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# Application Summary

## Competition Details

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**Competition Title:** 2024 Undergraduate Educator Award

**Category:**

**Cycle:**

**Submission Deadline:** 02/9/2024 11:59 PM

## Application Information

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**Application Title:** Senior Academic Professional

**Application ID:** 11647

**Submission Date:** 02/1/2024 10:12 AM

## Personal Details

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**Applicant First Name:** Michael

**Applicant Last Name:** Evans

**Email Address:** michael.evans@chemistry.gatech.edu

**Phone Number:** (404) 894-8222

### Primary School or Department

The School of Chemistry & Biochemistry

**Primary Appointment Title:** Senior Academic Professional

## Application Details

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### Proposal Title

Senior Academic Professional



January 27<sup>th</sup>, 2024

Dear Selection Committee Members:

It is a great pleasure to nominate Dr. Evans for Georgia Tech's "Undergraduate Educator Award". He is a highly innovative and very passionate colleague, who devotes, with good effect, great effort and talent to our undergraduate instructional mission. I have known Dr. Evans since he arrived at GT in July 2013, and I have a good knowledge of his instructional activities, as he reports to me and we frequently talk. Mike regularly teaches large, 100 – 250 student, undergraduate lecture courses in both our first year and organic chemistry sequences. Additionally, he has taught GT 1000, a selection of interesting special topics courses, part of a VIP on STEM communications, and the chemistry component of OMED's summer *Challenge* program. He is also heavily engaged in a wide range of service activities both on and off campus.

Dr. Evans is an impactful and highly innovative teacher. His latest classroom innovation in the organic chemistry sequence is the largescale successful deployment of *hybrid specifications grading*. Within this model, a large fraction of the student's final grade is determined by their demonstrated mastery of the course's learning goals, which is determined using proctored "Learning Target Quizzes" associated with each goal. Students get substantial feedback and the opportunity, if they want, to take a different version of the quiz to demonstrate that they have learnt from the feedback and are now able to meet the goal. This changes the class dynamic to one where the class is both challenging and rigorous, but initial failure is not disastrous, and growth is strongly supported and rewarded. In this hybrid model, a component of the grade still comes from points accumulated via traditional homework assignments and exams.

Dr. Evans does not squander valuable in class time on content delivery. He teaches using a flipped format and has a layered approach to supporting student learning. High quality custom video lectures on YouTube are provided, and a large amount of class time is devoted to facilitated problem solving, where the problems come from a variety of sources including the chemistry primary literature. Learning in his courses



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are supported using a variety of instructional technologies including the mobile app, *mechanisms*, that gamifies the process of writing our reaction mechanisms. Many students find the construction of reasonable reaction mechanisms to be very challenging, and this technology helps them learn this very important skill. He was personally involved in the development of this app., see DOI: [10.1021/acs.jchemed.0c00246](https://doi.org/10.1021/acs.jchemed.0c00246). Student learning is also supported by the use of molecular visualization software to examine molecules in 3D, and a variety of class discussion platforms, including Ed Discussion and Discord.

Dr. Evans courses are designed with accessibility and supporting every student in mind. His class materials are constructed using the principles of universal design, including minimal distraction, and the use of color schemes and “coding” that minimize problems for color blind students. He actively reaches out to students who do poorly on examinations, and he maintains a student bookable calendar of 15-minute time slots to provide student assistance.

His passion for, and dedication to, excellent undergraduate education is very well illustrated by some of the comments excerpted from “Thank-a-Teacher” notes and CIOS that can be found elsewhere in this package. Mike is one of the most highly regarded teachers in our school, and *is the most innovative, enthusiastic and indefatigable!* He is constantly exploring ideas of his own, and from the chem ed literature, to improve his classes, and devotes huge amounts of time to developing his courses.

