

July 19, 2024

CURRICULUM VITAE**Name:** Lacey W. Heinsberg, PhD, RN**Address:** 440 Victoria Building
3500 Victoria Street
Pittsburgh, PA 15213**E-mail:** law145@pitt.edu**ORCID iD:** 0000-0002-7690-5485**Citizenship:** United States of America**Pronouns:** She/her/hers**Education and Training****Undergraduate**

08/2006 – 12/2009 B.S. Civil Engineering, Magna cum laude, Southern Illinois University Carbondale, Carbondale, IL

01/2012 – 12/2012 B.S. Nursing, Summa cum laude, Goldfarb School of Nursing at Barnes-Jewish College, St. Louis, MO

Graduate

08/2015 – 06/2020 Ph.D. Nursing, Minor Healthcare Genetics, Department of Health Promotion and Development, School of Nursing, University of Pittsburgh, Pittsburgh, PA

Dissertation title: *Multi-Omics of the Iron Homeostasis Pathway in Patient Outcomes after Aneurysmal Subarachnoid Hemorrhage*

Dr. Yvette P. Conley, mentor

Postgraduate

07/2020 – 08/2024 Postdoctoral Training, Department of Human Genetics, School of Public Health, University of Pittsburgh

Focus: Human genetics

Dr. Daniel E. Weeks, mentor, University of Pittsburgh

Dr. Nicola L. Hawley, mentor, Yale University

Appointments and Positions

Academic appointments

08/2024 – Assistant Professor, Department of Health Promotion and Development, School of Nursing, University of Pittsburgh

Trainee and research positions

09/2015 – 08/2017 Predoctoral Scholar, *Targeted Research and Academic Training Program for Nurses in Genomics* (T32NR009759, PI: Conley), Department of Health Promotion and Development, School of Nursing, University of Pittsburgh

09/2015 – 08/2016 Research Assistant, Department of Acute and Tertiary Care, School of Nursing, University of Pittsburgh, *Developing Goal Directed Perfusion Therapy in SAH Neurocardiac Injury* (R01NR014221, PI: Hravnak)

08/2016 – 07/2018 Nursing Fellow, Jonas Center for Nursing and Veterans Healthcare

09/2016 – 08/2018 Research Assistant, Department of Health Promotion and Development, School of Nursing, University of Pittsburgh, *Epigenomics of Patient Outcomes after Aneurysmal Subarachnoid Hemorrhage* (R01NR013610, PI: Conley)

09/2017 – 06/2020 Predoctoral Fellow, *Multi-omics of the Iron Homeostasis Pathway in Patient Outcomes after aSAH* (F31NR017311, PI: Heinsberg), Department of Health Promotion and Development, School of Nursing, University of Pittsburgh

09/2019 – 06/2020 Research Assistant, Department of Health Promotion and Development, School of Nursing, University of Pittsburgh, *Epigenomics of Neurocognitive Function In Breast Cancer* (R01CA221882, PI: Conley)

07/2020 – 06/2022 Postdoctoral Scholar, *Clinical and Translational Science TL1* (TL1TR001858, PI: Kraemer), Department of Human Genetics, School of Public Health, University of Pittsburgh

09/2021 – 07/2024 Research Affiliate, Department of Chronic Disease Epidemiology, School of Public Health, Yale University

07/2022 – 07/2024 Postdoctoral Associate, *Biobehavioral and Environmental Contributions to Metabolomic Profiles and Early Life Body Composition* (K99HD107030, PI: Heinsberg), Department of Human Genetics, School of Public Health, University of Pittsburgh

Non-academic positions

05/2008 – 08/2008 Civil Engineer Intern, Indian Health Service, Public Health Service, Okmulgee, OK

01/2010 – 05/2012 Civil Engineer, Stantec Consulting, LLC, St. Louis, MO

01/2013 – 06/2013 Registered Nurse, Obstetrics and Gynecology, Good Samaritan Hospital, Vincennes, IN

06/2013 – 06/2014 Registered Nurse, Transitional Care Unit, St. Mary's Hospital, St. Louis, MO

06/2014 – 08/2015 Registered Nurse, Neurocritical Care, American Mobile Healthcare
Travel Nurse, Various Locations

Certification and Licensure

2010	Engineer Intern, Active
2013	Missouri State Board of Nursing, RN Licensure, 2013002278, Active
2013	Indiana State Board of Nursing, RN Licensure, 28207533A, Inactive
2014	California State Board of Nursing, RN Licensure, 95035769, Inactive
2015	Pennsylvania State Board of Nursing, RN Licensure, RN676953, Active

Honors and Awards

2006	National Science Foundation Scholarship
2012	Institutional Scholarship, Goldfarb School of Nursing
2015	Sigma Theta Tau International Honor Society of Nursing
2016	Cameos of Caring, University of Pittsburgh, School of Nursing
2017	University of Washington Summer Institute in Statistical Genetics Scholarship and Travel Award
2017	Wilkes Scholarship, University of Pittsburgh, School of Nursing
2017	President’s Award, International Society of Nurses in Genetics
2018	University of Washington Summer Institute in Statistical Genetics Scholarship and Travel Award
2018	PhD Nightingale Award of Pennsylvania
2020	Ruth Perkins Kuehn Award, Sigma, Eta Chapter
2020	University of Washington Summer Institute in Statistical Genetics Scholarship (National Science Foundation Grant, 2016186)
2021	University of Pittsburgh Graduate Nursing Student Organization Award
2021	Institute of Clinical Research and Education Career Development Award
2021	SHARP Training at Columbia Public Health Environmental Justice Bootcamp Scholarship
2021	Loan Repayment Program Award in Pediatric Research, National Institute of Environmental Health Sciences, L40ES033405, <i>Improving Wellness Through Metabolomics: PFAS and Body Composition in Samoan Infants</i>
2023	University of Pittsburgh Postdoctoral Association Professional Development Award for top poster at the Postdoctoral “Data and Dine” Symposium

