Application for the University System of Georgia
Regent's Scholarship of Teaching and Learning (SoTL) Award

Shainaz Landge, Ph.D.
Georgia Southern University

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GEORGIA SOUTHERN UNIVERSITY

November 22, 2024

Office of Academic Affairs
University System of Georgia
270 Washington St., SW
Atlanta, GA 30334

Dear Members of the USG Regents' Teaching Awards Selection Committee,

It is my distinct pleasure to support the nomination of Dr. Shainaz Landge, Assistant Professor in the Department of Chemistry and Biochemistry at Georgia Southern University, for the Regents' Scholarship of Teaching and Learning (SoTL) Award. Since joining Georgia Southern in 2010, Dr. Landge has been a transformative force in advancing SoTL research, both within her discipline and across broader teaching and learning contexts. Her exceptional contributions as a researcher, mentor, and advocate for innovative pedagogy have had a profound impact on her department, the university community, and the field of SoTL at large.

Dr. Landge's engagement with SoTL began in 2012, when she initiated a project to address a persistent challenge in chemistry education by assessing the effectiveness of a targeted teaching strategy. This project marked the beginning of a prolific SoTL career, during which Dr. Landge conducted numerous research studies to identify and refine instructional approaches that enhance student learning and success in chemistry. Her work is particularly focused on the retention of learning gains and student motivation, and she has shared her findings through publications in nationally recognized outlets and presentations at esteemed conferences.

Her research excellence is complemented by her ability to secure competitive funding to support her SoTL initiatives. Dr. Landge has successfully obtained grants from the USG STEM Initiative for Active Learning and Teaching Innovation, as well as from the Gulf Research Program of the National Academies of Sciences. The latter project involves training high school chemistry teachers in innovative instructional strategies for teaching content and labs, reflecting her commitment to improving education at multiple levels.

Beyond her research accomplishments, Dr. Landge has demonstrated exemplary leadership in promoting SoTL at Georgia Southern. Since 2014, she has served on the university's SoTL leadership team, where she has mentored SoTL fellows and provided invaluable guidance to colleagues within her department and across campus. Her collaborations with the Center for Teaching Excellence include serving on faculty panels for New Faculty Orientation and delivering workshops as part of the Evidence-Based Teaching series. Most notably, Dr. Landge was recently selected as a USG Chancellor's Learning Scholar, a role in which she leads a faculty learning community focused on course design informed by SoTL research findings.

Dr. Landge's influence extends beyond the campus through her editorial board service with the International Journal for the Scholarship of Teaching and Learning, where she contributes to advancing the field on a global scale. Her unwavering dedication to SoTL has earned her numerous accolades, including the Georgia Southern College of Science and Mathematics Teaching Award, the Georgia Southern Excellence in Instruction Award, and the Georgia Southern SoTL Award. These honors reflect her ability to translate her passion for teaching and learning into tangible outcomes that benefit students, colleagues, and the broader educational community.

I believe Dr. Shainaz Landge exemplifies the qualities celebrated by the Regents' Scholarship of Teaching and Learning Award. Her commitment to advancing pedagogical innovation, supporting student success, and fostering a culture of scholarly teaching makes her an outstanding candidate for this prestigious recognition. It is without hesitation that I offer my strongest endorsement for her nomination.

Sincerely,

Carl L. Reiber, Ph.D.
Provost & Executive Vice President for Academic Affairs
Georgia Southern University

CC: Dr. Will Lynch, Chair, Biochemistry, Chemistry, & Physics
Dr. Michael Huggins, Dean, College of Science & Mathematics

Narrative of Teaching Philosophy - SoTL

My journey of Scholarship of Teaching and Learning (SoTL) began when I joined as a lecturer in chemistry department at Georgia Southern (GS) University. One of my initial projects was based on analogies and was designed with the help of the SoTL team member/mentor on campus. The project was submitted for the SoTL Fellows Program in Spring 2013. I received constructive feedback through the SoTL and CTE (Center of Teaching and Excellence) team. This ignited the passion of education research in me and since then I have various projects conducted on student teaching and learning. In Fall of 2014, SoTL Leadership team nominated (*anonymous*) and selected me as one of their team fellows. For academic year, 2015-2016, I was awarded the Scholarship of Teaching and Learning Fellowship for "Incorporation of Molecular Simulation Program to Improve Students' Understanding in Laboratory" (In Laboratory – Student Learning). In Spring 2015, I was asked to introduce the key note speaker at the SoTL Commons conference. For this award, I presented the results at the Spring 2016 SoTL conference. In the same conference, I chaired one of the SoTL session. In Spring 2016, I was invited to be a part of the editorial board for *International Journal of Scholarship of Teaching and Learning (IJSoTL)*. I have gained tremendously from my SoTL experience, that my department acknowledge it as one of my core research area towards my tenure track position since Fall 2017. As the goal of the SoTL Leadership team (*…to actively collaborate with the faculty center in guiding, supporting and assessing the "SoTL at Georgia Southern" initiative*), I am the prime example of their mission! I have not only been guided, supported, assessed but also been brought in a position to guide new SoTL fellows.

My teaching philosophy is simple: I aim to create an interactive, positive learning environment where the students are involved and interested in the learning process. Teaching comes naturally to me and I hope that each day, I am the teacher for my students that my mentors were/are to me. I strongly encourage student participation and facilitate group discussions while solving complex problems or homework questions. These discussions have worked well, as students willingly and enthusiastically participate in answering and raising questions. I firmly believe in an interactive teaching style and many of the innovative techniques I have developed have become the source of assessment and study for my SoTL research in my discipline discussed below.

The Mail-Man Analogy Project: One of my early study, in which I developed and incorporated a novel visual analogy for teaching organic nomenclature, which was published in the peer reviewed journal "*Journal of Chemical Education*". The analogy of a mailman with the help of visual aids was to help the students to understand the difficult topic of nomenclature. The assessment of student learning gains was performed in two different settings (Analogy versus Non) and it revealed that students who learn through analogy retain their learning gains throughout the course.
Creative Exercises: As I have grown as an educator, I have realized that there is not one way to deliver the material. The more variation I bring in my lectures, the more I will be able to hold students' attention. My class each semester (since 2013) engages in "Student Generated Creative Exercises: An End-of-Semester Project" as part of my syllabus. The project is worth 2-3 % of the total grade depending upon the course I am teaching. The idea behind this exercise is to involve students in teaching each other the course material and to enhance their basic understanding of content through various mediums such as poems, stories, animations, mobile applications, cartoon strips, movie videos, music videos etc. This activity brings the best out of every student as they tend to learn and convey their ideas uniquely. Most of the examples created by my students are shared on my department webpage and showcased on the social media pages, so the students can

have direct access to it. I was able to publish the projects in "Engaged Student Learning: Essays on Best Practices in the University System of Georgia" as an open educational resource (OER).

