Bryanna L. Scheuler
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September 30, 2024

Department of Psychology
Wake Forest University
1834 Wake Forest Rd.
Winston-Salem, NC 27109

Dear Dr. Stone and Members of the Search Committee:

I am writing to apply for the Assistant Professor in Human Cognition position beginning July 2025. I am a competitive candidate who will contribute to the assessment and quantitative methods theme of the Wake Forest Psychology Department. My research bridges cognitive research and assessment methods. I am particularly drawn to the department's environment, instructor-student ratio, and faculty philosophy.

I am currently completing a Ph.D. at the University of Texas at San Antonio, and am on schedule to graduate in May 2025. In my dissertation research, I use response time modeling to assess cancer-related cognitive decline and inflammation. This research marks the first time accumulator models have been implemented in a cancer population and has the potential to change the way cancer cognition is measured. Wake Forest University would be the ideal location to build on this research, as it provides an environment to focus on cognition assessments while supporting cross-department collaborations with the School of Medicine. Additionally, the proximity of multiple Novant Health Cancer Institute facilities would promote community involvement and avenues for innumerable research opportunities. My experience in obtaining a $50,000 Mays Cancer Center collaboration grant for my dissertation project can be readily applied to building grant revenues in the North Carolina cancer research community.

Throughout my time as a graduate student, I was fortunate enough to receive opportunities to serve as a teaching assistant and give guest lectures, including to a wonderful class at Rice University. During these experiences, I have developed a deep love of teaching. Nothing gives me more motivation or fulfillment than watching the moment a student grasps a difficult concept. When I explored the courses that the Wake Forest Psychology Department offers, I was immediately thrilled. My research and teaching backgrounds have prepared me to teach many of the assessment-, biology-, and cognition-focused courses offered by your department. Additionally, I believe this would be a fantastic environment for me to teach other courses I am interested in, including Bayesian statistics, open science practices, and collaborative science. As providing a synergistic environment for my mentees is important to me, I am thrilled to learn that any student interested in joining my laboratory would have complementary education provided by their research and courses. Considering the small class sizes and the backgrounds of other faculty members, I would feel confident that my students could build a toolbelt for successful careers.

I would enjoy discussing this position with you in the weeks to come, as I truly believe that your department and my background are remarkably compatible. Please don't hesitate to let me know if you have any questions, or would like any additional information.

Kindest Regards,

Bryanna L. Scheuler

# Bryanna L. Scheuler

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## EDUCATION

| | |
|---|---|
| In-Progress | **Ph.D. in Psychology**<br>University of Texas at San Antonio – San Antonio, TX<br>Dissertation: *Utilizing Response Time Models to Assess Cancer-Related Cognitive Decline and Inflammation*<br>Advisor: Joseph W. Houpt, Ph.D.<br>Projected Graduation: May 2025 |
| 2022 | **M.S. in Applied Psychology**<br>Tarleton State University – Stephenville, TX<br>Thesis: *Validation of Classical Maximum Likelihood Estimation for Estimating Shifted-Wald Models of Response Times*<br>Advisor: Thomas J. Faulkenberry, Ph.D. |
| 2019 | **B.S. in Psychology**<br>Tarleton State University – Stephenville, TX<br>Awarded Upper-Level Honors |

## ACADEMIC AWARDS AND SCHOLARSHIPS

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| 2022 | **Best Graduate Poster**<br>The Association for Research in Memory, Attention, Decision-making, Imaging, Language, Learning, and Organization Conference |
| May 2022 | **Graduation Commencement Speaker**<br>Tarleton State University |
| May 2022 | **Outstanding Graduate**<br>Tarleton State University Department of Psychological Sciences |
| 2019 – 2022 | **President's Scholar**<br>Tarleton State University |
| 2017 – 2019 | **Dean's List Scholar**<br>Tarleton State University |
| 2014 – 2016 | **Regent's Scholarship Recipient**<br>Texas A&M University |

## RESEARCH GRANTS

**Mays Cancer Center Moonshot Pilot Project**
Project Title: *Surviving is Not Enough: Enhancing Cognitive Function in Cancer Survivors through Movement and Introspection*
Amount Awarded: $50,000
Dates: 2023 – 2025

**Responsibilities:**
Although my status as a graduate student prevented me from being able to apply as a principal investigator, the two senior investigators on this project agreed that, as this grant would be used for my dissertation and doctoral funding, it was important that I take the lead on the design and writing. I conducted a literature review and selected the appropriate tasks for measuring cognitive function in a cancer survivor population. I collaborated with the principal investigators to write a research plan to incorporate an assessment of cognitive function study into a therapeutic yoga intervention. After being awarded the grant, I have served as the cognitive assessment specialist, helped design the intervention, received training on inflammation analysis, and collaborated with multiple teams to ensure project success.