Membership in Professional and Scientific Societies

2006 – 2011	Society of Women Engineers
2006 – 2012	American Society of Civil Engineers
2012 – 2013	Student Nurses’ Association
2015 – 2020	Doctoral Nursing Student Organization
2015 – 2020	Graduate Nursing Student Association
2015 – Present	International Society of Nurses in Genetics
2016 – Present	Sigma Theta Tau International Honors Society, Eta Chapter
2017 – Present	Eastern Nursing Research Society
2017 – Present	Alliance of Nurses for Healthy Environments

2020 – Present American Society of Human Genetics
 2023 – Present Asian Pacific Islanders Caucus for Public Health (APIC)
 2023 – Present International Association for the Study of Human Growth and Clinical
 Auxology

Publications

†Equal first author contributions; ^Equal senior author contributions.

Peer-reviewed

1. **Heinsberg LW**, Turi E, Ren D, Crago E, Alexander S, Stanfill AG, Conley YP. Evaluation of *APOE* Genotype and Ability to Perform Activities of Daily Living Following Aneurysmal Subarachnoid Hemorrhage. *Biological Research for Nursing*. 2018 Mar; 20(2):177-182. doi: 10.1177/1099800417746504. Epub 2017 Dec 19. PubMed PMID: 29258400; PubMed Central PMCID: PMC5942520.
2. Knisley MR, Maseratie M, **Heinsberg LW**, Shah LL, Li H, Zhu Y, Ma Y, Graves LY, Merriman JD, Conley YP. Symptom Science: Advocating for Inclusion of Functional Genetic Polymorphisms. *Biological Research for Nursing*. 2019 Jul;21(4):349-354. doi: 10.1177/1099800419846407. Epub 2019 Apr 25. Review. PubMed PMID: 31023072; PubMed Central PMCID: PMC6700869.
3. **Heinsberg LW**, Arockiaraj AI, Crago EA, Ren D, Shaffer JR, Sherwood PR, Sereika SM, Weeks DE, Conley YP. Genetic Variability and Trajectories of DNA Methylation May Support a Role for *HAMP* in Patient Outcomes After Aneurysmal Subarachnoid Hemorrhage. *Neurocritical Care*. 2020 Apr; 32(2):550-563. doi: 10.1007/s12028-019-00787-4. Epub 2019 July. PubMed PMID: 31346934; PubMed Central PMCID: PMC6981002.
4. **Heinsberg LW**, Conley YP. Omics for Nurse Scientists Conducting Environmental Health Research. *Annual Review of Nursing Research*. 2019 Dec 23;38(1):35-52. doi: 10.1891/0739-6686.38.35. PubMed PMID: 32102954; PubMed Central PMCID: PMC7100388.
5. **Heinsberg LW**, Alexander SA, Crago EA, Minster RL, Poloyac SM, Weeks DE, Conley YP. Genetic Variability in the Iron Homeostasis Pathway and Patient Outcomes After Aneurysmal Subarachnoid Hemorrhage. *Neurocritical Care*. 2020 Dec;33(3):749-758. doi: 10.1007/s12028-020-00961-z. Epub 2020 Apr. PubMed PMID: 32246437; PubMed Central PMCID: PMC7541432.
6. **Heinsberg LW**, Bender CM, Rohay JM, Sherwood PR, Crago EA. Psychometric Properties of the Patient Assessment of Own Functioning Inventory Following Aneurysmal Subarachnoid Hemorrhage. *Journal of Nursing Measurement*. 2020 Aug 1;28(2):205-228. doi: 10.1891/JNM-D-18-00117. Epub 2020 Apr 27. PubMed PMID: 32341171. PubMed Central PMCID: PMC7442614.
7. Li H, Liu T, **Heinsberg LW**, Lockwood M, Wainwright DA, Jang M, Doorenbos A. Systematic Review of the Kynurenine Pathway and Psychoneurological Symptoms Among Adult Cancer Survivors. *Biological Research for Nursing*. 2020 Oct;22(4):472-484. doi.org/10.1177/1099800420938141. Epub 2020 Jun 30. PubMed PMID: 32602357. PMCID: PMC7708728.

