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| **Jennifer M. Staab** |
| Florida, USAWebpage: <http://www.cs.unc.edu/~jstaab/> |  Email: *jstaab@cs.unc.edu*  LinkedIn: [Profile](https://www.linkedin.com/pub/jennifer-staab/33/623/250)  |

Education

**University of North Carolina, Chapel Hill, NC**

Ph.D., Computer Science with specialty in Bioinformatics, May 2012.

M.S., Computer Science, May 2008.

M.P.H., Biostatistics, May 2000.

B.S.P.H., Biostatistics (minor in Chemistry), May 1996.

Professional Experience

**Florida Polytechnic**

**University**  Lakeland, FL. 8/2015 to present

 ***Assistant Professor of Big Data Analytics & Health Informatics***

\**Academic Program Coordinator for the Advanced Technology Program* – (8/15 -7/16) responsibilities include: managing course level assessments for Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), assigning faculty to class offerings, determining semester class offerings, revising course and program curriculum to achieve course and program level learning outcomes, hiring faculty (chair of hiring committee), advising students, overseeing credentialing of faculty, ensuring software and hardware meet course requirements, and handling grievances.

\* *Professor:* Responsible for designing and teaching 3-4 graduate and undergraduate courses in Programming, Databases (both relational and non-relational (graph, key-value, document, columnar)), Univariate and Multivariate Analysis, Business Intelligence, and Cloud Computing. Other duties include: student academic advising, graduate thesis and project advising, faculty credentialing, ensuring software meets course requirements, help determine semester class offerings, and revising course and program curriculum to achieve course learning outcomes in the Advanced Technology program. Primary programming languages and software packages: SQL (primarily MySQL & PostgreSQL), Neo4j, Redis, HBase, MongoDB, SAS (Base, Stats, Macro, IML, Enterprise Guide – OnDemand & Local Install), Tableau, R, Python, AWS tools, PHP and shell scripting.

\**Member of the Curriculum Committee* - responsibilities include: developing, monitoring, and evaluating policies and procedures related to curricula and teaching techniques. The committee makes recommendations concerning degrees offered, graduation requirements, and course offerings.

\**Member of the Institutional Effectiveness Committee* – (8/15 – 7/16) responsibilities include: planning and evaluation goals at the program and institutional levels that meet the University’s mission and to adhere to SACSCOC accreditation requirements.

\**Member of the University’s Provost Search and Computer Science Hiring Committees*

\**Member of the Big Data/Health Informatics Laboratory* – Initiate and advise student-led research projects with industry partners, bringing in industry partners in as guest speakers, and help oversee lab operations.

\**Panelist for Overcoming Barriers and Challenges in STEM -* For Women In Cable Telecommunication (WICT) Tech-It-Out Events at the University in 2015 and 2016*.*

**Consultant**  Satellite Beach, FL. 8/2014 to 7/2015

 ***Systems Engineer, Bioinformatician, Computer Scientist, Statistician***

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\* Plan, develop, install and maintain high performance computing environments under

 Amazon Web Services(AWS) cloud for genomic and bioinformatic big data analysis.

 \* Provide statistical consultation for bioinformatics and genomics analyses, especially

 when conventional methods are inadequate for addressing statistical issues.

\* Provide consultation for architecting and maintaining computational environments

 in AWS cloud. This includes moving local computation, services, and data to the

 AWS cloud along with using AWS tools to provide increased security, system

 redundancy, cost-efficiency, and ease of maintenance and use.

\* Provide expert software development, data analysis, and data management using the

 following programming languages and software packages: Python, C++, Perl, Java,

 PHP, SQL, Matlab, SAS, AWS tools, R, R/Bioconductor, shell scripting.

**United**

**Therapeutics** Satellite Beach, FL. 2012 to 7/2014

 ***Systems Engineer, Comparative Genomics***

 Developed and maintained a high performance computing environment under AWS

 cloud for genomic big data analysis in support of xenotransplantation research.

 Supervised the transition of the production environment to a more secure AWS

 Virtual Private Cloud environment. Acquired expertise with various cutting-edge

 software and pipelines for genomic and bioinformatics big data analyses.

