Nomination of **Dr. Ryan Lively**, Assistant Professor in the School of Chemical & Biomolecular Engineering, for the **CETL/BP Junior Faculty Teaching Excellence Award** - 2016

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Georgia Institute of Technology

Professor David Sholl
Chair of the School of Chemical & Biomolecular Engineering
and The Michael E. Tennenbaum Chair and
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January 26, 2016

Dear Awards Committee

I am very pleased to recommend Professor Ryan Lively for Georgia Tech's CETL/BP Junior Faculty Teaching Excellence Award. Ryan has been as Assistant Professor in Chemical & Biomolecular Engineering since 2013. Below, I highlight some of the reasons I feel that Ryan is an excellent candidate for this award.

Ryan is an incredibly effective instructor. Ryan has taught ChBE 2100 (Chemical Process Principles) four times to 206 students. This is our students' first encounter with the chemical engineering curriculum, and many of them find it challenging and discouraging. Ryan's CIOS scores for his classes have been 4.7, 4.8, 4.8, and 4.9. It is literally hard to imagine how he could get any better, at least by this limited measure.

Ryan directly models success for our students. Ryan received both his BS and PhD from our program at Georgia Tech, so he is a direct role model for the students he teaches. His enthusiasm, professionalism, and mastery of subject matter come across in all of his interactions with students.

Ryan combines excellence in teaching with excellence in research. In the same period that Ryan taught the courses mentioned above, he has raised millions of dollars in external research support from federal and industrial sources, and developed a very active research group that now includes more than 10 PhD students and postdocs. I have collaborated with Ryan on several technical topics as part of the DOE-funded Energy Frontier Research Center we both participate in. Ryan is already a fully fledged technical leader in these projects and the others he manages. Quite simply, he is well on his way to becoming an international star because of his research, which makes his ability to simultaneously perform at such high levels as an instructor all the more remarkable.

Ryan is a wonderful role model for more senior faculty. Ryan's ability to excel at both teaching and research and his enthusiastic use of "new" tools such as supplemental videos for his classes have provided a welcome (and positive) challenge to many mid-career and senior faculty in ChBE. ChBE has long held the attitude that we highly value undergraduate education as well as world-class research. Ryan is a direct embodiment of this attitude, and his success lifts up everyone around him.

I would like to close by illustrating Ryans's influence on ChBE students by directly quoting some of their comments from CIOS surveys:

- His teaching is fantastic, one of the best lecturers if not the best I have had while at GT.
- I think that his enthusiasm for the course and the respect that the professor had for the students was fantastic. Dr. Lively is extremely reasonable and fair as this is something that I always appreciate in tough courses such as this one.
- Dr. Lively's greatest strength is hard to pinpoint because in my opinion he excels in many, many areas of teaching. I suppose the most important characteristic I saw every day both in lecture and out was that Dr. Lively truly wanted to see his students succeed.
- Best professor I have ever had!

Ryan's contributions to undergraduate education in ChBE have already been impressive, and I have no doubt they will continue in the same vein for many years. I cannot think of a young faculty member who is a better candidate for the recognition this award will bring.

Sincerely,

David Sholl
Chair, School of Chemical and Biomolecular Engineering
Georgia Institute of Technology

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January 29, 2016

SUBJECT: Professor Ryan Lively- CETL/BP Junior Faculty Teaching Excellence Award

Dear Awards Committee Member:

I am delighted to support the nomination of Professor Ryan Lively for the CETL/BP Junior Faculty Teaching Excellence Award. As Associate Chair for the Undergraduate Program, one of my responsibilities includes making teaching assignments for each faculty member. I follow up on their teaching performance, primarily through CIOS teaching evaluations, but also from anecdotal comments (unsolicited) from the students and other related observations. This approach provides a quick feedback if the situation warrants an early intervention. Professor Lively joined as a faculty in fall 2013. In the past two and a half years, he has taught the first ChBE core course, *Chemical Process Principles*, four times. His excellence in classroom teaching has been consistently recognized through the CIOS evaluations (average scores 4.8/5.0). During spring 2016, he is teaching a new course, Chemical Engineering Thermodynamics II, for the first time. I observed Professor Lively in his class on January 26, 2016. My comments below are based on my class observation as well as several late evening discussions we have had over the past two and a half years. Whenever Professor Lively is about to introduce a new or difficult concept, he frets over how best to do it. Professor Lively generally mulls over the best way to introduce difficult concepts by bringing real world examples and applications. He then uses me (and other colleagues) as sounding board. It is a joy to see him go through the struggle. Many of our late evening discussions pertain to this aspect of his teaching. It is a joy to see him go through the struggle. I do not know any other faculty who has taken the class room teaching with this level of serious thought.

