JULIAN A. STANLEY

julianst@mit.edu   www.julianstanley.com   phone: 858.837.0221

EDUCATION

Massachusetts Institute of Technology   Cambridge, MA
PhD, Biology   2020-Present

Northeastern University   Boston, MA
MS, Bioinformatics   2020

Northeastern University   Boston, MA
BS, Biology with Honors Distinction, *summa cum laude*   2019
Thesis: *Sensitivity analysis of two-state ratiometric biosensors*

RESEARCH EXPERIENCE

Harvard Medical School, Boston, MA   July 2019-May 2020
Visiting Postgraduate Research Fellow, Department of Systems Biology
Advisor: Dr. Pamela Silver
Topic: Designing intrinsically disordered proteins inspired by tardigrades to induce stasis in human cells.
Skills: Predicting sites of protein carbonylation, high-throughput 3D modeling of human proteins, culturing and preparing samples of *H. dujardini* tardigrades for quantitative proteomics.

Northeastern University, Boston, MA
Undergraduate Research Associate   2015-2019
Advisor: Dr. Javier Apfeld
Topic: Temporospatial organization of redox potential and genetic pathways controlling lifespan and stress tolerance in C. elegans.
Skills: Automated genetic screens of stress and aging in C. elegans, ImageJ and MATLAB image analysis, derivations and sensitivity analysis implemented as an R package and web application.

Harvard Medical School, Boston, MA
Research Intern, Department of Systems Biology   Summer 2018
Advisor: Dr. Jeremy Gunawardena
Topic: Identifying novel subtypes of endometrial cancers via analysis of clinical genomic data.
Skills: Genomic segmentation and unsupervised clustering algorithms implemented in Python, R, and MATLAB.

Cygnal Therapeutics, Cambridge, MA
Research Associate, Immunology and Bioinformatics   2017-2018
Advisor: Dr. Chengyi Shu
Topic: Identifying immune modulators by investigating crosstalk between innate immunity and the peripheral nervous system.
Skills: Human primary cell and cell line culture, suspension and adherent. Processing through flow cytometry, ELISA, qPCR, and sample preparation for RNA-seq. Analyzing public and in-house gene expression data.

FELLOWSHIPS, SCHOLARSHIPS, & GRANTS

Northeastern University Honors Interdisciplinary Thesis Grant	2019
Northeastern University Honors Travel Grant	2017, 2019
Northeastern University Office of Research and Fellowships Travel Grant	2017, 2019
Scholars Independent Research Fellowship	2016, 2017, 2019
Northeastern University Honors Research Assistantship	2016, 2017

PUBLICATIONS & PREPRINTS

1. **Stanley, J**., et al. (2020) The SensorOverlord predicts the accuracy of measurements with genetically-encoded biosensors. *In review at BMC Biology.*

2. Schiffer, J., et al., including **Stanley, J**. (2020) C. elegans processes sensory information to choose between freeloading and self-defense strategies. *eLife.*

3. Chang, R., Stanley, J. et al. (2020) Unraveling Oxidative Stress Resistance: Molecular Properties Govern Proteome Vulnerability. *In review at EMBO.*

4. Parra, J., **Stanley, J**., et al. (2019) Crafting A More Environmentally Benign Extraction and Analysis of Pharmaceutical Precursors from a Medicinal Plant: A Student-Led Innovation. *chemRxiv.*

PATENT APPLICATIONS

3. Kahvejian, A., et al., including **Stanley, J.** Methods and compositions for treating cancer using chrna6 inhibitors. U.S. Application No. 62/624,260. Filed 2019-01-31.

2. Kahvejian, A., et al., including **Stanley, J.** Methods and compositions for treating inflammatory or autoimmune diseases or conditions using chrna6 activators. U.S. Application No. 62/624,269. Filed 2019-01-31.