Dr. Evans impact on our students goes far beyond the traditional classroom. He manages our school’s undergraduate research process. This includes helping students identify research opportunities, getting them properly registered for research classes, and encouraging them to present their work. He is very active in our school’s efforts to build community amongst our majors by, for example, organizing many coffee and donuts events in one of our common spaces, managing the process by which we select undergraduate awards, and serving as a very able Master of Ceremonies for our annual undergraduate awards dinner. For several years he organized and taught the chemistry component of OMED’s Challenge program, which supports and prepares entering minority student’s so that their transition to Tech is smoother. Dr. Evans is also passionate about effective communications in science. This extends to leading



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part of a VIP class on science communications, running the School of Chemistry and Biochemistry’s social media accounts, and chairing the School’s communications committee, which uses a distributed model to source content, where students are often authors.

His outreach activities include activities at the Atlanta Science festival, and he is a key faculty contact for Chemistry Olympiad events on campus. These events give highly talented high school student exposure to our campus and its’ excellent facilities, and support the development of chemistry talent in the US.

In summary, Dr. Evans is an excellent candidate for the “Undergraduate Educator Award”. He is a passionate, highly innovative and highly effective educator, pulling a variety of approaches and technologies into his classes to support the success of all students. He also brings his considerable enthusiasm and talent to a wide range of activities outside of the classroom, which touch our students and the broader community.

Yours sincerely,

Angus P. Wilkinson  
Assoc. Chair and Prof. Chemistry and Biochemistry  
Prof. Materials Science and Engineering



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# Nomination of Dr. Michael Evans for the 2024 Undergraduate Educator Award

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## Reflective Statement on Teaching

Michael Evans

January 2024

In my view, education is a fundamentally social enterprise predicated on positive relationships. This is both its greatest promise and greatest peril. On the one hand, as an instructor of large introductory and organic chemistry courses at Georgia Tech, I can inspire students to meet challenges of the future with advanced science, serving as a guide, coach, or role model. I love bringing passion and energy to the classroom to help students develop a “chemical mindset.” On the other hand, adversarial relationships can demotivate students, causing them to associate science courses with insurmountable barriers, old-fashioned thinking, or inaccessible language. The greatest challenge in my teaching, and one that inspires me to innovate constantly, is maintaining high academic standards while cultivating positive relationships with students. To do this, I combine enthusiasm and passion for the concepts, models, and applications of chemistry with course design focused on transparency, mutual respect, and student growth.

Grades sit at the center of this tension between relationships and standards. The emergence of a wide spectrum of grading models in recent years is a testament to this, as instructors have tried everything from giving up on grades entirely (ungrading) to allowing students a voice in the design of their own grading system (contract grading) and more. Increasing student frustration with and anxiety about grades provides further evidence of their potentially damaging effect on student-faculty relationships.

As student populations have grown, grades have become decoupled from meaningful feedback, rendering them impersonal, unhelpful, and punitive. Grades presented solely as a number or letter, particularly by an online homework system or learning management system, can deliver little more than shallow pride or anxiety. However, I believe that a grade properly earned via observable growth in response to meaningful feedback is good evidence of learning and a professional responsibility for instructional faculty. Thus, I have

devoted considerable energy to implementing grading systems that provide students with a great deal of feedback and encourage them to grow from it.

In my organic chemistry courses, in which regular practice and feedback are *extremely* important and prior knowledge is minimal, I use a hybrid specifications grading system. Students can earn a minimum letter grade of B or lower by demonstrating proficiency with course Learning Targets. Minimum standards for student work (“specifications”) related to the Learning Targets are published at the start of the term and strictly enforced. However, students have multiple opportunities to demonstrate proficiency and receive detailed feedback from teaching assistants or myself after each attempt. Students wishing to earn an A must do so by earning a minimum number of points on homework, exams, and in-class work, as in a traditional grading system. Even so, I have shifted to using adaptive homework assignments that encourage students to identify and improve their weak areas and meet minimum standards.

These changes in the way I grade have been transformative, both for students and my teaching practice. Students have become more responsive, more engaged, and less defeated by initial setbacks. I can now directly observe student growth and use the record of my feedback to inform and improve both *what* and *how* I teach. Although specifications grading is a lot of work, it is the kind of work that engages and inspires me as a teacher.

Aligning with the goal of observing and responding to student work as much as possible, I regularly use a flipped classroom model in my courses. Using principles of universal design for learning in my readings, videos, and other digital resources, I strive for accessibility and impeccable organization in my course resources. Class time is frequently devoted to group problem solving, enabling us to use class to explore concepts or skills that give students the most trouble or pique their interest most.