## RESEARCH EXPERIENCE

**Graduate Research Assistant**
*Department of Psychology*
University of Texas at San Antonio
2022 – Present

**Responsibilities:**
As a graduate research assistant in Dr. Houpt's Mathematical Cognitive Modeling Laboratory, I coordinated our meetings, ran the website, and advised the graduate and undergraduate students. I served as the UTSA point-of-contact on the Moonshot project collaboration, designing our cognitive assessments, handling translations, and aiding in the pursuit of future funding.

**Undergraduate/ Graduate Researcher**
*Department of Psychological Science*
Tarleton State University
2019 – 2022

**Responsibilities:**
While conducting research as an undergraduate in Dr. Faulkenberry's laboratory, I helped in a simulation study on Bayesian analysis and presented on Bayesian statistics at conferences. As a graduate researcher in his lab, I studied mental arithmetic and response time modeling. Additionally, I served as a mentor to the master's students completing their theses after me, assisting in paper organization and presentation techniques.

## TEACHING EXPERIENCE

**Graduate Teaching Assistant**
University of Texas at San Antonio
2024 – Present
PSY 3413

**Responsibilities:**
I was the primary instructor for the experimental psychology laboratory, training students on advanced statistical techniques and scientific writing.

**Graduate Teaching Assistant**
Tarleton State University

2022
PSYC 2317

**Responsibilities:**

I was the primary instructor for the core undergraduate statistics course, and taught Bayesian statistics in conjunction with the classical hypothesis testing curriculum.

**University Tutor**
Tarleton State University
2019 – 2021

**Responsibilities:**

I was a tutor for multiple statistical courses, including Statistical Methods in Psychology, Behavioral Statistics [graduate], Research Methods [graduate], Social Science Statistics, Principles of Bio-Statistics, Criminal Justice Statistics, and Statistical Methods for Criminal Justice [graduate]. (As a note, this was possible because I received an exception by the chairs of all Tarleton State University departments to tutor any statistics course the university offered). I also tutored Anatomy and Physiology, Business Computer Information Systems, Writing in Psychology, and Public Speaking.

## ACADEMIC SERVICE

2024 – Present **Doctoral Student Advocate**
Served as the University of Texas at San Antonio psychology department's advocate on the UTSA Graduate School board

2024 **Invited Speaker**
Spoke on a panel for the Society of Undergraduate Research

2024 **Textbook Review**
Reviewed a Bayesian statistics textbook for Routledge

2024 **Journal Review**
Reviewed a manuscript for *Supportive Care in Cancer*

2024 **Invited Speaker**
Gave a talk in the Rice University Understanding Cancer course

2023 **Conference Manuscript Review**
Reviewed a conference paper for the Society of Mathematical Psychology annual meeting

2023 **Invited Speaker**
Gave a talk at the Population Science Program

2022 **Psychology Department Representative**
Was interviewed as the representative for the psychology department for Tarleton State University promotional videos

## PAPERS IN-PREPARATION

Scheuler, B. L., Bennet, M. S., & Houpt, J. W. (2024). *Censoring data in accumulator models: Considerations and approaches* [Manuscript in preparation]. Department of Psychology, University of Texas at San Antonio.

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (2025). The tractor in the flower garden: A commentary on measuring cancer-related cognitive decline [Manuscript in preparation]. Department of Psychology, University of Texas at San Antonio.

Faulkenberry, T. J., Scheuler, B. L., & McMullin, S. (2025). Estimation methods in shifted-Wald models of response time times [Manuscript in preparation]. Department of Psychological Sciences, Tarleton State University.

