<div align="center">**Alena Smith**

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EDUCATION

University of Southern California (USC) — Los Angeles, California
  Dornsife College of Letters, Arts and Sciences — August 2018 – May 2022
    Bachelor of Science in Neuroscience
  Marshall School of Business
    Minor in Business Administration
Awards: Renaissance Scholar, Dean's List, Cum Laude

RESEARCH TRAINING SUMMARY

Poston Laboratory — Stanford, California
Stanford University School of Medicine — May 2022 – Present
PI & Mentor: Kathleen L. Poston, MD, MS
Postdoctoral Mentor: Carla Abdelnour, MD, PhD
Research Data Analyst

- Monitor recruitment from the Stanford Alzheimer's Disease Research Center (ADRC) to identify weak points in the racial, ethnic, and socioeconomic diversity of the study's cohort. Identified gaps in recruitment and proposed solutions to outreach and recruitment challenges.
- Enrolled 16 Dementia with Lewy bodies participants from the Stanford Neurology Clinic and the community; recruited, scheduled, consented, collected data from, and reimbursed participants.
- Organize cryogenic freezer sample storage, manage inventories, prepare and ship (domestic and international) samples to collaborators.
- Construct and manage large, longitudinal databases of clinical, diagnostic, and biomarker data; lab point of contact for data sharing to collaborators from Stanford, Amprion, the University of Texas, and the University of Gothenburg.
- Optimize data harmonization and cleaning pipelines using Python and R; process large-scale diagnostic, neuropsychological, and biomarker data from a multi-study, clinically heterogeneous cohort from the Stanford ADRC and Poston Lab cohorts.
- Apply various statistical analyses (normality assessments, variance analysis, hypothesis testing with corrections for multiple comparisons, correlation matrices, Gaussian mixture models, ROC AUC analysis, and regression analysis) and develop algorithms (LASSO Regression, Principal Component Analysis) to investigate the diagnostic accuracy of novel plasma Alzheimer's disease biomarkers in Lewy body disease participants.
- Investigate the diagnostic accuracy of Alzheimer's disease (AD) novel plasma biomarkers in Lewy Body disease (LBD) participants, demonstrating that plasma pTau181 and pTau217 reliably detect amyloidosis in LBD.
- Examine plasma biomarkers as non-invasive, cost-effective diagnostic tools for detecting AD mixed pathology in LBD, with implications for clinical practice and trial design.
- Contribute to the preparation and submission of abstracts and publications, involving data collection, follow-up analysis in response to reviewers, creating and formatting tables and figures, and copy-editing drafts.

Interim Lab Manager — August 2023 – December 2023

- Contributed to P01 and R01 grant submissions; organized documents, oversaw collaborative file version control, compiled and formatted faculty-submitted documents, copy-edited all drafts up to final submission, and directed the transfer of final files to research management teams for submission.

- Completed the protocol for a new study to operate synchronously with the Stanford Alzheimer's Disease Research Center. Initiated and implemented financial protocols for study billing.
- Managed the lab's 15 IRBs, organized the PI's meetings schedule, and oversaw lab organizational duties.

Human Neuroscience and Sleep Research Program Menlo Park, California
Stanford Research Institute, International (SRI) August 2023 – Present
PI: Tilman Schulte, PhD
Co-I & Mentor: Eva M. Müller-Oehring, PhD
Research Assistant
- Examine the cognitive and motor neurofunctional changes that occur in healthy aging, neurodegeneration in people living with HIV infection, and Parkinson's disease, incorporating cognition, mood, and motor function with sleep physiology and multimodal neuroimaging.
- Quality control of automated MRI based perivascular space clustering algorithm using ITK-snap and grey-white matter contrasts.
- Construct and manage large, collaborative databases in RedCap and SharePoint, harmonizing participant information across multiple longitudinal projects.
- Administer the MDS-United Parkinson's Disease Rating Scale (MDS-UPDRS) and the Scale for Assessment and Rating of Ataxia (SARA) to research participants; wrote the lab's protocol on administering these motor exams for research purposes to standardize video collection for remote exam scoring and data analysis.

