

Curtis L. Petersen, MS, MPH

Ph.D. Student
Dartmouth

✉ Curtis.L.Petersen.GR@Dartmouth.edu  [curtispetersen](https://github.com/curtispetersen)  CurtisLPetersen.com  [in curtis-petersen](https://www.linkedin.com/in/curtis-petersen)

EDUCATION

Dartmouth College, Hanover, NH

Burroughs Wellcome Big Data in the Life Sciences Fellow

Doctor of Philosophy *The Dartmouth Institute for Health Policy & Clinical Practice* 2016-Current

Dissertation: Precision Medicine: The Potential For Connecting Mobile Health Phenotypes To Molecular Profiles

Masters of Science *Quantitative Biomedical Science Program* 2020

Thesis: DNA Methylation As A Clinical Marker

Dartmouth College, Hanover, NH

Masters in Public Health *The Dartmouth Institute for Health Policy & Clinical Practice* 2014

Internship: Creating an Accountable Care Organization assessment tool

Capstone Project: Risk of multifocal breast cancer in women with atypical hyperplasia

University of Oregon, Eugene, OR

Bachelors of Science *Biology & Biochemistry* 2009

PROFESSIONAL

ImagineCare Digital Health, Dartmouth-Hitchcock, Lebanon NH

Data & Evidence Curator 2014-2016

- Conducting systematic reviews and writing clinical care algorithms based on evidence
- Writing analytic algorithms of passively and actively collected data
- System architecture & logic design of semi-automated response system
- Analyzing, interpreting, & summarizing data to feed into design and business cases

Druker/Deininger & Dao Lab, Oregon Health & Science University, Portland, OR

Research Assistant II 2009-2013

- Investigated the role of a CXCR4 antagonist in eliminating residual leukemia, Blood 2012
- Studied cytokine effect on JAK2V617F mutations in myeloproliferative neoplasms, Blood 2011
- Investigated the interaction between fanconi anemia, hematopoietic regulators, and betacatenin, Blood 2012

Zebrafish International Resource Center, University of Oregon, Eugene, OR

Research Assistant 2005-2009

TEACHING & MENTORING

Teaching Assistant: Dartmouth, MPH/MS Students

- PH 139: Epidemiology & Biostatistics I + Lab Summer 2016 & 2017
- PH 140: Epidemiology & Biostatistics II + Lab Fall 2016 & 2017
- PH 141: Regression & Other Statistical Approaches + Lab Winter 2017
- PH 147: Advanced Methods in Health Services Research + Lab Spring 2017

Instructor: Dartmouth, MPH/MS/MD/Postdoc/Residents

- Introduction to R: Workshop Winter 2017
- Graduate Research Peer Mentor Fall 2017-Spring 2019

SKILLS

Technical

Research	Programing
Machine Learning: classification, regression, clustering, feature engineering; Inferential Methods: Experimental & Observational Study Design; Artificial Neural Networks; Repeated Measures: Hierarchical Modeling; Health Informatics: Natural Language Processing; Genomic/Epigenomic Associations: Cell Type Estimation; Molecular Cloning & Cell Culture	R: Shiny, tidyverse, caret; Python: Pandas, Jupyter; Karas/Tensorflow; Stata; SQL; Ract-Native; Bioconductor & Biopython

Non-Technical

Critical Thinking	Communication
Data Wrangling; Teaching Statistical Language Classes (R & Stata); Teaching Epidemiological Concepts; Judged Public Presentations Protocol Synthesis; Analytic Plans	Manuscripts & Analytic Reports; Building Interactive Data Dashboards; Logic & Conceptual Models; Writing Evidence As Guidelines; Verbal & Poster Presentations; Conflict Resolution & Negotiation