I believe in the potential of educational technology to improve student learning and enhance communication between students and myself. Thus, I am always searching for new tools or activities to incorporate into my courses to these ends. My courses give students direct experience with computational chemistry and software for visualizing molecular structures and reactions in three dimensions. I also make heavy use of digital course forums (Ed Discussion) and more informal communication channels (Discord and Microsoft Teams). With the goal of promoting positive and effective communication on these platforms, I try to educate students at the start of each term on how to use them properly. At the same time, I try to use them to convey empathy and enthusiasm to keep students motivated to learn.

In deciding what to teach and tactics to employ, I strive to *teach for transfer*. The mathematical deduction and empirical-logical reasoning we do in introductory and organic chemistry courses transcends chemistry; I want students to be able to carry problem-solving strategies and reasoning skills from my courses with them into more advanced coursework in other fields. Chemistry itself is such an expansive field that two years of

coursework is just enough to scratch the surface. As a result, I try to train students to reason by analogy, applying what they have seen in prior examples to new situations. This kind of reasoning will become essential when students tackle new challenges throughout their careers.

The central challenge of my teaching practice remains the maintenance of both high academic standards and positive student-instructor relationships in my courses. This has led me to use grading systems that promote feedback and student growth, a flipped-classroom model built on universal design and peer learning, and digital communication tools that promote open and transparent dialogue.

## Evidence of Teaching Excellence and Impact on Student Learning

### I. Organic Chemistry I and II (CHEM 2311 and 2312)

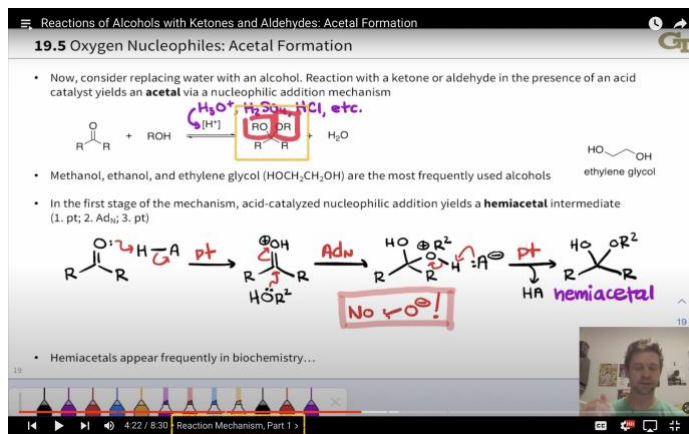
These courses cover the foundations of organic chemistry for science and engineering majors who will likely encounter organic compounds in their future courses or careers.

#### *Flipped Classroom*

Daily practice and regular feedback are *essential* for success in organic chemistry; my courses are designed with this in mind. I have prepared video lecture series for the courses incorporating YouTube features such as chapters and cards to increase engagement.

[Organic Chemistry I \(CHEM 2311\)](#)

[Organic Chemistry II, Bio-organic Edition \(CHEM 2312\)](#)



A lecture video for *Organic Chemistry III* showing dynamic annotations and the use of chapters to organize content (boxed in orange).

In class, we spend most of our time working problems, which I pull from a variety of sources including textbooks, [RealOrganicChemistry.org](http://RealOrganicChemistry.org), and primary literature articles. In summer semesters, I create student teams using [CATME](#) and structure problem sets to involve each team deliberately, for example by assigning a unique molecule or reaction to each team.



I also make use in class of an innovative mobile app that “gamifies” the process of drawing an organic reaction mechanism, aptly called [Mechanisms](#). This app enables students to play and explore when applying mechanistic reasoning to predict the course of organic reactions. It has long been a beloved component of my courses!

