

**Nomination of Dr. Cassie S. Mitchell:
Regents' Teaching Excellence Awards for Online Teaching**

Table of Contents

Nominating Letter – Provost Dr. Raheem Beyah	
Nominee's Condensed Curriculum Vitae	1
Nominee's Reflective Statement	4
Teaching Artifacts and Innovations	6
Evidence of Online Teaching Excellence	8
Letter of Support	12



December 3, 2025

Board of Regents of the University System of Georgia

270 Washington Street, SW
Atlanta, GA 30334

Re: Nomination of Dr. Cassie Mitchell for the Regents' Teaching Excellence Award for Online Teaching

Dear Regents' Teaching Excellence Awards Selection Committee:

I am honored to nominate **Dr. Cassie S. Mitchell** for the Regents' Teaching Excellence Award for Online Teaching. Dr. Mitchell is an Associate Professor in the Wallace H. Coulter Department of Biomedical Engineering at the Georgia Institute of Technology. As a faculty member who teaches exclusively online, she has demonstrated years of sustained excellence in instruction, mentoring, and course innovation that have profoundly expanded access, engagement, and student success at Georgia Tech.

Dr. Mitchell's online teaching portfolio is both broad and deep, spanning undergraduate, graduate, and research experiences. She regularly teaches BMED 2400 (Bioengineering Statistics), BMED 4813/8813 (Systems Neuropathology), BMED 6781 (Clinical Neurology), BMED 6791 (Translational Neuroengineering), and BMED/CS/NEUR 4699 (Undergraduate Research), all in fully online formats. Her entire teaching load is online, yet she consistently achieves the department's highest enrollments, strongest retention, and outstanding Course Instruction Opinion Survey (CIOS) evaluations, with overall effectiveness ratings above 4.7 and perfect scores in enthusiasm, stimulation of interest, and inclusion. Her excellence has been recognized with multiple institutional honors, including the GT Teaching Excellence Award for Online Teaching (2025), the Outstanding Teaching Award – Early Career from the College of Engineering, repeated GT Student Recognition of Excellence in Teaching (CIOS Honor Roll), and multiple "Thank a Teacher" commendations from the Center for Teaching and Learning.

At the heart of Dr. Mitchell's work is a deeply student-centered, Universal Design for Learning (UDL) approach. In her reflective statement, she describes the online classroom as a "living garden," where structure, interaction, and support are intentionally cultivated so that every learner can thrive. She brings this philosophy to life through clear and transparent course organization, predictable module design, and explicit guidance on how to succeed. Dr. Mitchell integrates multiple means of engagement and representation by providing a range of learning materials such as concise readings, narrated lectures, simulations, and authentic case studies, so that complex biomedical content becomes accessible without sacrificing rigor. Her use of micro-incentives such as short, low-stakes "pop extra-credit" quizzes, data-driven feedback dashboards,

////////////////////////////////////
Raheem Beyah

Provost and Executive Vice President for Academic Affairs

225 North Avenue, NW
Atlanta, Georgia 30332-0700 U.S.A.
Phone: 404.385-2700

and flexible assessment pathways encourages consistent engagement, supports self-regulation, and reduces barriers for students balancing coursework with other responsibilities.

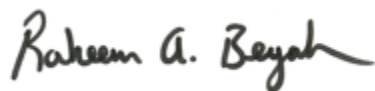
Dr. Mitchell's innovation extends beyond traditional courses into online research education at scale. She leads the Online Research Learning Pathway, a fully online research training program that prepares students to contribute to real-world, AI-for-healthcare, and biomedical data science projects. Through carefully scaffolded online modules, guided annotation practice, and tiered peer mentoring roles, students build advanced technical and analytical skills while collaborating asynchronously in authentic research workflows. In 2024 alone, 78 online students, ranging from Georgia Tech undergraduates to high school participants worldwide, contributed to projects that led to peer-reviewed publications, including the TrialSieve study, and earned prestigious honors such as the President's Undergraduate Research Award, the Sigma Xi Undergraduate Research Award, and the Goldwater Scholarship. This work exemplifies how online learning, when thoughtfully designed, can become a powerful engine for high-impact, research-rich education.

Dr. Mitchell also leverages online environments to broaden participation and foster belonging in STEM. She is the co-founder and advisor of ABLE Alliance, a predominantly online professional development and mentoring program that supports students with disabilities pursuing STEM careers. Through virtual workshops, remote networking events, and sustained mentoring relationships, ABLE Alliance has provided meaningful community and career preparation for nearly 300 students. Dr. Mitchell's own lived experience as a scientist with quadriplegia and ongoing cancer treatment deeply informs her data-driven, universally designed pedagogy; she models resilience, empathy, and excellence in ways that resonate profoundly with her students and colleagues alike.

Taken together, Dr. Mitchell's record reflects far more than strong teaching evaluations. Her courses expand access to rigorous biomedical engineering content, her online research pathway transforms learners into co-creators of new knowledge, and her mentoring and leadership work, especially with students with disabilities, demonstrate an unwavering commitment to student success. She embodies the very best of what online education can be: rigorous, accessible, innovative, and life-changing for the learners it serves.

