

Eileen B. Leary, MS, RPSGT

Curriculum Vitae

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Tenacious sleep nerd with over 20 years of research and data analysis experience.

Scientist known for successfully planning and executing multifaceted clinical research projects. A high-level thinker with exceptional strategic skills and the rare ability to effectively improve collaborations between diverse stakeholders. Extensive experience in analyzing data, publishing manuscripts, and statistical programming.

Currently working to improve our understanding of the genetic basis of sleep and sleep disorders by creating a large cohort and making the data freely available to the scientific community.

Education

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| MS, Epidemiology and Clinical Research, Stanford University School of Medicine <i>GPA: 4.0; Thesis: The Association Between Periodic Leg Movements (PLMs) and Sleepiness in the Wisconsin Sleep Cohort</i> | 6/2013 |
| BA, Psychology, University of California, San Diego <i>Provost Honors; Honors Thesis: Effects of Smoking Cessation on Sleep; Education Abroad Program (University of College Cork, Ireland)</i> | 6/1995 |

Professional Credentials and Memberships

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| Basic Life Support (BLS) Provider | 11/2016 – present |
| ABSM Registered Sleep Technologist (RST) (# 2791) | 2/2012 – present |
| Sleep Research Society Member | 7/2010 – present |
| California Sleep Society Member | 11/2007 – present |
| AAST Registered Polysomnographic Technologist (RPSGT) (# 2157) | 6/1998 – present |
| American Association of Sleep Technologists Member | 5/1997 – present |

Employment and Research Experience

Stanford Center for Sleep Sciences & Medicine (Palo Alto, CA) **3/2009 – present**

Senior Manager of Clinical Research

Responsibilities included leading technical initiatives, writing grants/proposals, performing statistical analysis and power calculations for grant applications/publications, designing research studies/clinical trials, developing budgets, negotiating contracts, and actively building successful collaborations with internal and third party organizations.

- Helped department secure >40 million dollars in funding by directing the submission of 15 grant applications (9 funded, 1 under review).
Grants included an 18-million-dollar family foundation grant to build a prospective cohort of 30k sleep clinic patients and a 7.85 million dollar NIH P01 grant to research the genetic, neurobiological, and immunological basis of type 1 narcolepsy.
- Project Director for the Alliance Sleep Questionnaire (ASQ): an online questionnaire that uses complex, branching logic to identify potential sleep disorders.
Partnered with stakeholders from 5 sites to develop the ASQ's content, conducted the pilot study, managed deployment, and integrated the new tool into the core workflow at Stanford's Sleep Clinic. Responsible for the ongoing management of the ASQ (monitoring data acquisition and integrity, assessing data quality, developing scoring algorithms, and performing data analysis). To date, the ASQ has been completed by over 8,000 people, is critical for >10 research studies (including Google baseline pilot), and has become standard of care at the Stanford Sleep Medicine Center.

- Database Architect/Administrator for the Stanford Sleep Cohort and Narcolepsy Cohort.
Created system to link clinical, research, and sleep study data on >40,000 individuals including biological data on >5,000 narcolepsy cases and >15,000 controls. Optimized data security and operational effectiveness by providing technical expertise and developing both the schema and data dictionaries.
- Implemented and managed Stanford's Multi-site PSG Triple Re-Score Project.
Authored manual of operations for the Stanford Site, developed a partnership with Philips Respironics to streamline data-export of >500 studies, hired/managed scoring techs, produced final dataset, and provided regular updates to the project's steering committee.
- Program and Technical Director of Stanford's Accredited Sleep Technologist Education Program.
Developed A-STEP's course curriculum (including speakers and materials), managed all administrative requirements (enrollment and record keeping), and presented lectures on various topics ranging from sleep scoring to patient hook-ups.
- Provided operational oversight for 8 clinical studies with sample sizes ranging from 40 to over 8,000.
- Authored/co-authored 30 manuscripts and abstracts published in scientific journals.
- Composed/managed >40 department active IRB protocols (involved updates/renewals, adherence to regulations, and coordination of inter-institutional agreements with >25 collaborators).