### *Specifications Grading*

For each course, I have developed ten [Learning Targets](#), high-level learning outcomes that serve as the basis for the [specifications-graded](#) aspects of the courses. Learning Target Quizzes (LTQs) based on these are administered weekly and graded *pass/fail*, with up to three attempts to demonstrate proficiency with the Learning Target (i.e., pass an LTQ). LTQs are graded using publicly available [general specifications](#) as well as quiz-specific specs. Students can complete LTQ reattempts during weekly Quiz Hours on Tuesdays and Thursdays from 11 am – 12 pm, during my office hours, or at another agreed-upon time. I make every effort to accommodate student requests to reattempt LTQs, in the spirit of encouraging them to review course material and grow from it. I also proctor each Quiz Hour.

I have also written over three hundred problems for Checkpoint quizzes in Organic Chemistry II as part of its specifications grading system. Checkpoints are self-paced Canvas quizzes with a time limit of 30 minutes. They must be completed with a perfect score to pass but can be attempted an infinite number of times. Related questions are grouped into pools, from which quiz questions are selected randomly for each attempt. Students are encouraged to discuss their Checkpoint results with me, teaching assistants, and their peers.

Performance on LTQs and Checkpoints is used to construct a “Learning Target-based letter grade (LTLG),” a letter grade *minimum* independent of a student’s point total. For example, demonstrating proficiency with all 10 Learning Targets and passing all 12 Checkpoints guarantees a letter grade of B or higher in the course. To earn an A, students must amass a certain number of points (as in a traditional grading system) from homework and engagement activities, midterm examinations, and the final exam.

## **II. Chemical Principles I and II (CHEM 1211K and 1212K)**

These foundational chemistry courses are taken by engineering and sciences majors who will go on to take organic chemistry. They cover the chemical theories, models, and algorithms used by everyone from practicing chemists to scientifically minded citizens when engaging with matter and energy.

### *Demonstrations*

Chemical demonstrations help students see and experience the oftentimes abstract theories and models of chemistry. I have incorporated several demonstrations into my CHEM 1211K and 1212K courses to serve as introductions to each unit.

Chemical Principles I: elephant's toothpaste; conductivity of solutions; fire syringe ([YouTube video](#)); the battery-driven water vortex? ([YouTube video](#)); hand boiler; thermodynamics of the Stirling engine; carbon snake reaction; nitinol, the metal with memory; solid-state endothermic reaction.

Chemical Principles II: iodine clock reaction; universal pH indicator; action of pH buffers; lemon battery; colors of aqueous transition metal complexes.

### *Course Design and Structure*

My CHEM 1211K and 1212K courses are designed for weekly consistency, so that expectations are crystal clear to students and course materials are easy to access and follow. After each class meeting, I post a Summary and Follow-up announcement that includes important logistical information, learning outcomes from the prior class, and preparation for the next class. Preparation always includes engagement with a Readings and Videos page, completion of a Preparation Quiz, and either printing or downloading a set of skeletal slides for class. Students complete Homeworks on the Macmillan Achieve platform, which is easily accessible from Canvas, and materials for exam review such as practice exams are also available there. To organize these materials, I make use of the Modules function in Canvas.

### **III. Thank-a-Teacher Comments**

*CHEM 1212K, Spring 2023.* “Your class was also a great experience for me because you clearly made the effort to help students understand the material. I can't think of another chemistry teacher that's uploaded a video guide detailing *HOW* to do practice problems, not just uploading an answer key without explanation. Keep up the amazing work!”

*CHEM 1315, Spring 2022.* “Thank you Dr. Evans for being an awesome Chemistry Professor! The thought of organic chemistry can be scary, but your lectures and course format made the CHEM 1315 experience stress-free and effective. Your availability and friendliness has always been nice, and I definitely enjoyed having you as my Chemistry Professor.”

### **IV. Selected Comments from CIOS**

*CHEM 1211K, Fall 2023 | Instructor Greatest Strength.* “I think he really shows a lot of passion and excitement about chemistry, and it made the course overall very fun and enjoyable. He also showed a lot of concern for his students and was very accessible for help with the course material.”

“Dr. Evans is extremely passionate about teaching and it shows in his lessons and outside communications.”

*CHEM 2311, Summer 2023 | Instructor Greatest Strength.* “Dr. Evans is highly motivated, puts in tons of effort and is very clear about expectations. The online video lectures are

fantastic. Well edited and very informative. If I ever struggled with a subject, I would simply watch the videos, do some homework problems, and my questions would be solved.”

