

Leigh A. Martin, PhD MS

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Education

Doctor of Philosophy (Ph.D.), Nutritional Sciences May 2025

Graduate Certificate: Applied Statistics
The Pennsylvania State University, University Park, PA
Mentor: Dr. Alison Gernand, PhD, MPH, RD
Dissertation: "Changes in vitamin B12 biomarkers and plasma volume in pregnant and nonpregnant females"

Master of Science (MS), Nutritional Sciences May 2023

The Pennsylvania State University, University Park, PA
Mentor: Dr. Alison Gernand, PhD, MPH, RD
Thesis: "Measuring plasma volume in women of reproductive age – a comparison study of hydroxyethyl starch to other methods of plasma volume measurements"

Bachelor of Science (BS), Nutritional Sciences (Dietetics) May 2017

Minor: Psychological Sciences
The Pennsylvania State University, University Park, PA

Research Experience

Postdoctoral Scholar, Golan Laboratory Sept. 2025 - present

Division of Nutritional Sciences, Cornell University, Ithaca, NY
PI: Yarden Golan Maor, RD PhD
Research focus: plasma volume and biomarker assessment in lactation

Graduate Research Assistant, Micronutrients and Pregnancy Lab 2020 – 2025

Department of Nutritional Sciences, The Pennsylvania State University, University Park, PA
PI: Alison D. Gernand, PhD, MPH, RD
Research focus: plasma volume, vitamin B12 status, and anemia in pregnancy.
Responsibilities:

- Developed and implemented a novel method using hydroxyethyl starch to measure plasma volume in nonpregnant and pregnant females.
- Measured micronutrient biomarker concentrations (specifically, vitamin B12) in nonpregnant and pregnant females.
- Disseminated study findings through manuscripts and poster presentations at research conferences.

Research Technologist, Micronutrients and Pregnancy Lab

2017 - 2020

Department of Nutritional Sciences, The Pennsylvania State University,
University Park, PA

PI: Alison D. Gernand, PhD, MPH, RD

Responsibilities:

- Managed daily lab operations, including supervising four undergraduate research assistants, to ensure efficient workflow.
- Coordinated participant recruitment and data entry for a year-long nutrition study, ensuring accuracy through REDCap.
- Developed and implemented micronutrient analysis methods and contributed to the creation of posters, manuscripts, and grant proposals.

Undergraduate Research Assistant, Micronutrients and Pregnancy Lab

2016 - 2017

Department of Nutritional Sciences, The Pennsylvania State University,
University Park, PA

PI: Alison D. Gernand, PhD, MPH, RD

Research focus: micronutrient deficiencies in women of reproductive age in low-income settings.

Responsibilities:

- Collaborated with a graduate student to measure micronutrients (zinc and copper) in blood samples of nonpregnant females.
- Conducted screenings to identify eligible participants for ongoing studies.
- Completed data entry tasks using REDCap.

Teaching Experience

Instructor , The Pennsylvania State University Nutrition Applications for a Healthy Lifestyle (LEAP Nutrition 100 – Summer Session) Class size: 24 students	June – Aug. 2024
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Co-Instructor , The Pennsylvania State University Nutrition Applications for a Healthy Lifestyle (Nutrition 100) Class size: 158 students	Aug. 2023 – Dec. 2023
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Graduate Teaching Assistant , The Pennsylvania State University Nutritional Aspects of Disease (Nutrition 452) Course Instructor: Connie Rogers, PhD, MPH Class size: 27 students Lecture: “How do we prevent and treat cardiovascular disease (CVD)? How do we treat it in pregnancy?” Medication Nutrition Therapy (Nutrition 453) Course Instructor: Jennifer Fleming, PhD, MS, RDN, LDN Class size: 53 students Lecture: “Lower GI Diseases and Disorders”	2021 - 2022
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Statistical & Other Software Experience

R/RStudio (proficient), Stata (proficient), REDCap (proficient)

