

Sophia Vinci-Booher

May 8, 2023

Personal information

Vanderbilt University, Peabody College of Education
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Faculty rank

Assistant Professor
Department of Psychology and Human Development
Vanderbilt University

Areas of specialization

Development, learning, perception, action, neuroimaging, diffusion MRI, functional MRI, handwriting, reading

Education

Ph.D.	Psychology & Neural Science	Indiana University, Bloomington, Indiana	2019
B.A.	French	Indiana University, Indianapolis, Indiana	2009
B.S.	Biomedical Engineering	Purdue University, Indianapolis, Indiana	2008

Professional experience

2022 – present	Assistant Professor, <i>Dept. of Psychology & Human Development</i> Peabody College of Education, Vanderbilt University, Nashville, TN
2019 – 2022	NSF Postdoctoral Fellow, <i>Dept. of Psychological & Brain Sciences</i> PI: F. Pestilli, Indiana University & University of Texas at Austin
2013 – 2019	Graduate Research Assistant, <i>Dept. of Psychological & Brain Sciences</i> PI: K.H. James, Indiana University, Bloomington, IN
2011 – 2013	Neuropsychology Technician, <i>Dept. of Neurology & Neuropsychology</i> PI: B. McDonald, Indiana University Health Physicians, Indianapolis, IN
2010 – 2013	Staff Research Assistant, <i>Dept. of Medical & Molecular Genetics</i> PI: T. Foroud, Indiana University, School of Medicine, Indianapolis, IN
2010 – 2011	Staff Research Assistant, <i>Dept. of Neurology</i> PI: E. Sowell, University of California, Los Angeles, CA

Affiliations

2023 – present	The Wondr'y at Vanderbilt
2022 – present	Vanderbilt Kennedy Center (member)
2022 – present	Vanderbilt Data Science Institute
2022 – present	Vanderbilt Brain Institute (training faculty)
2020 – present	Organization for Human Brain Mapping
2020 – present	Association for Psychological Sciences
2015 – present	Vision Sciences Society
2015 – present	Cognitive Development Society
Prior affiliations:	Cognitive Neuroscience Society, Flux Society, Society for Research in Child Development, International Society of Magnetic Resonance in Medicine, Society of Women Engineers

Honors & awards

Awards.

2019	FABBS Doctoral Dissertation Research Excellence Award
2019	J.R. Kantor Graduate Award for Distinction in Research
2015	Commendation on Doctoral Qualifying Examinations
2014	Poster winner at Center of Excellence for Women in Technology Conference

Fellowships.

2022	VISTA Distinguished Postdoctoral Fellowship, York University (declined)
2020	NSF SBE Postdoctoral Research Fellowship
2019	Developmental Training Grant, postdoc, NIH: 5 T32 HD007475
2018	Dissertation Research Fellowship, IU College of Arts & Sciences
2017, 2020	IU-OVPR Emerging Area of Research Initiative, Learning: Brains, Machines and Children
2014 – 2016	Developmental Training Grant, predoc, NIH: 2 T32 HD007475
2015	James S. McDonnell Foundation Fellowship
2006	Multidisciplinary Undergraduate Research Initiative Scholar

Merit-based scholarships.

2009	International Experience Scholarship
2009	Margaret A. Cook Scholarship for Foreign Study
2009	Marius J. Fauré Scholarship for Students of French Language/Literature
2007	Commitment to Engineering Excellence Scholarship

Travel awards.

2022	VSS NEI Early Career Scientist Travel Grant
2021	V-VSS Elsevier/Vision Research Travel Award
2020	Travel and Accommodations for NeuroHackademy (postponed to 2021)
2019	CDS Pre-Conference Travel Award: Open Developmental Science
2019	ACNN Big Data Neuroscience Conference Travel Award
2017 – 2019	IU-OVPR Travel Award for Women in Science
2015 – 2019	IU Program in Neuroscience College of Arts & Sciences Travel Award

Public coverage.