## PRESENTATIONS

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (July 2024). *Utilizing response time assessments of cognitive function: The first step in understanding cancer-related cognitive impairment.* Annual Meeting of the Society for Mathematical Psychology. Tilburg, Netherlands.

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (April 2024). *Utilizing response time modeling to inform cancer-related cognitive impairment assessments.* Graduate Student Appreciation Week Research Symposium. San Antonio, TX.

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (March 2024). *Utilizing response time modeling to inform cancer-related cognitive impairment assessments.* Southwestern Psychological Association. San Antonio, TX.

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (February 2024). *Exercise self-efficacy in Latina cancer survivors.* Advancing the Science of Cancer in Latinos Conference. San Antonio, TX.

Scheuler, B. L., Houpt, J. W., & Hughes, D. C. (October 2023). *One step at a time: Exercise self-efficacy in cancer survivors.* The Association for Research in Memory, Attention, Decision-making, Imaging, Language, Learning, and Organization. San Marcus, TX.

Scheuler, B. L., Houpt, J. W., & Faulkenberry, T. J. (March 2023). *Evaluating single-level and hierarchical maximum likelihood estimation in shifted-Wald models.* Southwestern Psychological Association. Frisco, TX.

Scheuler, B. L., & Faulkenberry, T. J. (November 2022). *Classical maximum likelihood estimation in shifted-Wald models of response times.* Psychonomic Society Annual Meeting. Boston, MA.

Scheuler, B. L., & Faulkenberry, T. J. (October 2022). *Classical maximum likelihood estimation in shifted-Wald models of response times.* The Association for Research in Memory, Attention, Decision-making, Imaging, Language, Learning, and Organization. Stephenville, TX.

Scheuler, B. L., & Faulkenberry, T. J. (April 2022). *Cognitive processes in mental arithmetic: A confirmatory Bayesian analysis.* Southwestern Psychological Association. Baton Rouge, LA.

Scheuler, B. L., & Faulkenberry, T. J. (March 2022). *Cognitive processes in mental arithmetic: A confirmatory Bayesian analysis.* Pathways Research Symposium, College Station, TX.

Scheuler, B. L., & Faulkenberry, T. J. (February 2022). *Cognitive processes in mental arithmetic: A confirmatory Bayesian analysis.* President's Excellence in Research Scholars. Stephenville, TX.

Scheuler, B. L., & Faulkenberry, T. J. (November 2019). *An illustration of Bayesian hypothesis testing in the social and behavioral sciences.* Pathways Research Symposium. Laredo, TX.

Faulkenberry, T. J. & Scheuler, B. L. (March 2019). *Bayesian model selection for informative hypotheses: A comparison of data-based versus default encompassing priors.* Mathematical Association of America. Stephenville, TX.

## PROFESSIONAL AFFILIATIONS

**2023 – Present** Student member of the Society for Mathematical Psychology
**2022 – Present** Affiliate member of UT Health Mays Cancer Center
**2022 – 2023** Student member of the Psychonomic Society

## LEADERSHIP POSITIONS

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| **2024 – Present** | Psychology Doctoral Representative for University of Texas at San Antonio Graduate School board |
| **2021** | Experienced Tutor Reviewer for Tarleton Tutoring & Learning Center |
| **2020 – 2021** | New Tutor Trainer for Tarleton Tutoring & Learning Center |
| **2019 – 2020** | President for Tarleton Psychology Club |

## INSTRUMENTATION EXPERIENCE

R/ RStudio, JASP, PsychoPy, Microsoft Products

## REFERENCES

**Joseph W. Houpt, Ph.D.**
Associate Professor, Department of Psychology
University of Texas at San Antonio
One UTSA Circle, San Antonio, TX 78249
Joseph.houpt@utsa.edu

**Daniel C. Hughes, Ph.D.**
Assistant Professor
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## RESEARCH STATEMENT

As a researcher, I study how quantitative tools can help us understand real-world problems. I believe that fields like mathematical and cognitive psychology have developed many incredible tools, but until we apply these techniques to real problems, the tools are being underutilized. This leads me to ask: How could quantitative techniques be applied to the medical field to help patients? How could precise tools that can represent underlying cognitive processes impact our understanding of how the brain changes during illness?