Certifications & Completed External Courses

OL 2000: Essentials of Online Teaching The Pennsylvania State University, University Park, PA	2023
Graduate School Teaching Certificate The Pennsylvania State University, University Park, PA	2023
Assessing Maternal Anthropometry and Weight Gain during Pregnancy INTERGROWTH-21 st course, The Global Health Network	2022
Assessing Newborn Size by Anthropometry INTERGROWTH-21 st course, The Global Health Network	2022

Fellowships, Scholarships, & Awards

Mary Frances Picciano Endowment, Department of Nutritional Sciences, The Pennsylvania State University. Role: Awardee Amount: \$1,500	2025
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John L. Beard Program Endowment, Department of Nutritional Sciences, The Pennsylvania State University. Role: Awardee Amount: \$2,300	2024
Mary Frances Picciano Endowment, Department of Nutritional Sciences, The Pennsylvania State University. Role: Awardee Amount: \$2,100	2024
Translational Training, Education, and Leadership Program in MCH Nutrition & Childhood Obesity Prevention: The TRANSCEND Program (HRSA sponsored), The Pennsylvania State University. Role: Trainee	2023 - 2024
Translational Science Fellowship (TSF), Penn State Clinical and Translational Science Institute (CTSI; NIH sponsored), The Pennsylvania State University. Role: TSF Fellow Amount: \$6,786	Summer 2023
Ruth L. Pike Nutritional Sciences Graduate Fellowship, Department of Nutritional Sciences, The Pennsylvania State University. Role: Ruth L. Pike Fellow Amount: \$1,000	2022 – 2023
Excellence in Graduate Recruitment (FEGR) Award, Department of Nutritional Sciences, The Pennsylvania State University. Role: Awardee Amount: \$5,934	2020 – 2021

Peer-Reviewed Publications

- Aguree S, **Martin LA**, Gernand AD. Plasma volume is associated with micronutrient mass but not concentration in healthy US women of reproductive age. *Journal of Trace Elements and Minerals*. 2024 Dec;10(100187).
- Gernand AD, Gallagher K, Bhandari N, Kolsteren P, Lee AC, Shafiq Y, Taneja S, Tielsch JM, Abate FW, Baye E, Berhane YY, Chowdhury R, Dailey-Chwalibog T, de Kok B, Dhabhai N, Jehan F, Kang Y, Katz J, Khatri S, Lachat C, Mazumder S, Muhammad A, Nisar MI, Sharma S, **Martin LA**, Upadhyay R, Christian P, Maternal BEP Studies Harmonization Initiative. Harmonization of Maternal Balanced Energy-Protein Supplementation Studies for Individual Participant Data (IPD) Meta-analyses – Finding and Creating Similarities in Variables and Data Collection. *BMC Pregnancy and Childbirth*. 2023 Feb;23(1):107. PMID: 36774497.
- Beck C, Gallagher K, **Taylor LA**, Goldstein JA, Mithal LB, Gernand AD. Chorioamnionitis and Risk for Maternal and Neonatal Sepsis: A Systematic Review and Meta-analysis. *Obstetrics and Gynecology*. 2021 Jun 1;137(6):1007-1022. PMID: 33957655.

1. Aguree S, Bethancourt H, **Taylor LA**, Rosinger AY, Gernand AD. Plasma Variation Across the Menstrual Cycle Among Healthy Women of Reproductive Age: A Prospective Cohort Study. *Physiological Reports*. 2020 Apr;8(8):e14418. PMID: 32323928.

Manuscripts in Preparation, Review, or Revision

3. **Martin LA**, Forsyth P, Castro MR, Lweno O, Smith ER, Gernand AD. Holotranscobalamin concentration across pregnancy – a systematic review. *Obstetrics and Gynecology International*. *Submitted*.
2. **Martin LA**, Gallagher K, Arcot A, Barberio M, Smith ER, Gernand AD. Measuring plasma volume in women of reproductive age – a comparison study of hydroxyethyl starch to other methods. *Experimental Physiology*. *Submitted*.
1. Gernand AD, **Taylor LA**, Hohman EE, McNitt KM, Downs DS, Savage JS. Micronutrient status across pregnancy in women with and without obesity. *American Journal of Obstetrics and Gynecology*. *Submitted*.