For these reasons, I am honored to offer my strong endorsement of Dr. Cassie S. Mitchell for the Regents' Teaching Excellence Award for Online Teaching. She exemplifies the highest standards and spirit of this award, and I am confident that her continued leadership in online teaching and learning will continue to transform the learning experience for students, inspire colleagues, and strengthen the broader STEM community for years to come.

Sincerely,

A handwritten signature in black ink that reads "Raheem A. Beyah". The signature is fluid and cursive, with the first name "Raheem" being more prominent.

Raheem A. Beyah
Provost and Executive Vice President for Academic Affairs
Georgia Institute of Technology

ABBREVIATED CV

CASSIE S. MITCHELL

cassie.mitchell@bme.gatech.edu | www.pathology-dynamics.org

Education

PostDoc (12/2010) Neurology, Emory University School of Medicine
Ph.D. (5/2009) Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA
B.S. (7/2004) Chemical Engineering, Oklahoma State University, Stillwater, OK.

Professional Experience

2023-present Associated Professor [with tenure], Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine
2017-2022 Assistant Professor, Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine
2017-present Program Faculty and Faculty Lead, Machine Learning @ GT
2011-2017 Research Engineer II, Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine

Select Teaching & Engineering Education Honors and Awards

2025 GT Teaching Excellence Award for Online Teaching
2024 GT Student Recognition of Excellence in Teaching Award, CIOS Honor Roll for Large Course in College of Engineering
2024 Thank a Teacher Award, Center for Teaching & Learning @GT
2023 Outstanding Teaching Award- Early Career, College of Engineering, GT
2023 GT Student Recognition of Excellence in Teaching Award, CIOS Honor Roll for Large Course in College of Engineering
2022 GT Student Recognition of Excellence in Teaching Award, CIOS Honor Roll for Large Course in College of Engineering
2022 Thank a Teacher Award, Center for Teaching & Learning @ GT
2022 Chan Zuckerberg Diversity Leadership Award
2022 GT Outstanding Undergraduate Research Mentor Award (Junior Faculty)
2022 GT EVPR Outstanding Diversity, Equity & Inclusion in Research Award
2021 Sigma Xi Young Faculty Award
2021 GT Student Recognition of Excellence in Teaching Award, CIOS Honor Roll for Large Course in College of Engineering
2020 GT Student Recognition of Excellence in Teaching Award, CIOS Honor Roll for Large Course in College of Engineering
2020 Thank a Teacher Award, Center for Teaching & Learning @GT
2020 National Science Foundation CAREER Award
2020 Faculty Award for Academic Outreach, Center for Teaching & Learning @ GT
2020 Faculty Diversity Champion at GT
2019 American Neurological Association Derek Denny Brown Outstanding Young Investigator for Neuroscience

Select Recent Refereed Journal Articles from the *Online Research Learning Pathway

**The Online Research Learning Pathway is a fully online research education program described in page 3 of the Online Education Excellence section.*

*Kartchner, D., Turner, H., Ye, C., Al-Hussaini, I., Nursal, B., Lee, A. J. B., Deng, J., Curtis, C., Cho, H., Duvaris, E. L., Jackson, C., Shanks, C. E., Tan, S. Y., Ramalingam, S., & Mitchell, C. S. (2025). TrialSieve: A Comprehensive Biomedical Information Extraction Framework for PICO, Meta-Analysis, and Drug Repurposing. *Bioengineering*, 12(5), 486. <https://doi.org/10.3390/bioengineering12050486>

*Lee, A. J. B., Bi, S., Ridgeway, E., Al-Hussaini, I., Deshpande, S., Krueger, A., Khatri, A., Tsui, D., Deng, J., & Mitchell, C. S. (2025). Restoring Homeostasis: Treating Amyotrophic Lateral Sclerosis by Resolving Dynamic Regulatory Instability. *International Journal of Molecular Sciences*, 26(3), 872. <https://doi.org/10.3390/ijms26030872>

*Wei, Z., Iyer, M. R., Zhao, B., Deng, J., & Mitchell, C. S. (2024). Artificial Intelligence-Assisted Comparative Analysis of the Overlapping Molecular Pathophysiology of Alzheimer's Disease, Amyotrophic Lateral Sclerosis, and Frontotemporal Dementia. *International Journal of Molecular Sciences*, 25(24), 13450. <https://doi.org/10.3390/ijms252413450>

*Al-Hussaini I., White B., Varmezian A., Mehra N., Sanchez M., Lee J., DeGroote NP, Miller TP, Mitchell CS. An Interpretable Machine Learning Framework for Rare Disease: A Case Study to Stratify Infection Risk in Pediatric Leukemia. (2024). *Journal of Clinical Medicine*. 2024; 13(6):1788. <https://doi.org/10.3390/jcm13061788>

*Singh, A., Maker, M., Prakash, J., Tandon, R., Mitchell, C.S. What Threshold of Amyloid Reduction Is Necessary to Meaningfully Improve Cognitive Function in Transgenic Alzheimer's Disease Mice? (2024). *Journal of Alzheimer's Disease Reports*. 1 Jan. 2024 : 371 – 385. 10.3233/ADR-230174

*Kartchner, D., McCoy, K., Dubey, J., Zhang, D., Zheng, K., Umrani, R., Kim, J.J., Mitchell C.S. (2023). "Literature-Based Discovery to Elucidate the Biological Links between Resistant Hypertension and COVID-19." *Biology* 12(9), 1269. <https://doi.org/10.3390/biology12091269>