AWARDS & ACHIEVEMENTS

- Fellowship: Burroughs Wellcome Fund - Big Data in the Life Sciences Training Program 2018-2021
- Dartmouth Graduate Student Council President 2019-2020
- Dartmouth Graduate Student Executive Council Academic Chair 2018-2019
- Winner of 5th Annual Epidemiology Poster Award, The Obesity Society 2017
- Student Employee of the Year, University of Oregon 2009
- Recipient, Benjamin A. Gilman Scholarship (Competitive International Study Program) 2009
- Eagle Scout, Boy Scouts of America 2004

PUBLICATIONS

Peer Reviewed Manuscripts

ORCID: <https://orcid.org/0000-0002-7210-447X>

Google Scholar Link

Agarwal A*, Fleischman AG*, **Petersen CL***, Loriaux MM, Woltjer R, Druker BJ, Deininger MW, Effects of Plerixafor (AMD3100) In Combination with Tyrosine Kinase Inhibition In a Murine Model of CML. Am Soc Hematology. 2010. 3389-3389. *co-first authors

Fleischman AG, Aichberger KJ, **Petersen CL**, Doratotaj S, Bumm TG, Pahl HL, Druker BJ, Deininger MW, Jak2 V617F Induced TNF Resistance as a Mechanism of Clonal Expansion In Myeloproliferative Neoplasm. Am Soc Hematology. 2010.

Fleischman AG, Aichberger KJ, Luty SB, Bumm TG, **Petersen CL**, Doratotaj S, Vasudevan KB, LaTocha DH, Yang F, Press RD, Loriaux MM, TNF α facilitates clonal expansion of JAK2V617F positive cells in myeloproliferative neoplasms. Blood. 2011., 118(24), pp.6392-6398.

Dao KHT, Rotelli MD, **Petersen CL**, Kaech S, Nelson WD, Yates JE, Newell AEH, Olson SB, Druker BJ, Bagby GC, FANCL ubiquitinates β -catenin and enhances its nuclear function. 2012. Blood, 120(2), pp.323-334.

Agarwal A, Fleischman AG, **Petersen CL**, MacKenzie R, Luty S, Loriaux M, Druker BJ, Woltjer RL, Deininger MW, Effects of plerixafor in combination with BCR-ABL kinase inhibition in a murine model of CML 2012. Blood, 120(13), pp.2658-2668.

Nutter EL, Weiss JE, Marotti JD, Barth RJ Jr, Eliassen MS, Goodrich ME, **Petersen CL**, Onega T, Personal history of proliferative breast disease with atypia and risk of multifocal breast cancer. 2017 Dec 20. Cancer. PMID: 29266172

Petersen CL, Wechsler EV, Halter RJ, Boateng GG, Proctor PO, Kotz DF, Batsis JA, Detection, Monitoring, and Feasibility of Repetitions Using an mHealth-Enabled Resistance Band, ACM ISBN 978-1-4503-5958-0/18/09. Applications, Systems and Engineering Technologies, September 26–28, 2018 <https://doi.org/10.1145/3278576.3278586>

Saunders CH, **Petersen CL**, Durand MA, Bagley PJ, Elwyn G, Bring on the machines: could machine learning improve the quality of patient-education materials? A systematic search and rapid review., JCO Clinical Cancer Informatics. 2018.

Weeks WB, Mishra MK, Curto D, **Petersen CL**, Cano P, Hswen Y, Serra SV, Elwyn G, Godfrey MM, Soro PS, Tomás JF. Comparing Three Methods for Reducing Psychotropic Use in Older Demented Spanish Care Home Residents. J Am Geriatr Soc. 2019 Jul;67(7):1444-1453. doi: 10.1111/jgs.15855. Epub 2019 Mar 8. PMID: 30848834.

Batsis JA, Boateng GG, Seo LM, **Petersen CL**, Fortuna KL, Wechsler EV, Peterson RJ, Cook SB, Pidgeon D, Dokko RS, Halter RJ, Kotz DF. Development and Usability Assessment of a Connected Resistance Exercise Band Application for Strength-Monitoring. World Acad Sci Eng Technol. 2019;13(5):340-348. doi: 10.5281/zenodo. PMID: 31205628; PMCID: PMC6570823.