Pre-print Publications (Non-Peer Reviewed)

3. **Martin LA**, Gallagher K, Arcot A, Barberio M, Smith ER, Gernand AD. Measuring plasma volume in women of reproductive age – a comparison study of hydroxyethyl starch to other methods. *medRxiv*. January 2025 (*currently submitted for peer review*). Available at: <https://www.medrxiv.org/content/10.1101/2025.01.08.25320201v1>
2. Lweno O, Reynolds VS, Barberio M, Klatt KC, Mugusi S, Gopalakrishnan M, Lukmanji Z, Alwy Al-Beity FM, Ahmadzia H, Arcot A, Gallagher K, **Martin LA**, Rahnavard G, Gernand AD, Masanja H, Smith ER. Single-blinded, stratified, dose ranging trial to assess pharmacokinetics and identify optimal dose of vitamin B12 in pregnancy in Tanzania. *Gates Open Research*. August 2024 (*currently under peer review*). Available at: <https://gatesopenresearch.org/articles/8-95>
1. **Taylor LA**, Gallagher K, Ott KA, Gernand AD. How often is the placenta included in human pregnancy research? A rapid systematic review of the literature. *Gates Open Research*. 2021. Available at: <https://gatesopenresearch.org/articles/5-38>

Published Abstracts & Conference Presentations

12. **Martin LA**, Arcot A, Gallagher K, Barberio M, Klatt KC, Lweno O, Masanja H, Mugusi S, Reynolds VS, Smith ER, Gernand AD. Examining correlations between plasma volume, hydration, and anemia biomarkers in pregnant women in Tanzania. Poster presentation at American Society for Nutrition 2024, Chicago, IL, June 29-July 2, 2024.
11. **Martin LA**, Arcot A, Gallagher K, Barberio M, Klatt KC, Lweno O, Masanja H, Mugusi S, Reynolds VS, Smith ER, Gernand AD. Examining correlations between plasma volume, hydration, and anemia biomarkers in pregnant women in Tanzania. Poster presentation at The 2024 Graduate Exhibition, The Pennsylvania State University, University Park, PA, March 22, 2024.