8. **Heinsberg LW**[†], Bui CNN[†], Hartle JC, Sereika SM, Choy CC, Wang D, Soti-Ulberg C, Naseri T, Reupena S, Duckham RL, Park J, Hawley NL[^], Deziel NC[^]. Estimated Dietary Bisphenol-A Exposure and Adiposity in Samoan Mothers and Children. *Toxics*. 2020 Sep 2;8(3):67. <https://doi.org/10.3390/toxics8030067>. PubMed PMID: 32887300. PubMed Central PMCID: PMC7560430. [†]Equal first author contributions. [^]Equal senior author contributions.
9. **Heinsberg LW**, Ray M, Conley YP, Roberts JM, Jeyabalan A, Hubel CA, Weeks DE, Schmella MJ. An Exploratory Study of Epigenetic Age in Preeclamptic and Normotensive Pregnancy Reveals Differences by Self-Reported Race but Not Pregnancy Outcome. [published online ahead of print, 2021 Apr 20]. *Reprod Sci*. 2021 Dec;28(12):3519-3528. doi:10.1007/s43032-021-00575-6. PubMed PMID: 33877642. PubMed Central PMCID: PMC826649.
10. Treble-Barna A, **Heinsberg LW**, Puccio AM, Shaffer JR, Okonkwo DO, Beers SR, Weeks DE, Conley YP. Acute *Brain-Derived Neurotrophic Factor* DNA Methylation Trajectories in CSF and Associations with Outcomes following Severe Traumatic Brain Injury in Adults. *Neurorehabilitation and Neural Repair*. 2021 Sep;35(9):790-800. doi: 10.1177/15459683211028245. Epub 2021 Jun 25. PubMed PMID: 34167372. PubMed Central PMCID: PMC8546867.
11. Ray M, **Heinsberg LW**, Conley YP, Roberts JM, Jeyabalan A, Hubel CA, Weeks DE, Schmella MJ. An Exploratory Study of White Blood Cell Proportions Across Preeclamptic and Normotensive Pregnancy by Self-Identified Race in Individuals with Overweight or Obesity. *Hypertension in Pregnancy*. 2021 Nov;40(4):312-321. doi: 10.1080/10641955.2021.1987453. Epub 2021 Oct 26. PubMed PMID: 34697971. PubMed Central PMCID: PMC8740522.
12. **Heinsberg LW**, Liu D, Shaffer JR, Weeks DE, Conley YP. Characterization of cerebrospinal fluid DNA methylation age during the acute recovery period following aneurysmal subarachnoid hemorrhage. *Epigenetics Communications*. 2021;1. Doi: 10.1186/s43682-021-00002-6. Epub 2021 Dec 20. PubMed PMID: 35083469; PubMed Central PMCID: PMC8787331.
13. **Heinsberg LW**, Weeks DE, Alexander SA, Minster RL, Sherwood PR, Poloyac SM, Deslouches S, Crago EA, Conley YP. Iron homeostasis pathway DNA methylation trajectories reveal a role for STEAP3 metalloreductase in patient outcomes after aneurysmal subarachnoid hemorrhage. *Epigenetics Communications*. 2021;1. Doi: 10.1186/s43682-021-00003-5. Epub 2021 Dec 20. PubMed PMID: 35083470; PubMed Central PMCID: PMC8788201.
14. **Heinsberg LW**, Weeks DE. Post hoc power is not informative. *Genetic Epidemiology*. 2022 Oct;46(7):390-394. doi: 10.1002/gepi.22464. Epub 2022 Jun 1. PubMed PMID: 35642557; PubMed Central PMCID: PMC9452450.
15. **Heinsberg LW**, Carlson JC, Pomer A, Cade BE, Naseri T, Reupena MS, Weeks DE, McGarvey ST, Redline S, Hawley NL. Correlates of daytime sleepiness and insomnia among adults in Samoa. *Sleep Epidemiol*. 2022 Dec;2. doi: 10.1016/j.sleep.2022.100042. Epub 2022 Aug 5. PubMed PMID: 36338277; PubMed Central PMCID: PMC9635619.

16. **Heinsberg LW**, Koleck TA, Ray M, Weeks DE, Conley YP. Advancing Nursing Research Through Interactive Data Visualization With R Shiny. *Biol Res Nurs*. 2023 Jan;25(1):107-116. doi: 10.1177/10998004221121109. PubMed PMID: 36029021. PubMed Central PMCID: In process.
17. Zhang JZ[†], **Heinsberg LW[†]**, Krishnan M, Hawley NL, Major TJ, Carlson JC, Harré Hindmarsh J, Watson H, Qasim M, Stamp LK, Dalbeth N, Murphy R, Sun G, Cheng H, Naseri T, Reupena MS, Kershaw EE, Deka R, McGarvey ST, Minster RL, Merriman TR, Weeks DE. Multivariate analysis of a missense variant in *CREBRF* reveals association with measures of adiposity in people of Polynesian ancestries. *Genetic Epidemiology*. 2023 Feb;47(1):105-118. doi: 10.1002/gepi.22508. PubMed PMID: 36352773; PubMed Central PMCID: PMC9892232. [†]Equal first author contributions.
18. **Heinsberg LW**, Hawley NL, Duckham RL, Pomer A, Rivara AC, Naseri T, Reupena MS, Weeks DE, McGarvey ST, Minster RL. Validity of anthropometric equation-based estimators of fat mass in Samoan adults. *American Journal of Human Biology*. 2023 Mar;35(3):e23838. Doi: 10.1002/ajhb.23838. Epub 2022 Nov 25. PubMed PMID: 36428275; PMCID: PMC10023273.
19. Liu S[†], Fu H[†], Ray M, **Heinsberg LW**, Conley YP, Anderson CM, Hubel CA, Roberts JM, Jeyabalan A, Weeks DE, Schmella MJ. A longitudinal epigenome-wide association study of preeclamptic and normotensive pregnancy. *Epigenetics Communications*. 3, 1 (2023). Doi: 10.1186/s43682-022-00014-w. Epub 2023 Jan 26. [†]Equal first author contributions. PubMed PMID: 3063698; PMCID: PMC10101051.
20. Treble-Barna A, **Heinsberg LW**, Stec Z, Breazeale S, Davis TS, Kesbhat AA, Chattopadhyay A, VonVille HM, Ketchum AM, Yeates KO, Kochanek PM, Weeks DE, Conley YP. Brain-Derived Neurotrophic Factor (*BDNF*) Epigenomic Modifications and Brain-Related Phenotypes in Humans: A Systematic Review. *Neuroscience and Biobehavioral Reviews*. 2023 Apr;147:105078. <https://doi.org/10.1016/j.neubiorev.2023.105078>. Epub 2023 Feb 9. PMID: 36764636; PMCID: PMC10164361.
21. **Heinsberg LW**, Weeks DE. dbGaPCheckup: pre-submission checks of dbGaP-formatted subject phenotype files. *BMC Bioinformatics*. 2023 Mar 3;24(1):77. doi: 10.1186/s12859-023-05200-8. PMID: 36869285; PMCID: PMC9985192.
22. **Heinsberg LW***, Shan N*, Arslanian KJ, Chen R, Bedi M, Unasa-Apelu F, Fidow UT, Soti-Ulberg C, Conley YP, Weeks DE, Ng CA, Hawley NL. Characterization of Per- and Polyfluoroalkyl Substance (PFAS) concentrations in a community-based sample of infants from Samoa. *Chemosphere*. Epub 2024 Feb 22. *Equal contributions as first author. <https://doi.org/10.1016/j.chemosphere.2024.141527>.

