

**CURRICULUM VITAE**  
**CARRIE PENLAND EARTHMAN, PHD, RD**

**EDUCATION:**

- 1999 **Ph.D. Nutritional Sciences**, University of Arizona, Tucson, Arizona  
1995 **M.S. Nutritional Sciences**, University of Illinois, Champaign, Illinois  
1991 **R.D. Dietetic Internship**, Shadyside Hospital, Pittsburgh, Pennsylvania  
1989 **B.S. Human Nutrition and Foods**, Virginia Tech University, Blacksburg, Virginia

**REGISTRATION AND CERTIFICATION:**

- Licensed Medical Radiation Technician, Limited to Bone Densitometry (Certificate # 10138; by the State of Delaware Authority on Radiation Protection; 7/25/19 – 7/25/25)  
Registered Dietitian (R.D., R-801156; by the Commission on Dietetic Registration through The American Dietetic Association; 1991 - present)  
Licensed Dietitian (L.D., #2329; by the State of Minnesota Board of Dietetics and Nutrition Practice; 2003 – 2019)

**PROFESSIONAL EXPERIENCE:**

- 2019 – **Professor, Nutrition**  
Department of Behavioral Health and Nutrition, University of Delaware, Newark, DE
- 2015 – 2019 **Professor, Nutrition**  
Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN
- 2009 – 2015 **Associate Professor, Nutrition**  
Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN
- 2013 – 2019 **H.T. Morse Alumni Distinguished Teaching Professor**
- 2003 – 2009 **Assistant Professor, Nutrition**  
Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN
- 2005 – 2019 **Director of the Didactic Program in Dietetics**  
Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN
- 2003 – 2006 **Director of the Coordinated Program in Dietetics**  
Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN
- 1999 – 2002 **Assistant Professor, Nutrition**  
Department of Human Nutrition, Foods and Exercise, Virginia Tech University, Blacksburg, VA

**ACADEMIC AWARDS AND HONORS:**

- 2014 Stanley J. Dudrick Research Scholar Award, American Society for Parenteral and Enteral Nutrition
- 2013 Horace T. Morse - University of Minnesota Alumni Association Award for Outstanding Contributions to Undergraduate Education
- 2012 Distinguished Teaching Award for Tenured Faculty, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
- 2010 Selected Participant, Dannon Nutrition Academic Mid-Career Leadership Institute, 5-day meeting, June 2010.
- 2010 American Dietetic Association Outstanding Dietetics Educator Award for Area 2 (7 Didactic Program in Dietetics Directors representing the 7 geographical regions in the US receive this award annually)
- 2010 Minnesota Dietetic Association Outstanding Dietetics Educator Award
- 2010 Nominated for the Horace T. Morse - University of Minnesota Alumni Association Award for Outstanding Contributions to Undergraduate Education
- 2008 Distinguished Teaching Award for Non-Tenured Faculty, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
- 2007 Award for Excellence in the Practice of Dietetics Research, American Dietetic Association
- 2006 New Career Excellence Award, College of Human Ecology, University of Minnesota

**RESEARCH/SCHOLARLY ACTIVITIES:**

***Funded Research Projects (last 15 years):***

1. “Prevalence of Malnutrition in Survivors of Critical Illness and Validation of the New Global Leadership on Malnutrition (GLIM) Criteria for Diagnosing Malnutrition: A Prospective Observational Study”, Lambell K (PI, The Alfred Hospital and Australian and New Zealand Intensive Care Research Center (ANZIC RC) at Monash University). **Earthman CP** (Associate Investigator), The Australasian Society of Parenteral and Enteral Nutrition; \$15,000 AUD. Project period: 1/4/21 – 12/31/22.
2. “Identifying Healthy and High-Risk Weight Loss Phenotypes to Optimize Obesity Management in End-Stage Kidney Disease”, Harhay M (PI, Drexel University College of Medicine). **Earthman CP** (Consultant), NIH/NIDDK R01 DK124388; 5-y Award (Direct Costs): \$988,811. 6/1/20 – 5/30/25.
3. “Developing a Wearable Hydration Monitor for Firefighters”, Hall M and **Earthman CP** (Co-PI). Center for Innovative Health Research, College of Health Sciences, University of Delaware; \$4,071. 12/2/19 – 12/1/20.
4. “The Consequences of Malnutrition in Mechanically Ventilated Critically Ill Children – A Multicenter Prospective Cohort Study of Nutritional Practices and Clinical Outcomes in Pediatric Intensive Care Units Around the World”, Bechar L (PI, Boston Children’s Hospital and Harvard Medical School), **Earthman CP** (Collaborator). American Society