 \* Developed and maintained a cloud environment that included the Sun Grid Engine

 for big data analysis, MySQL server for storage of knowledge mined from analyses,

 and Apache web server for web applications (e.g. MediaWiki, GBrowse, etc.) that

 facilitated the visualization and interpretation of results from analyses. Samba was

 used to integrate analysis results with local windows clients. Use of Network File

 System allowed for cost-effective data sharing across virtual machines in the cloud.

 \* Evaluated, developed, implemented, and maintained a broad range of computing

 technologies and software to meet the goals of providing a highly-available and

 stable infrastructure for cutting-edge biological and genetic engineering projects.

 \* Provided statistical and computational guidance and support for bioinformatics

 analyses of big data to system users.

 \* Managed multiple projects at an accelerated pace and maintained flexibility to deal

 with immediate and changing requirements of the projects.

 \* Managed specialty consultants on bioinformatics and computational projects.

 \* Prepared Statements of Work (SOWs) for specialized computational projects.

 \* Provided software development, data analysis, and data management primarily

 using Python, Perl, PHP, SQL, AWS tools, and shell scripting.

**Gomez Lab** UNC Biomedical Engineering Department, Chapel Hill, NC. 2006 to 2012

 ***Research Assistant***

 Developed a progressive consensus alignment tool (PCANS) for aligning Nuclear

 Magnetic Resonance (NMR) spectra in metabolomic data analysis. Developed

 additional tools for analysis and display of NMR spectra in the metabolomic context.

 Developed data mining tools for exploring the toxicological link between ToxCastTM

 bioassays and chemicals to diseases and other maladies. Responsible for various

 microarray expression analyses to explore temporal differences and activated

 biological pathways. Analytic experience with unsupervised and supervised learning

 techniques including clustering, Principal Component Analysis, discriminant analysis,

 logistic and linear regression. Supervised undergraduate students within the lab.

 Primary analytic tools included Python, R, R/Bioconductor, SQL, SAS, and Matlab.

**University of**

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**North Carolina** Computer Science Department, Chapel Hill, NC. Summer 2010

 ***Instructor***

 Taught *COMP 116: Introduction to Scientific Programming*. Responsible for all

 aspects of the undergraduate course. Provided an introduction to the fundamentals

 of programming for computational scientists through use of Matlab.

**GlaxoSmithKline** Research Triangle Park, NC. Summer 2008

***Summer Intern***

 Computational biology analysis of gene expression data to identify biomarkers and

 mechanisms of muscle regeneration. Researched the resulting genes to provide

 biological context to the results. This involved using LIMMA package (Linear Models

 for Microarray Data) to identify significant gene expression trends across time.

 Primary analytic tools included R, R/Bioconductor, SAS, Spotfire, and Ingenuity.

**University of**

**North Carolina** Computer Science Department, Chapel Hill, NC. 2005 to 2006

 ***Research Assistant***

 Developed and implemented tree based data mining techniques to associate

 Single Nucleotide Polymorphisms with phenotypic expression in C++.

**RTI International** Research Triangle Park, NC. 1996 to 2005

 ***Research Statistician***

 Awarded the Warren J. Mitofsky Innovators Award by the American Association

 for Public Opinion Research in 2011 for developing methodology for use of

 residential mailing lists for survey sampling frame construction. Projects were health

 based research including a randomized trial of circumcision for HIV prevention to

 the Dallas Heart Study, one of the first population based surveys to also include

 genomic medical information.

 \* Responsible for statistical analysis activities, including database management,

 quality control, creating and reviewing statistical analysis plans, and fulfilling

 analysis requests. This included both logistic and linear regression modeling.

 SAS system software was the primary analytic and data management tool.

 \* Provided budgeting and statistical analysis plans for Request for Proposals (RFPs)

 and Request for Applications (RFAs).

 \* Responsible for survey sampling activities included sample design, sample frame

 construction, sample selection, monitoring, and weighting for survey studies.

