

# SANGEETA NAIR

(805) 444-2420      [snair1@uab.edu](mailto:snair1@uab.edu)  
1719 6<sup>th</sup> Ave S., CIRC #312, Birmingham, AL 35233

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## **EDUCATION**

- Expected*      **Ph.D., Behavioral Neuroscience**  
2020      *University of Alabama, Birmingham* (Mentor: Jerzy P. Szaflarski, MD PhD)
- 2016      **M.A., Psychological Research in Behavioral and Cognitive Neuroscience**  
*San Diego State University* (Mentor: Ralph-Axel Müller, PhD)  
*Thesis: Links between local and long-distance connectivity in Autism Spectrum Disorder*
- 2012      **B.A., Intensive Psychology in Cognitive Science**  
*University of California, Santa Cruz* (Mentor: Jean E. Fox Tree, PhD)

## **FUNDING AND AWARDS**

- 2017      **Alabama Established Program to Stimulate Competitive Research**  
-      **(EPSCoR) Graduate Research Scholars Program (GRSP)** (with Jerzy  
2020      Szaflarski) [\$75,000] *Project: Combining MEG and fMRI to examine dynamic brain activity during verbal generation (encoding) task with high spatiotemporal resolution*
- 2016      UAB 3 Minute Thesis (3MT) Competition Semi-Finalist
- 2016      UAB Graduate Fellow in the College of Arts and Sciences [\$32,000]
- 2015      SDSU Center for Clinical Cognitive Neuroscience (CCN) Student Travel Award
- 2014      SDSU Outstanding Masters Student Award and Keynote Speaker
- 2013      SDSU Psychology Department Teaching Assistant Award
- 2013      SDSU Psychology Graduate Ambassador

## **RESEARCH INTERESTS**

Various neuroimaging methods (acquisition and analysis): functional MRI and functional connectivity MRI (fMRI, fcMRI) local functional connectivity (using regional homogeneity), EEG and MEG, and multimodal integration. Neurobiology of clinical disorders (neurodevelopmental disorders and epilepsy).

## **RESEARCH EXPERIENCE**

- 2017- present      **Epilepsy Research Center, Jerzy Szaflarski, Ph.D., *University of***

***Alabama, Birmingham***

- NSF AL EPSCoR GRSP Recipient (2017-2020)
- Data collection and analysis:
  - Siemens Magnetom Prisma 3.0T MRI
  - MEG at The Kirklin Clinic, UAB
- IRB protocol development
- Administered neuropsychological assessments
- Mentored undergraduate and graduate student through fMRI data analysis (2018)

2016- 2017     **Cognition, Brain and Autism Lab, Rajesh Kana, Ph.D., *University of Alabama, Birmingham***

- Developed standard preprocessing pipeline for ABIDE-II data
- Mentored undergraduate through fMRI data analysis
- Lab website

2013-2016     **Brain Development Imaging Lab, Ralph-Axel Müller, Ph.D. *San Diego State University***

- Data collection and analysis:
  - GE MR750 3.0T using Nova Medical 8- and 32-channel head coils
  - EGI Geodesic EEG System 400 MR, 128 channel system
- Administer semi-structured interview, Autism Diagnostic Observation Schedule (ADOS-2), and various neuropsychological assessments
- Editor: Generate biannual newsletters, training manuals, and field guides
- Lab website and wiki maintenance
- Train incoming graduate students
- Participant recruitment

2010-2012     **Spontaneous Communication Lab, Jean E. Fox Tree, Ph.D. *University of California, Santa Cruz***

- Trial design and stimulus construction
- Data collection and analysis, and computational trouble-shooting
- Primary project: *The Process of Auditory Distraction: Disrupted Attention and Impaired Recall in a Simulated Lecture Environment*

**PROFESSIONAL ACTIVITIES**

- 2019            **American Association for the Advancement of Science, Student Member**
- 2017-2019     **Neuroimaging Journal Club, Student Coordinator**  
Civitan International Research Center, University of Alabama at Birmingham
- 2017            **Graduate Student Government, Student Ambassador**  
University of Alabama at Birmingham
- 2014-2016     **Cognitive & Behavioral Neuroscience Brownbag, Senior Committee Member**  
Department of Psychology, San Diego State University
- 2013-2016     **Neuroimaging Journal Club**  
Department of Psychology, San Diego State University
- 2015            **Organization of Human Brain Mapping, Member**
- 2014-2015     **Society for Neuroscience, Member**