Responsive and Active Learning Strategies: Following the lead from the analogy project, I simultaneously started an interdisciplinary collaboration (Arts and Science) at GS in which we designed a *mobile application,* animation, power point slides and story board as various teaching mediums for learning Nomenclature topic with different discipline of students (Arts, General Chemistry and Organic Chemistry). The project was well disseminated on various platforms. Our goal was to study student's perceptions about different teaching mediums in teaching a single topic. Our results *did* reveal that the students gain a better understanding of the topic when creative approached and analogies are incorporated. Further we were able to showcase how small changes in teaching and learning can bring "big difference" through incorporation of active learning techniques. I initially conducted a faculty learning community through the Chancellor's Learning Scholars (CLS) program and later published the results in a book chapter "USG, *Campus Conversations: Student Success Pedagogies in Practice*"

Student Motivation: I am keenly interested in how students *learn* and their motivations towards it. Students who are more intrinsically motivated tend to perform better in the classroom and research on the topic seems to bear this out. My research considers the nature of that motivation and seeks ways to encourage students to develop more intrinsically motivated learning attitudes through various interventions (published in peer-reviewed "*Journal of SoTL*" journal). The goal of the study was to explore student academic motivation in General Chemistry I class. We extended our studies and a modified self-regulation questionnaire was used to investigate student motivation (autonomous and controlling) and its relationship to overall class demographics and final grades in human anatomy, principles of chemistry and organic chemistry courses. The detailed assessment results of this study were published in "*Learning and Motivation*" journal.

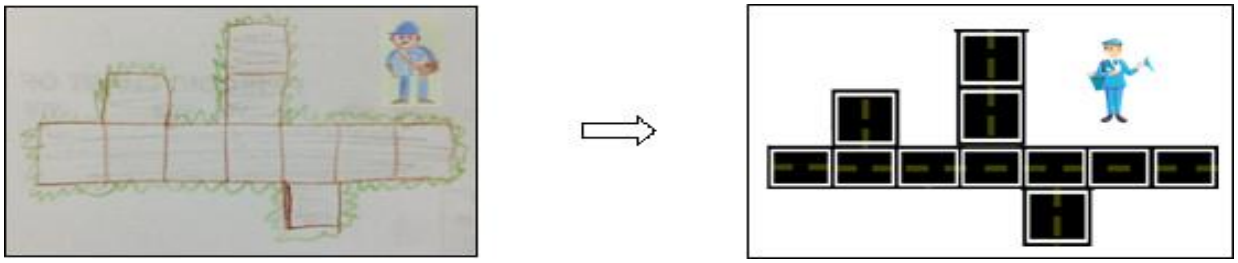
Student training and Success: I personally believe that if students are properly mentored and trained they can achieve enormous success. Our project "Remote Mentoring of Undergraduate Research Students" (**ReMentURS**) workshop series major objective was to design a remotely available professional development training that will provide rigorous research concept and skills introduction to incoming undergraduate research students during COVID-19. We ran the program for 8 weeks and provided access as an OER material through digital presentations, informational videos, virtual demonstrations, and aligned checks to foster student mindsets towards becoming independent scientists (Published in *International Journal of SoTL, 2022*)

Time Management: Self-Tracking Assessing and Reflection Study (STARS) project: One of my passionate projects, STARS aim is to encourage the students' take control of their study habits and be responsible for their time. Our hypothesis is that the students who are given time management tools with guided steps on how to use the tools are more likely to use it and experience academic success. Survey were given at the end of the semester to determine how often students used different techniques and how helpful these tools were thought to be. Through multiple semester studies we were able to identify and finalize the tools which can help students to be successful. *The data revealed that 20% of the student's grade was drastically improved form exam 1 to exam 2*. We continue to gather the data on this study.

Teachers, colleagues and friends have always been a continuous source of inspiration to me and likewise have challenged me to continue evolving as an educator. As a teacher, I can have a major influence in their life through education. In the years to come, I want to be remembered by my students not only for teaching the subject matter well, but also for challenging and bringing out the best in them!

Data/Evidence of the impact of SoTL Activities through annotated bibliography

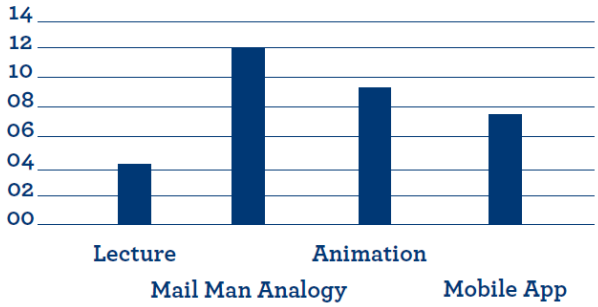
The Mail-Man Analogy Project[1]



Goal: Naming organic molecule (nomenclature) is a topic most students have difficulty in mastering in my discipline. Without a strong foundation of nomenclature, students struggle to follow more advanced organic chemistry topics. The project uses the analogy of a mailman, who is new to an area and trying to remember the destinations of his postal route, to teach alkane nomenclature. **Methodology:** The assessment of the Mail Man analogy activity was carried out over two semesters (fall 2013 and spring 2014) in Organic Chemistry classroom. The study group (analogy group (AG)) learned nomenclature rules using the mailman analogy; the control group learned nomenclature rules using the regular lecture with power point slides (nonanalogy group (NG)). Same material was covered to remove the potential instructor bias in the outcomes. Before introducing the nomenclature topic, a 10-15 min pretest quiz on the nomenclature topic was administered in both sections to all students to assess their basic understanding and addressed different rules of the naming system. After the pretest, the AG group was presented with the "Mail man" analogy, while the NG group was presented with traditional lecture. At the end of the lecture on the Nomenclature topic, students took the same quiz (posttest) to assess the short-term effect on student learning. Scores of both assessments were recorded. The same questions were included on Exam 1 and the final exam to analyze the long-term effect on student learning. Data in the form of pre-/post-test quiz scores, exam scores and survey results were collected. The survey was administered to evaluate student perceptions (understanding, satisfaction, and engagement) of the study group and the control group on the Nomenclature topic. **Results:** The survey indicated that *women reported higher levels of understanding and engagement in both groups as compared to men*. The study revealed that from pretest to post-test, students in both groups significantly improved with no difference in magnitude between them, suggesting that *both instructional methods are equally effective in promoting short term learning gains* on this topic. Detail analysis also suggest that the *lecture method leads to a "backsliding" in learning*, with many students who had previously demonstrated mastery losing the ability to retain and re-demonstrate it. In contrast, *the analogy method seems to both promote greater long-term retention among* those who learned it when it was first taught and a greater delayed among those who hadn't mastered it by Exam 1. **Student and Discipline Learning:** This project in true sense helps my discipline, the topic is so basic used in any chemistry subdisciplines and student struggle is evident. So this project not only helped organic chemistry students but also helped any subdisciplines of chemistry.