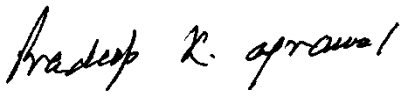
Professor Lively starts the lecture with a brief (1-2 min) recap from the previous class, and he ends the class with a recap of what was done that day. He brings real world applications of the material being covered. Professor Lively utilizes a variety of techniques to engage and challenge the students in his lectures. He has shades of Socratic style in his teaching approach. About four to six times in a lecture, he stops lecturing, poses a question, allows the students to discuss with their nearest neighbor for one minute, and then he calls on one or two students for the answer. This pair and share approach keeps the class engaged and attentive. It should be noted that the questions posed are not just randomly picked questions. Significant preparation is required in developing the right break points and in formulating appropriate questions.

Professor Lively maintains high expectations and standards for his class. He is admired by his students in spite of the fact that his classes have a reputation of being rigorous and demanding. The students clamor to get in the course section being taught by him, even though there is space available in another section. Professor Lively is admired by his students also because he is sensitive to the needs

of those who are not doing well in the class. The students very much appreciate his keeping abreast of the growth of every student, including those who are not doing so well academically. His ability to know every student by name early in the semester and communicate with them shows that he cares about them.

Professor Lively inspires other faculty members by his example that it is possible to provide a rigorous and challenging course and still command the respect and admiration of the students. He is a wonderful colleague and a joy to work with. Both in and out of the classroom, he demonstrates that the journey is as important as the destination. I strongly support the nomination of Professor Lively for the 2016 CETL/BP Junior Faculty Teaching Excellence Award.

Sincerely,



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Reflective Statement on Teaching

Ryan P. Lively
School of Chemical & Biomolecular Engineering

Introduction: I have always been deeply motivated by high quality undergraduate education, as university professors are capable of providing not only technical training, but are also major sources of motivation, perspective, and confidence. Moreover, my professional preparation was provided by Georgia Tech, and I have witnessed firsthand both effective and ineffective technical instruction at this Institute. This fact has helped me empathize with the current students and even develop a sense of comradery that helps break down the "instructor-student" wall and leads towards positive "mentor-mentee" relationships. Indeed, developing this latter relationship is one of the foundational pieces of my instructional approach, and seeing both a student's technical growth as well as personal growth strongly resonates with me and provides continuing motivation for me to improve as a teacher.

My approach: The core aspects of my teaching style are based around empathy for the student—students *want* to be excited about the material, but need to know that the instructor is excited about the material. Indeed, "generating excitement" is one of the pillars of my instructional approach. Aside from bringing lots of energy to the class, I constantly pepper my lectures with asides, examples, and tangents of "real world" applications, scientific curiosities, and "philosophies" of science and engineering. I find it important to strike a balance in the type of example utilized, as each individual is inspired by different facets of chemical and biomolecular engineering.

A central pillar of my instructional approach is to make the class as active as possible while still maintaining some elements of the "sage on a stage" format. To achieve this, I typically lecture for 5-6 minutes, then offer the class 30 second to 2 minute breaks to discuss the material amongst themselves. After this break, I randomly call on groups of students in the class to highlight takeaways from their discussions and to move the lecture forward (I specifically call on random *groups* as opposed to random individuals to avoid the potential "negative reinforcement" situation of isolating a highly introverted individual in front of a crowd). To highlight the success of this approach, I find that if I pose a question to the class, almost no student will answer. This is typical, as students do not want to venture forth a "stupid" answer, or, conversely, do not want to appear "too smart" in front of their peers. However, if I pose the same question to the class and give them 30 seconds to discuss amongst themselves, it almost singlehandedly wipes out the typical fears of a student answering a question, and I find that many students are willing (and perhaps even excited!) to answer the question. Despite almost always teaching at 8 am, I find that this active format successfully keeps the students engaged and focused on the material at hand.