*CHEM 2312, Spring 2023 | Instructor Greatest Strength.* “Dr. Evans is very passionate about this subject, which makes lectures, office hours, and any review sessions that much more engaging. His spirit just made me enjoy learning this subject, and made me more comfortable with making mistakes and learning from them.”

“I thought Dr. Evans’s greatest strengths were his passion for the material and his responsiveness. His enthusiasm for the material was unmatched, as we could all tell that he was well immersed in the content. I wanted to give another shoutout to the lecture videos, as even friends in other courses told me how helpful they were when I told them Dr. Evans was my professor. My friend and I often joked that Dr. Evans would have been better as our CHEM 2311 professor, because of his detailed breakdown of the elementary steps of reaction mechanisms and instilling the analogous reasoning necessary to be successful in this course sequence. Finally, his sense of humor was also amusing and kept my attention at multiple points during the semester. As a sidenote, please keep Discord! It’s way better than Piazza and was another one of my favorite aspects of the two Evans-led courses I’ve had. He was incredibly communicative and other students were just as willing to help, which only added to the collaborative atmosphere that I’ve really enjoyed about Tech.”

## **V. Awards and Honors**

Provost’s Teaching and Learning Fellow	2022 – 2024
PLUS Instructor of the Term	Fall 2023
Excellence in Online Teaching Award	2022
Eichholz Teaching Award	2022
Inclusive STEM Teaching Fellow	2022
Scholarship of Teaching and Learning Award	2021
Hesburgh Teaching Fellow	2021
GT 1000 Instructor of the Year	2016

## **VI. Informal Education and Outreach Activities**

In advising students, I often remark that what they do *beyond* the classroom is more important than what they do in the classroom. Living this philosophy means supporting opportunities for informal education and outreach as much as I can. I serve on the Institute Student Activities Committee, reviewing and advising student organizations on Institute policy and procedures, and serve or have served as the faculty advisor for several student organizations, including Psi Upsilon, the Molecular Gastronomists, Cloudman Chess Club, and others. The ability to observe and help develop the leadership skills of Georgia Tech students is incredibly inspiring!

I engage in scientific outreach both on and off campus through my participation in the STEM Communication VIP (STEMComm), Atlanta Science Festival, Science for Georgia,

and Science Olympiad at Georgia Tech. Through these activities I enjoy conveying the ideas that scientists (and Georgia Tech professors) are human beings just like anyone else and science touches nearly all aspects of our lives in some way.

I am also the chair of the Communications Captains group in the School of Chemistry and Biochemistry. In this role, I manage social media for the School as well as contributions to our website. I also work with a group of undergraduate students and graduate/postdoc representatives of the research groups (the “Communications Captains”) to write and publish stories on research and events in our department.

January 18, 2024

Dear committee,

I am delighted to be writing in support of Dr. Mike Evans's nomination for the 2024 Undergraduate Educator Award. As I detail below, Dr. Evan's excellence in instruction is well documented and known to create the very best learning environment for our undergraduate students. For an award that recognizes "teaching excellence in core courses, required courses or large courses", Dr. Evans immediately comes to mind as he excels at teaching all these three types of courses.

Dr. Evans's teaching responsibilities are large enrollments first-year general chemistry courses and organic chemistry courses. For the purposes of this letter, I reviewed CIOS data on Dr. Evans's instruction for the past couple of years during which he taught multiple sections and a broad array of undergraduate courses: (i) CHEM 1211K – Chemical Principles I, (ii) CHEM 1212K – Chemical Principles II, (iii) CHEM 2311 - Organic chemistry 1, (iv) CHEM 2312 - Organic chemistry 2 and (v) CHEM 1315 – Survey of Organic Chemistry. In all the courses, Dr. Evans's instruction is defined by his passion for chemistry. His enthusiasm is contagious, promote engagement and is praised across the board by his students. In numbers, his consistent ratings of 4.9 (out of 5) on end of semester survey for "instructor enthusiasm" are further testimony to his dedication to his students and chemistry.