[1] *Orvis, J.; Struges, D.; Rhodes, S.; White, K-J.; Maurer, T. W.;* ***Landge, S. M.****, J. Chem. Ed.,* ***2016****, 93, 879-885.*

The **Responsive Learning** was an interdisciplinary project between Arts and Science students, which was extended from the *analogy* project. The results indicate that the *interactive lecture with mail man analogy proved to be most successful in student learning*. The student appreciated one to one interaction with the analogy explained to them.



Various teaching mediums to different disciplines (Arts, Gen. and Org. Chem.) of students.

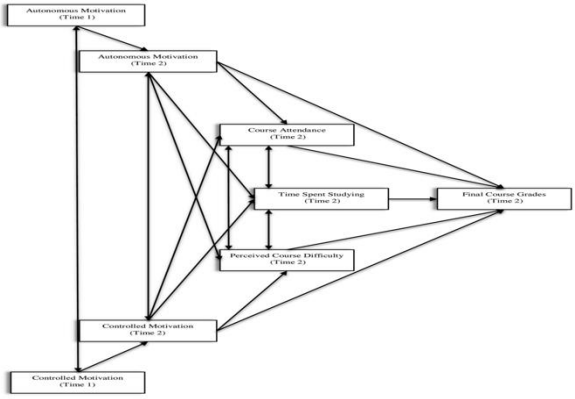
Student Motivation Study[2,3] The student motivation study was conducted during Fall 2013 and Spring 2014 to General Chemistry students. The study examined various questions such as:
a) Is the adapted AMS a reliable instrument for measuring student motivation in chemistry?
b) What types of motivation do students exhibit in Principles of Chemistry I?
c) Are motivation types different between genders and in underrepresented minority groups?
d) Are there differences in motivation types between on-sequence and off-sequence students?

The adapted Academic Motivation Scale (AMS) which was tested for reliability for use with undergraduate chemistry students show that it is *highly reliable*. Analyses were conducted on the seven subscales of the AMS to determine adequate reliability for use with the current sample and they were all above $\alpha > 0.80$ (literature supports that values greater than 0.70 indicate moderate internal consistency in the measure of classroom rating scales). Predominant motivation types were determined, and demographic information was collected. Additionally, descriptive statistics and frequency of endorsement were used to evaluate the demographic characteristics and motivation trends across the participants. Regarding to motivation characteristics across the participants, descriptive statistics revealed that *undergraduate chemistry students are largely extrinsic in their academic motivation* with 136 participants (58%) showing the highest endorsement for EM-ER. Only 11 (3.5 %) intrinsic motivation types were found out of all 311 participants. With regard to gender differences across the sample, females (M = 5.05, SD = 1.61) are significantly more likely to identify with the introjected form of extrinsic motivation (EM-IN) than males (M = 4.28, SD = 1.74), $F(228) = 12.20$, $p = .001$. Additionally, it was demonstrated that *African American students (M = 3.00, SD = 1.70) are significantly more likely to identify with the stimulation form of intrinsic motivation* (IM-ST) than White students (M = 2.77, SD = 1.40), $F(223) = 2.78$, $p = .02$. Shapiro Wilks test demonstrated the normal distribution of data ($\alpha = .32$). Our studies revealed *no difference in motivation types between on-sequence and off-sequence students*.

The extension of our studies utilized a modified survey to investigate student motivation (autonomous and controlling) and its relationship to class attendance, time spent studying, class difficulty and final grades in human anatomy, principles of chemistry and organic chemistry courses. The 24-item survey (12 demographic data and 12 SRQ questions) was administered in class at the beginning (time 1) and end (time 2) of fall and spring semesters. The study targeted 33 sections in fall semester and 29 sections in spring semester for a total of 1,284 students. The hypothesized model included direct paths from autonomous motivation at time 1 to autonomous motivation at time 2. It also included direct paths from controlling motivation at time 1 to

controlling motivation at time 2. We further hypothesized that there would be direct relationships between autonomous and controlled motivation at time 1 and time 2, in addition to direct paths between autonomous motivation at time 2 and class attendance, time spent studying, and class difficulty. Similar direct paths were hypothesized between controlling motivation at time 2 and class attendance, time spent studying, and class difficulty. The results revealed considerable stability in motivation over time as well as strong association between autonomous and controlled motivations at each time point. Autonomous motivation at Time 2 predicted higher levels of time spent studying and final course grades, and lower levels of perceived course difficulty. Controlled motivation at Time 2 predicted higher levels of course attendance, time spent studying, and perceived course difficulty, and lower levels of final course grades. These findings indicate that both autonomous and controlled motivations contribute to final course grades (albeit in opposite directions) and highlight the importance of creating need-supportive climates that facilitate the cultivation of autonomous motivation. This study helped in answering the following questions:
1 What is the association between autonomous motivation at the beginning (Time 1) and at the end (Time 2) of the semester, and what is the association between controlled motivation at the beginning (Time 1) and at the end (Time 2) of the semester?
2 What is the association between autonomous and controlled motivations at Time 1 and Time 2?
3 What are the relations of autonomous and controlled motivations at Time 2 to course attendance, time spent studying, perceived course difficulty, and final course grades?

The hypothesized model showing path analysis of student motivation predicting student grades. →



Our long-term goal with this project is to create the shift of extrinsically motivated science students towards intrinsic motivation by providing various interventions such as peer-led assisted need support (PLANS) model.

[2] Orvis, J.; Struges, D.; Tysinger, D. P. Riggins, K.; **Landge, S. M.**, *J. Scholarship of Teaching and Learning*,**2018,** 18, 43-57; [3] Botnaru, D.; Orvis, J.; Langdon, J.; Niemiec, C.; **Landge. S. M.***Learning and Motivation*, **2021,** 101723.

Remote Mentoring of Undergraduate Research Students (ReMentURS)[4]

The ReMentURS project helped undergraduate research scholars to learn the professional development skills virtually. Currently 10 modules are built and made accessible as open educational resource material to any student students who is interested in joining research lab. The detailed planning, development and introduction of the workshop series is shown via digital presentations, virtual informational videos, demons, and aligned checks to foster student mindsets towards becoming scientists. Preliminary assessment of the program reveals that participants self-report gaining a variety of skills through the series and are likely to use the content in their future course and research laboratories. Student learning gains will continue to be evaluated throughout the series and this initial assessment will be used towards the betterment of the future workshop.

