MattRalston

blend of bioinformatics and biochemistry

contact

Matt Ralston
15 Innovation Way
Newark, DE 19717

Phone: 302.547.2437
Email: mrals@udel.edu
matthewralston.github.io
LinkedIn:matthewralston

bioinformatics

Bowtie, Tophat, BWA
Blast, Blat, Clustal
Cufflinks, Trinity, Velvet
Samtools, Picard
Bedtools, DESeq
MACS, Circos
SVMlight

programming

♥ Ruby/Rails, R
Bash, Python, Julia
Matlab, LaTeX, Elisp
MySQL, PostgreSQL
Javascript, CSS/HTML

laboratory

RNA-seq, qRT-PCR
Northern & Western
Spectrometry, HPLC
Immunofluorescence
Immunohistochemistry
Microscopy, HPLC
FACS, GC-MS
Mammalian cell culture
Anaerobic fermentation

summary

Combines an understanding of molecular mechanisms from a B.S. in Biochemistry with analytical strengths from an M.S. in Bioinformatics to produce and interpret 'omic datasets from Next Generation Sequencing (NGS) reflected by an academic research record. Enjoys research and development, from experimental design to analysis. Offers interdisciplinary expertise for teams of scientists, engineers, and analysts.

education

2012-2015	**M.S.** Bioinformatics and Computational Biology **3.97**	University of Delaware
	Thesis: *Assembling Improved Gene Annotations in Clostridium acetobutylicum with RNA Sequencing.*	
2008–2012	**B.S.** Biochemistry	University of Delaware
	Minor in Biochemical Engineering; Research Fellowship; Merit Scholarships	

experience

2012–Now DELAWARE BIOTECHNOLOGY INSTITUTE   Newark, DE
Graduate Research Assistant
Accomplishments:
- Developed and utilized laboratory and computational workflows for first strand-specific deep RNA-seq and transcriptome assembly in *Clostridia*.
- Built and launched a genome browser for research community.

2010-2012 Center for Translational Cancer Research   Newark, DE
Undergraduate Research Fellow
Investigated the BMP-signaling pathway in colon cancer cells and tissue.

leadership

2014 Bioinformatic Student Association   Newark, DE
President
Organized and led a UNIX and HPC student development workshop.

2013 IGERT Business, Ethics, and Communication Project   Newark, DE
Project Manager
Won a proposal for a revision to Fraunhoffer CMB's vaccine production process.

publications

- **"Complex and extensive post-transcriptional regulation revealed by integrative proteomic and transcriptomic analysis of metabolite stress response in *Clostridium acetobutylicum*",** contributing author. *BMC Genomics*. (2015). Accepted

- **"Overexpression of the *L. plantarum* peptidoglycan biosynthesis murA2 gene increases the tolerance of *E. coli* to alcohols and enhances ethanol production",** contributing author. *Applied Microbiology and Biotechnology* 98.19 (2014): 8399-8411.

- **"The *Clostridium* small RNome that responds to stress: the paradigm and importance of toxic metabolite stress in *C. acetobutylicum*",** contributing author. *BMC Genomics*. 14.1 (2013): 849.