Timothy L. Tickle, Ph.D.

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Education:

Harvard School of Public Health (Department of Biostatistics) Boston, MA
Postdoctoral Fellow (Curtis Huttenhower Lab) September 2011-3

University of North Carolina at Charlotte Charlotte, NC
Doctor of Philosophy in Bioinformatics and Computational Biology May 2011
Bachelor of Science, Major: Computer Science (Cum laude) August 2004

Professional Interests:

Interested in both development and implementation of analysis infrastructure for large data sets. Experienced in applying high-dimensional and big data to complex diseases.

Experience:

Postdoctoral Fellow Fall 2011-Present
Harvard University (Department of Biostatistics, Curtis Huttenhower Lab) Boston, MA

- Responsible for the development and validation of methodology and software for translating high-dimensional metagenomics studies to human diseases.
- Assist in and lead clinical data analysis including remapping the Human Microbiome Project (comprised of several terabytes of complex data).
- Responsible for adhering to software development practices including versioning, regression/unit testing, lab coding standards, and code reviews.
- Provide documentation, establish a web presence, and support software users.
- Write scientific reports and create custom visualizations.
- Mentor students, lab members, and visiting scientists on analysis and tool use.

Research Assistant Fall 2007-2011
College of Computing and Informatics (UNC-Charlotte) Charlotte, NC

- Was responsible for all work associated with the ovarian exon tumor transcriptome study. Solely performed all wet-lab protocols and dry-lab analysis.
- Participated in training other team members and interns in various wet lab protocols.
- Performed associated analysis and developed software and database solutions.

Teaching Assistant Fall 2004-Fall 2007
College of Computing and Informatics (UNC-Charlotte) Charlotte, NC
ITCS 3050 (Intro to Bioinformatics), ITCS 6160 (Programming for Biologists), ITCS 2181(Computer Logic & Design), ITCS 3181/5141 (Computer Organization & Architecture).

- Taught classes on programming and class related software.
- Topics include bioinformatics algorithms and CAD-based circuitry design.
- Held lab sessions, office hours, and weekly programming tutoring sessions.

Application Developer Fall 2003-2004
The Vanguard Group Charlotte, NC

- Acted as and was given the full responsibility of a Netcentric Developer.
- Developed netcentric services (web applications) from design documents.
- Participated in code reviews, presentations, unit testing, performance testing, client acceptance testing and troubleshooting.
- Lead a focus group on the creation and maintenance of automated regression suites.
- Was solely responsible for migrating site emailing services to a new in-house service.
- Coordinated and tested web service environment settings with database administrators.

Honors, Awards, and Assistantships:

International Society for Computational Biology Travel Fellowship 2012-2013
GAANN Scholars Fellowship 2009-2011
TA of the year for the College of Computing and Informatics 2008

Professional Societies:

The International Society for Computational Biology 2010-Present
American Association of Cancer Researchers 2004-2007

Computer Skills:

Operating Systems: Windows (current), Mac OS (desktop and server), Linux (Ubuntu)
Programming and Scripting Related: JavaScript, C/C++/C#, Java (SE, EE), JDBC, Java 2D API, JSP, JUnit, XML, JSON, Python, NumPy, mlpy, matplotlib, PyUnit, PyCogent, Biopython, R
Bioinformatics Related: BLAST, TimeLogic products, OMP, Partek Genomics Suite, DataFate and other tools
Databases: Oracle, Postgres, SQL
Other Applications: Bitbucket / mercurial, Eclipse, Inkscape, LaTeX, bibTeX
Algorithms: Support Vector Machines (SVMs), Gradient Boosting, Mulitvariate Regression, K-mediods, Multiple Factor Analysis, Principle Components Analysis (PCA), Principle Coordinates Anlysis (PcoA), Nonmetric Multidimensional Scaling (NMDS), Heirarchical Clustering

Peer Reviewed Publications:

T. L. Tickle, N. Segata, L. Waldron, U. Weingart, and C. Huttenhower, "Two-stage microbial community experimental design," *ISME Journal*, 2013.

N. Segata, D. Boernigen, T. L. Tickle, X. C. Morgan, W. S. Garrett, and C. Huttenhower, "Computational metagenomics for microbial community studies," *Molecular Systems Biology*, vol. 9, 2013.

H. Sokol, T. Tickle, X. Morgan, D. Gevers, K. Devaney, D. Ward, J. Reyes, S. Shah, N. LeLeiko, S. Snapper, A. Bousvaros, J. Korzenik, B. Sands, R. Xavier, and C. Huttenhower, "Dysfunction of the intestinal microbiome in inflammatory bowel disease and treatment," *Genome Biology*, vol. 13, no. R79, 2012.

T. L. Tickle, *Data Mining the Serous Ovarian Tumor Transcriptome*. PhD thesis, University of North Carolina at Charlotte, 2011.

Z. Mostafavi, T. Tickle, J. Zhang, K. Bennett, J. Vachris, M. Spencer, M. T. Mostafavi, and D. Tait, "Correlation analysis of hox, erbb and igfbp family gene expression in ovarian cancer," *Cancer Investigation*, vol. 26, pp. 990–998, 2008.

A. Fodor, T. Tickle, and C. Richardson, "Towards the uniform distribution of null p values on affymetrix microarrays," *Genome Biology*, vol. 8, no. 5, 2007.