[4]Sargent, E.;* Shaikh A.; Marriott, K-S. C.; Porter, T.; Cannon-Rech, D.; **Landge, S. M.***, **2022**, *International Journal of Scholarship of Teaching and Learning*, Volume 16: No. 1, Article 7.

Student Generated activities project[5,6]

The goal of this creative project is to involve students in teaching each other the course material and to enhance their own basic understanding of content through various creative mediums. This activity targets challenging topics in chemistry courses and is primarily focused on developing critical thinking skills. The courses outcomes clearly state that the students should be able to understand, explain, apply and evaluate the material taught in the classroom. These creative exercises particularly focus on these learning goals. Creative projects are part of my course (General Chemistry, OrganicChemistry I and II). In my introductory lecture, I give a brief talk about a creative exercise project which is worth 3-4% of the total grade depending upon the course I am teaching. After my second exam in the semester, I describe the expectations of the project. The project is very well received and has generated a positive talk and response.

The Time Management (STARS) project: This on-going project aims to encourage the students' take control of their study habits and be responsible for their time. The two targeted courses in organic chemistry were randomly selected as a control and experimental group and are given time management tools. In the experimental section, students receive these materials in the form of a calendar and the instructor checks periodically with the students to see if they are using these materials and to what extent. To determine extent of use, the instructor checks the one-minute observation form weekly and assign a score of 0 – 3 based on a rubric. The score of zero being indicates the student is not or minimally using the calendar and 3 being extensively used and also utilizing it for other classes. A survey is given at the end of the semester to both the groups to determine how often students used different techniques and how helpful these tools were thought to be. Student success in the form of course and exam grades will be linked to responses to see if there are relationships. It is hypothesized that students who are given time management tools with additional information on how to use the tools are more likely to use the tools and more likely to experience academic success. The research question in this study are:

1) How does student completion of the one-minute observation sheet (as scored by the instructor as a 0,1, 2, or 3) relate to exam grades and final grade?

2. Is there a relationship in the experimental group between survey responses and course performance or exam performance?

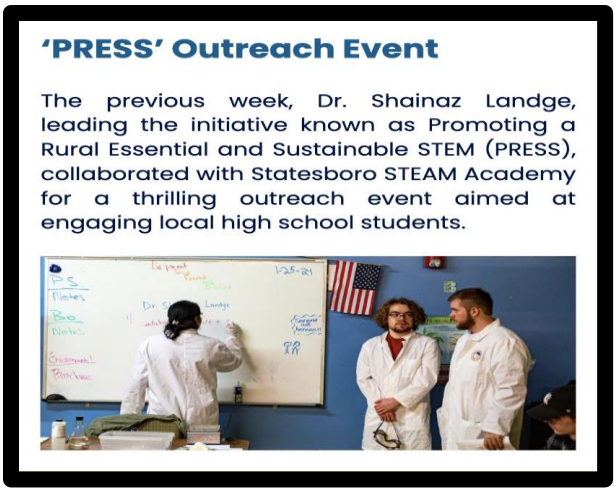
The evidence of only selected few projects are mentioned above. Overall, the SoTL research carried out in my classroom and laboratory has a greater impact on my teaching and student learning. The data gathered throughout these projects has helped me to continuously improved my teaching style and implement new strategies in my course work and extended further.

[5] **Landge, S. M.***; Greer, K., *USG, Campus Conversations: Student Success Pedagogies in Practice, Rowman & Littlefield;* Galle, J., & Domizi, D. P. (Eds.), **2021**, chapter 7, pp 119 – 138; [6] **Landge, S. M.***, *Engaged Student Learning: Essays on Best Practices in the University System of Georgia, Volume 1*, **2019,** 48-51.

Overview of SoTL Work

SoTL has been in a true sense a real journey for me. It has not only been useful in my individual research but also has been a designed pathway which has helped me involved and connect locally, regionally, nationally and internationally avenues. Below are few of the examples which I have used in mentoring, supporting and promoting educational activities via SoTL

Promoting a Rural Essential and Sustainable STEM (*PRESS*) Partnership through High Impact Practices (funded via Georgia Foundation for Public Education)
Underprivileged students in rural Georgia have limited access to quality STEM education and underperform in STEM areas. PRESS utilizes undergraduate research experience as an evidence-based STEM learning model to high school students conducted by Georgia College & State University and Georgia Southern University in partnership with Statesboro STEAM charter school and Newton College and Career Academy.



OUR2SWAMP and SWAMP2GULF (Suwannee Watershed Assessment & Monitoring Project to Gain understanding of local flow)
To make science relevant to high school and middle school students via hands on experiential learning activities, a well-organized a place-based professional development (PD) teacher training. The project (OUR2SWAMP; later: SWAMP2GULF CoPI/Senior Personnel) was funded by the Gulf Research Program of the National Academies of Sciences is to develop a place-based professional development (PD) for middle school science teachers that builds on the Okefenokee Swamp place-based PD). It helps to monitor local watershed conditions and examine the health and resilience of local ecosystems along the Gulf. Teachers integrate place-based citizen science projects and create inquiry lessons to increase students' understanding of local watersheds in the Gulf of Mexico.

Remote Mentoring of Undergraduate Research Students (ReMentURS), funded by Affordable Learning Georgia

The primary objective of the ReMentURS program was to design a remotely available professional development workshop series that will provide rigorous research training to new, incoming students. ReMentURS material is shared with any students, who are interested in joining a research group. I virtually mentored Savannah State University research students (funded by NSF-iAPPLY; NIH-NIBIB)

Development of the Modules - Virtual

Week	Topics to be covered	Title (Materials Generated and Shared) – Pre/Post SURVEYS
1	- Greet and Meet - Professional Etiquettes - Time Management	- Introductions(Video Demo and Discussion) - How to write an email – (Video and Worksheet) - How to be "present" in the virtual setting – Netiquette (Demo Video) - Are you managing your time? (Video and worksheet with examples)
2	Safety and Ethics	- The Do's and Don'ts in the lab setting (Video and worksheet with examples) - Are you ethical? (Video and worksheet with examples) - Role plays for both the topics.
3	Literature Search and Reading	- How to find scientific literature? (Video and Worksheet with examples) - Intro Literature Review Activity- (Worksheet with examples) *- Instrument Training, I – STEM focused*
4	Writing References -Endnote -Refworks	- How to create a bibliography (Video and Worksheet with examples) - Advanced Literature Review activity (Worksheet with examples) *- Instrument Training II – STEM focused*

