

# Thadryan Sweeney, MS

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*Medical Data Scientist, Doctoral Student*

I am a Medical Data Scientist currently pursuing a PhD in Quantitative Biomedical Sciences at Dartmouth College. I am interested in developing and applying biostatistical and machine learning methods to improve the efficiency of health systems with a special focus on opioid-related harms.

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## Research Positions

- 2022-present **Graduate Research Assistant**, *Dartmouth College*, Hanover, NH.
- 2020-2022 **Research Technologist**, *Mass General/Harvard Medical School*, Boston, MA.
- 2018-2019 **Bioinformatics & Data Science Contractor**, *bluebird bio*, Cambridge, MA.

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## Education

- In progress **Doctor of Philosophy**, *Quantitative Biomedical Sciences*, Dartmouth College.
  - Hanover, NH
- 2019 **Master of Science**, *Bioinformatics*, Northeastern University.
  - Boston, MA
- 2013 **Bachelor of Science**, *Human Biology*, American International College.
  - Springfield, MA
- 2011 **Associate of Arts**, *Liberal Studies*, Greenfield Community College.
  - Greenfield, MA

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## Teaching & Teaching Assistantship

- 2024 **Applied Epidemiological Methods 1**, *Dartmouth College*, Teaching Assistant.
- 2024 **Programming for Data Science**, *Dartmouth College*, Teaching Assistant.
- 2023 **Intermediate Programming for Data Science**, *Dartmouth College*, Teaching Assistant.

- 2023 **Applied Epidemiological Methods**, *Dartmouth College*, Teaching Assistant.
- 2022 **Bioinformatics Methods I (spring)**, *Northeastern University*, Instructor.
- 2021 **Bioinformatics Methods I (fall)**, *Northeastern University*, Instructor.
- 2021 **Bioinformatics Methods I (spring)**, *Northeastern University*, Instructor.
- 2020 **Bioinformatics Methods I (fall)**, *Northeastern University*, Instructor.
- 2020 **Bioinformatics Methods I (spring)**, *Northeastern University*, Instructor.
- 2019 **Bioinformatics Programming**, *Northeastern University*, Teaching Assistant.
- 2018 **Collecting, Storing, and Retrieving Data**, *Northeastern University*, Teaching Assistant.
- 2018 **Introduction to Data Mining and Machine Learning**, *Northeastern University*, Teaching Assistant.

## Published Software

- 2020 An interactive Bayesian Ttool for SARS-CoV2-Antibody test interpretation. Manuscript supplement, <https://covid.omics.kitchen/>
- 2020 ContrApption: interactive visualization of RNA-Seq style datasets from a single function call. (beta) <https://github.com/omics-kitchen/ContrApption>

## Publications

### Published

- 2023 **Plasma biomarkers for diagnosis of Alzheimers disease and prediction of cognitive decline in individuals with mild cognitive impairment**, *Frontiers in Neurology*.
- 2022 **Increased levels of the synaptic proteins PSD-95, SNAP-25, and neurogranin in the cerebrospinal fluid of patients with Alzheimers disease**, *Alzheimer's Research & Therapy*.
- 2022 **Elevation of Neuronal Injury Markers in Patients with Neurologic Sequelae after Hospitalization for SARS-CoV-2 Infection**, *Iscience*.

- 2022 **Distinct stress-dependent signatures of cellular and extracellular tRNA-derived small RNAs (tDRs)**, *Advanced Science*.
- 2022 **A novel tissue atlas and online tool for the interrogation of small RNA expression in human tissues and biofluids**, *Frontiers in Cell and Developmental Biology*, supplement: <https://data.omics.kitchen/miRNAatlas/>.
- 2021 **Evaluation of serological lateral flow assays for severe acute respiratory syndrome coronavirus-2**, *BMC Infectious Diseases*, supplement: <https://covid.omics.kitchen/>.

In preparation

- 2024 **Planned Use of Medication for Opioid Use Disorder Among Adolescents Entering Treatment for Opioid Use Disorder and Trends in the US, 2017-2021** .

## Volunteer Work & “Hacktivism”

- Fall 2024 present **Volunteer at HIV/HCV Resource Center**, <https://www.h2rc.org>.
- 2020-2022 **Volunteer at RagTag** (<https://ragtag.org/>), Core developer on *The National Survivor Financial Security Policy Map and Scorecard* (<https://mapandscorecard.freefrom.org/>), a tool for evaluating how different states in the US promote the financial wellness of Survivors of intimate partner violence.
- 2008-2014 **Volunteer Firefighter/EMT: Orange Fire-Rescue-EMS**.

## Media

- 2020 COVID-19 LFA Research. <https://www.wcvb.com/article/boston-researchers-assess-performance-of-covid-19-antibody-tests/33625088>

## Pre-academic work

### Antibody Technician - New England Peptide

(Now 'Vivitide')

Sept. 15 - Sept. 17

- . Ran day-to-day operations of antibody production lab as sole technician.
- . Self-taught Python programming to automate bioinformatics tasks, saving weeks of effort and dozens of errors.
- . Studied and practiced antigen design under an industry leader.

## Chemical Operator, Vinegar Plant - Pilgrim Foods

Mar. 15 - Sept. 15

- . Inoculated, monitored, and maintained live cultures of Acetobacter for fermentation of ethanol to acetic acid.
- . Redefined instrument calibration procedure by observing logarithmic trends in data previously modeled as linear.
- . Formulated batches of mash to alcohol, acidity, stock, and water specifications.

## Asst. Manager, Peer Counselor - The Bridge of Central Mass

(Now 'Open Sky Community Services')

Nov. 13 - Mar. 15

- . Counseled individuals aged 18-25 in their recovery from mental illness and trauma.
- . Provided quality assurance for medication administration and financial tracking.
- . Supervised nine employees during shifts and on call from home for crisis management.

## Firefighter/EMT - Orange Fire Rescue EMS

Jun. 08 - Sept. 14

- . Engaged in fire/rescue activities, structural and wildland firefighting, search operations, and trauma management.
- . Responded to medical emergencies, performed CPR/Basic life support, and administered medication.
- . Participated in search and rescue operations and trainings, including ice rescue training and boat operations.