USC Brain and Creativity Institute Los Angeles, California
University of Southern California August 2019 – May 2022
PI: Mary Helen Immordino-Yang, EdD
Postdoctoral Mentor: Rodrigo Riveros Miranda, PhD
Undergraduate Research Assistant
- Studied adolescent development of self-transcendent purpose and intellectual virtues through an intergenerational storytelling intervention, focusing on changes in speech patterns and eye movements to analyze changes in participant behaviors.
- Transcribed and segmented speech recordings with ELAN, analyzed eye movement patterns and blink rate during video recordings, and coded for various human factors (using NVivo) indicative of learning and goal setting.
- Collected weekly video and speech recordings from participants after each intervention session.

PEER-REVIEWED PUBLICATIONS

1. Abdelnour C, Young CB, Shahid-Besanti M, **Smith AM**, Wilson EN, Benitez JR, Vossler H, Plastini MJ, Winer JR, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson V, Montine TJ, Tian L, Mormino EC, Poston KL. Plasma pTau181 in Lewy Body Disease Spectrum. *Annals of Neurology.* **2024**; 96(3). http://dx.doi.org/10.1002/ana.27003

2. Young CB*****, Cholerton B*****, **Smith AM**, Shahid-Besanti M, Abdelnour C, Mormino EC, Hu SC, Chung KA, Peterson A, Rosenthal LS, Pantelyat A, Dawson TM, Quinn J, Zabetian CP, Montine TJ, Poston KL. The Parkinson's Disease Composite of Executive-Functioning (PaCEF): A Measure for Detecting Cognitive Decline in Clinical Trials. *Neurology.* **2024**; 103(2). https://doi.org/10.1212/WNL.0000000000209609. *These authors contributed equally.

MANUSCRIPTS IN PREPARATION

1. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. Plasma pTau181 and pTau217 as biomarkers of Alzheimer's disease mixed pathology in Lewy Body Disease.

2. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Romero A, Smith V, Shahid-Besanti M, Wilson EN, Davidzon G, Mormino EC, Poston KL. Regional Amyloid-β Burden in Lewy Body Disease.

3. Hemachandra D, Younes K, Peterson ET, Winer JR, Cobbigo Y, Rosen HJ, Young CB, **Smith AM**, Schulte T, Poston KL, Müller-Oehring EM. MRI visible perivascular spaces are associated with disease duration and severity in Parkinson's disease.

4. Müller-Oehring EM, Hemachandra D, Younes K, Peterson ET, Winer JR, Cobbigo Y, Rosen HJ, Young CB, **Smith AM**, Brontë-Stewart HB, McGlynn L, Poston KL, Schulte T. The role of MRI-visible perivascular spaces for cognitive dysfunction in aging with neuroinflammatory and neurodegenerative disorders.

ORAL PRESENTATIONS

1. Diagnostic accuracy of plasma biomarkers pTau181 and pTau217 in detecting amyloid co-pathology in Lewy body disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Orally presented at the Stanford School of Medicine 11th Annual Neuroscience Forum. May 2024, Stanford, CA.*

2. Understanding regional amyloid-β burden in Lewy body disease and its impact on cognitive function. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Smith V, Shahid-Besanti M, Davidzon G, Mormino EC, Poston KL. *Orally presented at the Stanford School of Medicine 11th Annual Neuroscience Forum. May 2024, Stanford, CA.*

3. Plasma pTau181 and pTau217 as biomarkers of Alzheimer's disease co-pathology in Lewy Body Disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Orally presented at the international NextGen Dementia with Lewy Bodies (DLB) virtual webinar. May 2024.*

4. Amyloid-β Burden in Lewy Body Disease: Beyond Common Regional Definitions. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Smith V, Shahid-Besanti M, Davidzon G, Mormino EC, Poston KL. *Orally presented at the international NextGen Dementia with Lewy Bodies (DLB) virtual webinar. May 2024.*