- for Parenteral and Enteral Nutrition Rhoads Research Foundation Grant; \$50,000. 1/1/18 – 6/30/21 (2-year grant with no-cost extension).
5. “Use of Bedside Ultrasound to Assess Neonatal Body Composition in the NICU”, Nagel E (PI – doctoral student of CPE), **Earthman CP** (Co-PI). Gerber Foundation; \$20,000. 1/1/18 – 12/31/20.
  6. “Use of Bedside Ultrasound to Assess Neonatal Body Composition in the Neonatal Intensive Care Unit”, Remel S (PI), **Earthman CP** (Co-I), and Demerath E (Co-I), Nagel E (Student Investigator and CP Earthman’s Doctoral Student), Healthy Foods, Healthy Lives, University of Minnesota; \$10,000. 7/15/17 – 7/15/18.
  7. “Opportunities for Bioimpedance Spectroscopy Utilization in the Clinical Setting”, **Earthman CP (PI)**, ImpediMed, Inc; \$90,000. 9/1/16 – 8/30/20.
  8. “Determination of Protein Requirements Using Stable Isotope Multi-Step Feeding Protocol and Evaluation of an Innovative Ultrasound Device and other Bedside Technologies for Lean Tissue Assessment in Individuals with Head and Cancer”, Price K (PI and CP Earthman’s Doctoral Student) and **Earthman CP** (Co-I), American Society for Parenteral and Enteral Nutrition Rhoads Research Foundation Grant; \$25,000; 1/1/16 – 1/31/21 (on extension).
  9. “Determination of Protein Requirements Using Stable Isotope Multi-Step Feeding Protocol and Evaluation of and Innovative Ultrasound Device and other Bedside Technologies for Lean Tissue Assessment in Individuals with Head and Cancer”, **Earthman CP** (PI), Nutricia Research Grant; €25,000 (~\$27,300); 3/1/16 – 8/31/20 (on extension).

***Publications (last 5 years only):***

Refereed Research Papers

*\*denotes student or post-doc mentee*

1. Marini E, Stagi S, Cabras S, Comandini O, Ssensamba JT, Fewtrell M, Busert L, Saville NM, **Earthman CP**, Silva AM, Wells JCK. Associations of bioelectrical impedance and anthropometric variables among populations and within the full spectrum of malnutrition. *Nutrition* 2024. In Press.
2. Smith LO, Vest MT, Rovner AJ, Caplan RJ, Trabulsi JC, Patel JB, Meng SW, Shapero M, **Earthman CP**. Malnutrition and pectoralis muscle index in medical intensive care unit patients: A matched cohort study. *JPEN* 2024;28:300 – 307.
3. Silva AM.... **Earthman CP**, et al. The bioelectrical impedance analysis (BIA) international database: Aims, scope, and call for data. *Eur J Clin Nutr* 2023;77: 1143 – 1150.
4. Stagi S, Silva AM, Jesus F, Campa F, Cabras S, **Earthman CP**, Marini E. Usability of classic and specific bioelectrical impedance vector analysis in measuring body composition of children. *Clin Nutr* 2022;41(3):673-679. doi:10.1016/j.clnu.2022.01.021
5. \*Bechard LJ, **Earthman CP**, Farr B, Ariagno KA, Hoffman RM, Pham IV, Mehta NM. Feasibility of bioimpedance spectroscopy and long-term functional assessment in critically ill children. *Clin Nutr* 2022;47: 405-409.

