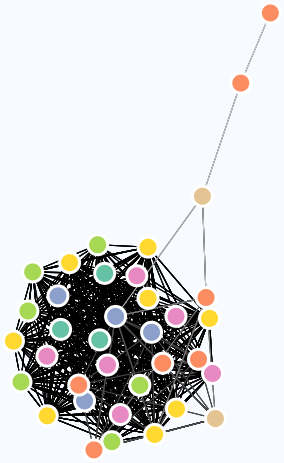
TED LADERAS, PHD

Assistant Professor, Division of Bioinformatics and Computational Biology, Department of Medical Informatics and Clinical Epidemiology

Researcher, OHSU Knight Cancer Institute

I am an Assistant Professor in the Division of Bioinformatics and Computational Biology in the Department of Medical Informatics and Clinical Epidemiology at OHSU (BCB/DMICE) and a member of the OHSU Knight Cancer Institute. My research focus is on the Systems Biology of Complex Diseases. I use integrative modeling approaches across OMICs types to achieve this.I am also passionate about teaching students to think about data, and have taught Data Science to a variety of groups, including graduate students, post-docs, staff, and clinicians. I am also an RStudio Certified Trainer in both the tidyverse and shiny.



View this CV online with links at *laderast.github.io/cv*

EDUCATION

2014 | 2009

PhD, Biomediical Informatics

Oregon Health & Science University — Portland, OR

- Dissertation: Connecting Genotypes to Drug Sensitivities in HER2 Positive Cancer Cell Lines

2004 | 2002

M.S., Biomedical Informatics

Oregon Health & Science University — Portland, OR

- Thesis: Developing and validating a tool for microarray cluster analysis

1998 | 1994

B.A., Chemistry

Reed College — Portland, OR

- Thesis: Resonance-Raman Spectroscopy, Chromium Hexacarbonyl, and Me: A Tale of Intrigue

SOFTWARE

Current | 2018

burro[1]

- R Package for exploring data. Used in multiple courses

Current | 2014

surrogateMutation[2]

- R Package for mapping mutations and copy number alterations to networks and associated statistics. http://dx.doi.org/10.5281/zenodo.17303[3]

Current | 2017

flowDashboard[4]

- Visualization framework in R/Shiny and processing pipeline for CyTOF and high dimensionality flow cytometry data.

CONTACT

- laderast@ohsu.edu
- tladeras
- github.com/laderast
- laderast.github.io
- linkedin
- 503-481-8470

LANGUAGE SKILLS

- R
- Python
- Bash
- SQL
- JavaScript

*Made with the R package **pagedown**.*

The source code is available on github.com/laderast/cv.

Last updated on 2020-07-12.

Current | 2004

Consense[5]

- R Package for comparing multiple clustering methods

COURSES

Current | 2015

BMI569: Data Analytics[6]

Biomedical Informatics, Oregon Health & Science University

Portland, OR

- Course co-director. Hybrid course co-taught with Kaiser Permanente Insight group.
- Winner of the Sakai Torchbearer Award 2020. Multiple nominations from students.

Current | 2020

BMI535/635: Management and Processing of Large Scale Data

Biomedical Informatics, Oregon Health & Science University

Portland, OR

- Course co-director. A course that focuses on UNIX scripting, parallel computing, and large scale databases.

Current | 2020

BMI507: Ready for R[7]

Biomedical Informatics, Oregon Health & Science University

Portland, OR

- Course Director. A gentle introduction to visualization, data transformation, and statistics using R and the tidyverse.
- Course is open to anyone at https://ready4r.netlify.app/mailing
- Currently over 1000 external students have enrolled.

Current | 2020

NEUS643: Stats for Neuroscientists[8]

Neuroscience Graduate Program, Oregon Health & Science University

Portland, OR

- Course Director. An introduction to image processing, statistics, and machine learning focusing on confocal microscopy data.
- Lecture/Active Learning Labs using RStudio.cloud.

2019 | 2015

BMI551/651 Bioinformatics and Computational Biology II: Statistical Methods

Biomedical Informatics, Oregon Health & Science University

Portland, OR

- Course co-instructor. Provided drop-in sessions for R/Bioconductor programming and general tutoring.

2018 | 2017

HMSP410/PHE427: Introduction to Health Informatics[9]

Portland State University

Portland, OR

- Course co-director. A gentle introduction to relevant data science and informatics concepts for Public Health Education students.
- Includes sections on data literacy, genomics, and metadata

Teaching and education are a passion of mine. I teach in a number of courses at OHSU. I spend a lot of time developing coursework/workshops in a variety of Data Science Topics. Most of my material is freely available to be reused by other instructors.