5. Diagnostic accuracy of plasma biomarkers pTau181 and pTau217 in detecting Alzheimer's disease co-pathology in Lewy Body disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Orally presented at Alzheimer's Association International Congress Neuroscience Next (AAIC-NN). April 2024, San Francisco, CA.*

6. Plasma pTau181 in Lewy body disease spectrum. Abdelnour C, Plastini M, Shahid-Besanti M, **Smith AM**, Wilson EN, Andreasson KI, Henderson V, Kerchner G, Poston KL. *Orally presented at the*

International Conference on Alzheimer´s and Parkinson´s Diseases and related neurological disorders (AD/PD). March 2023, Barcelona, Spain.

POSTER PRESENTATIONS

1. Plasma pTau181 and pTau217 Detect Amyloid Co-pathology and Have Specific Cut-offs in Lewy Body Disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Poster to be presented at the International Congress of Parkinson's Disease and Movement Disorders. September 2024, Philadelphia, PA.*

2. Diagnostic accuracy of plasma biomarkers pTau181 and pTau217 in detecting amyloid co-pathology in Lewy body disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Poster presented* at the Alzheimer's Association International Congress (AAIC). July 2024, Philadelphia, PA.* ***Awarded the Lewy Body Dementias Professional Interest Area (LBD PIA) Best Student Poster Award*** **Selected by the Alzheimer's Association to give a poster presentation to philanthropic partners, as a highlight of the type of science discussed at AAIC.*

3. The relationship between regional amyloid-β burden and clinical outcomes in Lewy body disease. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Smith V, Shahid M, Wilson EN, Davidzon G, Mormino EC, Poston KL. Occipital amyloid-β burden and clinical correlates in Lewy body disease. *Poster to be presented at the Alzheimer's Association International Congress. July 2024, Philadelphia, PA.*

4. The impact of the occipital lobe when assessing amyloid-β burden in Lewy body disease. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Smith V, Shahid M, Wilson EN, Davidzon G, Mormino EC, Poston KL. *Poster presented at the 2024 MBCT & NeuroTech Community Science Share Out Event. June 2024, Stanford, CA.*

5. Diagnostic performance of plasma pTau181 and pTau217 as biomarkers of Alzheimer's disease co-pathology in Lewy Body disease. **Smith AM**, Plastini MJ, Ashton NJ, Montoliu-Gaya L, Wilson EN, Arslan B, Young CB, Winer JR, Shahid-Besanti M, Vossler H, Kerchner G, Cholerton B, Andreasson KI, Yutsis MV, Henderson VW, Montine TJ, Tian L, Mormino EC, Zetterberg H, Poston KL, Abdelnour C. *Poster presented at Planning for Prevention of Parkinson's (PPP). May 2024, Boston, MA.*

6. The impact of the occipital lobe when assessing amyloid-β burden in Lewy body disease. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Smith V, Shahid M, Wilson EN, Davidzon G, Mormino EC, Poston KL. *Poster presented at the Wu Tsai Neurosciences Institute Retreat. May 2024, Santa Cruz, CA.*

7. Plasma pTau181 as a potential prognostic biomarker in Lewy Body Disease. Abdelnour C, Young CB, Shahid-Besanti M, **Smith AM**, Wilson EN, Vossler H, Plastini J, Winer JR, Tian L, Kerchner G, Andreasson KI, Henderson V, Mormino EC, Poston KL. *Poster presented at the International Conference on Alzheimer's & Parkinson's Diseases. March 2024, Lisbon, Portugal.*

8. Regional Amyloid-β Burden in Lewy Body Disease. Vossler H, Abdelnour C, Young CB, Winer JR, **Smith AM**, Romero A, Smith V, Shahid-Besanti M, Wilson EN, Davidzon G, Mormino EC, Poston KL. *Human Amyloid Imaging Conference (HAI). January 2024, Miami, FL.*