As the Chair of Teaching Effectiveness Committee in the School of Chemistry and Biochemistry for the past three years, I have had the pleasure of observing firsthand Dr. Evans's teaching as well as coordinating other peer evaluations of his work in the classroom. When I attended his class, Dr. Evans implemented several strategies to individually engage students such as deploying learning assistants for in-class problems and using a ludic bucket full with students' names that are picked-up randomly to respond to the instructor's inquiry. Across the board, peer assessments of Dr. Evans' teaching are impressive:

- "Dr. Evans's is amongst the best I have observed at Georgia Tech, which is even more impressive given the perceived difficulty of the content."
- "Dr. Evans spoke with authority, enthusiasm and charisma"

I will be remiss if I did not mention Dr. Evans' recorded lectures and resources on undergraduate chemistry topics that are available on-demand in support of students' success. These lectures are available on YouTube and offer a model of concision and clarity, laying out chemistry topics in an organized and cogent style. Dr. Evans is a very

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approachable colleague, and somehow, he conveys this quality in his series of video lectures. In fact, one of the peer-observers stated: "I have never seen a more engaging pre-recorded series".

In summary, Dr. Evans as a junior faculty is among the most committed and passionate teachers that I have had the pleasure to observe. By any measure, the CTL Undergraduate Educator Award would be well-deserved recognition of the broad and significant impact Dr. Evans' teaching has on our Georgia Tech's undergraduate students. I hope he garners strong consideration.

On behalf of the DOTE Committee,



Pamela Pollet  
Director of Teaching Effectiveness

Dear Awards Committee,

I am writing to recommend Dr. Michael Evans for the Georgia Tech Undergraduate Educator Award. During the spring 2023 semester, I had the pleasure of experiencing Dr. Evans' teaching strategies firsthand in CHEM 2312 (organic chemistry II), and I can say confidently that his teaching practices had a greatly positive impact both on my learning and on my wellbeing as a student.

Organic chemistry is without a doubt one of the most difficult courses students take in their undergraduate career, and it is notoriously stressful. In Dr. Evans' class, however, students were introduced to a hybrid grading system, which provided us with concrete learning goals and implemented feedback on our mistakes without penalizing us with a lowered grade. This form of assessment not only reduced my anxiety about the class, but also increased the amount I learned.

In addition to this grading system, Dr. Evans utilized a 'reversed classroom' teaching strategy, which was incredibly helpful. His pre-lecture videos allowed me to learn during times and settings that were comfortable to me, while his in-class practice problems offered a deeper look into the concepts covered in the pre-lecture videos. Given the opportunity to learn organic chemistry at my own pace was extremely beneficial. I had the ability to pause videos and re-watch sections to ensure my full understanding of the concepts before the lecture. It is worth noting that while many other classes do offer pre-lecture videos, these are often links to videos on YouTube or similar platforms; Dr. Evans, however, recorded every single pre-lecture video himself. This practice not only reduced discrepancies between teaching styles, but also maintained a level of organization for notetaking that I found beneficial to my learning.

Lastly, I believe that Dr. Evans is very transformative and understanding as an instructor. He was always opened to hearing feedback about his teaching, and was sympathetic and understanding of students' situations, both academically and otherwise. It is often rare to find a professor so devoted to their work and open to transitioning their teaching styles to benefit their students in the way Dr. Evans did.

I highly recommend Dr. Evans for the Georgia Tech Undergraduate Educator Award, as he has had an extremely positive impact on both my learning and my appreciation for the course he taught me.

Sincerely,

Beeta Nadjafi Enfaradi  
B.S. Biochemistry

Dear Awards Committee,

I write you today in support of Dr. Evans for the GT undergraduate educator award. As a third-year undergraduate in the CHBE program, I have had the pleasure of taking CHEM 2312 with Dr. Evans. Additionally, I have taken both CHEM 1211 and 1212 and the associated labs, all of which were coordinated by Dr. Evans. Furthermore, I have worked for tutoring and academic support for five semesters as a learning assistant. During this time, I have three courses taught by Dr. Evans, CHEM 1212 during Spring 2023, CHEM 2311 during Summer 2023, and currently CHEM 2312 (Spring 2024).