*Tandra, G., Yoone, A., Mathew, R., Wang, M., Hales, C.M., Mitchell, C.S. (2023). "Literature-Based Discovery Predicts Antihistamines Are a Promising Repurposed Adjuvant Therapy for Parkinson's Disease." *Int. J. Mol. Sci.* 24(15), 12339. <https://doi.org/10.3390/ijms241512339>

*Kronick, O., Chen, X., Mehra, N., Varmezian, A., Fisher, R., Kartchner, D., Kota V., Mitchell C.S. (2023). "Hematological Adverse Events with Tyrosine Kinase Inhibitors for Chronic Myeloid Leukemia: A Systematic Review with Meta-Analysis." *Cancers* 15(17):4354. <https://doi.org/10.3390/cancers15174354>

Fully Online Teaching

BMED 2400 – Bioengineering Statistics – This is a required course for Biomedical Engineering undergraduates although other majors can also take. BMED 2400 is an introduction to statistical modeling and data analysis in bioscientific and bioengineering applications. Online course size ranges from 50 to 100 students.

BMED 4813 – Systems Neuropathology & Translational Engineering – This was a special topics elective for Biomedical Engineering and Neuroscience students that I personally developed. Neuropathology is disease and/or injury of the nervous system. This is a

clinical neuro course for engineers focused on diagnostics, prognostics, therapeutics, and rehabilitative technology for neurological patient management and care. Translational engineering fundamentals are also applied to real-world neurological cases. BMED 4813 had content and assessments tailored to undergraduate-level learning with a proof-of-concept translational product. Online course size of 50 students.

BMED 8813 – Systems Neuropathology & Translational Engineering – BMED 8813 is the graduate-level version of BMED 4813 described above. Likewise, it was a clinical neuro course for engineers focused on diagnostics, prognostics, therapeutics, and rehabilitative technology for neurological patient management and care. A key differentiator from BMED 4813 was that BMED 8813 had to have a comprehensive translational research project with fully validated analysis. Online course size was 50 students.

BMED 4813/8813 (see above) were special topics courses. I split the special topics course into two specialized permanent online courses: Clinical Neurology (BMED 6781) and Translational Neuroengineering (BMED 6791) to enable even more in-depth online education.

BMED 6781 – Clinical Neurology–Clinical Neurology focuses specifically on the clinical physiology, pathology, differential diagnosis, prognosis, and treatment of complex neurological disease and injury. It is very similar to an introductory medical neurology residency, which is taught to M.S., Ph.D., and M.D.-Ph.D. engineers in Biomedical Engineering and Neuroscience. A key skill is the ability to do develop and interactively present patient case studies. Online course size is 50+ students.

BMED 6791 –Translational Neuroengineering–Neuroengineering is an intensively quantitative design course that leverages graduate level engineering first principles and data science/machine learning to develop novel translational designs as solutions to current, real-world challenges in the diagnosis, prognosis, and treatment of neurological disease and injury. It is taught to M.S., Ph.D., and M.D.-Ph.D. engineers in Biomedical Engineering and Neuroscience. Online course size is 50+ students.

BMED 4699/CS 4699/NEUR 4699 – Online Undergraduate Research– These fully online courses provide research course credits for the Online Research Learning Pathway. Students are taught in an innovative online self-contained research program with outcomes that focus on peer-reviewed published journal articles comprised of healthcare analytics.

Last 3 Years of Taught Fully Online Courses

Spring 2026 – BMED 6791, BMED 4699/CS 4699/NEUR 4699

Fall 2025 – BMED 6781, BMED 4699/CS 4699/NEUR 4699

Summer 2025 – BMED 4813 R, BMED 2400

Spring 2025 – BMED 4699/CS 4699/NEUR 4699

Fall 2024 – BMED 4813, BMED 8813, BMED 4699/CS 4699/NEUR 4699

Summer 2024 – BMED 2400 A, BMED 2400 R

Spring 2024 – BMED 4699/CS 4699/NEUR 4699

Fall 2023 – BMED 4813, BMED 8813, BMED 4699/CS 4699/NEUR 4699

Summer 2023 – BMED 4813 R, BMED 2400

Spring 2023 – BMED 4813, BMED 8813, BMED 4699/CS 4699/NEUR 4699

Fall 2022 – BMED 4813, BMED 8813, BMED 4699/CS 4699/NEUR 4699

Summer 2022 – BMED 4813 , BMED 2400

REFLECTIVE TEACHING STATEMENT

I view teaching as the act of cultivating growth—of creating an ecosystem in which students can take root, draw nourishment, and bloom into independent thinkers. My online classroom is a living garden, and my teaching philosophy follows the same principles as good gardening: nurture what is planted, adapt to the conditions, and trust that consistent care yields growth that endures beyond any single season.

In this garden, every element of the learning environment plays a distinct and essential role. *Students are the plants*, each growing at different rates and in unique directions. *Roots represent course structure*, anchoring learning with stability and clarity. *Soil supports interaction*, providing a shared medium where communication and participation take hold. *Sunlight represents knowledge*—the ideas and content that must reach learners from multiple angles. *Water and fertilizer* supply engagement and motivation, fueling persistence and curiosity. The *greenhouse* moderates rigor and flexibility, protecting learning during life’s inevitable storms. Finally, the *gardener—the teacher—tends the entire ecosystem*: observing growth, enriching the soil, pruning when needed, and encouraging every plant toward its potential.