Pre-Prints

1. Ray M, **Heinsberg LW**, Conley YP, Roberts JM, Jeyabalan A, Hubel CA, Weeks DE, Schmella MJ. Utilization of Epigenome-wide DNA Methylation for Longitudinal Comparison of Leukocyte Proportions Across Preeclamptic and Normotensive Pregnancy by Self-Reported Race (2020). *medRxiv*: <https://doi.org/10.1101/2020.09.18.20197491>
2. **Heinsberg LW**, Ray M, Conley YP, Roberts JM, Jeyabalan A, Hubel CA, Weeks DE, Schmella MJ. Racial Differences in DNA Methylation-Based Age Acceleration in Preeclamptic and Normotensive Pregnancy (2020). *medRxiv*: <https://doi.org/10.1101/2020.09.30.20204883>

3. **Heinsberg LW**, Carlson JC, Pomer A, Cade BE, Naseri T, Reupena MS, Weeks DE, McGarvey ST, Redline S, Hawley NL. Correlates of Daytime Sleepiness and Insomnia among Adults in Samoa (2022). *medRxiv*: <https://doi.org/10.1101/2022.05.25.22275570>
4. Zhang JZ[†], **Heinsberg LW**[†], Krishnan M, Hawley NL, Major TJ, Carlson JC, Harré Hindmarsh J, Watson H, Qasim M, Stamp LK, Dalbeth N, Murphy R, Sun G, Cheng H, Naseri T, Reupena MS, Kershaw EE, Deka R, McGarvey ST, Minster RL, Merriman TR, Weeks DE. Multivariate analysis of a missense variant in *CREBRF* reveals association with measures of adiposity in people of Polynesian ancestries. [†]Equal first author contributions. (2022). *medRxiv*: <https://doi.org/10.1101/2022.09.08.22279720>
5. Treble-Barna A, **Heinsberg LW**, Stec Z, Breazeale S, Davis TS, Kesbhat AA, Chattopadhyay A, VonVille HM, Ketchum AM, Yeates KO, Kochanek PM, Weeks DE, Conley YP. Brain-Derived Neurotrophic Factor (*BDNF*) Epigenomic Modifications and Brain-Related Phenotypes in Humans: A Systematic Review. (2022). *medRxiv*: <https://doi.org/10.1101/2022.09.13.22279723>
6. **Heinsberg LW***, Shan N*, Arslanian KJ, Chen R, Bedi M, Unasa-Apelu F, Fidow UT, Soti-Ulberg C, Conley YP, Weeks DE, Ng CA, Hawley NL. Characterization of Per- and Polyfluoroalkyl Substance (PFAS) concentrations in a community-based sample of infants from Samoa. (2023). *medRxiv*: <https://www.medrxiv.org/content/10.1101/2023.11.10.23298357v1>
*Equal contributions as first author.
7. **Heinsberg LW**, Pomer A, Cade BE, Carlson JC, Naseri T, Reupena MS, Viali S, Weeks DE, McGarvey ST, Redline S, Hawley NL. Characterization of sleep apnea among a sample of adults from Samoa. (2023). *medRxiv*: <https://www.medrxiv.org/content/10.1101/2023.11.16.23298644v1>.

Manuscripts in Review or Revision

1. **Heinsberg LW**, Pomer A, Cade BE, Carlson JC, Naseri T, Reupena MS, Viali S, Weeks DE, McGarvey ST, Redline S, Hawley NL. Characterization of sleep apnea among a sample of adults from Samoa. Submitted to *Sleep Epidemiology*, November 2023 (SLEEPE-S-23-00068).

Software

1. dbGaPCheckup

Description: An R package containing functions that check for formatting of the Subject Phenotype data set and data dictionary as specified by the National Center for Biotechnology Information (NCBI) Database of Genotypes and Phenotypes (dbGaP).

CRAN DOI: [10.32614/CRAN.package.dbGaPCheckup](https://doi.org/10.32614/CRAN.package.dbGaPCheckup)

Citation: **Heinsberg LW**, Weeks DE. dbGaPCheckup: pre-submission checks of dbGaP-formatted subject phenotype files. *BMC Bioinformatics* 24, 77 (2023).
<https://doi.org/10.1186/s12859-023-05200-8>

Links: <https://CRAN.R-project.org/package=dbGaPCheckup>;
<https://github.com/lwheinsberg/dbGaPCheckup>; <https://lwheinsberg.github.io/dbGaPCheckup/>

Abstracts & Presentations

§Published abstract; ^Equal senior author contributions.