6. Lopez D, Posada C, Roldan P, **Earthman CP**, Savino P. Educación en nutrición clínica en Colombia. Estado actual y el papel de la educación en línea. (English Title: Clinical nutrition education in Colombia – current status and the role of online tuition.) *J Nat Acad Med-Colombia* 2021;43(3): 367-381.
7. \*Smith LO, Vest MT, Rovner AJ, Shapero M, Suminski RR, Trabulsi JC, Earthman CP. Prevalence and characteristics of starvation-related malnutrition in a mid-Atlantic healthcare system: A cohort study. *JPEN* 2021;1-10. DOI: [10.1002/jpen.2114](https://doi.org/10.1002/jpen.2114).
8. \*Pertee-Jackson AD, **Earthman CP**, Price KL, Hanson A, Shyne MP, Larson-Nath, CM. Body composition assessment after pediatric liver transplant. *JPEN* 2021: 1 - 9. DOI: [10.1002/jpen.2105](https://doi.org/10.1002/jpen.2105).
9. \*Nagel EM, Hickey M, Teigen LM, Kuchnia A, Schifsky H, Holm, T, **Earthman CP**, Demerath E, Ramel SE. Ultrasound measurements of abdominal muscle thickness are associated with postmenstrual age at full oral feedings in preterm infants: A preliminary study. *Nutr Clin Pract* 2021: 1 – 8. DOI: [10.1002/ncp.10670](https://doi.org/10.1002/ncp.10670)
10. \*Lambell KJ, **Earthman CP**, Tierney AC, Goh GS, Forsyth A, King SJ. How does muscularity assessed by bedside methods compare to computed tomography muscle area at intensive care unit admission? A pilot prospective cross-sectional study. *J Hum Nutr Diet* 2021; 34: 345 – 355. DOI: [10.1111/jhn.12804](https://doi.org/10.1111/jhn.12804)
11. \*Nagel E, Desjardins C, **Earthman C**, Ramel S, Demerath E. Weight for length measures may not accurately reflect adiposity in preterm infants born appropriate for gestational age during hospitalization or after discharge from the neonatal intensive care unit. *Ped Obes* 2021;16:e12744. E-pub ahead of print. DOI: [10.1111/ijpo.12744](https://doi.org/10.1111/ijpo.12744)
12. \*Nagel E, Hickey M, Teigen L, Kuchnia A, **Earthman C**, Demerath E, Ramel S. Can ultrasound measures of muscle and adipose tissue thickness predict body composition of preterm infants in the neonatal intensive care unit? *J Parenter Enteral Nutr.* 2021;45(2):323-330. DOI: [10.1002/jpen.1829](https://doi.org/10.1002/jpen.1829).
13. Suresh A, Robinson L, Milliron B-J, Leonberg K, McAdams-DeMarco M, **Earthman C**, Klassen A, Harhay MN. Approaches to Obesity Management in Dialysis Settings: Renal Dietitian Perspectives. *J Renal Nutr* 2020;30(6):561-566. DOI: [10.1053/j.jrn.2020.01.021](https://doi.org/10.1053/j.jrn.2020.01.021)
14. \*Mulasi U, Vock DM, Jager-Wittenaar H, Teigen L, Kuchnia AJ, Jha G, Fujioka N, Rudrapatna V, Patel MR, **Earthman CP**. Nutrition status and health-related quality of life among outpatients with advanced head and neck cancer. *Nutr Clin Pract* 2020; 35(6):1129 - 1137. DOI: [10.1002/ncp.10476](https://doi.org/10.1002/ncp.10476).
15. \*Bell KE, Schmidt S, Pfeiffer A, Bos L, **Earthman C**, Russell C, Mourtzakis M. Bioelectrical impedance analysis overestimates fat-free mass in breast cancer patients undergoing treatment. *Nutr Clin Pract* 2020;35(6):1029-1040. DOI: [10.1002/ncp.10438](https://doi.org/10.1002/ncp.10438).
16. \*Baldwin CE, Fetterplace K, Beach L, Kayambu G, Paratz J, **Earthman C**, Parry SM. Early detection of muscle weakness and functional limitations in the critically ill: A retrospective evaluation of bioimpedance spectroscopy. *JPEN* 2020;44(5): 837 - 848. DOI: [10.1002/jpen.1719](https://doi.org/10.1002/jpen.1719).