This framework of care and intentional design mirrors the principles of **Universal Design for Learning (UDL) pedagogy**, which provides *multiple means of engagement, representation, and action or expression* to support all learners. Grounded in this framework, UDL ensures that students encounter content through flexible, accessible pathways that empower them to engage deeply, understand clearly, and demonstrate mastery authentically. In my classroom, *engagement* is the water and fertilizer that sustain curiosity and motivation; *representation* is the roots and soil that offer structure, clarity, and accessibility; and *action and expression* are the leaves that emerge above ground—the visible demonstrations of growth and learning.

The **roots and soil** of my courses provide stability and transparency. Clear expectations, consistent modules, and predictable flow form the foundation that anchors student confidence. Structured communication and discussion build an interconnected root system, allowing learners to draw support from one another while remaining firmly grounded in course objectives.

Sunlight represents knowledge itself—information that must reach every learner. I illuminate topics through multiple modalities: concise readings, narrated lectures, simulations, and applied case studies. By presenting content from diverse angles, I ensure that each student receives the light they need to grow, no matter where they are planted.

Water and fertilizer sustain engagement and motivation. I infuse enthusiasm into lectures, problem sessions, and messages, believing that energy is contagious. Frequent encouragement, real-world connections, and micro-incentives—such as extra-credit quizzes or applied challenges—act as fertilizer, promoting steady and joyful learning.

The **leaves** that emerge above ground represent *action and expression*, the outward signs of growth. Students demonstrate mastery through varied assignments—projects, reflections, and data-driven analyses—that allow for creativity and choice. This diversity ensures that every learner can show understanding in ways aligned with their strengths.

The **greenhouse** balances rigor and flexibility. Policies such as “drop lowest grade” or flexible submission windows act as controlled climate adjustments, providing protection during storms—

whether a personal hardship or a campus-wide disruption—while maintaining accountability and academic standards.

Like any attentive gardener, I monitor growth closely. I look for early signs of wilted leaves—drops in participation, delayed submissions, or changes in discussion patterns—and intervene before learning withers. Using analytics with empathy, I identify where students may need more sunlight, water, or support, and respond with personalized feedback, targeted resources, or course adjustments.

Farmers follow the farmer's almanac to optimize planting seasons. Each semester, I turn to my **Teacher's Almanac**—a reflection on course analytics, student feedback, and learning outcomes—to plan for the next growing season. By comparing participation trends, completion rates, and grade distributions, I identify which conditions yielded the strongest growth. These reflections guide my continuous refinement of structure, incentives, and engagement methods, ensuring that each new course iteration nourishes even deeper learning.

My own lived experience as a scientist with quadriplegia and ongoing cancer treatment continually reminds me that perseverance and design are deeply intertwined. Every barrier I encounter sharpens my resolve to create environments that are universally accessible, flexible, and empowering. This **data-driven, universal design pedagogy** is not an abstract theory—it is a daily practice of tending, observing, and adapting, of translating resilience into teaching.

Like a seasoned gardener, I measure success not by perfection but by progress—by the steady unfolding of growth across seasons of learning. Not every seed blooms in the same way or at the same pace, but with care and structure, all can grow stronger. Each course becomes a new garden, and each student adds vitality to the ecosystem we build together. Teaching, like gardening, is never finished—it is a cycle of reflection, renewal, and hope. My role as a teacher is to keep cultivating the conditions where every learner can grow.

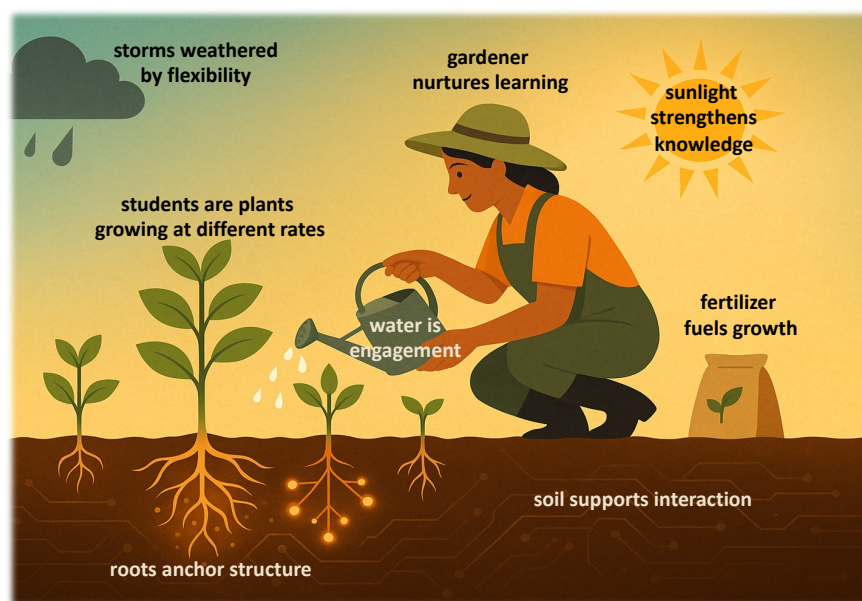
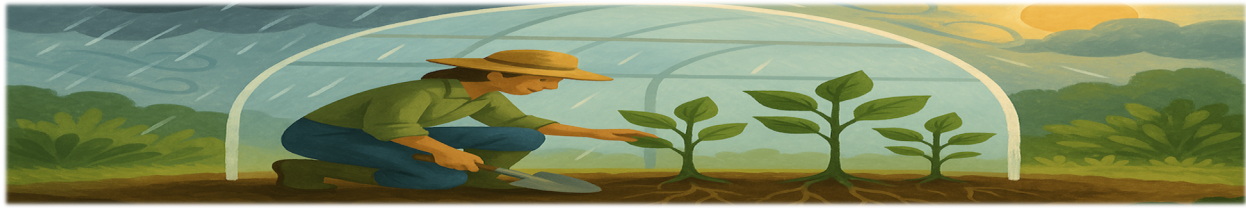