I supplement this active style with hands-on demonstrations throughout the semester that allow the student to physically manipulate and interact with objects that exemplify the concepts being taught. These demonstrations allow me to bring my research into the classroom as well—I bring various prototypes, modules, instruments, and safe samples from my laboratory to the lecture hall for the class to interact with. Importantly, I try to make the demonstrations interactive for as many as the students as possible, as I find the students do not connect with the concepts as fully when they simply watch me perform the demonstration. Considering this, I usually bring 5-10

copies of the demonstration with me so that the class can gather in groups and interact with the demonstration more directly.

Despite the active classroom format, some students need to work difficult technical problems in private and at their own pace. I have therefore created a series of "screencasts" that show me working through problems on a digital whiteboard coupled with my voiceover. These screencasts have resonated strongly with the students, and I often get requests to make more. Their popularity lies in the fact that the students can work through the problems at their own pace by controlling the screencast playback. Indeed, I find these screencasts to be excellent outlets for teaching the highly complex material that is often not suited for a 50 minute lecture.

Finally, I couple these previous approaches with a total commitment to availability. I have an open-door office hours policy, stay late after class, and host biweekly after-hours review sessions. These review sessions are unorthodox—rather than lecturing at the board, I treat them as a large "office hours" session; i.e., the TAs and I will circulate throughout the room and help individual student groups on a particular problem they are having. This arrangement enables open dialogue with the student, and through such conversation the critical challenge they are facing can be quickly deduced. The traditional "sage on a stage" session cannot achieve this same level of personal interaction.

Overall, I try to manifest my empathy for the students by acting as a catalyst for their excitement in the subject, breaking up the monotone of lecture through an active style, providing real-world examples and demonstrations, and making myself as available as possible. Although all of this consumes time, in my experience, this approach leads to a more nurturing—and more rewarding—"mentor-mentee" instructional relationship, which I believe enhances their learning relative to the traditional "sage on a stage" approach.

Results: I have received several "Thank a Professor" emails and cards from students in my courses. Here are some excerpts of the comments from various students (these are non-CIOS comments):

"I wanted to take a moment to thank you for the past semester. It has been a privilege to have you as a 2100 professor, and I feel more prepared than ever to take on the rest of this major. The fact that you cared about the success of the students really echoed among all of us in that lecture hall. Best of luck next semester. Thank you."

-Andrew, Fall 2015

"I'm writing to thank you for everything last year. I learned how to learn last semester in your class, and I have definitely seen myself using skills in other classes that I developed while taking yours."

-Tivon, Fall 2014

"I wanted to say thank you for being my professor last semester in ChBE 2100. I thoroughly enjoyed not only the material in the class, but also I enjoyed the way that you actively engaged the class by so frequently asking us to consult with our groups about the solutions to problems and then having us say the answers out loud. It made the lectures more interesting than any other lectures that I have had in my time at Georgia Tech."

-Nick, Fall 2014

"The fact you [are] telling me that I need to fully understand the concepts for this class is probably for a good cause in the future (I mean of all the professors I know, you took these classes just like we did, so you would know how hard the other classes are). I really appreciate you looking out for what's best for me."

-Ho-Kyung, Fall 2013

"Your 2100 class was by far the favorite class I've taken in my academic career thus far."

-Aditya, Fall 2015

"Thanks for teaching the class, it was by far my favorite!"

-Will, Fall 2015

"Thank you very much for your kindness. I hope to see you in many different Chem E classes."

-Jun, Fall 2013

"Thank you Professor Lively for being the most awesome Professor ever."

-David, Spring 2015

Going forward: Ultimately, my goal is to connect with a higher percentage of the students in my classes. This will require more classroom innovations that are successful in reaching different learning modalities aside from the ones that already resonate with my empathy-driven style. Specifically, I will focus my efforts on reaching the students at the bottom of the class who are motivated to learn the material, but have major challenges digesting and understanding the core concepts. In the past, I have assigned these students a personal upper classman tutor, which has had some mixed success. In the future, I will take additional time to tutor these students personally, provided they continue to show excitement for the material. In addition, I have recently developed a new classroom initiative that focuses on creatively utilizing engineering skillsets. These "mini projects" have the students using a "Fermi-style" approach to designing new systems, answering scientific and engineering questions, as well as estimating certain properties of existing complex systems. Over the coming years, my goal is to fully develop this initiative and work with other faculty to implement it in other engineering disciplines, as I think it is useful for engineering students to have creative outlets for their newfound skillsets. A second goal is to broaden my participation in outreach programs. I participate in the ExxonMobil SUCCESS program, which is a program designed to provide support to under-represented minorities. I have provided career advice, counseling, resume feedback, and helped select seminar speakers for the program. Going forward, I plan to spend more time with this program as well as other outreach programs within ChBE and the Institute in general. Overall, I will keep striving to improve my style of "personal" instructional techniques as well as continue striving to understand student's wants and needs, as I believe this combination leads to effective education of future engineers.