San Francisco VA Medical Center (San Francisco, CA)

4/2010 – 5/2011

Consultant, Clinical Trial Operations

Advised Dr. Thomas Neylan's research team on deployment of NIMH's 1-million-dollar Cognitive Behavioral Treatment of Insomnia in Posttraumatic Stress Disorder Study: a randomized, 2-arm controlled trial examining whether CBTi improves sleep in PTSD patients.

- Developed strategy to launch a complex neurocognitive test battery for the clinical trial.
- Proposed quality control procedures and created training materials to insure the ongoing integrity of the research data.

Stanford Sleep Research Center (Stanford, CA)

11/2002 – 2/2009

National Coordinator / Central Scoring System Manager

Responsible for overall operations on NHLBI's 14.1-million-dollar Apnea Positive Pressure Long-term Efficacy Study (APPLES): a 6-month, randomized, double-blind, 2-arm, sham-controlled, multi-center trial to assess the long-term effectiveness of nasal continuous positive airway pressure (CPAP) therapy for obstructive sleep apnea (OSA) with >1,516 enrolled subjects.

- Ensured program excellence across 5 university, hospital, and private practice sites.
Performed annual site audits, organized and chaired monthly quality assurance meetings, provided operations advice, and made recommendations to promote staffing diversity. Monitored monthly subject enrollment and retention goals for all clinical centers.
- Created procedures and tools to foster standardization and data integrity.
Collaboratively produced a detailed manual of operations and >100 case report forms to help ensure adherence to protocols and the collection of consistent, high-quality data.
- Assisted in developing a robust, online data entry and management system that effectively collected and managed >8 million data points.
- Managed Central Scoring System for APPLES and the APPLES fMRI Study.
Designed and implemented a database to track >20,000 sleep studies. Developed and implemented the program's quality control and quality assurance procedures, including a detailed instruction manual. Hired and managed team of up to 15 remote technicians.
- Supervised data collection at Stanford's Clinical Center.
Ensured high-level care was provided to the >400 subjects enrolled at Stanford. Recruited, trained, and supervised a diverse team of 12-16 staff members.
- Assisted Dr. Clete Kushida in developing/implementing subsequent clinical trials, including APPLES fMRI, APPLE CORS, and TOPS.

SleepQuest Inc. (Redwood City, CA)**7/2000 – 11/2002****Project Manager / Stanford Liaison**

Managed projects for Stanford's Dr. William C. Dement to raise public awareness of the importance of sleep.

- Developed educational materials for helping long-haul truck drivers improve their sleep quality and safety practices.
- Worked with third party organizations to incorporate the importance of sleep into college and high school curricula.
- Developed research protocol for testing the efficacy of SleepQuest's treatment pathway. Results published and presented at 2006 SLEEP conference.
- Worked with Stanford physicians to develop an annual sleep education course for a family practice clerkship (including tests for assessing efficacy).
- Improved CPAP adherence for over 100 patients through one-on-one appointments.

San Francisco VA Medical Center (San Francisco, CA)**12/1997 – 7/2000****Contractor**

Key contributor on research team examining the effects of Post-Traumatic Stress Disorder on sleep.

- Analyzed and scored sleep studies per project-specific metrics.
- Performed patient hook-ups and calibrated data collection software.

UCSF Mt. Zion Sleep Disorders Center (San Francisco, CA)**4/1997 – 7/2000****Registered Polysomnographic Technologist**

Conducted MSLT, MWT, and overnight sleep studies (PSGs) including full apnea hook-ups, PAP/BiLevel titrations, TCCO₂, and PES calibration and monitoring.

- Scored >150 sleep studies for sleep stages, breathing events, arousals, and leg movements.
- Improved patient health by developing/implanting a proactive PAP adherence program.

Teaching / Invited Lectures

Accredited Sleep Technologist Education Program (Redwood City, CA) 3/2015, 3/2016, 9/2016**Program/Technical Director, Lead Instructor**

Presented lectures and moderated intensive, two week/80-hour training course for sleep technologists.