During my experiences working with Dr. Evans, I can confidently state his priority has and always will be student learning. This is demonstrated by his continued effort to maintain high academic standards while creating a community that fosters growth, learning, and positive relationships between faculty and students. In all courses I have taken or worked in with Dr. Evans he has used a semi-flipped mode of lecturing. In this model students spend some time learning the material before attending lecture. This exposes students to the material and allows them to work with the material at their own pace. Given that chemistry and especially organic chemistry is inherently a challenging subject I found this to be invaluable as I was able to digest and struggle with the material without feeling rushed in a 50-minute lecture. Furthermore, exposure to the material allowed me to come to lecture prepared with questions allowing them to be answered swiftly and in detail. During lectures, after students have been exposed to the material, Dr. Evans spends time summarizing the most important topics and spends the remaining time engaging students in active learning. Every lecture has a problem set that is to be worked on collaboratively between students during lecture. Dr. Evans not only roams the classroom engaging groups of students while they solve problems, but he has also implemented the use of learning assistants (such as myself) and teaching assistants during lectures to provide further support to students while they participate in active learning. As a student and as a learning assistant I have found this support system and method of active learning has provided an environment where students are constantly engaged with content but are also not afraid to ask questions and engage with other students. Furthermore, the semi-flipped lecture style has required great dedication by Dr. Evans as he has spent the time making skeletal slides with associated YouTube videos for students to watch prior to lecture. In CHEM 2312 I found these resources as a saving grace. Dr. Evans understands that life happens and sometimes you may not be able to engage with a lecture or have the time to watch the material before class. The access to resources Dr. Evans has supplied through these videos gave me the luxury of going back and reviewing material in depth. These semi-flipped lectures, access to resources provided by Dr. Evans, and active learning style has helped me grow as a student and learn more than I have in any other course I have taken at Georgia Tech. Furthermore, through working as a learning assistant under Dr. Evans I have also seen his lecture style and dedication help countless students not only learn, but also and engage with faculty and their peers leading to a positive and uplifting environment that fosters learning.

Dr. Evans's dedication to the growth and learning of his students is further demonstrated by his ability to adapt his grading methods to provide flexibility to his students while maintaining high academic standards. Dr. Evans has implemented a hybrid grading model that incorporates specifications grading into his organic chemistry courses. This allowed me and other students to study in a much more deliberate manner eliminating wasted time and stress as it was clear what the learning goals and associated expectations were. Additionally, Dr. Evans



understands that learning is a continuous process allowing more than one opportunity to reach proficiency for each learning specification. During my tenure at Georgia Tech, making mistakes and receiving valuable feedback from them has been the single most valuable learning tool for my growth as an individual. In almost every course I have taken at this institute I have received a grade for my work paired with solution keys for the corresponding assignment. This has left me to search for where my mistakes are and how to correct them on my own time after it is already too late to make the correction on them. This has also made me reluctant to ask for feedback because I feel like there has been no effort to provide it. Dr. Evans's mode of specifications grading drops this barrier between student and faculty. He distributes weekly learning target quizzes where a student has an opportunity to prove proficiency for a learning specification. However, if the quiz is not passed on the first attempt, there are still two more opportunities to prove proficiency for the learning target. Additionally, Dr. Evans spends an extensive amount of time grading each students learning target quiz to provide intricate feedback to everyone. This ensures that any student who has made any mistake, even if they still passed the quiz, knows what mistake they made and how to correct it. As a student this significantly reduced the amount of stress I experienced when taking the course as I was not afraid to make mistakes. Furthermore, it lowered the barrier between faculty and student opening productive conversations leading to valuable feedback and growth. These weekly quizzes ensured I was staying up with course content without providing excessive stress because of the multiple opportunities to master a topic. This made learning the content feel almost effortless. Additionally, it created a classroom that felt like a community which fostered learning and promoted conversations between peers and faculty.