2023	Leading the Vanguard: Sophia Vinci-Booher, Vanderbilt Kennedy Center Notables, https://notables.vkcsites.org/2023/03/leading-the-vanguard-sophia-vinci-booher/
2019	Four previous cohorts of grant recipients have received almost \$500k in funding from Johnson Center grants. <i>News at IU: Business and Innovation</i> . https://news.iu.edu/live/news/25871-iu-bloomington-researchers-can-apply-for-25000
2018	From feeling lost to triumphant: An interview with PhD Candidate Sophia Vinci-Booher. <i>SciU: Conversations in Science at Indiana University</i> . https://blogs.iu.edu/sciu/2018/07/31/lost-to-triumphant/
2017	Basement wizards defy the magnet. <i>PBS Update at IU</i> . https://magazine.psych.indiana.edu/summer-2017/feature-stories/index.html (Cover article.)
2017	Graduate students help prepare local teens for high school and beyond. <i>News at IU: Science and Technology</i> . https://news.iu.edu/live/news/23869-graduate-students-help-prepare-local-teens-for

Publications

Trainees that I directly mentored are underlined.

Peer reviewed publications.

- 1| **Vinci-Booher, S.**, McDonald, D., Berquist, E., & Pestilli, F. Associative white matter selectively predicts sensorimotor learning. *BioRxiv* 2023.01.10.523345 [Preprint]. January 20, 2023. Available from: <https://doi.org/10.1101/2023.01.10.523345>.
- 2| **Vinci-Booher, S.**, Schlichting, M., Preston, A., & Pestilli, F. Development of human hippocampal subfield microstructure related to associative inference. *BioRxiv* 2023.04.07.536066 [Preprint]. April 09, 2023. Available from: <https://doi.org/10.1101/2023.04.07.536066>.
- 3| Levitas, D., Hayashi, S., **Vinci-Booher, S.**, Heinsfeld, A., Guimar, N., & Pestilli, F. *ezBIDS: Semi-automated data capture, standardization, quality control, and pseudonymization*. (in review).
- 4| Hayashi, S.* , Caron, B.* , Heinsfeld, A.S., **Vinci-Booher, S.**, ... Pestilli, F. *brainlife.io: A decentralized and open-source cloud platform to support neuroscience research*. (in review).
- 5| Cheng, H., **Vinci-Booher, S.**, Caron, B., Wang, J., Newman, S., & Pestilli, F. (2022). Denoising diffusion-weighted MRI data using convolutional neural networks. *PLOS ONE*, 17(9), e0274396. <https://doi.org/10.1371/journal.pone.0274396>.

- 6| **Vinci-Booher, S.**, Caron, B., Bullock, D., James, K.H., & Pestilli, F. (2022). Development of white matter tracts between and within the dorsal and ventral streams. *Brain Structure and Function*, 227(4), 1457-1477.
- 7| **Vinci-Booher, S.**, & James, K.H. (2021). Protracted neural development of dorsal motor systems during handwriting and the relation to early literacy skills. *Frontiers in Psychology*, 12.
- 8| **Vinci-Booher, S.**, James, T.W., & James, K.H. (2021). Visual-motor contingency during symbol production contributes to the development of the neural systems supporting symbol perception and concurrent gains in symbol recognition. *NeuroImage*, 227, 117554.
- 9| **Vinci-Booher, S.**, & James, K.H. (2020). Visual experiences of letter production contribute to the development of the neural systems supporting letter perception. *Developmental Science*, 23(5), 1-17. **(Cover article.)**
- 10| Merritt, E., Swain, S., **Vinci-Booher, S.**, & James, K.H. (2020). Constraining stroke order during manual symbol learning hinders subsequent recognition in children under 4 ½ years. *Frontiers in Psychology*, 11.
- 11| **Vinci-Booher, S.**, & James, K.H. (2020). Ecological validity of experimental set-up affects parietal involvement during letter production. *Neuroscience Letters*, 731.
- 12| **Vinci-Booher, S.**, Cheng, H., & James, K.H. (2019). An analysis of the brain systems involved with producing letters by hand. *Journal of Cognitive Neuroscience*, 31(1), 138-154.
- 13| **Vinci-Booher, S.**, Sturgeon, J., James, T., & James, K.H. (2018). The MRItab: An MR-compatible touchscreen with video-display. *Journal of Neuroscience Methods*, 306, 10-18.
- 14| Zemlock, D., **Vinci-Booher, S.**, & James, K.H. (2018). Visual-motor symbol production facilitates letter knowledge in young children. *Reading and Writing*, 31, 1255-1271.
- 15| **Vinci-Booher, S.**, James, T. W., & James, K. H. (2016). Visual-motor functional connectivity in preschool children emerges after handwriting experience. *Trends in Neuroscience and Education*, 5(3), 107-120.
- 16| **Vinci-Booher, S.**, & James, K. H. (2016). Neural substrates of sensorimotor processes: Letter writing and letter perception. *Journal of Neurophysiology*, 115(1), 1-4.
- 17| Foroud, T., Wetherill, L., **Vinci-Booher, S.**, Moore, E.S., Ward, R.E., Hoyme, H.E., et al. (2012). Relation over time between facial measurements and cognitive outcomes in alcohol exposed children. *Alcoholism: Clinical & Experimental Research*, 36(9), 1634-1646.
- 18| Anthony, B., **Vinci-Booher, S.**, Wetherill, L., Ward, R.E., Goodlett, C., & Zhou, F.C. (2010). Alcohol induced facial dysmorphology in C57BL/6 mouse models of fetal alcohol spectrum disorder. *Alcohol*, 44(7-8), 659-671.