Figure 1. The Garden as an Online Classroom. A visual metaphor illustrating how Universal Design principles cultivate growth in online learning.

TEACHING ARTIFACTS AND INNOVATIONS

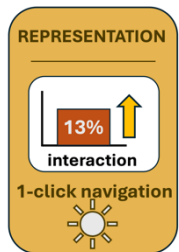


I approach online teaching as an opportunity to cultivate growth through design, data, and empathy. Each element of my course structure is intentional—grounded in the **Universal Design pedagogy** principles that prioritize engagement, representation, and action & expression. My courses combine clear organization, real-time analytics, and motivational micro-incentives to promote both academic rigor and human connection. The following strategies illustrate how evidence-based design translates into measurable gains in student growth and outcomes.



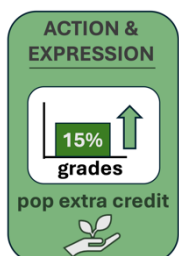
Recurrent Reminders & Daily Checklist Notification: Students receive “To-Do” summaries and timed notifications for each course day, 24 hours before deadlines, and one hour before submissions. These recurrent notifications increased participation by an astounding **+71% ↑↑**.

Data-Driven Student Support: I developed an algorithm to analyze Canvas login and participation data, allowing me to identify and check in on students showing early signs of disengagement or distress. This proactive approach has strengthened student connection in large classes and, in several cases, facilitated timely and potential life-saving referrals for professional mental health support.



Structured Easy-Access Course Design: I pre-plan each course with clear daily checklists and one-click navigation to every component, which decreases access barriers. Subsequently, Canvas interaction increased by **+13% ↗**.

Accessible and Flexible Assessments: Using randomized question banks, I created flexible, auto-graded exams that uphold academic integrity while accommodating diverse learners. This structure provides immediate feedback and reduces anxiety by letting students test under optimal conditions. Complex engineering problems are deconstructed to retain partial-credit logic (concept, method, analysis, and interpretation) with immediate feedback. Similarly, clinical case studies use sequential mini-checks to evaluate reasoning at each stage, enabling credit for diverse skill demonstration.



Micro-Incentives for Engagement: Short, low-stakes “pop extra-credit” quizzes (3 short questions) align with daily lectures and homework, rewarding attentiveness without penalty. These micro-incentives improved overall course grades by **+15% ↑** (≈ 1.5 letter grades) and Exam performance by **0.5 letter grades**, demonstrating measurable gains in retention and mastery. Micro-incentives further enable an individualized merit-based “curve” with an rigorous standard set grading scale. Pop extra credit increased daily lecture participation by **+27% ↑↑**.

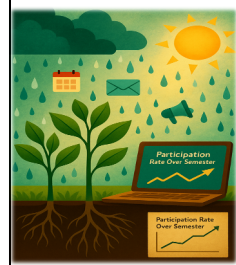
Interactive Problem Sessions and Design Challenges: Live virtual problem-solving sessions achieve **>92%↑** voluntary attendance, fostering real-time collaboration among undergraduates, graduate students, and clinicians. In the culminating “Design Challenge,” students apply course principles to authentic problems—often leading to conference presentations or publications.

This is your friendly reminder that the Extra Credit Quiz for Lecture L3.2 - Motoneuron Disease is due by M. 10/13 @ 11:59pm ET.

#NeverNeverNeverGiveUp



ENGAGEMENT



SECTION 2

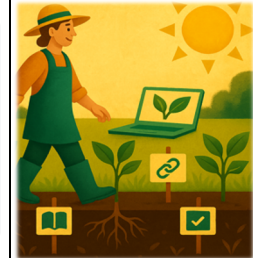
Mon. 9/15

- L2.1 - Vascular Disease & Ischemia: [link to view L2.1](#)
- L2.1 HW ; L2.1 ECQ due 11:5pm ET

Wed. 9/17

- L2.2 - Neurotrauma I (TBI): [link to view L2.2](#)
- L2.2 HW ; and L2.2 ECQ due 11:59pm ET

REPRESENTATION



Quiz Instructions

This extra credit quiz covers rehabilitation engineering (Lecture 2.4). You will only be able to see one question at a time and must answer it before moving forward. You will not be able to return to previously answered questions. Answers will become available to view for one day after the quiz closes (e.g. 12:01am to 11:59pm the following day).