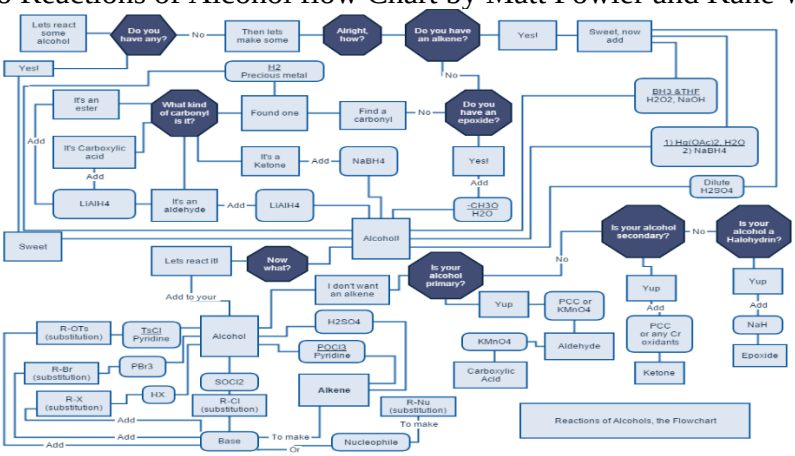
Week	Topics to be covered	Title (Materials Generated and Shared) – Faculty and Admin
5	Data Analysis - Making Data Bearable - Excelling in Excel	- How to read data? (Interactive data tutorial) - Excel Workshop (Demo Video and Worksheet with example) *- Instrument Training III – STEM focused*
6	Creating Figures - Drawing software: ImageJ/Adobe/ ppt - ChemDraw : Inside secrets.	- How to make scientific figures (Demo video for each software) - Data interpretation activity (Worksheet with examples) - Figure creation activity (Worksheet with examples) *- Instrument Training IV – STEM focused*
7	Scientific Presentations Poster/Virtual/ Face to Face	How to make an amazing poster (Demo videos) Poster creation activity (template provided) *- Instrument Training V – STEM focused*
8	Scientific Writing -Thinking about Titles! -Abstract Writing and Introduction	- How to write a title/abstract/introduction to your research (Intro videos) - Titles activity (worksheet with examples) - Abstract activity (template provided) - Introduction activity (template provided) *- Instrument Training VI – STEM focused*

Creative Teaching Techniques

Creative Projects from Students has helped many students who struggle with chemistry. The idea behind this exercise is to involve students in teaching each other the course material and to enhance their basic understanding of content through various creative mediums. I have received an overwhelmingly positive response. Many examples of the creative exercises can be found on our college website and social media (under the tab "Presentation" and "Poems"). Talks are with the GS museum to showcase the student generated projects to the entire community in Spring 2025.

• Chemistry 3342 Projects

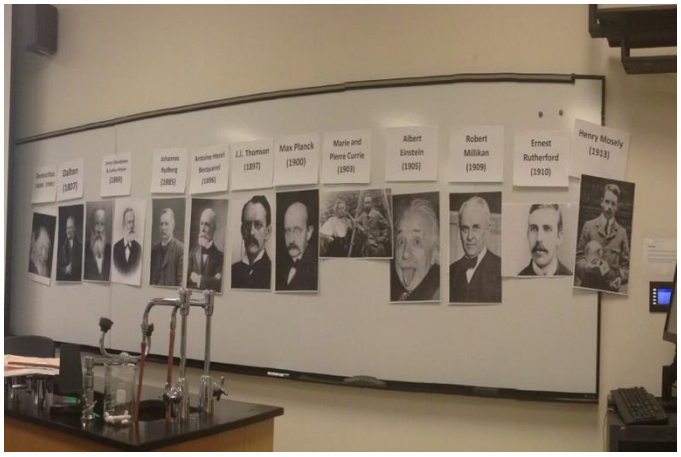
o Reactions of Alcohol flow Chart by Matt Fowler and Kane White.

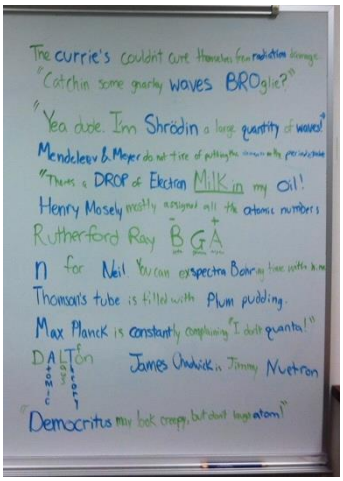


o Organometallic Poem by Dwianitra Bone and Raymond Klugey

o Aromaticity project by Riley Theis and Stephanie Cotton.

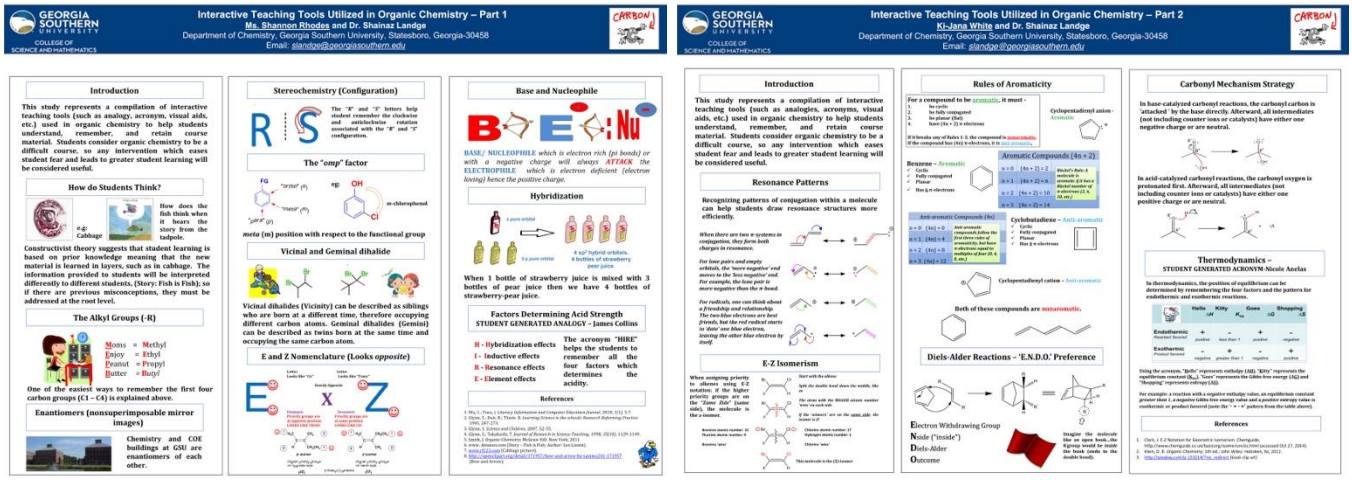
• General Chemistry 1145 Projects





History of Atomic Structure by Alexandra Knable and Kathryn McGowan and the story of Scientist and their Discoveries by Olivia Shaw and Emily Dell