Illustrations of the candidate's teaching excellence and the impact on student learning: CIOS Scores and Comments

Ryan P. Lively
School of Chemical & Biomolecular Engineering

Semester Taught	Course Number / Course Name	Number Enrolled	Number Responded	Median Score for "The Instructor is an Effective Teacher"
Fall 2013	ChBE 2100 / Chemical Process Principles	40	40	4.7
Fall 2014	ChBE 2100 / Chemical Process Principles	50	50	4.8
Spring 2015	ChBE 2100 / Chemical Process Principles	53	52	4.8
Fall 2015	ChBE 2100 / Chemical Process Principles	63	60	4.9
	Average	51.5	50.5	4.8/5.0

Student Comments from CIOS, 2013-2015

"I think that his enthusiasm for the course and the respect that the professor had for the students was fantastic. Dr. Lively is extremely reasonable and fair as this is something that I always appreciate in tough courses such as this one."

"Dr. Lively's greatest strength was being able to communicate complex concepts at the student's level. He was able to break everything down to simple ideas and logical arguments. Additionally, Dr. Lively made the class very interesting and relatable to students. I especially enjoyed the mini-engineering estimates at the beginning of every class."

"Caring (but not sympathy) for students--it genuinely seemed like Lively wanted us to learn the material."

"Great quality in teaching, one of my favorite professors at Georgia Tech."

"Professor Lively genuinely seemed to want each student to succeed. All assignments and exams provided a healthy degree of difficulty while still proving understandable. By applying myself and not

just completing assignments but striving to understand them, I have been able to succeed in this class, and this class and Dr. Lively have helped greatly towards that end."

"I think this course embodies that best that Tech has to offer. It has been a truly challenging course but a great opportunity to learn and dive into what ChBE has to offer. It has taught me new problem solving skills and set me up well for the years of ChBE courses to come."

"While this is a tough course, Dr. Lively was very approachable and equipped us with many tools to be successful. His lectures were excellent, and he gave valuable handouts, made screencasts, and held Shop 'Til You Drop Sessions [the name for my review sessions]. His tests were challenging but fair."

"Dr. Lively's greatest strength is hard to pinpoint because in my opinion he excels in many, many areas of teaching. I suppose the most important characteristic I saw every day both in lecture and out was that Dr. Lively truly wanted to see his students succeed."

"Actually cares about his students and wants them to succeed and learn the material. One of the few great professors I've encountered at Georgia Tech."

"Dr. Lively was always open to questions and kept the class alert by calling out and asking us questions--this made class time engaging and much more productive I think. When going through practice problems, Dr. Lively was for the most part clear and easy to understand. I also liked that we had worksheets every so often as that made it engaging and we had something to reference back to, not just our own notes. The shop til you drop sessions were also very helpful and I think many of us appreciated the time that Dr. Lively and Graham [the TA] took to stick around and help us out."

"This was a great instructor who only made me more interested in Chemical Engineering."

"Professor Lively is one of the best teachers I've ever had. His availability to students and teaching skills deserve recognition. Overall, he made the class engaging and was able to explain the material thoroughly."

"I did not see a single "greatest strength", professor Lively is an exceptional instructor and will go out of his way to ensure that it is not his shortcomings that hinder the success of his students."

"Could keep me engaged at 8 in the morning."

"Lots of energy, and really cared about us actually learning the material."

"Very enthusiastic, always willing to help, never condescending, lots of patience."

"I can honestly say that it is professors such as Dr. Lively who drew me to Tech. Having professors who don't just teach but pass on their knowledge in an organized and understandable manner is what sets institutions such as Georgia Tech apart. That coupled with a passion for seeing students succeed make Dr. Lively an exceptional professor."