Petersen CL, Weeks WB, Norin O, Weinstein JN, Development and Implementation of a Person-Centered, Technology-Enhanced Care Model For Managing Chronic Conditions: Cohort Study, JMIR Mhealth Uhealth 2019;7(3):e11082, URL: <https://mhealth.jmir.org/2019/3/e11082>, DOI: 10.2196/11082, PMID: 30892274

Brooks JM, **Petersen CL**, Titus AJ, Umucu E, Chiu CY, Bartels SJ, Batsis JA, Varying Levels of Food Insecurity Associated with Clinically Relevant Depressive Symptoms in U.S. Adults Aged 60 Years and Over: Results from the 2005–2014 National Health and Nutrition Survey, Journal of Nutrition in Gerontology and Geriatrics, 38:3, 218-230, DOI: 10.1080/21551197.2019.1611520

Schott SL, Xu K, Berkowitz J, **Petersen CL**, Saunders C, Sobti N, Coylewright M; Timing of electric health record Integrated Decision Aid (IDeA) for stroke prevention in atrial fibrillation matters; Journal of the American

College of Cardiology Mar 2019, 73 (9 Supplement 1) 3005; DOI: 10.1016/S0735-1097(19)33611-3

Batsis JA, **Petersen CL**, Crow RS, Cook SB, Stevens CJ, Mackenzie TA, Titus A, Bartels SJ, Weight Change and Risk of Frailty: Data from the National Health and Nutrition Examination Surveys 1999-2004. Obesity. 2019. Clinical Nutrition. ISSN 0261-5614, <https://doi.org/10.1016/j.clnu.2019.10.032>. (<http://www.sciencedirect.com/science/article/pii/S0261561419331255>)

Levy JJ, Titus AJ, **Petersen CL**, Chen Y, Salas LA, Christensen BC, MethylNet: A Modular Deep Learning Approach to Methylation Prediction, bioRxiv 692665; doi: <https://doi.org/10.1101/692665>

Crow RS, **Petersen CL**, Cook SB, Titus AJ, MacKenzie TA, Batsis JA, Reported Weight Change in Older Adults and Presence of Frailty. The Journal of Frailty and Aging (JFA). <http://dx.doi.org/10.14283/jfa.2019.44>

Petersen CL, Brooks JM, Titus AJ, Vasquez E, Batsis JA, Relationship Between Food Insecurity and Functional Limitations in Older Adults from 2005-2014 NHANES. Journal of Nutrition in Gerontology and Geriatrics. 2019. DOI: 10.1080/21551197.2019.1617219

Brooks JM, **Petersen CL**, Kelly SM, Reid MC, Likelihood of depressive symptoms in US older adults by prescribed opioid potency: National Health and Nutrition Examination Survey 2005-2013. Int J Geriatr Psychiatry. 2019; 1– 9. <https://doi.org/10.1002/gps.5157>

Batsis JA, **Petersen CL**, Crow RS, Cook SB, Stevens CJ, Mackenzie TA, Weight change and risk of the foundation of National Institute of Health Sarcopenia-defined low lean mass: Data from the National Health and Nutrition examination surveys 1999-2004 [published online ahead of print, 2019 Nov 4]. Clin Nutr. 2019;S0261-5614(19)33125-5. doi:10.1016/j.clnu.2019.10.032

Petersen CL, Mishra MK, Curto D, Cano P, Hswen Y, Serra SV, Elwyn G, Soro PS, Tomás JF, Weeks WB, Reducing psychotropic medication use in non-demented older care home residents. Journal of General Internal Medicine. (2019) doi:10.1007/s11606-019-05517-2

Crow RS, **Petersen CL**, Cook SB, Batsis JA, Reported Weight Change in Older Adults and Presence of Frailty. J Frailty Aging. 2020;9(2):74-81. doi: 10.14283/jfa.2019.44. PMID: 32259180; PMCID: PMC7202674.

