Abigail Stamm - Personal Narrative

I have worked for Health Research, Inc. (HRI) the New York State Department of Health (NYSDOH) Bureau of Environmental and Occupational Epidemiology (BEOE) for about five years, first as a student assistant and for the last 3.5 years as a Research Scientist. I have been involved in several projects during my time at BEOE. My primary contributions are listed below.

1) Contribution to the Department's public health mission to protect, promote or preserve the public's health and to the incumbent's field of public health

My primary duty at BEOE is to manage data for the NYS Environmental Public Health Tracking (EPHT) Program. The data I prepare are made available on our online portal, provided to our community partners, and sent annually to the CDC. I also attend meetings to advise the partners on how to use the data and to review the online portal.

I serve in several CDC EPHT workgroups. In the Cold-Related Illness Workgroup, I piloted the proposed cold-related mortality indicator in NYS. In the Geospatial and Geo Aggregation Workgroups, I presented on and contribute to discussions on developing subcounty aggregated areas, geocoding standards, and imputing ungeocodable records. In the Community Design Workgroup, I helped to develop and piloted the proposed traffic fatality indicators in NYS, piloted proposed definitions of food deserts and food swamps in Buffalo, NY, and am converting the ArcGIS indicator how-to guides to an R package.

I converted the Geographic Aggregation Tool to an R package, expanded its features and documentation, made it available online for anyone to use, and am its current maintainer. This tool is a free add-on for the free statistics software R that automates aggregation of small areas based on settings selected by the user.

2) Technical competence in program area, educational achievements, and evidence of continued professional development

I am currently a doctoral student in Epidemiology at the SUNY Albany School of Public Health. My studies included coursework in biostatistics, GIS, SAS, epidemiology, and quantitative and qualitative data analysis. My masters studies included courses on behavioral health and survey design and analysis.

Prior to the COVID lockdown, I taught workshops each semester (spring 2016 to fall 2019) on using R, which are available on my GitHub site at https://ajstamm.github.io/titanic/workshops/. These workshops covered the basics of R syntax, simple R charts, and using R for data management and for manipulating relational databases. I am developing additional workshops on using R to produce maps and using GAT. In addition to running workshops, I served as the co-chair for the NYSDOH Epidemiology and Biostatistics Community of Practice Learning Pathways Team, for which I coordinated the facilitators for workshops covering ArcGIS, Python, and writing journal manuscripts.

3) Innovativeness in the application of scientific knowledge and methodology to public health problems as evidenced in research experience and contributions to scientific knowledge

I have made two major contributions to scientific methodology and one major controbution to scientific knowledge.

- I developed the Geographic Aggregation Tool (GAT) with Gwen Babcock. This software is an add-on for the statistical program R that allows users to combine small geographic areas

based on user preferences. This tool was publicly released on GitHub earlier this year. It has been shared with the CDC and presented at multiple conferences. Internally, we have used it to (1) create the subcounty areas we use to share data with partners and will display on our new online data portal and (2) develop a sampling scheme for a biomonitoring project.

- I built on Gwen Babcock's work to impute census tracts for Statewide Planning and Research Cooperative System (SPARCS) cases with missing or ungeocodable addresses by (1) porting her imputation code from SAS to R, (2) developing a method to incorporate results from multiple imputations into our case totals, and (3) expanding her method to apply to birth records. We have presented on this process for internal and external audiences.
- As an intern, I designed, analyzed, wrote, and published a research project on border effect in New York State (NYS). This project showed that heart attack rates were lower along the eastern border of NYS than elsewhere in the state. It posited that this was due in part to NYS residents seeking care across the state border and recommended that states share hospital data to get full pictures of their residents' health.

4) Diversity and level of technical skills needed in the position

As a data manager, I routinely use R and SQL in my work. For some projects, I validate data for a coworker who uses SAS and assist with debugging her code. I write a lot of technical documentation, including data schema, data dictionaries, instructions to calculate indicators and use software, and how tools and measures were created. For GAT, I write all documentation within the software in Roxygen and all supplementary documentation in Markdown and LaTeX. For the R workshops I run, I write all slides in HTML. One of my projects also requires JSON. My geocoding projects require both MapMarker and ArcGIS, which I use routinely, and I produce maps and charts in R. I read data from Excel and Access into R and write to Excel.

I have written literature reviews on a variety of topics and have formatted charts and text for state reports and factsheets. For projects, I routinely clean and run summary analyses on data. From my coursework and dissertation, I also have experience with running and interpreting regression analyses.

5) Quality and efficiency of the programmatic component for which the incumbent is responsible

I strive to be efficient in my work. I complete my work in a timely manner, both to meet partners' deadlines and to complete my portion of team projects on time. I complete multiple weekly reports, for which I have written automation code both to speed up the process and to reduce mistakes. When I make mistakes, or find issues in the data, I set up data validation checks to catch and prevent similar future issues. I work effectively both alone, as with my data management and coding duties, and in a team, as with the CDC workgroups and special projects in which I have been involved.

6) Supervisory experience and responsibility, including number, title and grade level of staff

In my current position, a few projects have required me to oversee other staff. For the MARO nursing home covid testing study, I oversaw the work of five data validators assigned to confirm matches for ECLRS records. For the COVID sewershed pilot study, I coordinated two other staff for geocoding and spatial linking of ECLRS records. I have mentored several staff and interns in various skills, including geocoding, R programming, and public speaking.

In my position at the AIDS Institute, I trained and oversaw interns completing data entry for the Naloxone Law Enforcement Project, a database that I managed. I also have experience managing

classrooms as a teacher and professor and managing meetings both in Toastmasters and in graduate school as the Speaker for the Graduate Student Assembly.