"Some of the highest quality of teaching I've seen."

"Best professor I have ever had!"

To the CETL Awards Committee:

I am honored to have this opportunity to speak of Dr. Ryan Lively's exceptional capabilities as an instructor and the profound impact he has brought about in my own life. I am a senior undergraduate student in the school of Chemical and Biomolecular Engineering, currently completing my sixth semester as an undergraduate research assistant in Dr. Lively's laboratory and my fourth semester as an undergraduate teaching assistant for Dr. Lively's lectures. After such extensive experience in working with Dr. Lively both in and out of the classroom, I offer an extremely enthusiastic recommendation for his receipt of the 2016 Junior Faculty Teaching Excellence Award.

The very first class I took at Georgia Tech as an incoming transfer student was Dr. Lively's Chemical Process Principles class. My first impression of Georgia Tech as an institution was Dr. Lively's distinctly contagious enthusiasm for chemical engineering and very clear communication of his expectations of us as students in his course. He allowed the class to vote on his office hour times, offered not just once but several times throughout the week, to ensure as many students as possible could easily reach out to him for help. He came off as remarkably genial and approachable.

I joined Dr. Lively's research group after completion of his Chemical Process Principles class. Before this opportunity I was ignorant of the very existence of the world of research in chemical engineering. Dr. Lively took the time to sit down with me and show me how to utilize Georgia Tech's resources to locate literature relevant to my own project and assisted in the cultivation of a positive mentoring relationship between myself and a graduate student in his group. This outreach to me resulted in my receipt of a PURA award in my second semester of involvement with his research group.

Dr. Lively runs his laboratory with a contagious sense of prestige and pride. He organizes weekly 'entropically unfavorable' cleaning days to keep the lab space pristine, and can be frequently found in the lab space working with students one-on-one to troubleshoot issues that arise in the course of their research. I can easily attribute my love and enthusiasm for high-impact high-quality research and resultant recent admittance to PhD programs at three top-ten universities to Dr. Lively's guidance.

In my four semesters of work with Dr. Lively as a teaching assistant, I am constantly amazed at the amount of time and effort he puts into improvement of the class from one semester to the next. An example of Dr. Lively's constant innovation is his introduction of 'Engineering Estimates' to his Process Principles class after several semesters of teaching it. Engineering Estimates are short, 2-3 page written assignments given to students periodically throughout the semester to gauge their ability to answer creative questions designed to mimic the sort of calculations they might be asked to do throughout their careers, beyond the classroom. These assignments do a great job of integrating course material and real-world problems, go beyond what you can look up in a text book or through the internet, and make students utilize more creative and critical thinking than they would otherwise need. Dr. Lively's dynamic teaching style and constant search for new methods to better engage students distinguish him as an excellent professor and ensure his continued success in years to come.

Dr. Lively has single-handedly made the most enormous impact in my own life as a teacher and a mentor, and has served as a role-model throughout my undergraduate career. I can think of no one more deserving of any award for excellence in teaching.

Sincerely,

Kristin Presnell

Kristin Presnell

To the CETL Awards Committee,

It has come to my attention that Dr. Ryan Lively has been nominated for the 2016 CETL/BP Junior Faculty Teaching Excellence Award. I am writing this letter in full support!

In my experience thus far as an undergraduate student at Georgia Tech, Dr. Lively has been my previous instructor for ChBE 2100, and is currently my research professor and instructor for ChBE 3130. He is a brilliant researcher, tactful communicator, knowledgeable teacher, and approachable mentor and has been one of the best instructors that I have ever met. Through my interactions with him, I have grown tremendously as a student and researcher.

When teaching, Dr. Lively uses an innovative style that engages students by posing short discussion-based questions to work out in small groups. These questions encourage us to work together and think critically, and most importantly make us feel like we are a part of the learning process. In a way, we actually teach ourselves. As someone who learns by interacting and doing, I have benefitted a lot from this style of teaching. In addition, Dr. Lively uses pictures and screencasts to delve further into concepts and explore additional problems, which gives a more holistic understanding of course concepts and how they show up in industry.