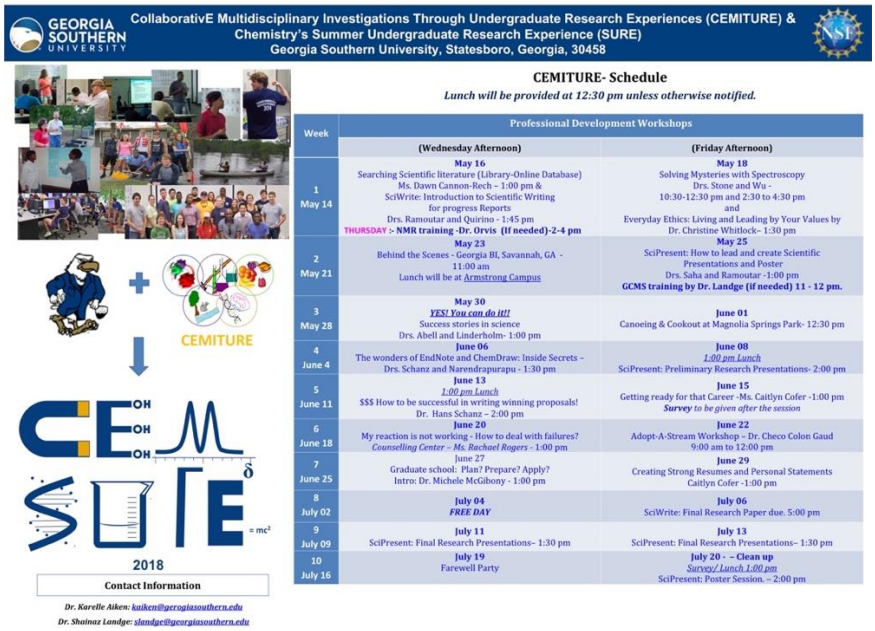
The following posters presentations were presented in conferences and shared with the department. This was presented by students under my guidance.



• More examples of Student presentations and poems updated on website..

CEM-SURE (NSF-REU) at Georgia Southern University

The National Science Foundation – Research experience for Undergraduates (NSF-REU) program; CEMITURE was part of our department for 9 years. CEMITURE is folded into Chemistry's Summer Undergraduate Research Experiences (SURE) program and the combined programs are called CEM-SURE. In CEM-SURE I hold two roles: co-coordinator and a research mentor. As a research mentor my role is to guide and assists the REU student scholar with the research with safe lab practice. As a co-coordinator, my responsibility is to schedule professional development activities for the CEM-SURE program (For both GS and non-GS students). During their stay, our goal is to make sure that the student have a fruitful and safe research experience with providing strong foundation to professional development.



Poster created for the CEM-SURE program showing the PD activities for 10 weeks.

Condensed Curriculum Vitae – Dr. Shainaz Landge

Professional Experience

Associate Professor of Biochemistry, Chemistry, and Physics	**Fall 2022 - *present***
Georgia Southern (**GS**) University, GA.	
Assistant Professor of Chemistry and Biochemistry, GS, GA	**Fall 2017 – 2022**
Lecturer and Coordinator of Organic Chemistry, GS, GA.	**Fall 2012 – 2017**
Teaching Faculty, GS, GA.	**Fall 2010 – 2012**

Education

Ph.D. Organic/Green Chemistry, University of Massachusetts, Boston. MA	**Fall 2004-2008**
M.S. Organic Chemistry, University of Pune, India.	**2000**
B.S. Chemistry, University of Pune, India.	**1998**

Significant Contributions

2016 – *present*	**Editorial Board member**, *International Journal of Scholarship of Teaching and Learning* (**IJSoTL**)
2022 – *present*	**Pioneered and Director** of the Vertically Integrated Projects (**VIP**) program through Georgia Research Alliance (**GRA**) grant.
2023 – *present*	**Leading** the "Promoting a Rural Essential and Sustainable STEM (**PRESS**) partnership with Statesboro STEAM academy (high school) and GSU.
2024 – *present*	**Provost Faculty Fellow** – **Research** (Office of Research)
2018 – 2022	**Pioneered and lead coordinator** the Freshmen Research Initiative (**FRI**) program – **iFREE** (***Incorporation of Freshmen in Research for Early Experience***), University System of Georgia (**USG**) STEM IV grant.
2021	Spearheaded the Remote Mentoring of Undergraduate Research Students (**ReMentURS**) an Open Educational Resources (**OER**) material through Affordable Learning Georgia (**ALG**) grant during COVID-19.
2015 – 2023	Planned and co-led sessions in Research Experience for Undergraduates **(NSF-REU**) **I/-CEMITURE** program at Department of Chemistry, GSU.

Noteworthy Accomplishments in Research (Published) and Mentorship
Patent: 1; and **Book chapter:** 7; and **Oral and Poster Presentations:** >260
Peer-reviewed Publications: 36 published and 1 in revision
Editorial Board Member or Topic Editors or Advisory Board: 4
In house Laboratory Manual Publications: 2 (Organic Chemistry I and II)
Member of the Thesis Committees as Graduate Faculty Mentor: 8
Mentored 3 **Graduate**, 34 **Undergraduate**, 5 **REU** Student at **GS** since 2012

Publications (Undergraduate students are **<u>underlined</u>** and Master Students are *italicized*).
Peer Reviewed Articles: (**31 more published articles – not shown**)

1. Cruz, L.; Grodziak, E.; Botnaru, D.;* Walker, D.; Maurer, T.; **Landge, S. M. *et al.*** "The Hospitality of the Commons: A Collaborative Reflection on a SoTL Conference ", **2023**, *International Journal of Scholarship of Teaching and Learning*, Vol. 17, No. 2, Art. 7.
2. Sargent, E.;* Shaikh A.; Marriott, K-S. C.; <u>Porter, T.</u>; Cannon-Rech, D.; **Landge, S. M.*** "Introducing the Remote Mentoring of Undergraduate Research Students (**ReMentURS**)

Workshop Series: Initial Evaluation and Plans for Wider Implementation", **2022**, *International Journal of Scholarship of Teaching and Learning*, Vol. 16:1, Article 7.