Dr. Evans's dedication to student learning has helped me grow as a student and as an individual. His understanding for the struggle students experience along with his creativity as an instructor lead to me learning more about in his courses than any others while stressing less. His hybrid lecture and grading styles allow for student flexibility while maintaining high academic standards which culminates into student growth. Additionally, his use of specifications grading, combined with exceptional feedback and incorporation of active learning has lowered the barrier not only between peer cooperation but also encouraged student and faculty collaboration. Dr. Evans's passion for teaching has also impacted me outside the classroom. He has inspired me to continue to dedicate my time to help students learn chemistry through the learning assistant program despite my continuously busy schedule. For these reasons, I am in full support of Dr. Evans as the GT undergraduate educator of the year award.

Sincerely,

Carter Guerrin  
B.S. Chemical and Biomolecular Engineering

Dear Awards Committee,

It is my honor and pleasure to support the nomination of Dr. Michael Evans for the 2024 Undergraduate Educator Award. I've taken several courses with Dr. Evans and have worked closely with him as a laboratory teaching assistant over the past few years. As such, I feel confident in my assertion that he is a compassionate and innovative instructor who plays a vital role in enriching the lives of students at Georgia Tech.

Dr. Evans' passion for chemistry shines through his lectures, with the incorporation of humorous anecdotes that keep students engaged and cutting-edge digital demonstrations that impart a deeper understanding of material. The innovative methods he applies in the classroom immediately jump to mind as something that sets him apart from other instructors. His use of three-dimensional simulations in introductory chemistry gives students a deeper sense of the space that molecular orbitals occupy, and the incorporation of interactive mobile puzzles in organic chemistry challenges students to show electron flow through a gamified means. This seamless incorporation of digital tools into the classroom helps to enhance learning and get students excited about the material.

These aren't the only educational innovations that Dr. Evans' has incorporated into his classroom. His means of delivery and grading structures are also key to the impactful nature of his instructional efforts. His emphasis on the larger intuitive patterns underlying organic chemistry speaks to the transferable nature of the skills he imparts to students in the classroom: reasoning by analogy, systematic problem solving, and perseverance, to name a few. By giving students multiple chances to meet learning targets through a specifications-based grading system, students are encouraged to push through initial failures to gain a deeper understanding of chemical concepts. This type of engagement is not typically present in traditional grading structures, where students are not often given room to recover from their mistakes. In this way, I appreciate Dr. Evans' approach to education as both innovative and unique, and I can attest firsthand to its effectiveness.

Not only are his instructional methods innovative, but the welcoming atmosphere he creates in and outside of the classroom makes him very approachable. I found this to be true even at times when I was struggling with the rigorous material. The availability of channels of communication that are less formal makes Dr. Evans an accessible instructor compared to his contemporaries, particularly to students who may be hesitant to reach out through more formal means. During my first semester at GT, I remember my reluctance to communicate with instructors while still learning the ropes of email etiquette. These alternate forms of communication made all the difference when it came to clarifying content and course logistics.

Dr. Evans' impact extends far beyond the classroom. Seeing his passion for chemical education sparked my own interest in educational outreach. It was his mentorship and encouragement that inspired me to become a laboratory teaching assistant for introductory chemistry, through which I gained a new appreciation for the hard work that goes into classroom and laboratory instruction.

Dr. Evans' infectious passion for education further drove me to get involved with STEMComm, a VIP at Georgia Tech with the purpose of increasing engagement with STEM fields and promoting science education beyond the classroom. Through this project, I've seen firsthand how Dr. Evans uses novel creative means to promote engagement with the sciences, including via music and live demos. His volunteerism with the Atlanta Science Festival further reflects his willingness to go above and beyond the call of duty with science outreach, inspiring an interest in chemistry and the sciences in young and old audiences alike.

Throughout my time at Georgia Tech, Dr. Evans has served as an invaluable mentor. He is my first choice when seeking academic or professional advice. Through his clear dedication to classroom instruction and student mentorship, Dr. Evans stands out as one of the most impactful educators within the Georgia Tech community. His educational initiatives—both inside and outside of the classroom—have enriched the lives of students both academically and otherwise. As such, I wholeheartedly recommend him for this award, and hope he will be recognized for his monumental contributions to the Georgia Tech community.

Sincerely,

Veronica Sills  
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