 \* Worked with government, corporate, and academic clients individually and

 as part of a multidisciplinary team.

 Primary Analytic Tools: SAS and Excel.

Peer-Reviewed Journal Articles

Staab, J.M., O’Connell T.M. and Gomez S.M. (2010). “[Enhancing metabolomic data analysis with Progressive Consensus Alignment of NMR Spectra (PCANS)](http://www.biomedcentral.com/1471-2105/11/123)”. BMC Bioinformatics, **11:**123.

Victor, R.G., R.W. Haley, D.L. Willett, R.M. Peshock, P.C. Vaeth, D. Leonard, M. Basit, R.S. Cooper,

V.G. Iannacchione, W.A. Visscher, J.M. Staab, and H.H. Hobbs (2004). “[The Dallas Heart Study: A Population-Based Probability Sample for the Multidisciplinary Study of Ethnic Differences in Cardiovascular Health](http://www.ajconline.org/article/S0002-9149%2804%2900352-2/abstract?cc=y).” *American Journal of Cardiology,* 93:1473-1480.

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Iannacchione, V.G., J.M. Staab, and D.T. Redden (2003). “[Evaluating the Use of Residential Mailing Addresses in a Metropolitan Household Survey](http://poq.oxfordjournals.org/content/67/2/202.abstract).” *Public Opinion Quarterly*, Vol. 67, pp. 202-210.

Rounds-Bryant, J.L., and J. Staab (2001). “[Patient Characteristics and Treatment Outcomes for African American, Hispanic, and White Adolescents in DATOS-A](http://jar.sagepub.com/content/16/6/624.short).” *Journal of Adolescent Research*, Vol. 16, No. 6, pp. 624-641.

Presentations and Other Publications

Staab, J.M. “[Systematic approaches to integrate inconsistent, noisy high-throughput data to bolster subtle relationships obscured by standard analyses](http://pqdtopen.proquest.com/pqdtopen/doc/1315240534.html?FMT=ABS).” PhD Dissertation, The University of North Carolina at Chapel Hill, 2012.

Zhu, H., Zhang L., Staab J., Sedykh A., Tang H., Gomez S., Rusyn I., Tropsha A. “Incorporation of ToxCast in vitro assay data and relevant toxicity pathway information improves Quantitative Structure-Activity Relationship (QSAR) models of reproductive toxicity.” Poster from *Society of Toxicology 50th Annual Meeting & ToxExpo*, Washington, D.C. March 6-10, 2011.

Jennings, J.M., Staab J., Ellen J.M. “A Comparison of Sampling Strategies for Determination of Multiple Level Risk Factors for STIs.” Proceedings from *CDC STD Conference 2004*, Philadelphia, PA; March 7-11, 2004.

Staab, J.M., and V.G. Iannacchione. “[Evaluating the Use of Residential Mailing Lists in a National Household Survey](http://www.amstat.org/sections/SRMS/proceedings/y2003/Files/JSM2003-000471.pdf).” Proceedings of the *2003 Joint Statistical Meetings, Section on Survey Research Methods*, San Francisco, CA; August 3-7, 2003.

Specialized Courses and Training

Architecting on AWS, Global Knowledge, July 2014.

Architecting on AWS – Advanced Concepts, Global Knowledge, July 2014.

GeneGo Inc. Basic MetaCore Computer Training Program, GSK, June 2008.

Personal Software ProcessSM for Engineers, Carnegie Mellon Software Engineering Institute, Sept. 2001.

SQL Processing with the SAS System, SAS Institute, Sept. 2000.

SAS Macro Language, SAS Institute, Jan. 1997.

Short Course on the Analysis of Longitudinal Data, RTI, June 1996.

Honors, Awards, and Certifications

AWS Certified Solutions Architect – Associate Level, AWS-ASA-5917, 02/2015 – 02/2017.

Warren J. Mitofsky Innovators Award, American Association for Public Opinion Research, 2011.

UNC Predoctoral Training Program in Bioinformatics and Computational Biology Fellowship, 2005-2006.

**\*\*References supplied upon request.**