Local/regional

1. Naumov D, Deslouches S, **Heinsberg LW**, Conley YP. Examination of the relationship between DNA methylation of PPP2R5B and DCI after aSAH [Abstract, Podium]. Presented at the PA Junior Academy of Science Competition, March 2019, Pittsburgh, PA.
2. **Heinsberg LW**, Weeks DE, Poloyac SM, Conley YP. Temporal DNA methylation of SLC46A1 is associated with long-term patient outcomes after aneurysmal subarachnoid hemorrhage [Abstract§, Poster]. Presented at the National Institute of Nursing Research Precision Health: Smart Technologies, Smart Health Bootcamp, July 2019, Bethesda, Maryland.
3. Naumov D, **Heinsberg LW**, Deslouches S, Conley YP. Associations of Klotho Genotype with Outcomes after Traumatic Brain Injury [Abstract, Podium]. Presented at the PA Junior Academy of Science Competition, March 2020, Pittsburgh, PA.
4. Li H, Liu T, **Heinsberg LW**, Lockwood M, Wainwright D, Jang M, Doorenbos A. Systematic Review of the Kynurenine Pathway and Psychoneurological Symptoms Among Adult Cancer Survivors. [Abstract, Poster]. Presented at the Summer Institute on Symptoms and Omics: The Interface between Nursing Science and Metabolomics, August 2020, Virtual.
5. **Heinsberg LW**. A Longitudinal Pilot Study of PFAS Exposure and the Metabolome in Obesity in Samoan Infants [Invited speaker]. Presented at the Rockefeller University Heilbrunn Family Center for Nursing Symposium, May 2021, Virtual.
6. **Heinsberg LW**, Arslanian KJ, Mullett SJ, Kershaw EE, Fidow UT, Naseri T, Conley YP, Weeks DE, Wendell SG^, Hawley NL^. Metabolomic profiles of 4-month-old Samoan infants by *CREBRF* obesity-risk allele status: A pilot study of dried blood spots. [Abstract, Podium]. Presented at the Summer Institute on Symptoms and Omics: The Interface between Nursing Science and Metabolomics, May 2021, Virtual.
7. Deslouches S, **Heinsberg LW**, Conley YP. Genetic variation of *EDIL3* and delayed cerebral ischemia after aneurysmal subarachnoid hemorrhage. [Abstract, Poster]. Presented at the University of Pittsburgh School of Public Health Dean's Day, April 2022, Pittsburgh, Pennsylvania.
8. **Heinsberg LW**, Weeks DE. dbGaPCheckup: an R package to perform pre-submission checks of dbGaP-formatted subject phenotype files. [Abstract, Poster]. Presented at the University of Pittsburgh's Postdoctoral "Data and Dine" Symposium, May 2023, Pittsburgh, Pennsylvania. Selected as a top poster award and recipient of \$750 in career development funds.
9. Petersen BA, **Heinsberg LW**, Conley YP, Fink EL, Treble-Barna A. Epigenetic associations of *ABCC8* and *NEFL* with outcomes in pediatric cardiac arrest. [Abstract]. Presented at the Johns Hopkins Critical Care Rehabilitation Conference, November 2023, Virtual.
10. **Heinsberg LW**. Perspectives on Applying for the K99/R00. University of Pittsburgh Office of Academic and Career Development, Invited speaker, October 2023, Virtual.

National/International

1. Turi E, Stanfill AG, Sherwood PR, **Wright L**, Conley YP. Association of Apolipoprotein E Genotype With Activities of Daily Living After Subarachnoid Hemorrhage [Rising Star Abstracts, Poster]. Sigma Theta Tau International Nursing Research Conference, July 2016, Cape Town, South Africa.
2. **Heinsberg LW**, Ren D, Crago EA, Sherwood PR, Poloyac SM, Conley YP. *HAMP* genotype and variability in patient outcomes following aSAH [Abstract, Poster]. Presented at the International Society of Nurses in Genetics World Congress, November 2017, Reston, Virginia.
3. **Heinsberg LW**, Arockiaraj AI, Crago EA, Ren D, Shaffer JR, Weeks DE, Conley YP. DNA Methylation Trajectories of *HAMP* and Patient Outcomes After Aneurysmal Subarachnoid Hemorrhage [Abstract, Podium]. Presented at the International Society of Nurses in Genetics World Congress, October 2018, Orlando, Florida.
4. **Heinsberg LW**, Weeks DE, Poloyac SM, Conley YP. DNA methylation trajectories in the amyloid precursor protein gene and patient outcomes after subarachnoid hemorrhage [Abstracts, Poster]. Published in *J Neurotrauma* 36:A59-A59. Presented at the National Neurotrauma Society Symposium, July 2019, Pittsburgh, Pennsylvania.
5. **Heinsberg LW**, Crago EA, Weeks DE, Conley YP. Associations between DNA Methylation of Aconitase 1 and 2 and Patient Outcomes after Aneurysmal Subarachnoid Hemorrhage [Abstract, Podium]. Presented at the International Society of Nurses in Genetics World Congress, October 2019, San Antonio, Texas.
6. Gawron L, **Heinsberg LW**, Crago EA, Conley YP. Oxytocin Receptor Gene (OXTR) and Delayed Cerebral Ischemia after Subarachnoid Hemorrhage [Abstract, Poster]. Presented at the International Society of Nurses in Genetics World Congress, October 2019, San Antonio, Texas.
7. **Heinsberg LW**, Weeks DE, Alexander SA, Crago EA, Minster RL, Poloyac SM, Conley YP. Associations Between DNA Methylation Trajectories for Genes Regulating Iron Homeostasis and Patient Outcomes Up to One Year After Subarachnoid Hemorrhage. [Abstract, Poster #881]. Presented at the 70th Meeting of the American Society of Human Genetics, October 2020, Virtual.
8. **Heinsberg LW**. How Would Florence Analyze It? Statistical Genetics for the Nurse Scientist [Expert Lecturer Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2020, Virtual.
9. **Heinsberg LW**, Weeks DE, Shaffer JR, Conley YP. Characterization of DNA methylation age in cerebrospinal fluid following subarachnoid hemorrhage. [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2020, Virtual.
10. Davis T, **Heinsberg LW**, Conley YP. Genetic Variability of Genes Involved in The Nrf2 Antioxidant Response Element Signaling Pathway And Patient Outcomes Following A Severe Traumatic Brain Injury [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2020, Virtual.
11. Ray M, **Heinsberg LW**, Conley YP, Weeks DE, Schmella MJ. Utilization of Epigenome-wide DNA Methylation for Longitudinal Comparison of Leukocyte Proportions Across