EDUCATIONAL RESOURCES

Current | 2015

RBootcamp[10]

- Online Interactive Introduction to the Tidyverse
- Written with Jessica Minnier

Current | 2017

A gRadual Introduction to Shiny[11]

- Workshop introducing basic interactive visualization and dashboard building using the Shiny framework for R
- Written with Jessica Minnier
- Used by multiple colleges, including Reed College and Lehmann College

Current | 2017

Clinical Data Wrangling[12]

- Multi-day workshop on understanding clinical data quality issues through both didactic lecturing and active data exploration.
- Written with Eilis Boudreau and Nicole Weiskopf.
- Given as an intro to both our incoming clinical and bioinformatics students.

SELECTED PUBLICATIONS, POSTERS, AND TALKS

2020

Illuminating Biological Pathways for Drug Targeting in Head and Neck Squamous Cell Carcinoma

PLOS One

- Gabrielle Choonoo, Aurora S. Blucher, Samuel Higgins, Mitzi Boardman, Sophia Jeng, Christina Zheng, James Jacobs, Ashley Anderson, Steven Chamberlin,Nathaniel Evans, Myles Vigoda,Benjamin Cordier, Jeffrey W. Tyner, Molly Kulesz-Martin, Shannon K. McWeeney, and **Ted Laderas**.
- Senior Author. Did code review of entire workflow and published the workflow as an RMarkdown Notebook at mybinder.org

2019

CSF1R inhibitors exhibit anti-tumor activity in acute myeloid leukemia by blocking paracrine signals from support cells

Blood

- David K Edwards, Kevin Watanabe-Smith, Angela Rofelty, Alisa Damnernsawad, **Ted Laderas**, Adam Lamble, Evan F Lind, Andy Kaempf, Motomi Mori, Mara Rosenberg, Amanda d"Almeida, Nicola Long, Anupriya Agarwal, David Tyler Sweeney, Marc Loriaux, Shannon K McWeeney, Jeffrey W Tyner.

My research interests are complex diseases, precision medicine, applications of systems science (including network analysis and modeling), and applying data integration to difficult and high-impact translational research questions. These questions include immune system profiling in both infectious disease (tuberculosis) and Acute Myeloid Leukemia, understanding drug sensitivity in the context of multiple cancer types (AML, Colorectal, Breast and Head and Neck Cancer), and quantifying expression differences in alcoholic preference. I have worked with a large number of datatypes (high-throughput immunophenotyping, proteomics, expression, genomic, and functional drug screen data) and have focused on methods and frameworks integrating these datatypes within the biological and clinical context of these translational research questions. My training in biomedical informatics as a master's student in Biomedical Informatics, as an NLM

2018

Immunogenomic Exploration of the Acute Myeloid Leukemia Microenvironment Identifies Determinants of T-Cell Fitness.

Blood

- Lauren K Brady, David Soong, Evan F Lind, Yoko Kosaka, Adam J Lamble, Michael Schaffer, Brendan P Hodkinson, Clare Lefave, **Ted Laderas**, Shannon K McWeeney, Homer Adams, Yann Abraham, Pegah Safabakhsh, Jeffrey W Tyner, Brian J Druker, Fei Huang.

2017

Training future biocurators through data science trainings and open educational resources.

F1000 Research

- Nicole Vasilevsky, **Ted Laderas**, Jackie Wirz, Bjorn Pederson, David A Dorr, William Hersh, Shannon McWeeney, Melissa Haendel.

2017

Teaching data science fundamentals through realistic synthetic clinical cardiovascular data[13]

Biorkv

- Ted Laderas, Nicole Vasilevsky, Bjorn Pederson, Shannon McWeeney, Melissa Haendel, and David Dorr.
- Contribution: First author: helped conceive study, designed bayesian network, developed course material based on dataset.

2015

The Consensus Molecular Subtypes of Colorectal Cancer.

Nature Medicine

- Justin Guinney, Rodrigo Dienstmann, Xin Wang, Aurélien de Reyniès, Andreas Schlicker, Charlotte Soneson, Laetitia Marisa, Paul Roepman, Gift Nyamundanda, Paolo Angelino, Brian M. Bot, Jeffrey S. Morris, Iris Simon, Sarah Gerster, Evelyn Fessler, Felipe de Sousa e Melo, Edoardo Missiaglia, Hena Ramay, David Barras, Krisztian Homicsko, Dipen Maru, Ganiraju C. Manyam, Bradley Broom, Valerie Boige, **Ted Laderas**, Ramon Salazar, Joe W. Gray, Douglas Hanahan, Josep Tabernero, Rene Bernards, Stephen H. Friend, Pierre Laurent-Puig, Jan P. Medema, Anguraj Sadanandam, Lodewyk Wessels, Mauro Delorenzi, Scott Kopetz, Louis Vermeulen, and Sabine Tejpar.
- Contribution: mapped and analyzed OMICs data to consensus cancer subtypes.