10. Sciscent BY, Kollipara V, Shehaj A, Bailey D, **Martin LA**, Hallan DR, Rizk EB. Levetiracetam for seizures in pediatric neurocritical care: a systematic review and meta-analysis. Poster presentation at American Association of Neurological Surgeons Annual Scientific Meeting 2024, Chicago, IL, May 3-6, 2024.
9. Sciscent BY, Kollipara V, Shehaj A, Bailey D, **Martin LA**, Hallan DR, Rizk EB. Levetiracetam for seizures in pediatric neurocritical care: a systematic review and meta-analysis. Oral presentation at The 6th Annual Student Neurosurgery & Neurology Research Conference (online), January 6, 2024.
8. **Martin LA**, Gallagher K, Arcot A, Barberio M, Smith ER, Gernand AD. Measuring plasma volume in women of reproductive age – a comparison study of hydroxyethyl starch to other methods of plasma volume measurements. Poster presentation at American Society for Nutrition 2023, Boston, MA, July 22-25, 2023.
7. **Taylor LA**, Gallagher K, Arcot A, Barberio M, Smith E, Gernand AD. Measuring plasma volume in women of reproductive age – a comparison study of indocyanine green and hydroxyethyl starch. Recorded audio research presentation at The 2022 Graduate Exhibition, The Pennsylvania State University, online. March 22-25, 2022.
6. Beck C, **Taylor LA**, Gallagher K, Parks K, Ott K, Gandy A, Goldstein JA, Gernand AD. Chorioamnionitis as a risk factor for early-onset neonatal sepsis: a systematic review and meta-analysis. Poster presentation at The Society for Pediatric and Perinatal Epidemiologic Research (SPER) 33rd Annual Meeting, online. Dec 15, 2020.
5. Gernand AD, Berhane Y, Bhandari N, Chowdhury R, Jehan F, Khatry SK, Kolsteren P, Lee AC, Muhammad A, Shafiq Y, Taneja S, Tielsch J, **Taylor LA**, Gallagher K, Christian P, Yan J, Roskosky M. Harmonization of Maternal Nutrition Trials – Finding and Creating Similarities in Protocols and Outcomes. Poster presentation at American Society for Nutrition 2020, online. June 1-4, 2020.
4. Beck C, **Taylor LA**, Gallagher K, Parks K, Ott K, Gandy A, Goldstein JA, Gernand AD. Chorioamnionitis as a risk factor for early-onset neonatal sepsis: a systematic review and meta-analysis. Poster presentation at Women's Health Research Day. April, 2020 (cancelled due to COVID-19).
3. Gernand AD, Goldstein JA, Parks W, Chen Y, Zhang Z, Davaasuren D, Wu C, Beck C, **Taylor LA**, and Wang JZ. AI-based rapid placental assessment tool. Poster to be presented at the International Federation of Placenta Associations (IFPA) 2019, Buenos Aires, Argentina, Sept 10-13, 2019.
2. Gernand AD, **Taylor LA**, Hohman EE, McNitt KM, Symons Downs D, Savage JS. Micronutrient status across pregnancy in women with overweight and obesity. Poster presentation at American Society for Nutrition 2019, Baltimore, MD, June 8-11, 2019.
1. Aguree S, Bethancourt H, **Taylor LA**, Rosinger AY, Alexander LM, Gernand AD. Plasma volume, hydration and nutritional biomarker concentrations across the menstrual cycle. Poster presentation at American Society for Nutrition 2019, Baltimore, MD, June 8-11, 2019.

Students Mentored

<i>Name</i>	<i>Program</i>	<i>Years</i>
Payton Forsyth (undergraduate honors)	Nutritional Sciences (Dietetics)	2024-present

Emily Holly (undergraduate)	Nutritional Sciences (Dietetics)	2023-present
Casey Ostroski (undergraduate honors)	Nutritional Sciences (Nutritional Physiology and Biochemistry)	2022-2023
Paris Winston (undergraduate)	Nutritional Sciences (Dietetics)	2018-2019
Casey Carr (undergraduate honors)	Biology	2018-2019
Alysha-Nichole Gandy (undergraduate)	Nutritional Sciences (Basic Science)	2018-2019
Grace Thomas (undergraduate)	Nutritional Sciences (Dietetics)	2018-2019
Rachele Hale (undergraduate)	Nutritional Sciences (Dietetics)	2018-2019
Nicole Heller (undergraduate)	Nutritional Sciences (Dietetics)	2018-2019
Carissa Heine (undergraduate honors)	Nutritional Sciences (Dietetics)	2017-2018

Invited Panels & Presentations

Graduate Student Panelist, Undergraduate Student Nutrition Association (SNA) Research Panel, The Pennsylvania State University, February 3, 2022.
Topic: Areas of research in nutrition, the research process, and research opportunities at Penn State.

Service

Member, Environmental Health and Safety Integrated Safety Plan (ISP) Committee, Department of Nutritional Sciences, The Pennsylvania State University February 2024 – present

Co-President, Nutrition Graduate Student Association 2021 – 2022

Mentor, Alumni Mentoring Program, College of Health and Human Development, The Pennsylvania State University 2023 – present
2018 – 2019

Memberships

Graduate Student Member, American Society for Nutrition 2023 – present

Member, Nutrition Graduate Student Association, Department of Nutritional Sciences, The Pennsylvania State University. 2020 – present