Carolyn Brewster

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EDUCATION

December 2019 (expected)	**M.S., Bioinformatics & Genomics Program**	*University of Oregon, Eugene, OR*
December 2017	**B.S., Biology/Math & Comp. Sci. (dual major)**	*University of Oregon, Eugene, OR*
May 2010	**A.S., Emergency Medical Services**	*Midland College, Midland, TX*

SKILLS

Wet Lab: DNA (isolation, primer design, PCR, gels, sequencing library preparation)
RNA (isolation, Northern blots, radio-labeled probing, ribosome profiling)
Protein (isolation, Western blots, antibody probing, antigen design and production, protein purification)

Programming: CSS, XHTML, PHP, Python, SQL, Javascript, Java, C, SML/NJ, Haskell, Unix, R

Data Analysis: database design/implementation, data processing automation, machine learning, DNA/RNA sequence QA and analysis, data visualization

RESEARCH 2018-Present

Deep learning for visual tumor detection and demography-based predictions
Omics Data Automation/University of Oregon Bioinformatics & Genomics
Two-pronged approach to accelerating cancer care. Building and training a deep convolutional neural network to identify tumor regions from slide images to facilitate diagnosis. Building a comprehensive relational database of more than 1.5 million medical records to provide a framework for predicting patient outcomes based on demographics, diagnosis, and treatment data from over 5,000 OHSU cancer patients. Repositories at github.com/0x644BE25.

PUBLICATIONS 2016-2018

Light regulation of photosynthesis (Barkan Lab)
Institute of Molecular Biology, University of Oregon
Researched light regulation of photosynthesis in maize, *Arabidopsis*, and tobacco. Skills employed include isolation and analysis of DNA, RNA, proteins, and ribosome footprints, recombinant protein expression, and start-to-finish antibody development. Manuscript "The Arabidopsis pentatricopeptide repeat protein LPE1 and its maize ortholog are required for translation of the chloroplast psbJ RNA" submitted to *The Plant Journal* (2018).

PROFESSIONAL 2011-2013

Designer, Production Artist
Eugene Magazine
Created all in-house ad builds for *Eugene Magazine* and *Eugene Weddings*, as well as all promotional and marketing materials. Designed, laid out, and created print files for the entirety of both *Eugene Magazine* and *Eugene Weddings*. Designed the website and was responsible for coordinating online content.

AWARDS 2017

Peter O'Day Fellowship: Investigating light-regulated translation of psbA: designer pentatrichopeptide repeat proteins
Merit-based fellowship to support work with PhD. Pioneered the use of "designer" PPR proteins to bind to target RNA sequences *in vivo*, enabling isolation of specific RNA transcripts from a more biologically relevant context than was previously available.