9. Using plasma ptau181 in Lewy body disease spectrum for the identification of Alzheimer's disease co-pathology. Abdelnour C, Shahid-Besanti M, **Smith AM**, Wilson EN, Vossler H, Plastini J, Young CB, Winer JR, Tian L, Kerchner G, Andreasson KI, Henderson V, Mormino EC, Poston KL. *Poster presented at the Alzheimer's Association International Conference (AAIC). July 2023, Amsterdam, The Netherlands.*

10. Plasma ptau181 helps to identify Alzheimer's co-pathology in Lewy body disease patients. Abdelnour C, Plastini M, Shahid-Besanti M, **Smith AM**, Wilson EN, Andreasson KI, Henderson V, Kerchner G, Poston KL. *Poster presented at the World Parkinson Congress. July 2023, Barcelona, Spain.*

RESEARCH SKILLS

Computational Skills
Python, R/RStudio, REDCap

Human Factor Analysis Skills
ELAN, NVivo, segmentation and quality control of speech transcripts, quality control of eye-tracking recordings

Imaging Skills
ITK-snap, quality control of MRI grey matter and white matter contrasts.

Laboratory Skills
Fluorescence microscopy, PCR, Western Blot, DNA isolation, gel electrophoresis, paper and column chromatography, titration

Administrative Skills and Grant Support
IRB protocol creation and maintenance, DUA/MTA compliance, grant (P01, R01) copy-editing and collaborative document organization

TEACHING EXPERIENCE

Menlo Park Strength Studio (MPX)   Menlo Park, California
Certified Personal Trainer and Group Fitness Instructor   March 2023 – Present
- Lead strength classes (> 400 classes to date) on the X-Former machine.
- Teach clients with a personalized approach, molding their technique and building their understanding of the basic physiology of muscle group mechanics.
- Apply understanding of neuromuscular and neurobiological principles to educate clients about how their physical health is linked to brain health and resilience to neurodegenerative processes of aging.
- Demonstrate strong communication skills through breaking down complex physiological concepts for diverse audiences.

Private Tutor   May 2018 – December 2019
- During my senior year of high school, I was selected to teach algebra and geometry workshops to sophomore students enrolled in the Advancement Via Individual Determination (AVID) program. After graduating, I continued to privately tutor three AVID students in precalculus and trigonometry.

LEADERSHIP & COMMUNITY OUTREACH

Connecting Through Art   Stanford, California
Bay Area Chapter Founder and Director   August 2023 – Present
- Established and currently direct the Stanford chapter of Connecting Through Art, an art therapy program for Parkinson's disease patients, in partnership with the American Parkinson's Disease Association (APDA).
- Conceptualize therapeutic art workshops alongside art therapy professionals and movement disorders specialists, focusing on managing Parkinson's symptoms and obstacles.
- Facilitate such workshops in the form of monthly therapy sessions to the Bay Area PD community. Provide tailored art tool modifications and support to accommodate various disease progression.
- Liaise group discussions around participants' connections with their artwork and how challenges were overcome in the art-making process.
- Facilitate a network of meaningful partnerships between the APDA, Stanford, local Senior centers, and participant-caretaker communities.
- Foster positive relationships through consistent and meaningful interactions with group members.

Spanish-Speaking Parkinson's Support Group   Stanford, California
Bay Area Program Co-founder and Coordinator   August 2023 – Present
- Organize monthly Parkinson's disease support group meetings for the underrepresented and underserved Hispanic community in the Bay Area.
- Conduct bi-monthly discussions with the APDA and the Stanford Information & Referral Center to build outreach networks that improve resource accessibility and extend outreach to underserved groups.
- Liaise between the group leader, the group's participants, and research recruitment teams.
- Elevate research participation in local Hispanic communities through outreach.