3. Botnaru, D.; Orvis, J.; Langdon, J.; Niemiec, C.; **Landge. S. M.*** "Predicting Overall Course Grades: A Path Analysis of Motivation and Course- Related Demographics" *Learning and Motivation,* **2021**, 74, 101723. https://doi.org/10.1016/j.lmot.2021.101723
4. Orvis, J.; Sturges, D.; Tysinger, D. P. Riggins, K.; **Landge, S. M.** "A Culture of Extrinsically Motivated Students: Chemistry", *J. Scholarship of Teaching and Learning.* **2018,** *18*, 1, 43-57.
5. Orvis, J.; Struges, D.; Rhodes, S.; White, K-J.; Maurer, T. W.; **Landge, S. M.*** "A Mailman Analogy: An Introduction to Alkane Nomenclature", *J. Chem. Ed.*, **2016**, *93*, 879-885.
6. Whitlock, C.; Landge, S.; Williams, L.; Cannon-Rech, D. "Comparative Study of Usage and Student Outcomes after an Open Educational Resource Implementation in Organic Chemistry", **2025**, *Journal of College Science Teaching* [*in Submission*].

Book Chapters (**5 more published book chapters – not shown**), (**1 patent – not shown**)

1. **Landge, S. M.***; Greer, K. "small change → BIG DIFFERENCE = *See it for yourself*" – Step Wise Incorporation of Active Learning Techniques in Course Design to Enhance Student Learning", USG, Student Success Pedagogies in Practice, Rowman & Littlefield; **2021**, Galle, J., & Domizi, D. P. (Eds.), 2021, chapter 7, pp 119 - 138.
2. **Landge, S. M.*** "Student Generated Creative Exercises: An End-of-Semester Project", *Engaged Student Learning: Essays on Best Practices in the University System of Georgia*, Volume 1, **2019**, 48-51. (***Invited for the nomination of USG Teaching Regents award***)

Ancillary Materials (Open Educational Resources ALL through ALG funded grants)

1. **Landge, S. M.;*** Whitlock, C.;* Aiken, K.; DiCesare, J.; Quirino, R.; Schanz, H.; Shaikh, A.; Cannon-Rech, D. Organic Chemistry Textbook by Open Affordable Learning Georgia, **2020**.
2. **Landge, S. M.;*** Whitlock, C.;* Cannon-Rech, D. Organic Chemistry Lab Techniques book by Open ALG, **2021**.
3. **Landge, S. M.;*** Sargent, E.; Shaikh, A.; Cannon-Rech, D. Remote Mentoring of Undergraduate Research Students by Open ALG, **2021**.
4. **Landge, S. M.;*** Sargent, E.; Ghosh, D.; Mortimore, J. Cannon-Rech, D. Forensic Chemistry by Open Affordable Learning Georgia, **2022**.
5. Whitlock, C.;* **Landge, S. M.;*** Aiken, K.; Shaikh, A.; Carroll, G.; Cannon-Rech, D.; Mortimore, J. Organic Chemistry Supplementary Materials by Open **ALG**, **2022 - 2023**.
6. **Landge, S. M.*** Promoting a Rural Essential and Sustainable STEM (**PRESS**), **2023 - 2024**.

Awards & Nominations

- *Nominated* for the "*Regents Scholarship of Teaching and Learning Award*" **Fall 2024**
- **COSM** - Life Time Achievement award for Citations and Publications **Fall 2024**
- Awarded the ***COSM - Excellence in Research Award*** **Fall 2023**
- Awarded the ***VIP Innovation Award***: Partnership Building **Fall 2022**
- Awarded the ***Governor's Teaching Fellowship (GTF)*** **Spring 2022**
- Awarded the ***COSM - Excellence in Service Award*** **Fall 2021**
- Awarded the ***Student Success – University Award of Excellence*** **Spring 2021**
- *Nominated* and **Selected** as the "***USG Chancellor's Learning Scholars***" **Fall 2018**
- Awarded the **University "*Excellence in Contributions to Instruction*"** **Fall 2018**
- Awarded the "***Scholarship of Teaching and Learning Award***". **Spring 2018**
- Awarded the "***COSM- Excellence in Teaching Award***" **Fall 2017**

Professional Service

- Faculty Mentor for **SoTL** Mentorship Program **2024 - 2025**
  Scholar: Dr. Bailey Nafziger (COE); *Small Teachings for Critical Thinking*
- Reviewer – **SoTL** Award and Fellowships, GSU, Statesboro. **Fall 2015 – present**
- Participated in the Mini-mentor session for **SoTL** – FLC **Fall 2018**
- Reviewer of the **SoTL** Commons Conference abstracts **2018 – *present***
- Session Chair in **SoTL** Commons Conference **Spring 2016 - 2017**
- Reviewer – Lorraine Gilipin **SoTL** Travel Award, GS University **Fall 2015 - 2017**
- Introduced Keynote Speaker (Dr. T. Dary Erwin), **SoTL** Commons Conference, Coastal Georgia Center, Savannah, GA. **Spring 2015**
- Manuscript reviewer for **IJSoTL** peer reviewed journal **2015 - *present***

Grants/Awards Funded

1. **Innovative Prototype Grant** through the Georgia Foundation for Public Education: **PRESS** Promoting a Rural Essential and Sustainable STEM partnership through High Impact Practices, **PI**, with PI Dr. Mahabaduge, CoPI. Dr. Kang; 2023 – 2024, $25,000.
2. The National Academies of Sciences Engineering Medicine - Education: Okefenokee 2 Ocean: Understanding Real world Relevance through Suwanee Watershed Assessment, **CoPI/Senior Personnel**, with PI: Dr. Lacey Huffling; C., Fall 2023 – 2026, $465,335.
3. Georgia Research Alliance (**GRA**), Georgia Tech, Vertically Integrated Projects @ Georgia Southern University, **PI**, 2021-2023, $25,000
4. **USG's Affordable learning Georgia** - Textbook Transformation Grant, No cost option for Forensic Chemistry i-CURE course, **PI** with CoPI: Dr. Ghosh, **2021-2022, $20,000** and for Organic Chemistry, **PI** with PI: Dr. Whitlock, **2021-2022, 2023, $30,000**.
5. **USG's Affordable learning Georgia** - Textbook Transformation Grant, **PI** with PI: Christine Whitlock, **2020-2021**, $10,800 and **Spring 2019 (# 461)**, $21,400.
6. **Gulf Research Capacity Building Grant** - Education: Okefenokee - Understanding Real-world Relevance through Suwannee Watershed Assessment and Monitoring Project (OUR^2SWAMP), **CoPI**, with PI: Dr. Huffling, **Fall 2018-2021**, $763,897.00
7. **SoTL** Fellowship Award for Incorporation of Molecular Simulation Program to Improve Students' Understanding in Gas Chromatography Laboratory, **PI**, **2015 – 2016**, $3000.00

Oral and Panel Presentations: (>**260 more oral and poster presentations – not shown**)