American Association of Sleep Technologists (AAST) Conference (Denver, CO)**6/2016****Invited Speaker**

Delivered presentation on "Patient Hook-ups" for the Fundamentals Course.

SLEEP Conference (Seattle, WA)**6/2015****Presenter, Panel Member**

Presented "Electronic / Web-Based Screening Tools for Sleep Disorders" for the discussion group "How Do New Clinical and Consumer-Oriented Tools Fit within the Practice of Sleep Medicine?"

SLEEP Conference (Minneapolis, MN)**6/2014****Presenter**

Oral presentation of original data on "Validation of Alliance Sleep Questionnaire (ASQ) Narcolepsy Module in Sleep Disordered Patients."

Stanford Epidemiology Research Seminar (HRP 236) (Stanford, CA)**5/2013****Presenter**

Master's thesis presentation: "Sleepiness and Periodic Leg Movements in the Wisconsin Sleep Cohort."

Publications

Peer Reviewed Articles

1. **Leary EB**, Moore H 4th, Schneider LD, Finn, LA, Peppard PE, Mignot E. Periodic Leg Movements (PLMs): Prevalence and Associated Sleepiness in the Wisconsin Sleep Cohort. *Sleep*, Under Review.
2. Koch H, Schneider LD, Finn LA, Young T, **Leary E**, Peppard P, Sorensen H, Jennum P, Mignot E. Breathing disturbances in sleep apnea are associated with objective sleepiness independent of hypoxia. *American Journal of Respiratory and Critical Care Medicine*. In Press.
3. Olsen AV, Stephansen J, **Leary E**, Peppard P, Sheungshul H, Jennum P, Sorensen H, Mignot E. Diagnostic value of sleep stage dissociation as visualized on a 2-Dimensional sleep state space in human narcolepsy. *Journal of Neuroscience Methods*. In Press.
4. Christensen J, Carrillo O, Moore H 4th, **Leary EB**, Peppard P, Young T, Sorensen H, Jennum P, Mignot, E. Sleep stage transitions during polysomnographic recordings as diagnostic features of type 1 narcolepsy. *Sleep Med*. 2015 Jul 7. PMID:26299470.
5. Moore H 4th, **Leary E**, Lee SY, Carrillo O, Stubbs R, Peppard P, Young T, Widrow B, Mignot E. Design and validation of a periodic leg movement detector. *PLoS One* 2014 Dec 9;9(12):e114565. doi: 10.1371/journal.pone.0114565. eCollection 2014. PMID:25489744.
6. Kushida CA, Nichols DA, Holmes TH, Quan SF, Walsh JK, Gottlieb DJ, Simon RD Jr, Guilleminault C, White DP, Goodwin JL, Schweitzer PK, **Leary EB**, Hyde PR, Hirshkowitz M, Green S, McEvoy LK, Chan C, Gevins A, Kay GG, Bloch DA, Crabtree T, Dement WC. Effects of continuous positive airway pressure on neurocognitive function in obstructive sleep apnea patients: The Apnea Positive Pressure Long-term Efficacy Study (APPLES). *Sleep*. 2012 Dec 1;35(12):1593-602. PMID:21358847.
7. Quan SF, Chan C, Dement WC, Gevins A, Goodwin JL, Gottlieb DJ, Hirshkowitz M, Hyde PR, Kay GG, **Leary EB**, Nichols DA, Schweitzer PK, Simon RD, Walsh JK, Kushida CA. The Association between Obstructive Sleep Apnea and Neurocognitive Performance—The Apnea Positive Pressure Long-term Efficacy Study (APPLES). *Sleep*. 2011 Mar 1;34(3):303-314B. PMID: 23204602.
8. Dement WC., **Leary EB**. Sleep disorders: a widely ignored pandemic. *FOCUS: Journal for Respiratory Care & Sleep Medicine*, Jan/Feb 2009:28.
9. Kushida CA, Nichols DA, Quan SF, Goodwin JL, White DJ, Walsh JK, Schweitzer PK, -Guilleminault C, Simon RD, **Leary EB**, Hyde PR, Holmes TH, Bloch DA, Green S, McEvoy LK, Gevins A, Dement WC. The Apnea Positive Pressure Long-term Efficacy Study (APPLES): rationale, design, methods, and procedures. *J Clin Sleep Med.*, 2006 Jul 15; 2(3): 288-300. PMID:17561541.

