TYLER FORDING

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EDUCATION

M.S. University of Oregon, Biology, Bioinformatics and Genomics 2016-2017
B.S. University of Oregon, Anthropology, Biology Minor 2013-2016

TECHNICAL SKILLS AND KNOWLEDGE

Python	Data Modeling	Cloud/Remote Computing
R	Data Profiling/Mining	Scientific Communication
Shell Scripting	Statistical Modeling	Data Visualization
SQL	Comparative Analysis	Adobe Illustrator
Git/Github	Biostatistics	Experimental & Survey Design

LEARNING/GROWING SKILLS

C#	Machine Learning	Java

WORK EXPERIENCE

Baumann Laboratory: Jan 2017 – Present, Kansas City, MO
Bioinformatician (Stowers Institute for Medical Research)

- Wrote custom python scripts and packages to analyze a variety of complex data types which resulted from evolution experiments in parthenogenetic lizards, surveyed that data both diagnostically and visually, and presented resulting data for publication and to colleagues.
- Lead a team tasked with restructuring and updating a relational database to a modern active-active distributed Cassandra database as well as hiring a developer to build a web interface.
- Conducted genome annotation by implementing hidden Markov model gene prediction algorithms, transcriptome assembly using software that clusters data and constructs Brujin graphs to model distance between clusters, and benchmarking for modern assemblies using diagnostic comparisons.
- Communicated complex computational and statistical concepts to non-analytically minded members of the institute through data driven presentations and Python and R derived graphs, figures, and schematics.
- Designed, managed, surveyed, and analyzed billions of genetic sequences to determine the quantity of genetic contribution from parents in a hybrid novel reproductive system.

Bioinformatics and Genomics Master's Program: Summer 2016 – Dec 2016, Eugene, OR
Graduate Researcher (University of Oregon)

- Worked as a member of an outside analysis team for an organization researching persistent organic pollutants (POPs), in the Alaskan Blackfish and the effects of POPs in freshwater rivers and streams.
- Created and used programs to algorithmically clean and filter massive genetic sequence datasets.
- Assembled resources for use in our research as well as in the organization's future work, benchmarked the resulting products using comparative evaluations using evolutionarily-informed expectations.
- Conducted differential gene expression analysis on normalized gene count data, using Pearson correlation to measure the linear relationship between controls and experimentally treated samples, then used hierarchical clustering to determine how the different samples clustered using both the associated Person correlation coefficient and the Euclidean distance.

Snodgrass Laboratory: Fall 2015 – Summer 2016, Eugene, OR
Undergraduate Researcher (University of Oregon)

- Performed enzyme-linked immunosorbent assays (ELISA) for C-reactive protein (CRP), and conducted an analysis of variance (ANOVA) on biomarker data as a member of the World Health Organization's Study on global AGEing and adult health (SAGE) methods validation team.
- Presented results that indicated significant variability in data extracted from samples kept under subtlety different storage conditions to experts in the field via poster presentations at national and regional biomedical conferences.
- Created standardized methods and helped optimize protocols for the collection and use of dried blood spots in field-based, population-level, research in a longitudinal experiment aimed at elucidating contributing factors to human aging.

Sterner-Ting Laboratory: Fall 2014 – Summer 2016, Eugene, OR
Undergraduate Researcher (University of Oregon)

- Designed primers and conducted wet lab experiments in preparation for sequencing and preliminary analysis with the intent of determining host specificity and evolutionary history of *Trichuris sp.* – a parasite known to infect humans and non-human primates.

United States Army: Fall 2008 – Fall 2012, Vilseck, Germany
Fire Direction and Control Chief (11C20)

- Squad Leader of an outside continental United States based Mortar Platoon in support of the Squadron as an element of a Stryker Brigade Combat Team.
- Controlled direction and fire of mortar systems in both practice range and combat environments.
- Charged with the welfare, morale, discipline, training, and professional development of four Soldiers.
- Responsible for the employment and maintenance of the Stryker RMS6-L Mortar System, and the accountability and maintenance of $2,000,000 worth of mission essential equipment.

PUBLICATIONS

Fording, T.E., Eick, E., Leibert, M., Kowal, P.R., Sterner, K.N., Snodgrass, J.J. (2015) Methodological Considerations for the use of Dried Blood Spot Samples in Population-Based Research. *In preparation.*

Eick, E.N., Urlacher, S., **Fording, T.E.**, Kowal, P.R., Sugiyama. L., Snodgrass, J.J. What a drop can really do: methodological challenges of integrating dried blood spot samples into human biology research. *Conference Paper.*

RESEARCH PRESENTATIONS

Fording, T.E., Eick, E., Leibert, M., Kowal, P.R., Snodgrass, J.J., Sterner, K.N. (2015) "Methodological Considerations for the use of Dried Blood Spot Samples in Population-Based Research." **12th Annual Western Regional International Health Conference**, Eugene, OR, 2015.

Fording, T.E., Eick, E., Leibert, M., Kowal, P.R., Snodgrass, J.J., Sterner, K.N. "Methodological Considerations for the use of Dried Blood Spot Samples in Population-Based Research." **84th Annual American Association of Physical Anthropologists** in St Louis, MO, 2015.

LEADERSHIP AND HONORS

President: University of Oregon Climbing Team (2014-2015)
Vice President: University of Oregon Anthropology Club (2014-2015)
Secretary: University of Oregon Anthropology Club (2013-2015)
2014: University of Oregon Anthropology Dept. Undergraduate Research Award ($500)
2015: American Association of Physical Anthropologists Undergraduate Travel Award ($450)