Batsis JA, **Petersen CL**, Clark MM, Cook SB, Lopez-Jimenez F, Al-Nimr RI, Pidgeon D, Kotz D, Mackenzie TA, Bartels SJ. A Weight-Loss Intervention Augmented by a Wearable Device in Rural Older Adults with Obesity: A Feasibility Study. J Gerontol A Biol Sci Med Sci. 2020 May 8;glaa115. doi: 10.1093/gerona/glaa115. Epub ahead of print. PMID: 32384144.

Petersen CL, Halter RJ, Kotz DF, Loeb L, Cook SB, Pidgeon D, Christensen BC, Batsis JA, Using Natural Language Processing and Sentiment Analysis to Augment Traditional User-Centered Design: Development and Usability Study. JMIR Mhealth Uhealth. 2020;8(8):e16862. Published 2020 Aug 7. doi:10.2196/16862

Petersen CL, Chen JQ, Salas LA, Christensen BC. Altered immune phenotype and DNA methylation in panic disorder. Clin Epigenetics. 2020 Nov 18;12(1):177. doi: 10.1186/s13148-020-00972-9. PMID: 33208194; PMCID: PMC7672933.

Batsis JA, **Petersen CL**, Cook SB, Al-Nimr RI, Pidgeon D, Mackenzie TA, Bartels SJ. A Community-Based Feasibility Study of Weight-Loss in Rural, Older Adults with Obesity. J Nutr Gerontol Geriatr. 2020 Jul-Dec;39(3-4):192-204. doi: 10.1080/21551197.2020.1817226. Epub 2020 Sep 9. PMID: 32907522; PMCID: PMC7787696.

Al-Nimr RI, Wright KCS, Aquila CL, **Petersen CL**, Gooding TL, Batsis JA. Intensive nutrition counseling as part of a multi-component weight loss intervention improves diet quality and anthropometrics in older adults with obesity. Clin Nutr ESPEN. 2020 Dec;40:293-299. doi: 10.1016/j.clnesp.2020.09.002. Epub 2020 Sep 19. PMID: 33183553; PMCID: PMC7670080.

Whedon JM, Haldeman S, **Petersen CL**, Schoellkopf W, MacKenzie TA, Lurie JD. Temporal Trends and Geographic Variations in the Supply of Clinicians Who Provide Spinal Manipulation to Medicare Beneficiaries: A Serial Cross-Sectional Study. J Manipulative Physiol Ther. 2021 Apr 10;S0161-4754(21)00029-4. doi: 10.1016/j.jmpt.2021.02.002. Epub ahead of print. PMID: 33849727.

Petersen CL, Christensen BC, Batsis JA. Weight management intervention identifies association of decreased DNA methylation age with improved functional age measures in older adults with obesity. Clin Epigenetics. 2021 Mar 2;13(1):46. doi: 10.1186/s13148-021-01031-7. PMID: 33653394; PMCID: PMC7927264.

Batsis JA, **Petersen CL**, Clark MM, Cook SB, Kotz D, Gooding TL, Roderka MN, Al-Nimr RI, Pidgeon D, Haedrich A, Wright KC, Aquila C, Mackenzie TA. Feasibility and acceptability of a technology-based, rural weight management intervention in older adults with obesity. BMC Geriatr. 2021 Jan 12;21(1):44. doi: 10.1186/s12877-020-01978-x. PMID: 33435877; PMCID: PMC7801868.

Manuscripts Under Review & In Revision

Petersen, CL, Li X, Halter, RJ, Kotz, DF, Batsis, JA, Positive perceptions of mHealth based physical activity and weight reduction program. Health Informatics. 2020

Manuscripts In Preparation

Nelson, HH, Miller, JS, Christensen, BC, **Petersen, CL**, Koestler DC, Kelsey, KT, Cytomegalovirus (CMV) is associated with leukocyte PDCD1 methylation and patient outcome in head and neck cancer.

Petersen, CL, Jacobson, N, Decrease blood pressure during remote medical sensing of hypertensive adults: large open trial.