- Preeclamptic and Normotensive Pregnancy. [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2020, Virtual.
12. Gawron L, **Heinsberg LW**, Crago EA, Conley YP. Oxytocin Gene (*OXT*) and Delayed Cerebral Ischemia after Subarachnoid Hemorrhage [Abstract, Poster]. Presented at the International Society of Nurses in Genetics, November 2020, Virtual.
13. Treble-Barna A, **Heinsberg LW**, Puccio AM, Shaffer JR, Okonkwo DO, Beers SR, Weeks DE, Conley YP. Acute *Brain-Derived Neurotrophic Factor* DNA Methylation Trajectories in CSF and Associations with Outcomes following Severe Traumatic Brain Injury in Adults. [Abstract, Poster]. Published in *J Neurotrauma* 38:A22-A22. Presented at the National Neurotrauma Society meeting, July 2021, Virtual.
14. **Heinsberg LW**, Arslanian KJ, Mullett SJ, Kershaw EE, Fidow UT, Naseri T, Conley YP, Weeks DE, Wendell SG[^], Hawley NL[^]. Exploration of the *CREBRF* obesity-risk variant in Samoan infants using untargeted metabolomic analysis and pathway discovery. [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2021, Virtual.
15. Wallace M, **Heinsberg LW**, Ray M, Conley YP, Weeks DE, Schmella MJ. Identifying Alterations in the Inflammatory Milieu of Preeclamptic Pregnancies. [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2021, Virtual.
16. Ray M, **Heinsberg LW**, Wallace MK, Conley YP, Weeks DE, Schmella MJ. Longitudinal DNA methylation of Chromosome 19 microRNA Cluster Across Preeclamptic and Normotensive Pregnancy. [Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2021, Virtual.
17. Davis T, **Heinsberg LW**, Sereika SM, Conley YP. DNA Methylation Trajectories of Genes Involved In The Nrf2 Antioxidant Response Elements Signaling Pathway and Patient Outcomes Following Severe Traumatic Brain Injury. [Reviewers' Choice Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2021, Virtual.
18. Ray M, **Heinsberg LW**, Chen NX, Conley YP, Weeks DE, Schmella MJ. MicroRNA-associated DNA methylation in a longitudinal, exploratory study of preeclamptic and normotensive pregnancy. [Abstract, Poster]. Published in *American Journal of Obstetrics and Gynecology* 226:S202-S203. Presented at the Society for Maternal-Fetal Medicine, February 2022, Virtual.
19. Wallace M, **Heinsberg LW**, Ray M, Conley YP, Weeks DE, Schmella MJ. Suggestive differences of DNA Methylation at *ICAM1* between preeclamptic and normotensive pregnancies. [Abstract, Poster]. Published in *Reproductive Sciences* 29:254-255. Presented at the Society for Reproductive Investigation, March 2022, Denver, Colorado.
20. **Heinsberg LW**. Elevating Nursing Research through R Shiny Applications [Expert Lecturer Abstract, Podium]. Accepted for presentation at the International Society of Nurses in Genetics, November 2022, Durham, North Carolina. Declined to present in person due to COVID-19.
21. Crago EA, **Heinsberg LW**, Meyer L, Fisher A, Wagner A, Conley YP. The impact of aromatase genotypes on functional outcomes after aneurysmal subarachnoid hemorrhage [Abstract, Poster]. Presented at the International Society of Nurses in Genetics, November 2022, Durham, North Carolina.

22. Wagner MA, **Heinsberg LW**, Bender CM, Conley YP. Exploratory Analysis of the Relationship Between DNA Methylation of Adrenergic Receptor and Norepinephrine Transporter Genes and Reported Worst Pain in Postmenopausal Women with Early-stage Hormone Receptor-positive Breast Cancer After Six Months of Continuous Aromatase Inhibitor Therapy [Abstract, Podium]. Presented at the Oncology Nursing Society Congress, April 2023, San Antonio, Texas.
23. Wagner MA, **Heinsberg LW**, Bender CM, Conley YP. Exploratory Analysis of the Relationship Between DNA Methylation of Adrenergic Receptor and Norepinephrine Transporter Genes and Reported Worst Pain in Postmenopausal Women with Early-stage Hormone Receptor-positive Breast Cancer Prior to the Start of Aromatase Inhibitor Therapy [Abstract, Podium]. Presented at the Midwest Nursing Research Society Conference, March 2023, Des Moines, Iowa.
24. Petersen BA, Deslouches S, **Heinsberg LW**, Conley YP, Treble-Barna A. Brain-Derived Neurotrophic Factor (BDNF) Plasma Concentration and Neurobehavioral Recovery following Pediatric TBI [Abstract, Poster]. Published in *J Neurotrauma*. Presented at the National Neurotrauma Society Symposium, June 2023, Austin, Texas.
25. Petersen BA, **Heinsberg LW**, Conley YP, Treble-Barna A. Epigenetic associations of Brain-Derived Neurotrophic Factor (*BDNF*) and neurobehavioral recovery from pediatric TBI. [Abstract, Poster]. Published in *Archives of Physical Medicine and Rehabilitation*. Presented at the American Congress of Rehabilitation Medicine, October 2023, Atlanta, Georgia.
26. **Heinsberg LW**. Multivariate Bayesian Approaches for Analyzing Correlated Phenotypes in Nursing Research. [Expert Lecturer Abstract, Podium]. Presented at the International Society of Nurses in Genetics, November 2023, Providence, Rhode Island.

Submitted/Under Review

1. **Heinsberg LW**. Statistical Tools to Support Implementation: Variable Selection and Post-Selection Inference in Genomic Nursing Research. [Expert Lecturer Abstract, Podium]. Submitted for Presentation at the International Society of Nurses in Genetics, November 2024, San Diego, California.