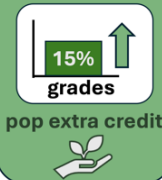
Question 2

0.5 pts

Case Study. A T10 ASIA B 35-year-old female patient is being fitted for an everyday manual rigid wheelchair. The insurance company does not have a covered wheelchair company provider that allows ergo seats but only standard squeeze seats. Which set-up would be best for her disability?

Daily extra-credit quizzes drive regular logins and implicit engagement, bringing students back to check answers and often into the discussion boards.

ACTION & EXPRESSION



JJ

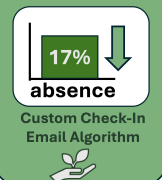
SysNeuroTrEngr-BMED4813/8813

6:06pm

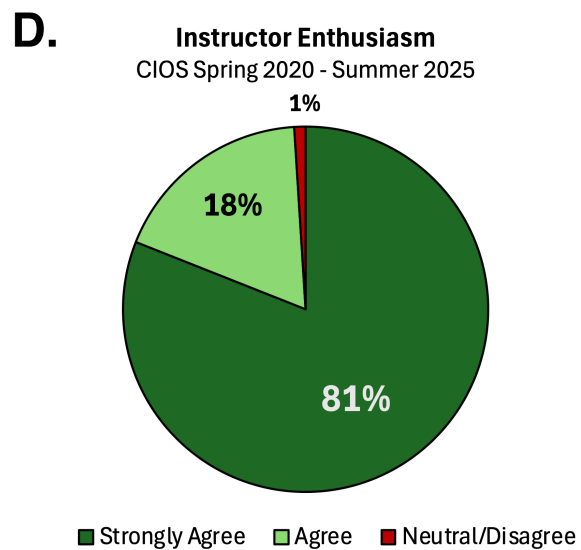
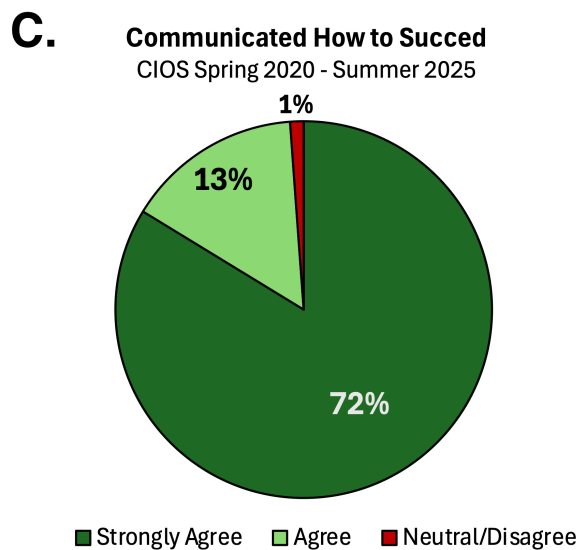
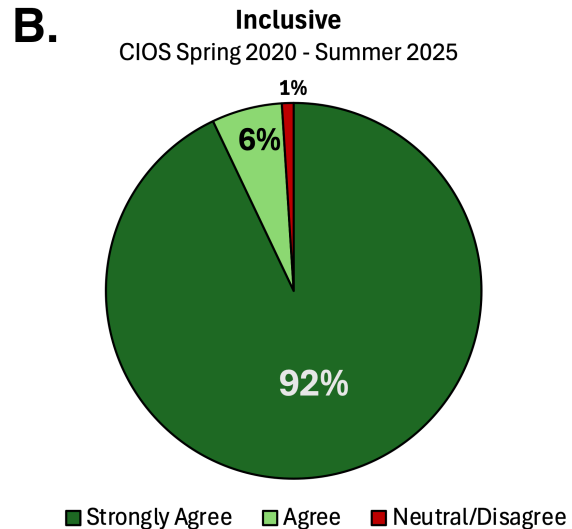
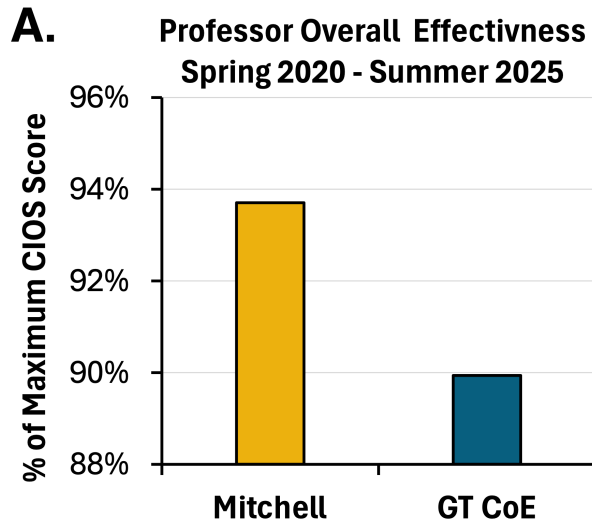
Hi Dr. Mitchell,

Thank you for reaching out to me. The last unit I did miss out on most of the extra credit quizzes primarily due to time management; I have been struggling a bit with studying for a couple of my other classes and balancing being the [redacted]. I've taken a reset and have created a more stable schedule for myself to make time for the quizzes and the class now so that I can keep on top of the topics. It means a lot to me for you to reach out and check up on me.