Book Chapters

1. **Leary, EB**. Patient Preparation. *Fundamentals of Sleep Technology*. Second Edition, Lippincott Williams & Wilkins, 2012, 311-324.
2. **Leary, EB**. Polysomnographic Recording Procedures. *Fundamentals of Sleep Technology*. Second Edition, Lippincott Williams & Wilkins, 2012, 325-339.
3. **Leary, EB**. Book Chapter: Patient Preparation. *Fundamentals of Sleep Technology*, Lippincott Williams & Wilkins, 2007, 241-252.

Abstracts

1. **Leary EB**, Joergensen SH, Barwick FH, Malunjkar S, Kim SJ, Mignot E. Comparison of Two Techniques to Validate the Alliance Sleep Questionnaire (ASQ) Insomnia Module in Sleep Disordered Patients. *Sleep* June 2017, Vol. 40 (Abstract suppl.). Under Review.

2. **Leary EB**, Malunjkar S, Cheung J, Schneider L, Walsh JK, Mignot E. Validation of the Alliance Sleep Questionnaire (ASQ) Obstructive Sleep Apnea (OSA) Module in Sleep Disordered Patients. *Sleep*, June 2016, Vol. 39 (Abstract suppl.) A124, #0345.
3. Nichols DA, Ho V, Miller RA, Griffin KS, **Leary EB**, Walsh JK, Gottlieb DJ, Kushida CA. An Informatics Method to Classify and Analyze Prescription and Non-Prescription Medications for Sleep-Related Clinical Trials. *Sleep*, June 2016, Vol. 39 (Abstract suppl.) A375, #1050.
4. Cheung J, Schneider LD, Chau A, Einen M, **Leary E**, Lin L, Ruoff CM, Mignot E. Characterization of the Stanford Narcolepsy Database. *Sleep*, June 2016, Vol. 39 (Abstract suppl.) A246, #0689.
5. Jolanki O, Moore 4th H, Lin L, Hillary R, Einen M, **Leary E**, Ollila H, Mignot E. T Cell Receptor Sequencing in Narcolepsy. *Sleep*, June 2016, Vol. 39 (Abstract suppl.) A2, #0005.
6. Sakai N, Lin L, Einen M, **Leary E**, Mignot E, Nishino S. Comprehensive Analysis of Plasma Amino Acids in Patients with Sleep Disorders. *Sleep*, June 2016, Vol. 39 (Abstract suppl.) A110, #0305.
7. **Leary EB**, Malunjkar S, Ruoff CM, Walsh JK, Mignot E. Validation of the Alliance Sleep Questionnaire (ASQ) Restless Legs Syndrome Module in Sleep Disordered Patients. *Sleep*, June 2015, Vol. 38 (Abstract suppl.) A432, #1219.
8. Ruoff C, Einen M, Hekmat A, **Leary E**, Nevsimalova S, Plazzi G, Mignot E. Repeatability of the MSLT in Patients with Known CSF Hypocretin Levels. *Sleep*, June 2015, Vol. 38 (Abstract suppl.) A271, #0776.
9. Nichols, Miller, Griffin, DeSalvo, **Leary**, Hyde, Walsh, Kushida. Sleep Research Content and Use Analysis from an Online Document Management System. *Sleep*, June 2015, Vol. 38 (Abstract suppl.) A434, #1222.
10. **Leary EB**, Einen M, Malunjkar S, Ruoff CM, Walsh JK, Mignot E. Validation of the Alliance Sleep Questionnaire (ASQ) Narcolepsy Module in Sleep Disordered Patients. *Sleep*, June 2014, Vol. 37 (Abstract suppl.) p. A360, #1026.
11. **Leary EB**, Peppard P, Moore H, Hagen E, Stubbs R, Young T, Mignot E. Evaluation of a Method to Detect Periodic Limb Movements (PLMs) to Analyze Daytime Consequences in a Large, Population Based Cohort. *Sleep*, June 2013, Vol. 36 (Abstract suppl.), p. A243, #0707.
12. **Leary EB**, Malunjkar S, Qadri S, Ruoff CM, Sullivan SS, Walsh JK, Mignot E. Deployment of the Alliance Sleep Questionnaire (ASQ) at the Stanford Sleep Disorders Clinic (SSDC) as Standard of Care. *Sleep*, June 2013, Vol. 36 (Abstract suppl.), p. A413, #1209.
13. Moore HE, Warby S, Li JJ, **Leary EB**, Carrillo O, Peppard PE, Stubbs R, Young T, Winkelmann J, Mignot E. Leg Movement Detection Software and Periodic Leg Movement Index Calculator for Genetic and Pathophysiological Studies of Large Dataset. *Sleep*, June 2013, Vol. 36 (Abstract suppl.), p. A240, #0698.
14. Miller R, Nichols N, Jadrnicek R, Griffin K, Hyde P, Jónsson D, **Leary E**, Walsh J, Kushida C. Evolution of a Data Collection Management System Designed to Capture Sleep Research Data Using Internet-Based Forms. *Sleep*, June 2013, Vol. 36 (Abstract suppl.), p. A420, #1223.
15. **Leary EB**, Barger L, Hall-Porter JM, Maislin G, Peppard PE, Rajaratnam SR, Rumble M, Sullivan SS, Walsh JK, Mignot E. Alliance Sleep Questionnaire (ASQ): A Collaborative Online Sleep Assessment Questionnaire. *Sleep*, June 2012, Vol. 35 (Abstract suppl.), p. A432; #1281.
16. **Leary EB**, Griffin KS, Malunjkar S, Qadri S, Ruoff CM, Sullivan SS, Walsh JK, Mignot E. Alliance Sleep Questionnaire (ASQ) Feasibility Pilot Study. *Sleep*, June 2012, Vol. 35 (Abstract suppl.), p.A432; #1282.