Book chapters.

- 19| **Vinci-Booher, S.**, James, K.H. (in press). The contribution of handwriting to letter processing in early reading development: evidence from behavioral and neuroimaging research. In Ye, Y., Inoue, T., Maurer, U., & McBride, C. (Eds.), *Handbook of Visual-motor skills, Handwriting, and Spelling, Theory, Research, and Practice*. Oxfordshire, England, UK: Routledge Taylor & Francis.
- 20| James, K.H., **Vinci-Booher, S.**, & Muñoz-Rubke, F. (2017). The impact of multimodal-multisensory learning on human performance and brain activation patterns. In Oviatt, S., Schuller, B., & Cohen, P. (Eds.), *Handbook of Multimodal-Multisensor Interfaces*. San Rafael, CA, USA: Morgan & Claypool Publishers.

Conference proceedings and publications.

- 21| Fang, S., Liu, Y., Huang, J., **Vinci-Booher, S.**, Anthony, B., & Zhou, F.C. (2010). Surface feature analysis using videos of mouse embryos for FAS classification. *International Conference on Digital Image Computing: Techniques and Applications* (pp. 22-26). Institute of Electrical and Electronics Engineers. (57% acceptance rate).
- 22| Fang, S., Liu, Y., Huang, J., **Vinci-Booher, S.**, Anthony, B., & Zhou, F.C. (2009). Facial image classification of mouse embryos for the animal model of fetal alcohol syndrome. *Symposium on Applied Computing* (852-856). Association for Computing Machinery. (29% acceptance rate).
- 23| Belcher, C., Terry, M., **Vinci-Booher, S.**, & Du, Y. (2007). Video image based multimodal face recognition system. *Illinois-Indiana Section Conference* (paper 14-1-10). American Society for Engineering Education.

Working papers.

- 1| Photiou, M., **Vinci-Booher, S.**, Konstantinou, N., Avraamides, M.*, & Pestilli, F*. *Dancing and the white matter pathways in the brain*. *Shared senior author.
- 2| **Vinci-Booher, S.**, & Pestilli, F. *White matter and learning, a review*.

Oral presentations

Invited talks.

- 1| **Vinci-Booher, S.** (2023, May). White matter in human learning and development. White Matter Seminar, Temple University, Philadelphia, PA, USA. (virtual).

- 2| **Vinci-Booher, S.** (2023, January). White matter in human development. Takemura Seminar, National Institute for Physiological Sciences (NiPS), Okazaki, Japan. (virtual).
- 3| **Vinci-Booher, S.** (2022, November). Development of human hippocampal subfield microstructure related to human behavior. Dallas-Austin Area Memory Meeting, University of Texas at Austin, TX, USA.
- 4| **Vinci-Booher, S.** (2022, April). Perception and action in human learning. Developmental Psychology Brown Bag Seminar, University of Connecticut, CT, USA. (virtual).
- 5| **Vinci-Booher, S.** (2021, April). The relationship between white matter microstructure and learning that generalizes across tasks. Cognitive Neuroscience Seminar, University of Texas at Austin, TX, USA. (virtual).
- 6| **Vinci-Booher, S.** (2019, November). Development of vertical white matter pathways connecting dorsal and ventral visual streams. Brain and Mind Institute, University of Western Ontario, ON, CA.
- 7| **Vinci-Booher, S.** (2018, February). The development of brain systems supporting handwriting and letter perception. Psychological and Brain Sciences Graduate Recruitment Event, Indiana University, IN, USA.
- 8| **Vinci-Booher, S.** (2017, October). The developmental trajectory of brain systems supporting handwriting and the perception of handwritten letters. Neuroscience Seminar, Loyola University, IL, USA.
- 9| **Vinci-Booher, S.** (2016, October). Brain systems supporting handwriting across development. Psychological and Brain Sciences Alumni Homecoming & Award Banquet, Indiana University, IN, USA.