7) Authorship of publications and reports, considering type, number, research involved, and relevance of the work

I have published one peer-reviewed journal article as first author and one R package. I am in the process of developing two other R packages, one on geomasking and one for a CDC community design project.

- Stamm, A, & Babcock, G (2021). gatpkg: Geographic Aggregation Tool (GAT). R package version 1.61.0. https://github.com/ajstamm/gatpkg
  First author for this software package to facilitate automation of small area aggregation for the purpose of protecting confidentiality and calculating stable health measures.
- Stamm, A, Savadatti, S, Kumar, S, & Hwang, S (2017). A spatial analysis of acute myocardial infarction rates in New York State in relation to hospitals along state jurisdictional borders. Journal Of Public Health Management And Practice, 23(5), S39-S44. doi:10.1097/PHH.0000000000000596
  First author for this peer reviewed article on analyzing a possible border effect among heart attack rates in NYS.
- Report for the Governor's Cancer Research Initiative, 2019.
  Contributed analyses and maps for the section on Buffalo, NY.
- Report for the New York City Asthma Study, 2020.
  Performed a literature review for and wrote the section on pest triggers of asthma and contributed maps and charts for the section on environmental triggers.

  naloxone factsheets? wastewater article under review?

8) Professional recognition

At the Department of Health, I received the Commissioner's Recognition Award for Inter-Agency or Intra-Agency Cooperation in December 2019 for my work on the Governor's Cancer Research Initiative. For this project, I mapped Brownfield sites identified by the Department of Environmental Conservation that were located near our area of interest in Buffalo. I also investigated food swamps and food deserts in the same area using the commercial InfoUSA database as part of our environmental assessment.

I have been a member of the NYSDOH chapter of Toastmasters International, a professional public speaking and leadership organization, for six years. During that time, I have received one public speaking award, Advanced Communicator Bronze, and two leadership awards, Competent Leader and Advanced Leader Bronze. Earning these awards required me to fulfill a series of duties in the club, including (1) serving for a year as Vice President Education, (2) chairing meetings and taking meeting minutes, (3) giving prepared and impromptu speeches at events both within and outside the club, (4) facilitating club activities, and (5) mentoring club members in public speaking, leadership, and facilitation skills.

9) Grants received, including their number, size, recency, type, and relevance

No grants, but do things like IRB and data requests count here? took class at marquette in grant-writing, helped write grant at mcfi

10) Scientific presentations and posters at local, state, national and international meetings and conferences, considering type, number, first authorship, the research involved and relevance of the work

Presentations for which I was a presenter:

- Stamm, A, Muscatiello, N, & Hsu, W. Accounting for demographics in geographic aggregation. Place & Health Conference 2021. Virtual, November 16, 2021.
  Presenter and first author for this poster on using GAT to automate neighborhood aggregation.
- Stamm, A. gatpkg: Developing a geographic aggregation tool in R for non-programmers. useR! 2021. Virtual, July 6, 2021.
  Presenter and author for this lightning talk on developing software that someone who is not a computer programmer can use.
- Stamm, A. Geographic Aggregation Tool (GAT): An introduction and demonstration. NYSDOH BEOE Bureau Seminar. Virtual, February 18, 2021.
  Presenter and author for this technical presentation about what GAT does and how to use it.
- Stamm, A. Geographic Aggregation Tool (GAT): A method for handling small numbers when calculating disease rates. NAHDO Conference 2020. Virtual, August 25, 2020.
  Presenter and author for this presentation on automating small area aggregation.
- Stamm, A, & Babcock, G. Demonstration of the Geographic Aggregation Tool. CDC NEPHT Geo Aggregation Workgroup Call. Virtual, March 9, 2020.
  Presenter and first author for this technical demonstration of how to use GAT.
- Rai, A, Stamm, A, & Babcock, G. NYS EPHT: Geographic Aggregation Development Process. CDC NEPHT SND Workgroup Call. Virtual, October 3, 2019.
  Presenter and second author for this presentation on developing and imputing to subcounty aggregated areas.

Presentations for which I was an author, but not a presenter:

- Rai, A, Stamm, A, Babcock, G, Done, D, Nayak, S, & Muscatiello, N. Development of Sub-County Level Health Data Indicators through Geographic Aggregation for Environmental Health Surveillance in New York State. Place & Health Conference 2021. Virtual, November 16, 2021.
  Second author for this presentation on developing subcounty aggregated areas.
- Rowe, K, Stamm, A, Leung, S, Hammer, M, Vinehout, J, Stancliff, S, Dailey, M, & White, V. Findings from the New York State (NYS) opioid overdose and intranasal naloxone program for law enforcement. American Public Health Association 2016. Denver, CO, October 29-November 2, 2016.
  Second author for this presentation on the NYS Naloxone Law Enforcement Program.

11) Academic work and affiliations, including collaborative research and work with academic departments, staff and students

For my doctoral work at SUNY Albany, I am using data housed in BEOE, which will benefit BEOE's research initiatives. My project assesses a possible relationship between certain air pollution models, including one developed at Emory University, and select birth defects in NYS.

I am the BEOE data manager for the statewide COVID sewershed project, which involves a consortium of agencies, notably Syracuse University and SUNY ESF. For this project, I summarize COVID testing data from the Electronic Clinical Laboratory Reporting System (ECLRS) and plot it on charts against COVID levels measured in the data for each sewershed.

Related to BEOE's climate work, a few universities have contacted BEOE for data, usually birth,

mortality, or disease rates at subcounty level. If they receive permission to use the data, then I prepare it for them.

12) Additional strengths

Leadership skills?