Scott R. Cole
scott.cole0@gmail.com
http://sxcole.com

Education

Ph.D. Student in Neurosciences, Computational Neuroscience Specialization 2014 - Present
University of California, San Diego La Jolla, CA
GPA: 3.9/4.0

B.S. in Bioengineering, Electrical Engineering Specialization, Mathematics minor 2010 - 2014
Clemson University Clemson, SC
GPA: 4.0/4.0

Publications

1. **Cole SR**, Peterson EJ, van der Meij R, de Hemptinne C, Starr P, Voytek B. Nonsinusoidal oscillations underlie pathological phase-amplitude coupling in the motor cortex in Parkinson's disease. *In review.* Preprint: http://biorxiv.org/content/early/2016/04/19/049304
2. Mohammed FS, **Cole SR**, Kitchens CL (2013). Synthesis and Enhanced Colloidal Stability of Cationic Gold Nanoparticles using Polyethyleneimine and Carbon Dioxide. *ACS Sustainable Chem. Eng.*, *1*(7), 826-832.

Presentations

1. **Cole SR**, Peterson EJ, de Hemptinne C, Starr P, Voytek B. Deep brain stimulation changes the shape of motor cortical beta oscillations in Parkinson's Disease. *Cognitive Neural Systems (CNS) Seminar Series*, La Jolla, CA, USA. 2015 Sep.
2. **Cole SR**, Peterson EJ, de Hemptinne C, Starr P, Voytek B. Deep brain stimulation changes the shape of motor cortical beta oscillations. *Society for Neuroscience (SfN) Annual meeting*, Chicago, IL, USA. 2015 Oct. Poster.
3. Noto T, **Cole SR**, Gao R, Peterson EJ, Voytek B. Neural network properties can be inferred from electrophysiological power spectral geometry. *Society for Neuroscience (SfN) Annual meeting*, Chicago, IL, USA. 2015 Oct. Poster.
4. Thielk M, **Cole SR**, Sharpee T, Gentner TQ. Neural representation of morphed motifs in European Starling NCM. *MURI Winter School: Dynamics of multifunction brain networks*, San Diego, CA, USA. 2015 Jan. Poster.
5. **Cole SR**, Voytek B. Effect of noise on a pulse-coupled neural network with phase-amplitude coupling. *Center for Science of Information Summer School*, San Diego, CA, USA. 2014 Aug. Poster.
6. **Cole SR**, Mason JI, Lestrange SJ, Alvarez TL. Effects of stereoscopic vision training on the vergence system of binocularly normal subjects. *Biomedical Engineering Society Annual Meeting*, Seattle, CA, USA. 2013 Sep. Poster.
7. **Cole SR**, Dean D, Kitchens CL. Synthesis and cytotoxicity of one step synthesis cationic gold nanoparticles. *Biomedical Engineering Society Annual Meeting*, Seattle, CA, USA. 2013 Sep. Poster.
8. **Cole SR**, Steele TWJ. Biodegradable elastomers for targeted drug delivery applications. *Society for Biomaterials symposium*, Clemson, SC, USA. 2012 Sep. Podium.
9. **Cole SR**, Mohammed FS, Kitchens CL. Synthesis, characterization, and the effect of carbon dioxide on polytheleneimine-capped gold nanoparticles. *International Conference of Young Researchers on Advanced Materials*, Singapore. 2012 Jul. Poster.
10. **Cole SR**, Mohammed FS, Kitchens CL. Synthesis of gold and silver nanoparticles functionalized with polyethyleneimine. *Society for Biomaterials symposium*, Clemson, SC, USA. 2011 Oct. Poster.

Open-Access Software

Cole SR & Peterson EJ. (2015). Pacpy: A library for calculating phase-amplitude coupling. v1.0.3. *Python*. https://pypi.python.org/pypi/pacpy/

Cole SR. (2015). Pacmat: A library for calculating phase-amplitude coupling. *MATLAB*. https://github.com/voytekresearch/pacmat

Cole SR. (2015). CleanUtahLFP: Artifact rejection high density multi-electrode local field potential recordings. *MATLAB*. https://github.com/srcole/CleanUtahLFP

Scholarships & Grants

Conference travel grant - Neurosciences Education and Research Foundation, San Marcos, CA 2016
Graduate Research Fellowship - National Science Foundation 2014-2017
Barry M. Goldwater Scholarship 2013
Conference Travel Grant - Calhoun Honors College, Clemson University 2012, 2013
Educational Enrichment Travel Grant - Calhoun Honors College, Clemson University 2012

Honors & Awards

Faculty Scholarship Award - Clemson University 2014
Poly-Med Outstanding Senior Award - Clemson University Bioengineering Department 2014
Larry S. Bowman Outstanding Junior Award - Clemson University Bioengineering Department 2013
1st Place Undergraduate Oral Presentation - Society for Biomaterials Symposium, Clemson University 2012
S. W. Shalaby Outstanding Sophomore Award - Clemson University Bioengineering Department 2012
2nd Place, National Accounting competition - Future Business Leaders of America 2009

Academic Activities

Teaching

Filtering neural signals and processing oscillation amplitude, Lecturer, UCSD,
Fundamentals of statistics and computation for neuroscientists (Lecture, Materials) May 2016
Calculating phase and coherence in neural signals, Lecturer, UCSD,
Fundamentals of statistics and computation for neuroscientists (Lecture, Materials) May 2016
Neural signal processing, Teaching assistant, UCSD, COGS 160/260 (prof Eran Mukamel) Mar-Jun 2016
MATLAB crash course, neural decoding workshop, & neural oscillations special project,
Teaching assistant, UCSD, Neurosciences Graduate Program Bootcamp Sep 2015
Electrical Engineering & Mathematics tutor - Clemson University Academic Success Center 2012-2014

Mentoring

Katie McGreevey - incoming-freshman summer researcher, nanoparticle synthesis Jul-Aug 2011
Erin Cole (no relation) – undergraduate researcher, electrophysiology analysis May 2016-present

Peer review

eLife (1 article) 2015-present

Membership

Society for Neuroscience (SfN) 2014-present

Campus involvement

Neuroscience education outreach - UCSD Neurosciences Graduate Program 2014-present
Computational neuroscience committee - UCSD Neurosciences Graduate Program 2014-present
Graduate student panel - UCSD Asian Pacific American Medical Student Association Feb 2016
Research mixer - Collaboration for Neuroscience, UCSD Undergraduate organization May 2016
Undergraduate Clemson Bioengineering Society - President 2011-2014

Media coverage

“The quantified burrito” - Partially Derivative data science podcast (link) May 2016
“$40K made in currency market by tracking social media” - FOX Carolina (article, video) May 2012