1. Kahvejian, A., et al., including **Stanley, J.** Methods and compositions for treating inflammatory or autoimmune diseases or conditions using calcitonin receptor activators. U.S. Application No. 16/140,224. Filed 2018-09-24.

TALKS, ABSTRACTS, & POSTERS

5. **Stanley, J**. and Apfeld, J. (2019) What can your biosensor measure accurately? **Poster and Invited Workshop Talk**. 22nd International *C. elegans* Conference, Los Angeles, CA.

4. Schiffer, J., Heath, W., **Stanley, J**., et al. (2017) How do worms determine their readiness to cope with environmental stress**? Abstract and Poster**. 21st International *C. elegans* Conference, Los Angeles, CA.

3. **Stanley, J**., Vogelaar, A., and Apfeld, J. (2017) How do genetic interactions regulate aging in *C. elegans*? **Poster**. Research, Innovation, Scholarship, and Entrepreneurship Conference, Boston, MA.

2. Parra, J., Webb, C., Foster, S., **Stanley, J**., et al. (2016) Greener extraction and analysis of medicinal plant compounds: A teaching module for undergraduates. Abstracts of the Papers of the American Chemical Society 252.

1. **Stanley, J**. and Apfeld, J. (2016) How do transcription factors regulate aging in *C. elegans*? **Poster**. American Society of Biochemistry and Molecular Biology Undergraduate Conference, Boston, MA.

TEACHING EXPERIENCE

Bioinformatics Computational Methods 1 (BINF6308)   Fall 2019-Spring 2020
Bioinformatics Program, College of Science   Northeastern University

This graduate level course introduces fundamental concepts in genome and transcriptome assembly, sequence alignment, and biological databases. I wrote and delivered weekly lectures, graded assignments, and participated in the review and improvement of course material.

Techniques in Biology (BIOL2309, now Biology Project Lab)   Summer 2016
Department of Biology, College of Science   Northeastern University

This undergraduate, project-based course requires students to design and execute literature-driven experiments on *C. elegans* and/or *B. thuringiensis*. I assisted in advising student projects and preparing laboratory modules.

Laboratory for Genetics and Molecular Biology (BIOL2302)   Fall 2016
Department of Biology, College of Science   Northeastern University

This undergraduate laboratory course requires students to perform a series of literature reviews and computational analysis related to a disease with a known genetic component. I wrote new disease modules on Cockayne Syndrome and Hemophilia A., with accompanying instructions, problem sets, and solutions.

Laboratory for General Chemistry 1 (CHEM 1217)   Spring 2016
Department of Biology, College of Science   Northeastern University

This cutting-edge undergraduate laboratory course gives students background on chemistry research being conducted at Northeastern and requires them to conduct small-scale projects related to that research. I helped design and test a project module involving the extraction of vincristine from plant leaves using greener solvents and supercritical fluid chromatography, based on the research of Drs. Carolyn Lee-Parsons and Erin Cram.

OUTREACH & EXTRACURRICULAR LEADERSHIP

Leadership member (President, Vice President, Media Chair), Northeastern University Biochemistry Club   2016-2019
We invited local researchers to weekly meetings, organized diversity and volunteering events, and three times applied for and hosted the Northeast-regional undergraduate conference of The American Society of Biochemistry and Molecular Biology.

Senior Health Educator, Peer Health Exchange   2015-2017
We taught, independently and in pairs, 30-45-minute classes about physical and emotional health to high school freshmen in Boston area public schools. We participated in multiple courses and weekly workshops about education, diversity, and inclusion, led by local experts and certified health educators.

TECHNICAL SKILLS

- Scripting in Python, Perl, R, and MATLAB
- Bash scripting, Unix command line environment and SLURM, and git version control
- Data presentation through R markdown, Jupyter notebooks, pandas, ggplot, plotly, and shiny
- Design patterns and object-oriented programming in Python and Java; familiar with C++
- Analysis of high-throughput sequencing and microarray data