

Education

The University of Wisconsin-Madison Department of Medical Physics <i>PhD Candidate</i>	Madison, WI Expected May 2028
The University of Wisconsin-Madison Department of Medical Physics <i>Masters of Science in Medical Physics</i>	Madison, WI August 2025
The University of Chicago <i>Bachelor of Arts in Physics, Cum Laude</i>	Chicago, IL June, 2023

Publications

- Cartesian MPnRAGE for Efficient Simultaneous Multi-Contrast and Quantitative Relaxometry Imaging*
- Authors: **Carly A. Allen**, Kevin M. Johnson, Bernadette T. Gillick, Maren E. Schimek, Andrew L. Alexander, Steven R. Keckskemeti

Presentations

First author presentations:

- International Society for Magnetic Resonance in Medicine (ISMRM) 2025
Annual Meeting Abstract Poster Presentation: *Cartesian MPnRAGE for Efficient Simultaneous Multi-Contrast and Quantitative Relaxometry Imaging*
Honolulu, Hawaii
May 10-15, 2025
- Authors: **Carly A. Allen**, Kevin M. Johnson, Andrew L. Alexander, Steven R. Keckskemeti
- ISMRM 2024 Annual Meeting Abstract Oral Presentation:
Comparison of Early Life White Matter Development of Non-Human Primates and Human Infants using Quantitative Relaxometry
Singapore
May 4-9, 2024
- Authors: **Carly Allen**, Douglas Dean, Jason Moody, Marissa DiPiero, Nakul Aggarwal, Ned Kalin, Andrew Alexander, and Steve Keckskemeti

University of Wisconsin-Madison Presentations:

- Brain Food Talk: *Cartesian MPnRAGE for Efficient Simultaneous Multi-Contrast and Quantitative Relaxometry Imaging.* September 2025
- Waisman Center Poster Fair: *Titled as above* December 2025
- Medical Physics Student Research Symposium: *Titled as above* January 2025
Awarded first place
- Emerging Leaders Symposium Poster: *Comparison of Early Life White Matter Development of Non-Human Primates and Human Infants using Quantitative Relaxometry* August 2024
- Brain Food Talk: *Do Rhesus Macaques Really Age 3 Times Faster than Humans?* December 2023

Other Conference Presentations:

American Academy for Cerebral Palsy and Developmental Medicine
79th Annual Meeting Poster Presentation: *Developing Effective Strategies to Enhance Non-Sedated Infant MRI Success*

New Orleans, LA
October 15-18, 2025

- Authors: Maren E. Schimek, Kellie M. Collins, Veronika Mak, Cameron P. Casey, Kate Konieczka, **Carly A. Allen**, José Guerrero Gonzalez, Steven R. Kecsckemeti, Douglas C. Dean III, Andrew L. Alexander, Bernadette T. Gillick

Research Experience

Quantitative Brain Imaging Technology Lab

Waisman Center, University of Wisconsin-Madison

Advisor: Dr. Andrew Alexander, Dept. of Medical Physics and Psychiatry

September 2023-Present

- Describing the quantitative relationship between non-human primate and human infant brain development by comparing the rate of white matter myelination using quantitative T1 imaging
- Optimizing a Cartesian MPnRAGE pulse sequence to enable multi-contrast T1-weighted imaging and achieve accurate quantitative T1 fitting with reduced scan times
- Collecting quantitative MRI infant brain scans to develop an atlas of normative brain development. Improving infant MRI acquisition by reducing acoustic noise and increasing motion robustness

Cornell Research Experience for Undergraduate (REU)

Cornell University, Ithaca, NY

Advisor: Dr. Mattias Liepe, Dept. of Physics

June 2022-August 2022

- Tested and created a 3D temperature map of Nb3Sn Superconducting Radio Frequency Cavities (SRF) to gain information about quenching to improve SRF cavity design

Technical Skills

- Trained in MRI safety and proficient in scanner operation.
- Experience with Matlab, Python, C++, GE's EPIC pulse sequence programming language
- Image processing and reconstruction
- Experience using FSL and ImageJ for image analysis

Memberships

- International Society for Magnetic Resonance in Medicine (ISMRM). October 2023-Present
- American Association of Physicists in Medicine (AAPM), October 2025-Present

Honors

- Morse Society Scholar 2026-2027
- Paul DeLuca, PhD Scholar Award 2023
- Lockheed Martin STEM Scholar 2019-2023