Research Funding

Active

CREBRF Genomics, Gestational Diabetes, and Early Life Body Size in American Samoa
NICHD/NIH – R00HD107030

CREBRF Genomics, Gestational Diabetes, and Early Life Body Size in American Samoa
Funding period: 08/2024 – 07/2027

PI: Heinsberg

NHLBI/NIH - R01HL133040

Lipidomics and Structural Genomics of Cardiometabolic Health in Samoan Adults
Funding period: 04/2024 – 03/2028

PI: Minster

Role: Co-I

% effort: 10% Y1-Y4

NINDS/NIH - R01NS135492

Methylomics of Pediatric Traumatic Brain Injury and Neurobehavioral Recovery

Role: Co-I

Funding period: 09/2024 – 08/2029

% effort: 25% Y1-Y5

PI: Treble-Barna

Role: Co-I

Under Review

NIDDK/NIH R01

Genetic Determinants of Diabetes Risk Among American Samoans in Pregnancy and Postpartum

Role: Co-I

Funding period: 12/2024 - 11/2029

% effort: 10% Y1-3, 12% Y4-Y5

MPI: Hawley, Bengtson, Kershaw

Impact Score: 15

Percentile: 1st

Status: Pending Council Review

NHLBI/NIH X01

Genomics and Epigenomics of Preeclampsia and Fetal Growth Restriction

Role: Co-I

% effort: N/A

PI: Blue

Impact Score: 34

Status: Revision in progress

Completed

NIH

NINR/NIH (F31NR017311)

Multi-omics of the Iron Homeostasis Pathway in Patient Outcomes Following aSAH

Funding period: 09/2017 – 08/2020 Award: \$132,132 PI: Heinsberg

NICHD/NIH (K99HD107030)

Biobehavioral and Environmental Contributions to Metabolomic Profiles and Early Life Body

Composition

Funding period: 08/2022 – 07/2024 Award: \$270,108 PI: Heinsberg

Foundation / Other Funding Source

Sigma Theta Tau Research Award

Genetic Variation of the Iron Homeostasis Pathway in Patient Outcomes Following aSAH

Funding period: 06/2017 – 06/2018 Award: \$2,500 PI: Heinsberg

International Society of Nurses in Genetics Research Award

Epigenetic Variation of the Iron Homeostasis Pathway in Patient Outcomes Following aSAH

Funding period: 11/2017 – 11/2019 Award: \$2,000 PI: Heinsberg

Leslie A. Hoffman Endowed Research Award

Epigenetic Variation of the Iron Homeostasis Pathway in Patient Outcomes Following aSAH

Funding period: 09/2017 – 08/2019 Award: \$6,100 PI: Heinsberg

Jayne F. Wiggins Memorial Scholarship Award

Polymorphisms in the Iron Homeostasis Pathway and Patient Outcomes Following aSAH

Funding period: 07/2018 – 08/2019 Award: \$3,300 PI: Heinsberg

Nightingale Awards of Pennsylvania

Multi-omics of the Iron Homeostasis Pathway in Patient Outcomes After aSAH

Funding period: 06/2018 – 05/2020 Award: \$5,000 PI: Heinsberg

American Nurses Foundation Research Award: Eastern Nursing Research Society and Eleanor C. Lambertson Scholar Fund

Temporal DNA Methylation of the Iron Homeostasis Pathway and Patient Outcomes after Aneurysmal Subarachnoid Hemorrhage

Funding period: 09/2019 – 08/2021 Award: \$10,000 PI: Heinsberg

Heilbrunn Nurse Scholar Award

Title: A Longitudinal Pilot Study of PFAS Exposure and the Metabolome in Obesity in Samoan Infants

Funding period: 07/2020 – 06/2023 Award: \$25,000 PI: Heinsberg

Sigma Global Nursing Research Grant

Title: Genetic, Socioenvironmental, and Behavioral Contributions to Metabolomic Profiles and Body Composition in Samoan Infants

Funding period: 11/2021 – 05/2023 Award: \$10,000 PI: Heinsberg

University of Pittsburgh Clinical and Translational Science Willingness to Participate Pilot Award

Title: Pacific Islander Participation in Genomic Research

Funding period: 08/2022 – 07/2023 Award: \$30,000 PI: Minster/Durst

Role: Co-I

Institutional Support

NINR/NIH (T32NR007969)

Targeted Research and Academic Training for Nurses in Genomics

Role: Trainee

Funding period: 09/01/2015-08/31-2017

PI: Conley

NCATS/NIH (TL1TR001858)

NRSA Training Core Fellowship in Clinical and Translational Science

Role: Postdoctoral Trainee

Funding period: 07/01/2020-06/30/2022

PI: Kraemer

Teaching

Lecturer / Guest Lecturer

Term/Year	Course	No. Stud ents	Level	Topic
Fall 2015	HRS 1017: Introduction to Epidemiology	25	Undergraduate, Health Sciences	Screening for early disease
Spring 2018	HRS 1017: Introduction to Epidemiology	25	Undergraduate, Health Sciences	Screening for early disease
Spring 2022	HUGEN 2080: Statistical Genetics	10	Graduate Human Genetics	Variable selection and post-selection inference
Fall 2022	HUGEN 2071: Genomic Data Processing	15	Graduate Human Genetics	dbGaP data formatting and submission
Spring 2024	HUGEN 2080: Statistical Genetics	12	Graduate Human Genetics	Variable selection and post-selection inference

Seminars

01/2019	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: Mendelian randomization for nursing research</i>
09/2019	Seminar lecturer, School of Nursing Omics Club, <i>Statistical Genetics: Use of approximate Bayes factors for genetic association studies</i>
02/2020	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: PLINK for the nurse scientist</i>
11/2021	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: Post hoc power is not informative</i>
01/2022	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: R Shiny applications</i>
10/2022	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: dbGaPCheckup – An R package for performing dbGaP pre-submission checks</i>
12/2022	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: Bayesian multivariate approaches in nursing research</i>
01/2023	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: ChatGPT as a tool for learning to code</i>
06/2023	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: Variable selection and post-selection inference</i>
02/2024	Seminar Lecturer, School of Nursing Omics Club, <i>Statistical Genetics: What to do with “null” results</i>