During my undergraduate and master's degrees, I was trained in parameter estimation and response time modeling. My master's thesis evaluated the efficacy of a traditional estimation technique in model fitting through data simulation, to determine the strengths and limitations of the approach many researchers utilize. This process taught me the power of tools like response time modeling, and how much more information we can gain when we step away from only relying on averages to represent data. During my dissertation, I have had the opportunity to begin applying these tools to cognition in the cancer population. Many cancer patients experience cancer-related cognitive decline (CRCD), but despite the millions of people experiencing this impairment, many facets of CRCD have remained ambiguous. For one potent example, within the last 20 years, we have learned that CRCD is not necessarily caused by chemotherapy (despite its moniker 'chemo-brain'). The cancer research field has chased inflammation as a possible cause but has run into many challenges, largely due to difficulties in measuring CRCD, as results have been varied, with quantitative and qualitative measures regularly lacking correlation. I believe that techniques like response time modeling can be part of the solution to our difficulty in capturing CRCD changes in quantitative measures. Thus, in my dissertation, I am applying response time modeling to neurocognitive tasks to evaluate attention, executive control, and working memory across a six-month intervention with cancer survivors. Additionally, I am assessing how inflammation relates to changes in the underlying cognitive processes, to determine if response time modeling can help us understand what may be causing CRCD. Despite the mountain of evidence that modeling can better represent data and provide meaningful parameters, these techniques have never been utilized in cancer research. My research is the first to implement accumulator models in cancer populations, and will hopefully be the first step in bridging one of the gaps between psychology tools and health science research.

Throughout my doctoral program, I have been able to speak on this alternative approach to measuring CRCD multiple times, leading to many planned projects. The organizations I plan to collaborate with over the next five years include the Mays Cancer Center—UT Health, the Netherlands Cancer Institute, and the HIV Manhattan Brain Bank. By leaning into collaborative projects, I hope to expand the use of techniques like response time modeling in health science studies, to help as many survivors as possible. Due to my mathematical psychology background, my connections in the health field, and first-hand experience with CRCD, I have been uniquely equipped to tackle CRCD, and I am determined to make the most of that combination. Whether it be tenacity or audacity, I refuse to settle for anything less than improving the lives of cancer patients on a global scale.

Throughout my career, I will determine the best way to combine cognitive and mathematical psychology techniques and inflammatory biomarker analysis in the health sciences. Wake Forest University would be the ideal location for me to build this research program. Firstly, the focus that the Department of Psychology places on measurement would translate into students who would be successful in my applied assessments laboratory. Secondly, my research is complementary to the

department's themes, so I would be able to contribute back to the department while learning from my peers in a synergetic environment. Thirdly, the Wake Forest School of Medicine would provide an avenue for cross-department collaborations, where psychology assessment techniques can be introduced to entrant healthcare providers. Finally, the multitude of Novant Health Cancer Institute facilities in the surrounding area would accommodate access to cancer survivors, while allowing me to give back to the community.

## TEACHING STATEMENT & EFFECTIVENESS

I originally went into academia because I love learning. I stayed in academia because I love watching students fall in love with learning. At the end of my first semester of teaching, a student approached me to tell me that she was so terrified from her previous experience with statistics that she was contemplating dropping out of the program. Then she melted my heart by saying that my course taught her to love statistics instead and that she was now considering going into research. At that moment, I knew that I wanted to spend my life helping students fall in love with knowledge. My goal is to equip students with a toolbelt of knowledge and the confidence they need to chase their questions.

To implement my teaching philosophy, I design my classes around a scaffolding process based on Bloom's Taxonomy. For example, in my experimental course, I introduce each topic by building on familiar material, then walking the students through why our process would need to change, with questions like: "But what if we want to see how their scores change over time? How might this change our equations?" Once the students have a strong understanding of the concepts and theories behind a topic, I model how they would ask questions and apply this topic with practice problems. Throughout the practice, I transition to letting the students lead the problems, providing immediate feedback. The homework assignments require students to combine the information they have learned and decide how to evaluate their results. This process builds to creating a study, completing a factorial ANOVA, analyzing their results, and reporting it in a paper that follows the American Psychology Association guidelines. Through modeling and layers of practice, I believe that students build confidence in their abilities, and learn which 'tool' is right for the 'job.'