ACTION & EXPRESSION



EVIDENCE OF ONLINE TEACHING EXCELLENCE



Longitudinal student evaluation outcomes from 20 fully online courses (Spring 2020–Summer 2025). **Panel A** shows Dr. Mitchell’s CIOS “Instructor Overall Effectiveness” ratings consistently exceeding the Georgia Tech College of Engineering median [which includes mostly in-person courses]. **Panels B–D** illustrate exceptionally strong student sentiment for Inclusivity, Communicated How To Succeed, and Instructor Enthusiasm, with 99% of respondents selecting “Agree” or “Strongly Agree” across all three dimensions. *Note:* Includes online courses BMED 2400, 4813, 8813. The fully online undergraduate research course does not collect CIOS data.

Quotes from Student Freeform Comments on Georgia Tech CIOS Surveys

The below table illustrates some of the CIOS free text response field of what students liked best about the course. These quotations are from online courses for BMED 2400 Bioengineering Statistics (required course) BMED 4813 Systems Neuropathology (undergraduate elective), and BMED 8813 Systems Neuropathology & Translational Engineering (graduate elective).

- “Dr. Mitchell's demeanor is amazing. She encourages students to learn more and is very familiar with many approaches to the material and its' applications.”
- “Dr. Mitchell's passion for the subject material, which she conveyed to her students Dr. Mitchell also included lots of hands-on activities, case studies, etc. that made the material both engaging and personally-relatable.”
- “Dr. Mitchell passion for this topic was clearly evident. Her concern for students were also exceptional, offering many times outside of her office hours for designated feedback time. She also made interactions interesting by encouraging and engaging students with interactive activities such as back-of-the envelop calculations in estimating candy count in containers, showing catheters and wheelchair accessories that we learned about in lecture.”
- “She was passionate about the subject and always willing to help students.”
- “Good lecturer, able to keep me engaged and interested in the subject matter.”
- “Her teaching is exceptional! Very knowledgeable and explains very simple and well.”
- “Dr. Mitchell taught this class in an amazing way and ignited my interest in clinical neurology. She is very inspiring!”
- “Dr. Mitchell shows that she cares about the students learning and follows up about tasks missed. Shows concern if the material doesn't seem to click.”
- “The constant and uplifting encouragement through announcements was extremely helpful in forming the asynchronous class into an actual teacher-student relationship and was very appreciated. This helped me to try my best at studying well through the lazy summer days. I will definitely be making a printout of '#NeverNeverNeverGiveUp' to stick to my ceiling.”
- “Very available for help and very caring about students. Very kind.”
- “Respected the fact that most students taking this were also working/taking other classes. I learned a lot which I could use in my current Mitchell internship and this class did make me a lot more interested in statistics.”
- “Very enthusiastic”
- “The enthusiasm of teaching”
- “Best teacher I have ever had Georgia Tech hands down.”
- “My favorite course of all, including in person and online courses. Perfect balance of flexibility and accountability. Extra credit and reminders really kept [sic] on track.”

She was one of the best Professors I have had at Tech. She is literally amazing. I honestly kinda struggled in this class but she was always so encouraging and helpful. She always outlined the things that we could do to succeed in the course. Her course was very fair and encouraged actual learning of the material. She by far was the best teacher I had virtually. I think everyone should model their virtual teaching after her methods. I cannot say enough good things about her.

BMED 4813

From [REDACTED]
Date [REDACTED] 10:30 AM
To Mitchell, Cassie S <cassie.mitchell@bme.gatech.edu>

Hi Dr. Mitchell,

I just wanted to thank you for a great semester! I originally signed up for this class because it was the only depth elective that fit into my schedule, but it ended up being one of my favorite classes I've ever taken at Tech. Even though the class was online, and I usually don't pay attention very well in online classes, I watched all of the lectures (and looked forward to them). I really liked how you applied concepts to real life in terms of case studies as well as how BMED can be applied.

Several of my classes at Tech left me wondering why I was learning what I was learning, but this class made so many of the concepts click. It tied together so many of the engineering concepts I have spent the last four years wondering why I was learning and showed me new ways to apply the concepts I hadn't even considered.

I also wanted to share how this class shifted my perspective. I originally thought I wanted nothing to do with anything related to the nervous system because I've had such a bad experience with concussions in the past, but this class made me reinterested in pursuing neurology. I even started volunteering at the Shepherd Center because I liked what I was learning in this class so much and I wanted to learn more.

Your class even sparked almost weekly discussions with one of my friends who wasn't in the class about what I was learning because I thought it was so interesting, and she did too. I really hope you are able to teach this class again because I know several people who would love to take this class.

Thank you again for such a wonderful semester, and I hope you have a great break!

Best,
[REDACTED]

The content above the dark black line was an **UNSOLICITED** original email I [Dr. Cassie S. Mitchell] received from a student about how her online learning experience in BMED 4813 Systems Neuropathology & Translational Engineering totally reshaped her perspective on her academic training, its application, and even her future career. Such voluntary feedback, reflection, and initiative to write back after course completion to express gratitude and reveal such prophetic insights is the highest compliment of all to me as an online professor.

Inclusive, Scalable, and High-Impact Online Research Learning Pathway

To expand access to high-impact experiential learning, I created a **fully online research curriculum** grounded in the *Universal Design for Learning (UDL)* framework and aligned with *Quality Matters (QM)* principles for clear structure, learner support, and meaningful interaction. Since 2020, more than **250 students**—including **78 students in 2024** and **61% from underrepresented groups**—participated in this online program, enabling STEM research opportunities regardless of geography, disability, or financial constraints.

