

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 Estimation 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 network 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 gymnastics 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, Shan gsi 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 Mehembre, 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](#)

Shangsi 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.