Another aspect of Dr. Lively's teaching that I enjoy is the way that he ties his research and its global context into the course. It gives us a reason why everything we are learning is important and how it might be useful. For example, we discussed in an earlier lecture how 1% of the entire world's energy is used to separate propane and propene (conventionally by cryogenic distillation). He showed us how learning how to better separate just one mixture, we could make a huge difference in the energy industry. 1% may not seem like much, but on a global scale, one solution could save billions of dollars and eliminate an environmentally harmful process. Understanding the importance and the implication of our work is very important to me, and has been one of the key reasons that I research in the Lively Lab.

Dr. Lively is also a fantastic member of the Georgia Tech community. He is very approachable and frequently uses office hours to get to know his students better. In fact, by the end of ChBE 2100, he knew each persons' name in the class. That may seem trivial, but there are few professors I know who will put in the effort to learn everyone's name in a 50-person class. I took advantage of his office hours to ask questions about the class as well as his research, and he took note of that and actually invited me to interview for a position in the lab. Since joining the lab last semester, one of my favorite experiences that really makes Dr. Lively unique is when we had a lab tailgate before one of the home football games. How many people have grilled hamburgers and played Frisbee with their professor? I thought that it was a really fun interaction and an example of outstanding Georgia Tech citizenship.

Dr. Lively has been a great teacher and mentor, and I firmly believe that he represents the best of Georgia Tech and is deserving of the 2016 CETL/BP Junior Faculty Teaching Excellence Award.

Best regards,

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January 10, 2016

To the CETL Awards Committee:

I am writing to recommend Dr. Lively for the 2016 CETL Teaching Excellence Award. This semester, Dr. Lively served as the professor for my introductory chemical engineering class (ChBE 2100). His lectures were always extremely thorough and enjoyable despite the difficulty of the subject matter. Dr. Lively was a great professor for this class, because he took a difficult "weed-out" class and made it into a supportive and helpful environment for students to learn more about chemical engineering. A prime example of the way Dr. Lively helped students feel comfortable in this new terrain, their first real engineering class, involved his innovative help sessions. Dr. Lively provided "Shop 'Till You Drop" sessions both midway and at the end of each section of material. In these sessions he individually visited each student in attendance and helped them with problems they didn't understand or concepts that they found difficult. He really understands the position students are in with this difficult class that uses a new way of thinking, and he even made the class a practice exam, complete with real exam conditions, to help calm us and prepare us thoroughly for the rigors of the class.

Dr. Lively is a great professor in terms of accessibility and relatability. Unfortunately, my schedule was too packed to make it to his office hours this semester, but whenever I came by his office with a quick question he was eager to help. He put the course material in terms that I could understand and took the time to help me through the class even though I could not attend his normal hours. Furthermore, in class, Dr. Lively knew every students' name, and made sure everyone received some form of individualized attention. His relatability translated to the classroom as well—on Halloween, when many students were bogged down with exams, he brightened everyone's day by breezing in and beginning class on the board—while wearing a full Harry Potter costume. Dr. Lively made this difficult class a fun and interesting look into chemical engineering, while making sure each student was confident in the material along the way.

An additional way Dr. Lively is an outstanding teacher is the way he connects the classroom with the world. One of his assignments, "engineering estimates," requires the students to perform calculations similar to those of a technical job interview, such as estimating the number of ping-pong balls that can fit in an airplane. These exercises really opened my mind up to a different way of thinking, and helped illustrate what being an engineer is all about. He also brought in a guest lecturer from Cheerios, a particularly exciting experience for the whole class to witness the full-blown applications from 2100 in a real world situation.

Overall, Dr. Lively was an outstanding teacher. His passion for teaching and his plethora of methods for learning cannot be summarized sufficiently in one letter. However, every student of his that I have encountered will wholeheartedly vouch for the impact of his level of caring and knowledge on their future paths as chemical engineers. In summary, Dr. Lively transformed my experience in a required course from one of rumored stress to one of fascinating importance. He successfully taught the class on a level that made the students able to learn new things without having to be overly anxious out about developing this new way of thinking. Dr. Lively has shaped my growth as a chemical engineer and helped prepare me for the future with a strong and confident grounding, not just in 2100, but in becoming an engineer.

Sincerely,

Mandy Salmon

Dear CETL Awards Committee,

My name is Alexandra Sutlief, and I am a fourth year chemical engineering student. My very first class in the ChBE department was with Dr. Livley for ChBE 2100 (Introduction to Mass and Energy Balances). At this point, I was still unsure of what exactly chemical engineering is and scared of how hard I had heard this major could be, but after one semester with his guidance, I knew that this was the right path for me. His teaching skills are outstanding, and I know he has helped many students as a part of the ChBE faculty.