### **GUEST LECTURES**

- *Tools and Techniques: Ways to study human brain structure + function* (2018 + 2019, June). Summer Program in Neuroscience (SPIN), University of Alabama at Birmingham.
- *Looking at the Brain Noninvasively: A brief introduction to magnetic resonance imaging* (2016, March). University of Alabama at Birmingham Graduate School.
- *Autism: How what we know shapes what we don't* (2016, October). Talk given at the 2<sup>nd</sup> Annual 3 Minute Thesis (3MT) Competition. Birmingham, AL.
- *Physiological Approaches to Personality* (2016, March). Department of Psychology, San Diego State University.
- *Visual Perception and Imagery in Autism Spectrum Disorder* (2016, March). Department of Psychology, San Diego State University.
- *Neurodevelopment and Autism Spectrum Disorder* (2014, May). Department of Psychology, San Diego State University.

### **PUBLIC OUTREACH / SERVICE**

- *WBHM* Junior Board Member (Sept 2019 – present)
- Volunteer at *Brain Awareness Week: Cow eye and sheep brain dissections* (2019, March). McWane Science Center. Birmingham, AL.
- Graduate mentor for *Summer Program in Neuroscience (SPIN)* (2018, June-August). University of Alabama at Birmingham.
- Graduate mentor for *EPSCoR's Research Experience for Undergraduates (REU) summer program* (2018, June-August). University of Alabama at Birmingham.

- Judge at *Annual John P. Ost Undergraduate Research Competition* (2018, April). University of Alabama at Birmingham.
- Volunteer at *Brain Awareness Week: Cow eye and sheep brain dissections, perception workshop* (2018, March). McWane Science Center. Birmingham, AL.
- Ambassador for *Live a Great Story* (2016 – present).
- Volunteer at *Brain Awareness Week: Perception workshop* (2017, March). McWane Science Center. Birmingham, AL.
- *Development and Autism Spectrum Disorder* (2016, May). [Talk given at the Pint of Science](#), La Jolla Brewing Company. San Diego, CA.

## **RELATED EXPERIENCE**

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|--------------|---|
| 2016-present | <b>The Center for the Integration of Research, Teaching, and Learning (CIRTL) Practitioner Certificate</b> , University of Alabama at Birmingham  |
| 2016-present | <b>Research Communications Certificate</b> , University of Alabama at Birmingham  |
| 2016-present | <b>Mentoring and Leadership Certificate</b> , University of Alabama at Birmingham   |
| 2013-2015    | <b>Graduate Teaching Assistant</b><br>San Diego State University <ul style="list-style-type: none"> <li>- Maya D'Eon, M.A., Personality Psychology, Spring 2015</li> <li>- Katherine Midgley, Ph.D., Cognitive Psychology, Fall 2014</li> <li>- Susan Brasser, Ph.D., Behavioral Neuroscience, Spring 2014</li> <li>- Katherine Turner, Ph.D., Cognitive Neuroscience, Fall 2013</li> </ul> |
| 2013-2016    | <b>MRI Operator</b><br>GE MR750 3.0T whole-body imaging system <ul style="list-style-type: none"> <li>- Trained to run anatomical, structural, and functional protocols on both 8- and 32- channel head coils</li> <li>- Including the Multi-echo Multi-slice (MEMS) and Human Connectome Project (HCP) protocols using the 32-channel head coil</li> </ul>                                 |
| 2014-2016    | <b>EEG Data acquisition and analysis</b><br>EGI Geodesic EEG System 400 MR, 128 channel system  |
| 2014-2016    | <b>ADOS-2 Administration</b> <ul style="list-style-type: none"> <li>- Clinically trained to administer and score ADOS-2 (Autism</li> </ul>  |

- Diagnostic Observation Schedule)
  - UCSD School of Medicine Continuing Medical Education ADOS-2 Clinical Training presented by the Autism Discovery Institute, Rady Children's Hospital, San Diego (2014); Christiana Corsello, Ph.D.
- 2013-  
2016
- Neuropsychology Test Administration**
- Wechsler Abbreviated Scale of Intelligence (WASI)
  - Clinical Evaluation of Language Fundamental (CELF)
  - Edinburgh Handedness Inventory
  - Beery-Buktenica Developmental Test of Visual-Motor Integration (Beery VMI)
- 2012-  
2013
- Behavior Interventionist**, Addison Behavioral Resources
- Applied Behavior Analysis (ABA) working with children ages 3-10 with various developmental disorders (ASD, ADHD)
- 2012
- Intern**, Pediatric Therapy Center
- Shadowed occupational, physical, and speech therapists
  - Facilitated independent and group sessions with children with various developmental disorders ages 3-12

