. Dr. Spencer is my biology advisor and was my professor for several courses over the past year. She is a capable and considerate professor who is always willing to meet and speak with her students about coursework or provide school or career advisement. Dr. Spencer excels as an advisor and professor and is a worthy candidate for this award.

As my biology advisor, Dr. Spencer has given me practical and useful advice as I consider my undergraduate and graduate career. Even when I visit her office unexpectedly, she always makes herself available to answer any questions I have. She is receptive and clearly cares about her students, and she is one of my greatest resources at the School of Biology and at Georgia Tech .

Dr. Spencer has a teaching style unlike any professor I have ever had. Rather than following the standard lecture format, she expects students to cover the basic content outside the class and uses class time to implement active learning techniques to address the concepts with which students have the most difficulty. This style might not work for all professors, but students respect Dr. Spencer and are inspired to rise to her expectations because she respects her students and exhibits confidence in the ability of her students to perform well. Her competence and passion for biology set the atmosphere of her lectures and makes the classroom a positive, transparent, and effective learning environment in which students see the benefit of her activities and are excited to see what comes next.

Alicia Lane