Conference talks.

- 10| Caron, B., **Vinci-Booher, S.**, & Pestilli, F. (2022, May). Data analysis platforms: Democratizing psychological neuroscience through community-based analysis platforms. In G. Niso, **S. Vinci-Booher**, R. Botvinik-Nezer, & F. Pestilli, *Open science projects accelerate rigorous and inclusive psychological research*. Symposium. Association for Psychological Science Annual Convention, IL, USA.
- 11| **Vinci-Booher, S.**, Caron, B., Bullock, D., James, K.H., & Pestilli, F. (2021, May). A model of the development of major white matter pathways within and between ventral and dorsal visual streams. Annual Meeting of the Vision Sciences Society. (virtual).
- 12| **Vinci-Booher, S.**, & Pestilli, F. (2020, October). Developmental differences in white matter tracts between and within the dorsal and ventral streams. Neuromatch 3.0. (virtual).
- 13| **Vinci-Booher, S.**, & Pestilli, F. (2020, September). Posterior-vertical white matter tracts cluster with ventral stream tracts in development and predict behavioral variability. Data blitz. Advanced Computational Neuroscience Network. (virtual).
- 14| James, K.H., & **Vinci-Booher, S.** (2019, May). Visual experiences during letter production contribute to the development of the neural systems supporting letter perception. In T. Schubert, *Reading as a visual act: Recognition of visual symbols in the mind and brain*. Annual Meeting of the Vision Sciences Society, FL, USA.
- 15| **Vinci-Booher, S.**, Nikoulina, A., James, T.W., & James, K.H. (2019, March). Sensorimotor contingency leads to developmental changes in the neural mechanisms supporting visual recognition. Data blitz. Annual Meeting of the Cognitive Neuroscience Society, CA, USA.
- 16| James, K.H., & **Vinci-Booher, S.** (2017, October). The Development of the Neural Systems that Support Production and Perception of Handwritten Forms. In B.I. Bertenthal & J.J. Lockman, *Mind in motion: The development of cognitive processes in real time*. Cognitive Development Society Biennial Conference, OR, USA.
- 17| **Vinci-Booher, S.**, James, T.W., & James, K.H. (2015, March). The influence of visual-motor experiences on the development of brain mechanisms subserving letter perception. In E. Wakefield & M. Novack, *Comparing the effects of active and passive learning experiences through action and gesture*. Symposium. Biennial Meeting of the Society for Research in Child Development, PA, USA.

Conference poster presentations

International conferences.

- 1| **Vinci-Booher, S.**, Arif, Z., & Pestilli, F. (2023, August). *White matter tracts connecting ventral and dorsal visual streams have distinct microstructural profiles and developmental trajectories*. European Conference on Visual Perception, Paphos, Cyprus.
- 2| Photiou, M., **Vinci-Booher, S.**, Galati, A., Pestilli, F., & Avraamides, M. (2023, August). *Spatial Cognition and Intervention-Induced Changes in White Matter Integrity: The Case of Dancers*. European Conference on Visual Perception, Paphos, Cyprus.
- 3| Qian, A., Martinez, L., Ju., S., Kay, K., Booth, J.R., Pestilli, F., Yu, C., & **Vinci-Booher, S.** (2023, May). *Dense longitudinal neuroimaging to evaluate neural mechanisms of early learning*. Annual Meeting of the Vision Sciences Society, FL, USA.