2015

Between Pathways and Networks lies Context.

Science Progress

- **Ted Laderas**, Guanming Wu, and Shannon McWeeney.

2007

Consensus framework for exploring microarray data using multiple clustering methods.

OMICS

- **Ted Laderas** and Shannon McWeeney

SELECTED DATA SCIENCE WRITING

I regularly blog about education, data science, and mental health in a variety of places.

2020 **Rebuilding the RBootcamp and Generating R Tutorials**[14]

RStudio Education Blog

- Story about building our interactive RBootcamp using Ines Montani's interactive R/Python Framework.
- Authored with Florencia D'Andrea and Jessica Minnier

2019 **RStudioConf 2019: Education and Organizations**[15]

Personal Blog

- Story about presenting our poster about interactive data science education and educational resources/talks at RStudioConf 2019

2019 **Notes on the RStudio Instructor Training Experience**[16]

Personal Blog

- Story about becoming an RStudio Certified Instructor in the Tidyverse and Shiny

2018 **What we learned teaching Python to Neuroscience Students**[17]

Personal Blog

- Notes on organizing an intro Python course for Neuroscience Students

2018 **So You've Accidentally Checked a Large File Into Git**[18]

Personal Blog

- Notes on fixing your Git history using the BFG

2017 **Some Lessons we Learned Running Cascadia R**[19]

Personal Blog

- Notes on organizing and running the first NW regional R Conference, Cascadia R

SELECTED PRESS (ABOUT)

SELECTED PRESS (BY)

POSITIONS AND WORK EXPERIENCE

Current | 2015 **Assistant Professor**

Department of Medical Informatics and Clinical Epidemiology, Oregon Health & Science Univeristy

Portland, OR

2015 | 2014 **NLM Postdoctoral Fellow, Division of Bioinformatics and Computational Biology**

Oregon Health & Science Univeristy

Portland, OR

2015 | 2014

Visiting Scientist

Sage Bionetworks — Seattle, WA

2014 | 2009

NLM Predoctoral Fellow

Medical Informatics and Clinical Epidemiology, Oregon Health & Science Univeristy

2009 | 2003

Bioinformatics Developer/Project Manager, OHSU Knight Cancer Institute

Oregon Health & Science University — Portland, OR

2002 | 2001

Teaching Assistant/Computer Programmer/Server Admin, Medical Informatics and Clinical Epidemiology

Oregon Health & Science University — Portland, OR

2001 | 1999

Research Assistant/Computer Programmer, Department of Molecular Medicine

Oregon Health & Science University — Portland, OR

- Developed and extended real time image processing pipeline using LabView. Conducted surface tension experiments using lung surfactant components

1998 | 1996

Research Assistant/Teaching Assistant

Gerrity Lab — Reed College

- TA in Instrumentation Lab
- Conducted research using resonance raman spectroscopy/
- Programmed in LabView/Igor

LINKS

1. https://laderast.github.io/burro
2. https://github.com/laderast/surrogateMutation
3. http://dx.doi.org/10.5281/zenodo.17303
4. https://github.com/laderast/flowDashboard
5. https://github.com/laderast/consense
6. https://laderast.github.io/AnalyticsCourse
7. https://ready4r.netlify.app
8. https://stats4neuro.netlify.app
9. https://laderast.github.io/PHE427/
10. https://r-bootcamp.netlify.app
11. https://laderast.github.io/gradual_shiny
12. https://laderast.github.io/clinical_data_wrangling
13. https://www.biorxiv.org/content/early/2017/12/12/232611
14. https://education.rstudio.com/blog/2020/03/r-bootcamp/
15. http://laderast.github.io/2019/01/24/rstudio-conf-2019-education-and-organizations/
16. http://laderast.github.io/2019/11/15/my-experience-with-rstudio-instructor-training/
17. http://laderast.github.io/2018/01/17/what-we-learned-teaching-python-to-neuroscience-students/

18: http://laderast.github.io/2018/01/05/so-you-ve-accidentally-checked-in-a-large-file-into-git/
19: http://laderast.github.io/2017/06/07/cascadiarnotes/