

# Eric Bridgeford

Biomedical Engineer and Computer Scientist

## contact

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## languages

English, basic French

## programming

Python, R, UNIX   
Java, Matlab, SQL  
C++, C  
Javascript, CSS & HTML

## tools

Django, FSL, Git  
Docker, EC2, S3  
Android

## education

- 2013 – 2017 **B.S.** in Biomedical Engineering and Computer Science  
minor in Applied Mathematics and Statistics Johns Hopkins University, Baltimore, MD  
Thesis work supervised by Dr. Joshua T. Vogelstein on project entitled:  
Functional Neurodata Graphs Service: a One-Click Pipeline for the Reliable Esti-  
mation of Functional Connectomes.
- 2009 – 2013 **High School** La Salle College High School Wyndmoor, PA

## experience

### Academic Experience

#### Positions

- 08/14 – now **Center for Imaging Science, Johns Hopkins University** Baltimore, MD  
*Undergraduate Researcher* under Joshua T. Vogelstein  
Design and implementation of an open-source fMRI pipeline for robust one-click  
analysis. Development of extensive quality multi-modal MR quality control suite.  
Statistical work focusing on making inferences from fMRI connectomes.
- 05/14 – 02/16 **Complex Systems Group, University of Pennsylvania** Philadelphia, PA  
*Undergraduate Researcher* under Danielle S. Bassett  
Assisted in the development of novel network theory statistics to compare net-  
work performance. Publicly available code for assessing small world propensity  
in weighted, real world networks, a statistic that improves the robustness and  
scaling of measures of small worldness.

### Organizations and Volunteer Work

- 03/08 – now **Special Olympics Male Gymnastics Coach, Hatboro YMCA** Hatboro, PA  
Volunteer work mentoring & coaching special needs gymnasts. Head male gym-  
nastics coach from 03/11 – 05/14.
- 04/14 – now **Sigma Chi Fraternity, KY Chapter** Baltimore, MD  
Chapter Risk manager from 09/14 – 05/15.

## awards

- 09/14 – now **Martha A. Lavery Scholar** Johns Hopkins University, Baltimore, MD  
Grant awarded for merit achievement.
- 05/15 – now **Dean's List** Johns Hopkins University, Baltimore, MD  
Awarded for maintaining a GPA above a 3.5/4.0.
- 09/15 **Everyblock API Award** University of Pennsylvania Pennapps, Philadelphia, PA  
Awarded for the best application making use of the Everyblock API for app Stroll-  
Safe.
- 05/13 **National Merit Finalist** La Salle College High School, Wyndmoor, PA

## interests

**professional:** pipeling engineering, cloud computing, data analysis, neuroscience, reproducibility, timeseries analysis, machine learning.

**personal:** guitar, cooking, hiking, biking, scale model warships, rock climbing.

## publications

### articles in peer-reviewed journals

1. [Small-World Propensity in Weighted, Real-World NetWorks](#)

Sarah F. Muldoon, Eric W. Bridgeford, Danielle S Bassett

*Scientific Reports* (Feb. 2016).

### conference posters

1. [MR Graph with Rich attribUTES DataBase \(Mr. GruteDB\)](#)

Gregory Kiar, William R Gray Roncal, Disa Mhembere, Eric Bridgeford, Shanshi Wang, Carey Priebe, Randal Burns, Joshua T Vogelstein

*Organization for Human Brain Mapping (OHBM)* (June 2016).

2. [Quantifying Small Worldness in Weighted Brain NetWorks: Small-World Propensity](#)

Sarah Muldoon, Eric W Bridgeford, Danielle Bassett

*Society for Neuroscience (SfN)* (Oct. 2015).

3. [The Open Connectome Project & NeuroData: Enabling Data Driven Neuroscience at Scale](#)

Joshua T. Vogelstein, et al.

*Society for Neuroscience (SfN)* (Oct. 2015).

4. [Community Connectomics via Cloud Computing Utilizing m2g - a Reference Pipeline](#)

Gregory Kiar, et al.

*Organization for Human Brain Mapping (OHBM)* (2015).

5. [MRImages to Graphs: A One Click Community Pipeline for MR Connectome Analysis](#)

Eric Bridgeford, Gregory Kiar, Will Gray Roncal, Disa Mehembere, Randal Burns, Joshua T Vogelstein

*Institute for Computational Medicine Poster Session* (2015).

### works in progress

1. [Optimal Decisions for Discovery Science via Maximizing Discriminability: Applications in Neuroimaging](#)

Shanshi Wang, Zhi Yang, Xi-Nian Zuo, Michael Milham, Cameron Craddock, Gregory Kiar, William Gray Roncal, Eric Bridgeford, Carey E Priebe, Joshua T Vogelstein

*In Preparation* (2016).

2. [NeuroData: Enabling Neuroscience for Everyone](#)

Joshua T. Vogelstein, et al.

*In Preparation* (2016).

3. MRImages to Graphs

Gregory Kiar, et al.

*Work in Progress* (2016).

4. [Dimensionality Reduction in the Acquisition of fMRI Brain Graphs and its Impact on Discriminability](#)

Eric W Bridgeford, et al.

*Work in Progress* (2016).

5. [Functional Neurodata Graph Service: a One-Click Pipeline for Functional Connectome Estimation \(FNGS\)](#)

Eric W Bridgeford, et al.

*Computer Science Honors Thesis* (2016).

6. Dynamic Understanding of the Working Memory Paradigm

Eric W Bridgeford, et al.

*Biomedical Engineering Undergraduate Design Project* (2016).

## **talks**

1. [“From the Functional Brain to the Connectome: An Introduction to Neuroscience Research in the 21st Century”](#). 2016.