- 4| **Vinci-Booher, S.**, Berquist, E., & Pestilli, F. (2022, June). *White matter microstructure predicts learning*. Annual Meeting of the Organization for Human Brain Mapping, GLA, SCT. (virtual).
- 5| Okete, P., **Vinci-Booher, S.**, & Pestilli, F. (2022, May). *Activation of posterior parietal cortex when viewing trained symbols compared to untrained symbols after drawing experience*. Annual Meeting of the Vision Sciences Society, FL, USA.
- 6| **Vinci-Booher, S.**, Berquist, E., & Pestilli, F. (2022, May). *White matter tracts traveling between cortical regions associated with the dorsal and ventral visual streams predict learning a perceptual-motor task*. Annual Meeting of the Vision Sciences Society, FL, USA.
- 7| Cheng, H., **Vinci-Booher, S.**, Wang, J., & Newman, S. (2022, May). *Mitigation of noise floor in diffusion MRI using deep learning*. Annual Meeting of the International Society for Magnetic Resonance in Medicine, London, England, UK. (virtual).
- 8| **Vinci-Booher, S.***, Caron, B.*, Wang, J., Newman, S., Pestilli, F., & Cheng, H. (2020, June). *Denoising diffusion-weighted magnetic resonance data using convolutional neural networks*. Annual Meeting of the Organization for Human Brain Mapping. Virtual conference. *Shared first author. (virtual).
- 9| **Vinci-Booher, S.**, Sehgal, N., & James, K.H. (2018, May). *Visual and motor experiences of handwriting contribute to gains in visual recognition*. Annual Meeting of the Vision Sciences Society, FL, USA.
- 10| **Vinci-Booher, S.**, Sehgal, N., Muñoz-Rubke, F., & James, K.H. (2016, May). *Perceptual and motor effects of letter writing on brain regions associated with letter perception*. Annual Meeting of the Vision Sciences Society, FL, USA.
- 11| **Vinci-Booher, S.**, Cheng, H., & James, K.H. (2016, March). *Handwriting as a visually guided action: A developmental neuroimaging study*. Latin American School for Education, Cognitive, and Neural Sciences, Buenos Aires, AR.
- 12| Fang, S., Liu, Y., Huang, J., **Vinci-Booher, S.**, Anthony, B., & Zhou, F.C. (2010, June). *Surface analysis from video volumes for fetal alcohol syndrome classification*. International Conference on 3D Data Processing, Visualization, and Transmission, Sydney, ASTL.

National conferences.

- 13| **Vinci-Booher, S.**, Bullock, D., Caron, B., McPherson, B., James, K.H., & Pestilli, F. (2019, October). *The relationship between the microstructure of vertical white matter pathways and behavior in early elementary school children*. Cognitive Development Society Biennial Conference, KY, USA.
- 14| **Vinci-Booher, S.**, Nikoulina, A., James, T.W., & James, K.H. (2019, March). *Sensorimotor contingency leads to developmental changes in the neural mechanisms supporting visual recognition*. Annual Meeting of the Cognitive Neuroscience Society, CA, USA.
- 15| **Vinci-Booher, S.**, & James, K.H. (2017, October). *The development of the neural systems supporting handwriting and letter perception from kindergarten to adulthood*. Cognitive Development Society Biennial Conference, OR, USA.
- 16| Zemlock, D., **Vinci-Booher, S.**, & James, K.H. (2016, April). *Learning about letters through handwriting practice*. National Conference on Undergraduate Research, NC, USA.
- 17| **Vinci-Booher, S.**, Engelhardt, L., James, T.W., & James, K.H. (2015, March). *Functional connections during letter perception reflect aspects of letter writing*. Annual Meeting of the Cognitive Neuroscience Society, CA, USA.
- 18| **Vinci-Booher, S.**, James, T.W., & James, K.H. (2015, March). *Investigating functional connectivity in the developing brain using generalized psychophysiological interactions analysis*. Biennial Meeting of the Society for Research in Child Development, PA, USA.
- 19| Black, L., **Vinci-Booher, S.**, Begyn, E., McDonald, B.C., Katzenstein, J. (2013, October). *Neurocognitive and behavioral profile differences in children treated for medulloblastoma*. Annual Meeting of the American Academy of Clinical Neuropsychology, IL, USA.
- 20| Highley, E., **Vinci-Booher, S.**, Begyn, E., and Katzenstein, J. (2013, June). *Evaluation of intellectual abilities pre- and post- radiation therapy in preschool aged children with solid brain tumors*. Annual Meeting of the American Academy of Clinical Neuropsychology, IL, USA.
- 21| Black, L., Begyn, E., McDonald, B., **Vinci-Booher, S.**, Katzenstein, J. (2013, June). *Neuropsychological outcomes in children with medulloblastoma*. Annual Meeting of the American Academy of Clinical Neuropsychology, IL, USA.
- 22| Black, L., Begyn, E., McDonald, B., **Vinci-Booher, S.**, Katzenstein, J. (2013, June). *Behavioral outcomes in children with medulloblastoma*. Annual Meeting of the American Academy of Clinical Neuropsychology, IL, USA.