1. **Landge, S.;** Cannon-Rech, N.; Reagan, K.; Botnaru, D.; Walker, D.; Mercer, K.; Whitlock, C.; "The dynamic equilibrium between OER and SoTL: **OER ↔SoTL**", **2024,** *SoTL commons conference, Savannah, GA.* (***Panel Presentation***)
2. **Landge**, **S. M.;** Sargent, E.; Shaikh, A.; Cannon-Rech, D.; Porter, T.; Marriott, K.; "Initial Evaluation of the Remote Mentoring of Undergraduate Research Students (**ReMentURS**) Workshop Series", **2022,** *SoTL commons conference, Savannah, GA.* [***Oral Presentation***]
3. **Landge, S. M.;** Whitlock, C. Cannon-Rech, D. "Low-Cost Learning Materials for the Organic Chemistry Sequence", **2021**, ALG Featured Series: Organic Chemistry, [***Oral Presentation***].
4. **Landge, S. M.;** Orvis, J.; Greer, K.; Graves, I. "Gradual Incorporation of Active Learning Techniques through STARS" **2020**, *SoTL conference, Savannah, GA.* [***Oral Presentation***].
5. **Landge, S. M.** "Motivating and Retaining Student Learning Gains" **2018**, **SoTL Award Winner** Presentation, Georgia Southern University, Statesboro, GA. [***Oral Presentation***]

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Dear Members of the Awards Committee, December 1, 2024

It is my honor to write a letter of nomination and support for Dr. Shainaz Landge for the Regent's Scholarship of Teaching and Learning Award. Dr. Landge has developed a robust and diverse array of research activities here at Georgia Southern (GS). Quite simply, she is the most remarkable colleague I have ever had the pleasure to work alongside. Her indefatigable optimism and energy are truly outstanding. My letter is an attempt to describe what I consider to be a rather remarkable feat. She is an accomplished researcher in the lab and in her educational activities, but she has bumped it all up a notch by creating broad research environments encompassing many more faculty and students.

Dr. Landge is an excellent teacher in the classroom, she has creative ways to encourage students in active learning during class and she is well known for the poems, songs, and projects that students produce. She cares deeply about her classroom activities and strives to document these in the form of scholarly work.

Dr. Landge is engaged and has a proven track record in the scholarship of teaching and learning (SoTL) work in education theory as well as more nuts-and-bolts classroom practice. Because she teaches organic chemistry, she noticed that some students were struggling with the systematic naming of organic compounds. She devised an analogy of a mailman delivering mail efficiently in a neighborhood to help students understand the logic of the naming system. In addition to developing the analogy, she sought to make it more readily accessible by teaming up with faculty across the campus to develop an app for students to use. We published the data in the prestigious peer-reviewed "*Journal of Chemical Education*" and were able to demonstrate the student learning gains throughout the semester. She and I have a shared interest in the effectiveness of peer leaders in the role of academic motivation in student success. We have worked together on multiple projects in what I will describe as the most productive faculty learning group that I've ever worked with. We received seed money from the university to get baseline data and have submitted NSF proposals on *student motivation* to provide more need supportive strategies into the teaching and learning.

Dr. Landge constantly reflects openly on her teaching practices. I have the pleasure of serving with her as the supplemental instruction coordinators for chemistry. We meet weekly with our student leaders for training. It is our tenth year in sharing these weekly meetings and in that time, Dr. Landge has very openly described her own challenges and experiences as a way to inspire the student leaders. She is a very effective leader in the role of inspiring these potential new teachers of chemistry. While working with student leaders, Dr. Landge noticed that time management was often quoted as a challenge for both the students in the classroom and the student leaders. She developed detailed calendars for students to use and implemented them with her students. She utilizes this technique commonly to determine how helpful these are to student learning through her time management STARS (Self-Tracking, Assessing and Reflection Study) project. She is truly a model teacher-scholar. Since the beginning of our collaboration, we have been successful in publishing various peer-reviewed journals and presentations (oral, panel or poster). We have three peer-reviewed publications and another in preparation, and numerous (>30) poster/oral presentations and three funded grants together. She uses her creativity to continually search for new pathways for student success. and has many publications, presentations and grants in this arena alone.

Dr. Landge's SoTL journey began when she arrived on our campus and began systematically studying student learning in her own classrooms and labs. She is now a clear SoTL leader on our campus being a part of the GS SoTL Leadership Team (reviewer SoTL awards and fellowships, faculty learning community) and serving on the editorial board for the International Journal for the Scholarship of Teaching and Learning (since 2016), reviewing approximately 2-3 manuscripts per year. She also has been actively involved in the Internationally renowned SoTL commons conference, held in Savannah every year (session chair, introducing keynote speakers, reviewing abstracts). She is currently mentoring the new SoTL scholar in the university through the SoTL Mentorship program.

What I find most impressive about Dr. Landge's research is what she has chosen to do with her success. She has created several new undergraduate research programs at GS. She blended the research lab experience and chemistry education resulting in research opportunities for so many students and faculties.

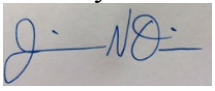
Vertically Integrated Projects (VIP): Dr. Landge brought this impressive program to our campus and is actively directing faculty overseeing 15 projects (VIP teams). The program starts with a specialized dedicated FYE section taught by Dr. Landge. The students are systematically introduced to various research projects on campus. For the final exam, the students present a poster on a research topic of their choice that is supported by all faculty on the team. Several of these students continue in the research labs of participating faculty. I've assisted Dr. Landge with this group for three years now and I enjoy describing this program to new faculty. This model is ideal for any campus wishing to place a high value on undergraduate research in education and Dr. Landge deserves credit for the success of the program here.

Promoting a Rural Essential Sustainable STEM Education (PRESS): Dr. Landge pioneered another new project based on introducing a new crop of students to the research experience—high school students. This ambitious project transfers an evidence-based learning model to high school students and promotes rigorous early STEM learning.

Incorporation of Freshmen in Research for Early Experience (iFREE): To capture the research students in the first year of college, Dr. Landge pioneered and directed the program called **iFREE**. As many as 24 students were systematically oriented to the research environment through weekly class meetings in the first semester. The program continued the second semester so students had a full year of mentorship into the research lab. Instead of waiting until the junior or senior year to participate in a research, these students had the opportunity to participate for much longer and accomplish much more.

There's no question that our GS students are the primary beneficiaries of Dr. Landge's research efforts. As an award-winning teacher, she blends solid teaching with a love for research and brings that liveliness to her research colleagues and to her students. I didn't attempt to include all of Dr. Landge's work in this letter. It would turn into a list that you already have in her application. But the work that I've highlighted here has led to a better Department and a better Georgia Southern University. She is passionate, enthusiastic, and visible in her efforts to reach students. Her incredible work in the SoTL arena is truly worthy of recognition, and she is well deserving of the Regents' SoTL Award.

Thank you and sincerely,



Jessica Orvis,