One of the things that stand out about his teaching is his dynamic style in the classroom. Throughout class he asks small questions for each student to discuss with their neighbor before the class talks about them together. This is a great way to begin critical thinking and having student become actively engaged during class, a feat for any professor teaching an 8 am class. These mini questions along with his great explanations of the fundamentals of chemical engineering make him an amazing professor. As a fourth year, I have heard from other students who have had him since I did, and they all have similar stories. Students believe he is tough yet fair, and he will make sure you walk away from his class with better problem solving skills and knowledge about chemical engineering.

Beyond the classroom, Dr. Livley is almost always available for help. If a student could not make his office hours, he is available by a simple email asking to set up another time or just knocking on his door. He also holds review sessions which actively engage the students by working out sample test questions or homework problems in small groups in which Dr. Livley would walk around to answer any questions.

While Dr. Lively prepared me for the rigorous chemical engineering curriculum, he also prepared me to be a successful chemical engineer. He understands that many students still are not exactly sure what can be done with a chemical engineering degree, and he explains this by giving homework and class examples that are found in industry. He also had a friend who works in industry to come in and talk to the class about what he does as well as the kinds of problems he faced on a daily basis. Besides industry, he let us understand there is another important part of chemical engineering—research. Dr. Lively helped us understand what his research and some of his colleagues' research involved and encouraged us to partake in undergraduate research so that we would know about this aspect of our degree. After taking his advice and doing research for a different professor, I personally was stuck between deciding on whether to further my education and go to graduate school or go straight into industry. He sat me down and helped me figure out what kinds of schools would be a good fit for me, and even put me in touch with a current student at the Imperial College of London so that I could ask any questions. I am grateful to have had someone with an objective yet knowledgeable viewpoint try to help me decide what was best for me.

Dr. Livley cares greatly about the success of his students, and will work with his students in any way he can to help them succeed. He is a young professor just beginning his promising career in the ChBE department, and I am so glad to have had his guidance as a student.

Best Regards,

Alexandra Sutlief

To the CETL Awards Committee:

I am extremely excited to have the opportunity to support the nomination of Dr. Ryan P. Lively for the 2016 CETL/BP Junior Faculty Teaching Excellence Award. I had the privilege of having Dr. Lively as a professor for ChBE 2100, Chemical Process Principles in Fall of 2013.

Dr. Lively is an excellent professor. During his lectures he shows great passion for the class material. Teaching 2100 definitely seems like no easy task. A contributing factor to that is because you have a class that is a majority of students that "think" they know what chemical engineering is. A challenge that he is faced with is making the subject interesting to the class so they don't end up changing their major immediately following. Dr. Lively was able to relate to the students. I might say I think we had too much homework, but from talking with students in other professor's classes, we as Dr. Lively's students knew the material so much more. Dr. Lively, understood that it was a lot, but because he was a relatively recent degree recipient of the department, he had an additional level of credibility.

Dr. Lively is also very dedicated to the field of chemical engineering. During the class he would find ways to tell us about his research without taking an entire day to talk about it. He would talk about gas separations at times where it would help us understand the material for 2100. His class still remains to be the only chemical engineering class where I have listened to professionals in industry teach material. He pulls on his network from when he was a student here to bring in industry professionals to talk to students during class. He is also involved in the Georgia Tech community. I have attended multiple lectures in the chemical engineering department and each time I have seen Dr. Lively there.

Overall that is just illustrating that Dr. Lively showed great compassion for his students. He was able to show us that he cared deeply about not only how we were learning the material and performing in the class but also that we were doing well overall as college students. Something simple as asking us what we were planning for the weekends or asking about our brakes and being genuine about it.

Even after completing his class, Dr. Lively has been extremely helpful in progressing with my Chemical Engineering Degree. He has always been available for conversations about industry experience and development programs I have had opportunities to participate in.

Whenever underclassmen ask me advice about schedules, I always tell them to take Dr. Lively. Even if that means rearranging their entire schedule, it is definitely worth it. Not just from a class perspective, but from a getting to know an outstanding person in your department perspective.

Sincerely,

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