### **CONFERENCES ATTENDED**

- EPSCoR Women in Neuroscience (WiN) Conference: Pray, MT (July 2019)
- Cognitive Neuroscience Society (CNS): San Francisco, CA (March 2019)
- UAB Cognitive Neuroscience Center (CNC) Retreat: Birmingham, AL (October, 2018)
- Alabama Advanced Imaging Consortium (AAIC): Delta, AL (July, 2018)
- American Academy of Neurology (AAN): Los Angeles, CA (April 2018)
- Cognitive Neuroscience Society (CNS): Boston, MA (March 2018)
- Alabama Advanced Imaging Consortium (AAIC): Delta, AL (July, 2017)
- International Meeting for Autism Research (IMFAR): San Francisco, CA (May 2017)
- UAB Cognitive Neuroscience Center (CNC) Retreat: Birmingham, AL (September, 2016)
- Society for Neuroscience (SFN): Chicago, IL (October 2015)
- Organization of Human Brain Mapping (OHBM): Honolulu, HI (June 2015)
- International Workshop on Brain Connectivity (WBC): San Diego, CA (June 2015)
- Society for Neuroscience (SFN): Washington D.C. (November 2014)
- International Meeting for Autism Research (IMFAR): Atlanta, GA (May 2014)
- TEDxSanDiego: San Diego, CA (December 2013)
- Society for Neuroscience (SFN): San Diego, CA (November 2013)

## **RELATED COURSEWORK**

- *VIS 755: Electronics for Biologists*; Dr. Timothy J. Gawne; University of Alabama at Birmingham
- *VIS 757: Hands-on fMRI*; Mark Bolding; University of Alabama at Birmingham
- *PSY 743: Methods in Neuroimaging*; Dr. Kristina Visscher; University of Alabama at Birmingham
- *PSY 767: Cognitive and Behavioral Neuroscience*; Dr. Ksenija Marinkovic; San Diego State University
- *SOMI 276C: Advanced Topics in Functional MRI*; Drs. Richard Buxton, Anna Devor, Eric Halgren, Rebecca Theilmann, Frank Haist; University of California, San Diego

## **PUBLICATIONS**

**Nair S**, Nenert RE, Allendorfer JB, Goodman AM, Vannest J, Mirman D and Szaflarski JP (2019) Sex, Age, and Handedness Modulate the Neural Correlates of Active Learning. *Front. Neurosci.* 13:961. doi: 10.3389/fnins.2019.00961

Gaston TE, **Nair S**, Fahey AM, Allendorfer JB, Martin RC, Beattie JF, Szaflarski JP. (2019). Verbal Memory Response and Neuroimaging Correlates of a Novel Cognitive Rehabilitation Program for Memory Problems in Epilepsy: A Pilot Study. *Restorative Neurology and Neuroscience*. doi: 10.3233/RNN-190919

Jao Keehn RJ, **Nair S**, Pueschel EB, Linke A, Fishman I, & Müller RA. (2018) Atypical local and distal patterns of occipito-frontal functional connectivity are related to symptom severity in autism. *Cerebral Cortex*. doi: 10.1093/cercor/bhy201

**Nair S**, Jao Keehn RJ, Berkebile MM, Maximo JO, Witkowska N, & Müller RA. (2018) Local resting state functional connectivity in autism: Site and cohort variability and the effect of eye status. *Brain Imaging Behav*, 12(1),168-179. doi: 10.1007/s11682-017-9678-y

## **CONFERENCE PRESENTATIONS**

**Nair S**, Nenert R, Allendorfer JB, Vannest J, Mirman D, Szaflarski J. (2019, March). *Sex, age, and handedness modulate the neural correlates of active learning*. Poster presented at the Cognitive Neuroscience Society (CNS). San Francisco, CA.

**Nair S**, Nenert R, Allendorfer JB, Vannest J, Szaflarski J. (2018, July). *Networks supporting self-generation and passive encoding during paired-associate learning identified by independent source separation*. Poster presented at the Alabama Advanced Imaging Consortium. Delta, AL.

Castillo S, **Nair S**, Szaflarski J. (2018, July). *Neural Correlates of Visual Episodic Encoding: an fMRI Analysis*. Poster presented at the AL EPSCoR NeuroNEM meeting. Ruston, LA.

Albritton B, **Nair S**, Pizarro D, Killen J, Pati S, Martin R, Gawne T, Szaflarski J, Mohamed I. (2018, December). *Neuromagnetic Dynamics of Working Memory in Temporal Lobe Epilepsy and in Healthy Controls*. Poster presented at the Annual Meeting of the American Epilepsy Society. New Orleans, LA.

