

1 Callie Federer | Curriculum Vitae

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<https://github.com/cfederer>

Education

Computational Bioscience PhD Student – University of Colorado Anschutz Medical Campus, Aurora, CO Aug 2015 - present

GPA: 3.88

Working under Joel Zylberberg - Computational Neuroscience

Bachelor of Science, Computer Science – Truman State University, Kirksville, MO , *Cum Laude* Aug 2011 - May 2015

Minor in Biology

GPA: 3.60, Computer Science GPA: 3.75

Publications

Federer Callie, Yoo Minjae, and Tan Aik Choon. *ASSAY and Drug Development Technologies.* December 2016, 14(10): 557-566.

Honors

NSF Graduate Research Fellowship 2017-2020

Graduated Cum Laude, Truman State University May 2015

Combined Ability Scholarship, Truman State University 2011-2015

President's Honorary Scholarship, Truman State University 2011-2015

Provost & Vice President for Academic Affairs List, Truman State University 2012

Research Experience

A Self Organizing Memory Network, University of Colorado Mar 2016 - *current*

I identified a set of synaptic plasticity rules that let neural networks self-organize to perform working memory tasks, and tested these in computer simulations.

Big Data Mining and Adverse Event Pattern Analysis in Clinical Drug Trials, University of Colorado, published Jan - May 2016

I extracted information from ClinicalTrials.gov, a source of clinical studies, to assist in drug adverse event knowledge and structured it into a database for data mining and pattern analysis.

Identifying Molecular Mechanisms Associated with Chromosome 21 Amplifications, University of Colorado Jan - Mar 2016

In order to better understand the unique disease spectrum of Down Syndrome, I used publicly available data from The Cancer Genome Atlas to identify important genes, pathways and mechanisms associated with chromosome 21 amplification.

Parallel Programming Research, Truman State University Spring 2015

In order to advance the parallel programming class at Truman State University, a cohort of four students including myself under the guidance of professor Bob Matthews investigated the use of a parallel library in C++ called Boost.

Informatics Research Assistant, The Genome Institute, Washington University, St. Louis, MO May - Aug 2014

I created a tool using the Picard Bioinformatics library in Java and Samtools to phase variants, both single nucleotide variants (SNVs) and indels (insertions and deletions).

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Presentations

Junior Scientist Workshop on Machine Learning and Computer Vision Research Talk, Janelia Research Campus	Oct 2016
Junior Scientist Workshop on Machine Learning and Computer Vision TensorFlow Tutorial, Janelia Research Campus	Oct 2016
Big Data Mining and Adverse Event Pattern Analysis in Clinical Drug Trials, University of Colorado	May 2016
A Self Tuning Memory Network, University of Colorado	May 2016
Identifying Molecular Mechanisms Associated with Chromosome 21 Amplifications, University of Colorado	Mar 2016
Grant Writing Presentation: Empirical determination of biases in PCR-based 16s characterization, University of Colorado	Dec 2015
Research Day Conference: Phasing Variants, Truman State University	May 2015
Specialty Integration Internship Wrap-Up Presentation, Express Scripts	May 2013
Reliability Internship Wrap-Up Presentation, Express Scripts	May 2012

Professional Experience

Intern in IT-Specialty Integration – Express Scripts, St. Louis, MO May - Aug 2013

Express scripts is the largest Pharmacy Benefits Management company in the U.S. I worked on the integration team during their merger with Medco. I was responsible for project update auditing and compliance ran a weekly change request approval meeting, performed milestone and financial alignment as well as data analysis and reporting.

Intern in IT - Reliability – Express Scripts, St. Louis, MO May - Aug 2012

I worked in the IT infrastructure area with analysis of system outages and reliability. I Created the daily IT Metrics report, calculated outage impact minutes, performed root cause analysis follow-up and organized and responded to problem tickets.

Activities

Historian and Webmaster of Women in STEM Club, University of Colorado (2016-current)

I am creating the first website for the organization to share ideas on upcoming and past events, contact information, links to resources as well as contact information. I also manage documents from events and am responsible for archiving and maintaining the information.

Boys and Girls Club STEM Speaker (2016 - current)

I present on STEM opportunities to students across metro Denver that go to the Boys and Girls Club. We discuss what level and type of education is required in order to achieve their goals and play games such as 'Choose Your Own Adventure' career style.