17. \*Teigen LM, Kuchnia AJ, Nagel E, Deuth C, Vock DM, Mulasi U, **Earthman CP**. Impact of software selection and ImageJ tutorial corrigendum on skeletal muscle measures at the third lumbar vertebra on computed tomography scans in clinical populations. *JPEN* 2018;42(5): 933-941. DOI: [10.1002/jpen.1036](https://doi.org/10.1002/jpen.1036).
18. \*Mulasi U, Vock DM, Kuchnia AJ, Jha G, Fujioka N, Rudrapatna V, Patel MR, Teigen L, **Earthman CP**. Malnutrition identified by the Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition consensus criteria and other bedside tools is highly prevalent in a sample of individuals undergoing treatment for head and neck cancer. *JPEN* 2018;42(1): 139 - 147. DOI: [10.1177/0148607116672264](https://doi.org/10.1177/0148607116672264).

#### Refereed Review Papers

1. \*Smith LO, Olieman JF, Berk KA, Ligthart-Melis GC, **Earthman CP**. Clinical applications of body composition and functional status tools for nutrition assessment of hospitalized adults: A systematic review. *JPEN* 2023;47(1):11-29. doi:10.1002/jpen.2444. *Article selected for the ASPEN CE program.*
2. Tatucu-Babet OA, Nguo K, \*Lambell KJ, Romero L, **Earthman CP**, Ridley EJ. Doubly labelled water for determining total energy expenditure in adult critically ill and acute care hospitalized inpatients: A scoping review. *Clin Nutr* 2022;41: 424 – 432.
3. \*Perteet-Nagel AD, **Earthman CP**, Larson-Nath, CM. Body composition post pediatric liver transplant: implications and assessment. *Nutr Clin Pract* 2020: 1 - 12. DOI: [10.1002/ncp.10601](https://doi.org/10.1002/ncp.10601).
4. \*Nagel E, Hickey M, Teigen L, Kuchnia A, Curran K, Soumekh L, **Earthman C**, Demerath E, Ramel S. Clinical application of body composition methods in premature infants. *JPEN* 2020;44(5): 785 - 795. DOI: [10.1002/jpen.1803](https://doi.org/10.1002/jpen.1803).
5. \*Price, KL, **Earthman CP**. Update on body composition tools in clinical settings: computed tomography, ultrasound and bioimpedance applications for assessment and monitoring. *Eur J Clin Nutr* 2019;73(2): 187 - 193. DOI: [10.1038/s41430-018-0360-2](https://doi.org/10.1038/s41430-018-0360-2).
6. \*Teigen LM, Kuchnia AJ, Nagel EM, Price KL, Hurt RT, **Earthman CP**. Diagnosing clinical malnutrition: Perspectives from the past and implications for the future. *Clin Nutr* 2018;26:13 - 20. DOI: [10.1016/j.clnesp.2018.05.006](https://doi.org/10.1016/j.clnesp.2018.05.006).
7. \*Kuchnia AJ, Teigen L, Nagel E, Ligthart-Melis G, Mulasi U, Weijs P, **Earthman CP**. Protein in the hospital: Gaining perspective and moving forward. *JPEN* 2018;42(2): 270 - 278. DOI: [10.1002/jpen.1068](https://doi.org/10.1002/jpen.1068).

#### Research Editorials and Special Reports

1. Compher C, Jain AK, Nichol PF, Blackmer A, **Earthman C**, Evans DC, McCarthy MS, Taylor B, Mehta N. Research agenda 2018: The American Society for Parenteral and Enteral Nutrition. *JPEN* 2018;42(5): 838 – 844. DOI: [10.1002/jpen.1312](https://doi.org/10.1002/jpen.1312).

#### Book Chapters

1. Beckman LM and **Earthman CP**. Alterations in the neuroendocrine regulation of energy

**Carrie P. Earthman**  
**August 11, 2024**

balance after bariatric surgery. In: Netto BDM, Dâmaso A, Bettini SC, eds. Morbid Obesity Clinical and Interdisciplinary Management. São Paulo, Brazil: Editora Unifesp 2018. Written in English, Translated into Portuguese for publication. ISBN 978-85-5571-021-6.

**TEACHING ACTIVITIES (*Courses as Primary Instructor at the University of Delaware*)**

NTDT 822 Advanced Nutrition Assessment (2021, 2022)

NTDT 812 Current Topics in Nutrition (2019, 2020)

NTDT 451 Medical Nutrition Therapy II (2020, 2021, 2022)

HBNS 210 Introduction to Nutritional Biochemistry (2023, 2024)