- 23| Anthony, B., **Vinci-Booher, S.**, Veene, B., Wetherill, L., Goodlett, C., Ward, R., & Zhou, F. C. (2012, June). *Effects of duration and dose of prenatal alcohol exposure via maternal liquid diet on facial dysmorphology in C57BL/6J mice*. Annual Scientific Meeting of the Research Society on Alcoholism, CA, USA.
- 24| Wetherill, L., **Vinci-Booher, S.**, Mattson, S., Coles, C., Sowell, E., McCarthy, N., ... & Foroud, T. (2012, June). *Gene x alcohol exposure: what does this interaction tell us about phenotypic variation in fetal alcohol spectrum disorders?* Annual Scientific Meeting of the Research Society on Alcoholism, CA, USA.
- 25| Anthony, B., **Vinci-Booher, S.**, Wetherill, L., Ward, R., Goodlett, C., & Zhou, F.C. (2009, June). *Alcohol induced facial dysmorphology in C57BL/6 mouse models of Fetal Alcohol Spectrum Disorder*. Annual Scientific Meeting of the Research Society on Alcoholism, CA, USA.

Regional conferences.

- 26| Okete, P., **Vinci-Booher, S.**, & Pestilli, F. (2022, April). *Parietal cortex activation during symbol perception after drawing experience*. Midwest Undergraduate Cognitive Science Conference, IN, USA. (**Best Poster**, 2nd place.)
- 25| DelaCuesta, C., **Vinci-Booher, S.**, & James, K.H. (2018, April). *Novel symbol learning: The maintenance of brain changes over time*. Center of Excellence for Women in Technology Conference, IN, USA.
- 27| Harris, S., **Vinci-Booher, S.**, & James, K.H. (2018, April). *Handwriting influence on symbol learning in adults*. Center of Excellence for Women in Technology Conference, IN, USA.
- 28| Yearling, E., **Vinci-Booher, S.**, & James, K.H. (2017, April). *Investigating changes in functional connectivity between visual and motor systems after handwriting practice*. Center of Excellence for Women in Technology Conference, IN, USA.
- 29| Zemlock, D., **Vinci-Booher, S.**, & James, K.H. (2016, March). *Learning about letters through handwriting practice*. Indiana University Undergraduate Research Conference, NC, USA. (**Best Poster**.)
- 30| Sehgal, N., **Vinci-Booher, S.**, & James, K.H. (2015, February). *The relationship between handedness and activation in the visual cortex of the brain*. Center of Excellence for Women in Technology Conference, IN, USA.
- 31| **Vinci-Booher, S.**, Engelhardt, L., James, T.W., & James, K.H. (2014, March). *Investigating the development of letter perception using gPPI connectivity analysis*. Center of Excellence for Women in Technology Conference, IN, USA.
- 32| Belcher, C., Terry, M., **Vinci-Booher, S.**, & Du, Y. (2006, October). *Multimodal face recognition system*. Indiana University Undergraduate Research Conference, IN, USA.

Intellectual property

"Electronic tablet for use in functional MRI," *US Patent No. 10,820,839B2*, November 3, 2020, Sturgeon, J., Shroyer, A., **Vinci-Booher, S.**, & James, K.H.