Poston Lab Annual Research Report   Stanford, California
Report Coordinator and Designer   January 2023, 2024
- Develop and publish the Poston Lab's Annual Newsletter, highlighting the lab's research findings and openly recruiting studies.
- Copy-edit and organize community-oriented articles written by each lab member. Compile articles into a comprehensive, participant-facing research report.
- Coordinate with research recruitment teams to compile a packet of all research studies open for recruitment.
- Elevate research participation of Bay Area participants through newsletter outreach.
- Facilitate research study enrollment from interested volunteers responding to the newsletter.

USC First-Generation Student Association   Los Angeles, California
Incoming Freshman Mentor   July 2021 – December 2021
- Mentored fellow first-generation students in their first semester at the University of Southern California; coached mentees as they reached academic and social goals throughout the semester.
- Guided mentees through campus resources such as scholarships, clubs, and undergraduate internships.

Community Organized Relief Effort (CORE)   Los Angeles, California
COVID-19 Community Relief Volunteer   May 2020 – September 2021
- Administered COVID-19 rapid tests at mobile testing centers in underserved neighborhoods in central Los Angeles, providing an essential healthcare service during the pandemic's speak (summer 2020).
- Delivered over 5,000 tests per day.

CLINICAL EXPERIENCE

Stanford Movement Disorders Clinic   Stanford, California

Shadow under Kathleen L. Poston, MD, MS (Chief of Movement Disorders)   September 2023 – May 2024
- Shadowed the MDS-United Parkinson's Disease Rating Scale (MDS-UPDRS) and the Scale for Assessment and Rating of Ataxia (SARA), gained proficiency in administering the MDS-UPDRS and SARA motor exams to research participants.
- Created the lab's protocol on administering the MDS-UPDRS and SARA for research purposes, to guide video collection for remote exam scoring and data analysis.

Cedars Sinai Emergency Department   Los Angeles, California
Volunteer in Patient Bedside Care   May 2021 – November 2021
- Provided comprehensive patient bedside care, including preparing beds, serving food and water, and directing family to proper rooms, while maintaining the efficiency of triage.
- First point of contact for incoming patients, facilitated incoming patient management: directed patients to appropriate waiting areas based on respiratory symptoms and guided families to visitor waiting areas.
- Supported triage nurses in promoting COVID-19 preventative measures such as mask-wearing and social distance enforcement in Emergency Department waiting areas.

PROFESSIONAL SERVICE

- Stanford Information & Referral Center   August 2022 - Present
- Member of the International Parkinson and Movement Disorder Society   September 2023 – Present
- Member of the MDS Women in Movement Disorders Group   September 2023 - Present
- Member of the MDS Young Members Group   September 2023 - Present

Workshops and Seminars
- What About Co-Pathologies? Planning for Prevention of Parkinson's Workshop   May 2024
- Dynamic Stretching for Parkinson's Disease   May 2024
- At-Home Pencil, Pen, and Brush Modifications for Parkinson's Disease   October 2023
- Lewy Body Disease Caregiver Symposium   October 2023
- Diversity, Equity, and Inclusion Principles in Research Recruitment   September 2023

MENTORED STUDENTS

Emily Diaz   Los Angeles, California
Undergraduate Business Student   August 2023 – December 2023
- Mentored her as a first-generation college student at the USC Marshall School of Business, seeking an internship for the upcoming summer. Workshopped her resume, exercised networking skills, and connected her to leaders of business consulting clubs on campus.

Lesley Omenge   Los Angeles, California
Undergraduate Business Student   August 2023 – December 2023
- Mentored her as a first-generation college student at the USC Marshall School of Business, introducing her to interdisciplinary studies with the Liberal Arts College. Ms. Omenge is completing her World Bachelor in Business degree, growing her global business proficiency.

ADDITIONAL EXPERIENCE

The Healing Process   Los Angeles, California
Staff writer and magazine designer   August 2019 – March 2020

Personal art business (alenaasmith.com)   Los Angeles, California
Artist, raise money for the Los Angeles Epilepsy Foundation   August 2018 – Present

The Beehive   Manhattan Beach, California