Mentoring

Project mentorship in R programming and statistical genetics

Year	Mentee	Stage	Program
2019 – 2020	Daniela Naumov	High school	Genetics
2019 – 2021	Tara Davis, PhD, RN	PhD	Nursing
2020 – 2021	Mitali Ray, PhD, RN	Postdoctoral	Nursing

2021 - 2022	McKenzie Jancsura, PhD, RN	Postdoctoral	Nursing
2021 – 2022	Kaitlin Kirkpatrick Heimke, MPH	Master’s	Human Genetics
2022 – 2023	Monica Wagner, PhD, RN	Postdoctoral	Nursing
2022 – 2023	Sandra Deslouches, MS	Master’s	Human Genetics

Other mentorship activities

- 2015 – 2016 Mentorship of Eleanor Turi, University of Pittsburgh School of Nursing undergraduate program; broad mentorship through the Undergraduate Research Mentorship Program (URMP). Eleanor went on to complete a PhD in Nursing at Columbia University.
- 2024 – 2024 Mentorship of Eunhye Lee, University of Illinois Chicago School of Public Health PhD program; mentorship through APIC focused on career planning and doctoral to postdoctoral transitioning.
- 2024 Mentorship of Krisean Tuitele, University of Hawaii Manoa, Post-baccalaureate; mentorship through the Ola Coaching Program in career planning and health care research.

Other Scholarly Activities

Additional Training and Workshops

- 06/2016 Summer Genetics Institute, National Institute of Nursing Research
- 07/2017 Introduction to R for Statistical Genetics and Regression Methods, Concepts, and Applications, University of Washington Summer Institute in Statistical Genetics
- 07/2018 Population Genetics and Association Mapping, GWAS, and Sequencing Data, University of Washington Summer Institute in Statistical Genetics
- 07/2019 Precision Health: Smart Technologies, Smart Health Bootcamp, National Institute of Nursing Research
- 07/2020 Pathway and Network Analysis for Omics Data, University of Washington Summer Institute in Statistical Genetics
- 07/2020 Google Cloud Fundamentals Training: Core Infrastructure and Big Data and Machine Learning, National Institutes of Health Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative
- 07/2020 Write Winning NIH Grant Proposals Workshop, Institute of Clinical Research and Education
- 07/2020 The Exposome Bootcamp: Measuring Exposures on an Omics Scale, SHARP Training at Columbia Public Health
- 08/2020 – 03/2021 Advanced Grant Writing Course, Institute of Clinical Research and Education
- 10/2020 Metabolomics Short Course (Gary Patti), Washington University in St. Louis
- 08/2021 Environmental Justice Bootcamp: Theory and Methods to Study Environmental Health Disparities, SHARP Training at Columbia Public Health

08/2021 – 09/2021 International Summer Sessions in Metabolomics, UC Davis West Coast Metabolomics Center
 06/2023 GIS Workshop: Visualizing and Analyzing Health Data, SHARP Training at Columbia Public Health
 08/2023 Causal Mediation Analysis: Methods and Applications Using Health Data, SHARP Training at Columbia Public Health
 07/2024 Creating Compelling Research Narratives, SHARP Training at Columbia Public Health
 07/2024 Data, Designed Workshop, SHARP Training at Columbia Public Health
 2024 National Institutes of Health/National Institute of Environmental Health Sciences, Environmental Health Research Institute for Nurse and Clinician Scientist (EHRI-NCS), (R25ES033452, PI: Castner J). Role: Research Trainee/Workshop Participant

Service

2008 – 2009 Treasurer, Southern Illinois University Carbondale Chapter, American Society of Civil Engineers,
 2009 National Conference Planning Committee Chair, American Society of Civil Engineers
 2015 – Present University of Pittsburgh, School of Nursing, ‘Omics Enthusiasts’ Club
 2016 – 2017 Inaugural Student Representative, Board of Directors, International Society of Nursing in Genetics
 2016 – 2019 Communications Committee Member, International Society of Nurses in Genetics
 2016 – 2020 Global Membership Committee Member, International Society of Nurses in Genetics
 2017 – 2019 Co-Chair, Global Membership Committee, International Society of Nurses in Genetics
 2017 – Present Alliance of Nurses for Healthy Environments Research Workgroup
 2020 – 2021 Writer, International Society of Nurses in Genetics, Member Spotlight (monthly in 2020 to celebrate the “Year of the Nurse and Midwife”, quarterly publication in 2021)
 2023 – Present Co-Leader (with Dr. Tina Tauasosi-Posiulai, University of Hawaii Manoa), Ola Coaching Program: A Coaching Program to support Pacific Islander individuals in health and research careers.
 2023 – Present Coach, The Ola Coaching Program
 2023 – 2024 Mentor, Asian Pacific Islanders Caucus for Public Health (APIC)

Master’s Thesis Reader

2022 Kaitlin Kirkpatrick Heimke, MPH; University of Pittsburgh, School of Public Health, Department of Human Genetics

Manuscript Reviewer

05/2018 *Genetic Epidemiology*, Under supervision of Daniel E. Weeks, PhD
 08/2020 *PeerJ*
 04/2021 *Annals of Translational Medicine*

01/2023 *Cancer Chemotherapy and Pharmacology*
06/2023 *World Journal of Pediatrics*
08/2023 *World Journal of Pediatrics*
11/2023 *BMC Medical Research Methodology*
04/2024 *BMC Medical Research Methodology*

Abstract Reviewer

10/2021 Sigma Eta Chapter, Scholars Night

I certify that this curriculum vitae is a current and accurate statement of my professional record.

Signature:  Date: 07-19-2024 | 11:43 AM EDT
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