Published datasets

- 1| **Vinci-Booher, S.**, Berquist, E., & Pestilli, F. (2022). Microstructure of white matter tracts connecting perceptual and motor association cortices predict learning to draw novel symbols. <https://doi.org/10.25663/brainlife.pub.36>, <https://osf.io/95zjk/>
- 2| **Vinci-Booher, S.**, Schlichting, M., Preston, A., & Pestilli, F. (2022). Development of hippocampal subfield microstructure related to transitive inference. <https://doi.org/10.25663/brainlife.pub.33>
- 3| Cheng, H., **Vinci-Booher, S.**, Caron, B., & Pestilli, F. (2022). Denoising diffusion weighted imaging data using convolutional neural networks. <https://doi.org/10.25663/brainlife.pub.35>
- 4| **Vinci-Booher, S.**, Caron, B., Bullock, D., & Pestilli, F. (2021). Development of white matter tracts between and within the dorsal and ventral streams. <https://doi.org/10.25663/brainlife.pub.23>

Grants

CRCNS Research Proposal: Dense longitudinal sampling of brain function and structure to evaluate neural mechanisms of learning in early childhood

National Science Foundation	\$1,624,080	Pending
Collaborative Research in Computational Neuroscience	8/2023 – 7/2025	
PI: S. Vinci-Booher , co-PIs: James Booth (VU), Kendrick Kay (UMN), Franco Pestili (UT Austin), Chen Yu (UT Austin)	Vanderbilt University	

MRI-compatible eye-tracking to capture brain mechanisms of visual attention in diverse populations

Office of the Vice Provost for Research and Innovation	\$59,415	Pending
Seeding Success – Spring 2023	7/2023 – 6/2024	

PI: S. Vinci-Booher , co-PIs: Frank Tong, James Booth, Eric Wilkey	Vanderbilt University	
The MRItab: An MRI-compatible table for use during MRI scanning NSF Mid-south Region Hub subaward Ideator Program at The Wondr'y at Vanderbilt PI: S. Vinci-Booher ,	\$2,500 4/2023 – 7/2023 Vanderbilt University	Received
Dense longitudinal sampling of brain function and structure to evaluate learning in early childhood Vanderbilt Brain Institute Novel Ideas in Neuroscience – TIPs Initiative for Pilot and Feasibility PI: S. Vinci-Booher , co-PI: James Booth	\$50,000 1/2023 – 6/2023 Vanderbilt University	Unfunded
Harnessing machine learning and cloud computing to test biological models of the role of white matter in human learning, 200487 National Science Foundation SBE Postdoctoral Research Fellowship PI: S. Vinci-Booher , sponsored by F. Pestilli	\$138,000 8/2020 – 7/2022 Indiana University	Completed
Development and validation of a visual field mapping protocol for children Indiana Clinical and Translational Sciences Institute Core Pilot Grant PI: F. Pestilli, Co-PI: S. Vinci-Booher	\$10,000 8/2020 – 7/2021 Indiana University	Completed
MR-safe electronic tablet for use in functional MRI Johnson Center for Innovation and Translational Research Translational Research Pilot Grant PI: K.H. James, Co-PIs: S. Vinci-Booher , J. Sturgeon	\$25,000 8/2017 – 7/2019 Indiana University	Completed
Digital analysis of letters and numbers handwritten by preschool children Groups STEM Summer Research Experience Mentorship Grant PI: K.H. James, Co-PI: S. Vinci-Booher	\$1,000 5/2017 – 8/2017 Indiana University	Completed
Letter production and the development of letter perception Indiana University Imaging Research Facility Graduate Student Brain Scan Credit Program PI: K.H. James, Co-PI: S. Vinci-Booher	100 MRI hours 5/2014 – 8/2016 Indiana University	Completed

Teaching experience

Courses – Instructor of record.

Fall 2023	Introduction to Statistics	Dept. of Psych. & Human Development	Vanderbilt University
Spring 2023	Introduction to Statistics	Dept. of Psych. & Human Development	Vanderbilt University
Fall 2022	Introduction to Statistics (2 sections)	Dept. of Psych. & Human Development	Vanderbilt University
2016	Methods Exp. Psychology Lab	Dept. of Psych. & Brain Sciences	Indiana University

Courses – Teaching assistantships.