17. Prilipko O, Huynh N, Tantrakul V, Kushida C, **Leary E**, Nichols D, Guilleminault C. Changes in Cerebral Activation on Working Memory Task in Obstructive Sleep Apnea patients after CPAP or sham CPAP treatment. *Sleep*, June 2009, Vol. 32 (Abstract suppl.), p.A225; #0691.
18. Huynh N, Prilipko O, Tantrakul V, Nichols D, **Leary E**, Kushida C, Guilleminault C. fMRI Study of CPAP Treatment on Verbal Memory Encoding in Obstructive Sleep Apnea Patients in Comparison to Healthy Controls. *Sleep*, June 2009, Vol. 32 (Abstract suppl.), p.A224; #0686.
19. Katikireddy C, Nguyen P, Won C, Cardell C, Nichols D, **Leary E**, McConnell M, Holmes TH, Kushida CA, Yang P. Multimodality Cardiovascular Imaging Detects Improvement of Subclinical Microvascular Dysfunction with Continuous Positive Airway Pressure Therapy in Obstructive Sleep Apnea Patients: A Prospective, Randomized, Double-blinded Study. *Circulation*, 2007, 116:II, 846, Abstract 3722.
20. Trotter K, **Leary E**, Claman D, Evaluation of EPMS Optiflex Compared to Esophageal Pressure (Pes). *Sleep*, June 1999, Vol. 22 (Abstract suppl.), 47.
21. **Leary E**, The Effects of Smoking Cessation on Sleep. *Sleep*, June 1998, Vol. 21, (Abstract suppl.), 261.
22. Trotter K, Wong R, **Leary E**, Claman D. Non-Invasive Assessment of UARS: EPMS Optiflex Diaphragmatic EMG (dEMG), and Esophageal Pressure (Pes). *Sleep*, June 1998, Vol. 21 (Abstract suppl.), 185.