**Nair S**, Allendorfer J, Nenert R, Martin A, Mirman D, Vannest J, Szaflarski JP. (2018, April). *Neural correlates of self-generation and verbal memory performance during paired-associate learning*. Poster presented at the American Academy of Neurology (AAN). Los Angeles, CA.

**Nair S**, Allendorfer J, Nenert R, Martin A, Mirman D, Vannest J, Szaflarski JP. (2018, March). *Neural correlates of self-generation and verbal memory performance during paired-associate learning*. Poster presented at the Cognitive Neuroscience Society (CNS). Boston, MA.

**Nair S**, Loomba N, Kana RK. (2017, April). *Altered patterns of local connectivity in autism measured by Regional Homogeneity*. Oral presentation given at the 16<sup>th</sup> Annual International Meeting for Autism Research (IMFAR). San Francisco, CA.

Loomba, N., **Nair, S.**, Kana, R. (2016, November) *Examining Local Brain Connectivity using Regional Homogeneity among Individuals with Autism*. Poster presented at the UAB Undergraduate Fall Expo Symposium. Birmingham, AL.

Fong, CH, Zhao, W, **Nair, S**, Berkebile, MM, Müller, RA. (2016, October). *Reduced network differentiation in children with autism spectrum disorder is associated with symptom severity*. Poster presented at the 46<sup>th</sup> Annual Meeting for the Society for Neuroscience. San Diego, CA.

Jahedi, A, Meeni, VK, Linke, A, **Nair, S**, Bailey, B, Chen, CP, Müller, RA. (2016, October). *Connectome wide brain-behavior association in autism*. Poster presented at the 46<sup>th</sup> Annual Meeting for the Society for Neuroscience. San Diego, CA.

**Nair, S**, Müller, RA. (2016, March). *Links between local and long-distance connectivity in Autism Spectrum Disorder*. Oral presentation given at the 9<sup>th</sup> Annual Student Research Symposium, San Diego State University. San Diego, CA.

**Nair, S.,** Berkebile, M.M., Chen, C.P., Maximo, J.O., Müller, R.-A. (2015, October). *Local resting state functional connectivity in autism: Multisite variability and effect of eye status.* Poster presented at the 45<sup>th</sup> Annual Meeting for the Society for Neuroscience. Chicago, IL.

Gao, Y., **Nair, S.,** Legenkaya, A., Punyamurthula, S., Fishman, I., Müller, R.-A. (2015, October). *Relationship between language network connectivity and language deficits in children with Autism Spectrum Disorder.* Poster presented at the 45<sup>th</sup> Annual Meeting for the Society for Neuroscience. Chicago, IL.

Zhao, W., Fishman, I., Legenkaya, A., **Nair, S.,** Sullivan, M., Gao, Y., Berkebile, M.M., Müller, R.-A. (2015, October). *Atypical intrinsic functional connectivity of FFA is associated with social communication deficit in ASD.* Poster presented at the 45<sup>th</sup> Annual Meeting for the Society for Neuroscience. Chicago, IL.

Berkebile, M.M., Nair, A., Khan, A.J., **Nair, S.,** Datko, M., Fishman, I., Müller, R.-A. (2015, October). *Links between thalamocortical and cerebrocerebellar intrinsic functional connectivity in autism.* Poster presented at the 45<sup>th</sup> Annual Meeting for the Society for Neuroscience. Chicago, IL.

**Nair, S.,** Maximo, J.O., Keown, C.L., Abbott, A., Fishman, I., & Müller, R.-A. (2015, June). *Links between atypical local and long-distance connectivity in autism.* Poster presented at the 21<sup>st</sup> Annual Meeting for the Organization of Human Brain Mapping. Honolulu, HI.

**Nair, S.,** Berkebile, M.M., Chen, C.P., Maximo, O., Keown, C.L., & Müller, R.A. (2015, March). *Variation in local connectivity patterns across low-motion subsamples in autism: A resting state fMRI study of regional homogeneity.* Talk given at the 8<sup>th</sup> Annual Student Research Symposium, San Diego State University, San Diego, CA.

**Nair, S.,** Chen, C.P., Maximo, J.O., Keown, C.L., & Müller, R.-A. (2014, November). *Complex local connectivity patterns in large low-motion autism sample: A resting state fMRI study of regional homogeneity.* 140.17. Poster presented at the 44<sup>th</sup> Annual Meeting for the Society for Neuroscience. Washington, DC.