2017	Exp. Methods in Social Psych.	Dept. of Psych. & Brain Sciences	Indiana University
2014, 2016	Cognitive Neuroscience	Dept. of Psych. & Brain Sciences	Indiana University
2014	Research/Theory in Dev. Sci.	Dept. of Psych. & Brain Sciences	Indiana University
2013	Cognitive Neuropsychology	Dept. of Psych. & Brain Sciences	Indiana University

Lectures – Guest lecture.

2020	Early Language Development	Course: Language & Psycholinguistics	University of Rochester
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Lectures – Substitute lectures.

2016	Language and the Brain	Course: Cognitive Neuroscience	Indiana University
2016	Exp. Design in Neuroimaging	Course: Clinical Neuroimaging Lab	Indiana University
2015	Preprocessing of fMRI Data	Course: Clinical Neuroimaging Lab	Indiana University
2014	Executive Functioning	Course: Cognitive Neuropsychology	Indiana University

Mentorship experience

Graduate student trainees.

2019 – 2022 Maria Photiou Domain expertise: Dancing and white matter University of Cyprus

Undergraduate student trainees – Honors theses.

2016 – 2017 Neha Sehgal Dynamic representations in symbol learning Indiana University

2015 – 2016 Debby Zemlock Learning about letters through handwriting Indiana University

Undergraduate student trainees – Capstone projects.

2022 Praise Okete Handwriting-induced changes in brain function Indiana University

2021 Wesley Wolf Child-friendly dorsal visual field mapping Indiana University

2020 Janet Oluwayomi White matter and learning Indiana University

2018 Sarah Harris Visual-motor experiences and symbol learning Indiana University

2016 Chandler Boys Handwriting training protocol for early literate children Indiana University

2016 Emily Yearling Functional connectivity during handwriting Indiana University

Undergraduate student trainees – Groups summer research experience projects.

2017 Amanda Ellison Digital analysis of letters handwritten by young children Indiana University

2015 Tayla Frizzell Automated scoring of child handwriting samples Indiana University

Undergraduate student trainees.

Current. Angela Qian, Camille Liska, Susie Ju, Lucas Martinez, Zoha Arif (SyBURRE Fellow), Brianna Freeman.

Past. Charles Durbin, Allison Quest, Sarah Sha, Tabitha Rominger, Nicole Nguyen, Griffin Scism, Sabrina Ali, Mariam Oluyadi, Abhinav Kotaru, Shreya Bothra

Service

Professional

Peer-reviewed journals (ad hoc reviewer). PNAS, Memory & Cognition, Psychological Science, Psychological Bulletin & Review, Brain Imaging & Behavior, Educational Psychology Review, Investigative Ophthalmology and Vision Science, Reading & Writing, Brain Structure and Function, Frontiers in Psychology, PLOS ONE, Discover Psychology, Journal of Neuroscience, Developmental Psychology, Neuropsychologia

Conference abstracts. Association for Psychological Science Annual Convention (2020, 2021)

Grant applications. Indiana Clinical and Translational Sciences Postdoc Challenge (2019, 2020)

Community

2022 Event coordinator, Learn about your brain, Girls Inc.

2019 Writer, Conversations in Science at IU, <http://blogs.iu.edu/sciu>

2015 – 2019 Instructor, Summer School, Foundations in Science & Mathematics for High School Students

2009 – 2013 Tutor, School on Wheels

University

2023 – present Reviewer, Vanderbilt Undergraduate Summer Research Program (VUSRP)

2022 – present Vanderbilt Brain Institute Training Faculty

2015 – 2020 Research supervisor, IU Groups STEM for Underrepresented Students

2015 – 2020 Mentor, IU Groups STEM for Underrepresented Students

2015 – 2019 Coordinator, Preparing Future Faculty Conference Planning Committee at IU

2018 Coordinator, Association for Psychological Science Learning Workshop at IU

2009 Fundraising chair, Hosted the Society of Women Engineers Region H Conference

College

2023 Member, Transformational Learning Community, Office of Equity, Diversity, and Inclusion at VU

2019– 2020 Reviewer, Postdoc Challenge Research Grants at IU

Department

2023 – present Member, Admissions committee for the Cognitive Psychology in Context Master's Program

2023 Member, Honors Thesis Committee for Jiulin (Zoe) Dai

2019 – 2020 Member, Diversity Advancement Committee at IU

2017 Member, Emerging Areas of Research Faculty Search Committee at IU