When researching Wake Forest University, I was continually impressed. I would be honored to be a part of an institution where undergraduate education is so highly valued, as evidenced by Wake Forest ranking 31$^{st}$ in the nation for undergraduate education. Additionally, I have taught in large lecture halls and small classrooms, and have seen how beneficial it can be to have smaller class sizes. With an average class size of 19 students, Wake Forest provides students with an opportunity for more interaction with their professors. Being able to teach in these smaller classes, where I can facilitate discussion and student engagement is a priority to me, and yet another reason I want to teach at Wake Forest University. Additionally, I know this is a university that I could contribute back to, utilizing my background in multiple courses, both at the undergraduate and graduate levels. My background in statistical analyses and assessment development would lend well to teaching statistics, methods, experimental design, and assessment courses. My training in cognition, biology, and health sciences has equipped me to teach biopsychology, cognition, stress, and memory classes. Additionally, I would love the opportunity to teach courses on Bayesian statistics, open science practices, collaborative science, and response time modeling. I believe that I would be a true asset to Wake Forest University.

The following are example evaluations from the two sections of the Statistical Methods in Psychology course I taught at Tarleton. This class was taught online in the spring of 2022, with lecture and practice problem videos provided as YouTube links. The average grade for the students who completed this course was an 89%. The most common comments included enjoying the practice problem videos, liking how the instructions built in steps, and appreciating being treated with kindness.

"Ms. Scheuler has been the best math teacher I have ever had. I have always struggled in math, but I am doing pretty good in this course, and I accredit that to the great teacher! She works at a steady pace and explains each step and answer thoroughly, as well as does a recap of what have already learned. I appreciate her!!"

"This may sound different but I feel like I get a one-on-one experience with Ms. Scheuler because of the way she takes her time when teaching. She doesn't teach as if I should already know what's going on and that makes it easier for me to follow along. Also, her communication is impeccable unlike mine. While I would love to take a face-to-face class with Ms. Scheuler her online teaching has a way of feeling non rushed so everything is in detail."

"Ms. Scheuler has done a phenomenal job at replying to my emails in a timely manner. She has been able to help me think through the problems I didn't understand until I was able to come up with a solution. Ms. Scheuler was able to break down the problem into smaller questions so that I better understood what the problem was asking. She was very helpful and incredibly nice."

**Note**: At the date of this submission, the course I am currently teaching (Experimental Psychology) has not reached the point in the semester to submit course evaluations. If this submission is reviewed after December 10th, 2024, I can provide the evaluations from the current course.

## CONTRIBUTIONS TO DIVERSITY, EQUITY, AND INCLUSION

As an instructor and mentor, I always view students as holistic beings with lives outside academia. I believe this openness to hearing a student's needs is the first, crucial step in providing an inclusive, safe, and supportive environment. If, at any point, I learn of ways I can make my classroom a more equitable learning environment for all students, I make any necessary adjustments with all due haste. While teaching at the University of Texas at San Antonio, I have witnessed how a diverse group of students can contribute invaluable perspectives to the class, when every student can feel confident to use their voice. Though challenging, my experiences teaching classes with a range of student backgrounds have taught me how to be flexible, and how to educate all members of my class equally. Seeing the confidence shift in my students is the strongest evidence I could have that an inclusive environment makes a difference.

Equity in research has been and will continue to be, extremely important to me. My dissertation research is being implemented in both San Antonio and Laredo, TX, to provide intervention opportunities to Latina breast cancer survivors, particularly those living in underserved communities. As many of the members of the Laredo community do not have running water, it was crucial to our team that actions be taken to ensure they are provided with an accessible, responsive intervention. Despite

the added difficulties of including a satellite location in a pilot study, it was imperative to our team that our convenience did not override survivors' needs. I intend to implement this survivor-first approach throughout my future research and incorporate consideration for participants with the highest need into the design, location, language selection, and recruitment methods. It is important to remember that research is *for* participants, not *about* participants, and being mindful of inclusivity in the design is a crucial component for ensuring the research is helping the participants who need it most.