Application & Screening: Students begin with an online readiness assessment and a short Zoom interview evaluating motivation and learning disposition. This functions as a *QM-aligned learner analysis*, ensuring appropriate placement and early support.

Structured Onboarding. A two-week online onboarding sequence provides transparent expectations and scaffolded orientation consistent with QM Standard 1. Modules include narrated examples, visual schema diagrams, practice sets with solution keys, and brief competency checks, with weekly focus groups to reinforce clarity and community.

Guided Practice. Students apply skills through structured annotation tasks using online tools. Real-time communication channels (Zoom, Slack) support question-asking and collaborative reasoning, meeting QM expectations for learner–instructor and learner–learner interaction (Standards 5.2 and 5.3). Weekly feedback cycles strengthen accuracy, confidence, and self-regulation. Weekly merit-based awards incentivize and recognize.

Peer Mentoring & Role Progression. As students demonstrate mastery, they progress into roles that offer multiple means of action and expression: senior annotators, quality-control reviewers, or analysis-team members. These positions emphasize peer mentoring, conflict resolution, and collaborative refinement. This tiered structure builds community, supports persistence, and aligns with QM’s emphasis on active learning and ongoing feedback.

Scholarly Output & Learning Impact. Online learners contribute to authentic scientific outcomes, including **11 peer-reviewed publications** and numerous conference products. The published 2024 TrialSieve project (Kartchner, et. al., 2025, *Bioengineering*)—completed by **78 online students**—generated a large, annotated dataset, validated an AI-assisted biomedical meta-analysis pipeline, and resulted in public recognition. Program surveys demonstrate strong student satisfaction with training structure, motivational aids, and team-learning sessions (Cronbach $\alpha = 0.87$). Students report increased confidence, accuracy, analytical reasoning, and collaboration—key indicators of deep learning. **250 graduates** of the fully online research learning pathway program have a **100% job placement** in industry and **>92% acceptance to medical school or graduate school**.



← **Online Research Learning Pathway (Left).** UDL- and QM-aligned online curriculum providing structured, inclusive, and scalable research experiences. Over 250 online students—including 78 in 2024—contributed to authentic research products such as 11 peer-reviewed publications.

November 11, 2025

Dear Members of the Committee,

It is my honor to nominate **Dr. Cassie S. Mitchell** for the *USG Regents' Teaching Excellence Award for Online Teaching*. Dr. Mitchell, an Associate Professor in the Wallace H. Coulter Department of Biomedical Engineering, has had years of sustained excellence in online instruction, mentoring, and course innovation that have profoundly expanded access, inclusion, and student success at Georgia Tech.

Dr. Mitchell's online teaching portfolio includes BMED 2400 (Bioengineering Statistics), BMED 4813/8813 (Systems Neuropathology), BMED 6781 (Clinical Neurology), and BMED 6791 (Translational Neuroengineering) and BMED/CS/NEUR 4699 (Undergraduate Research). As the only faculty member in Biomedical Engineering who teaches exclusively online, she consistently achieves the department's highest enrollments, retention rates, and CIOS evaluations—with overall scores above 4.7 and perfect ratings in *enthusiasm*, *stimulation of interest*, and *inclusion*. She earned the College of Engineering Teaching Award, the GT Online Teaching Excellence Award, and the CIOS Honor Roll for 4 consecutive years—reflecting outstanding student feedback in direct comparison with in-person courses.

Dr. Mitchell's lived experience as a scientist with quadriplegia and ongoing cancer treatment informs her data-driven, universal design pedagogy for online education. Her courses feature flexible accountability through creative online quizzes, data-driven assessments, and virtual case studies that build genuine student community. Her graduate courses attract not only Georgia Tech students but also clinicians and industry professionals who enroll for their uniquely interdisciplinary and translational content.

Dr. Mitchell's innovative online research course and mentorship program provides students with a structured, high-impact research experience through AI-for-healthcare projects. She teaches participants to apply advanced analytical methods, collaborate asynchronously, and engage in authentic research workflows. In 2024 alone, 78 students—from Georgia Tech undergraduates to high-school participants worldwide—took part, with many earning honors such as the President's Undergraduate Research Award, the Sigma Xi Undergraduate Research Award, and the Goldwater Scholarship.

Dr. Mitchell extends this same philosophy through her role as co-founder and advisor of ABLE Alliance, a predominantly online professional development and mentoring program supporting students with disabilities pursuing STEM careers. Through virtual workshops, networking events, and mentoring sessions, ABLE has provided meaningful career preparation and community for nearly 300 students, reinforcing the inclusive and empowering spirit that defines her approach to online teaching.

Dr. Mitchell is a visionary educator whose innovation, perseverance, and compassion continually transform online learning into an engine of opportunity. Her courses inspire deep engagement, her mentorship cultivates resilience, and her teaching leaves an enduring impact on every student she reaches. She exemplifies the highest ideals of the *Regents' Teaching Excellence Award for Online Teaching*.



Alyssa Panitch, Ph.D.

Wallace H. Coulter Biomedical Engineering Department Chair and Professor