

# Jon Belyeu | Bioinformatician

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## Education

### Brigham Young University

Provo, UT

BS **Bioinformatics**, Minor: **Computer Science**

Aug. 2009–April 2016

GRE 165 Quantitative (95th percentile), 170 Verbal (99th percentile). GPA 3.77/4.00

#### Selected Courses

- Bioinformatics, Computational Biology, Introduction to Bioinformatics
- Big Data, Algorithm Design & Analysis, Advanced Programming Concepts, Internet Programming, Discrete Structure, Data Structures
- Biology, Genetics, Molecular Biology, Evolutionary Biology
- Statistics for Engineers and Scientists, Organic Chemistry, Calculus

## Experience

### Research/Academic.....

#### Perry Ridge, Ph.D., Brigham Young University

Provo, UT

Research Assistant, Department of Biology

Sept. 2014–Apr. 2016

Computational research in genetics/genomics

#### Projects and Skills:

- Built phylogenetic trees from species sets
- Performed evolution-based analyses of synonymous codon bias
- Graphically analysed data with R
- Used supercomputer resources for large-scale analyses
- Developed SelecT (Selection Test):
  - Programmed SelecT in Java
  - Modified SelecT for use generalization
  - Analyzed genomes using SelecT

#### Richard Gill, Ph.D., Brigham Young University

Provo, UT

Research Assistant, Department of Biology

Apr. 2015–Apr. 2016

Ecological data pipeline development

#### Projects and Skills:

- Built data pipeline for automated or manual storage of ecological time-series data
- Managed Ubuntu server and MySQL database of time-series data
- Performed time-series data analyses and quality control

### Industry.....

#### Center for Teaching and Learning, Brigham Young University

Provo, UT

Web Developer

Apr. 2014–Sept. 2015

Developer for the BYU course management website

#### Projects and Skills:

- Back-end web development
- Some front-end web development
- Used MySQL database
- Led individual projects and team projects

## App Raptors

Web Developer

Full stack PHP and JavaScript Web development consultant

Selected Projects:

- missionarymemories.com
- alderandtweed.com
- naturalbiologics.com

Provo, UT

Apr. 2016–Jul. 2016

## Teaching

### Department of Computer Science, Brigham Young University

Teaching Assistant

Instruction in basic programming skills

Projects and Skills:

- Tutored in C++
- Gave group presentations on project specifications
- Graded assignments

Provo, UT

Jan. 2014–April 2014

### Department of Biology, Brigham Young University

Teaching Assistant

Instruction in basic principles of biology

Projects and Skills:

- Presented group review sessions
- Tutored individuals
- Graded assignments

Provo, UT

Aug. 2014–Dec. 2014

## Volunteer

### The Church of Jesus Christ of Latter-day Saints

Missionary

Barranquilla, Colombia

2010–2012

## Publications

### Under Review

Justin B. Miller, Ariel A. Hippen, **Jonathon R. Belyeu**, Michael F. Whiting, and Perry G. Ridge. Missing Something?: Codon Non-Usage as a Character in Phylogenetic Inference in Tetrapods. 2016.

### In Draft

Hayden Smith, M.T.W. Ebbert, **Jonathan Belyeu**, Brandon D. Pickett, Levi Morrison, John S.K. Kauwe, Perry G. Ridge. Selection Test: a powerful, high-resolution selection scanning tool to identify genomic selection signals using next-generation sequencing data. 2015.

### Posters

Artem Golotin, **Jonathan Belyeu**, Darian Ramage, Steven Magana-Zook, Douglas A. Dodge, Quinn Snell. Streaming Correlation-based Seismic Event Detector. April 2016.

**Jonathan Belyeu**, Artem Golotin, Ashlee Gerlach, Mark Ebbert, John Kauwe, Perry Ridge. Computationally locating selection signals in diploid genomes with next-generation sequencing data. December 2015.

### Invited Talk

Darian Ramage, Artem Golotin, **Jonathan Belyeu**. Streaming Correlation-based Seismic Event Detector. April 2016 @ Lawrence Livermore National Laboratory.

## Skills and Qualifications

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### Programming Languages.....

- Python & Biopython
- C/C++
- C#
- Java
- Bash/Shell
- R

### Web Technologies.....

- Javascript
- JQuery, NodeJS
- AngularJS, MustacheJS
- HTML5/CSS

### Typesetting Languages.....

- L<sup>A</sup>T<sub>E</sub>X

### Versioning Technologies.....

- Git
- Subversion

### Bioinformatics Skills.....

- Algorithm development
- Computational tool development
- Parallel processing
- Supercomputing
- Database development
- NCBI tools

### Data Science Technologies.....

- Hadoop MapReduce
- Apache Ignite
- Apache Kafka
- Weka

### Database Technologies.....

- MySQL
- SQLite
- MongoDB

## Languages

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**English:** Native

**Spanish:** Fluent

*2 years of full immersion*

## References

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**Perry G. Ridge**, Research Mentor

Assistant Professor, Biology

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