CHRISTIAN B. SINNOTT - CURRICULUM VITA

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EDUCATION

University of Nevada, Reno 2017 - Present
Ph.D. in Psychology - Cognitive and Brain Sciences – 3.91 GPA
Expected Graduation – May 2023

University of Nevada, Reno 2022
M.S. in Psychology – Cognitive and Brain Sciences
Thesis: Underwater virtual reality system for neutral buoyancy training: Development and evaluation.

Oregon State University 2016
M.A. in Interdisciplinary Studies – 3.66 GPA
Foci: Educational Psychology, Cognitive Psychology, Rural Studies
Thesis: Investigating Differences between Rural and Non-rural Students

Oregon State University 2014
B.A. in Psychology

RESEARCH INTERESTS

Self-motion perception, joint head- and eye-tracking, natural scene statistics, psychophysical methods, visual and vestibular sensory adaptation, head and eye movement modeling, Bayesian modeling.

PEER-REVIEWED MANUSCRIPTS

Shankar, B., **Sinnott, C. B.**, Binaee, K., Lescroart, M. D. & MacNeilage, P. R. (2021). Ergonomic design development of the Visual Experience Database headset. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Sinnott, C. B.*, Ramanujam, S.*†, Shankar, B., Halow, S. J., Szekely, B., Binaee, K., & MacNeilage, P. R. (2021). VEDBViz: The Visual Experience Database visualization and interaction tool. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Binaee, K., **Sinnott, C. B.**, Capurro, K. J. †, MacNeilage, P. R. & Lescroart, M. D. (2021). Pupil tracking under direct sunlight. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Hausamann, P. A., **Sinnott, C. B.**, Daumer, M. & MacNeilage, P. R. (2021). Evaluation of the Intel RealSense T265 for tracking natural human head motion. *Scientific Reports, 11* (12486), 1-12.

Hausamann, P. A., **Sinnott, C. B.** & MacNeilage, P. R. (2020). Positional head-eye tracking outside the lab: An open-source solution. *Proceedings of the 12th ACM Symposium on Eye Tracking Research & Applications, 14*. 1-5

Sinnott, C. B., Liu, J., Matera, C., Halow, S., Jones, A. E., Moroz, M., Mulligan, J., Crognale, M. A., Folmer, E. & MacNeilage, P. R. (2019). Underwater virtual reality system for neutral buoyancy training: Development and evaluation. *Proceedings of the 25th ACM Symposium on Virtual Reality Software and Technology, 29,* 1-9.

(* after author name indicates both authors contributed equally to work.)
(† after author name indicates author was an undergraduate student.)

INVITED TALKS

Characterization of head orientation and heading during everyday activity: Implications for modeling. *31st Annual Meeting of the Society for the Neural Control of Movement, July 2022.*

Characterization of head orientation and heading during everyday activity: Implications for modeling. *The 20th International Multisensory Research Forum, July 2022.*

VEDBViz: The Visual Experience Database visualization and interaction tool. *Eye Tracking Research & Applications ActivEye Workshop. May 2021.*

Mobile gaze tracking and the Visual Experience Database. *Smith-Kettlewell Eye Research Institute. March 2020.*

RESEARCH EXPERIENCE

Graduate Research Assistant Aug. 2017 - Present
Self-Motion Lab, University of Nevada, Reno
Advisor: Dr. Paul MacNeilage
My duties in this lab focus on experimental design, hardware set-up, programming, data collection, and data analysis, and dissemination of work via writing and conference presentations. My current work uses mobile head and eye-tracking to answer questions concerning how people move their head and eyes during everyday activities in diverse environments. These data can be further segregated to investigate differences in oculomotor and cephalomotor behaviors based on task, environment, or individual subject differences like biomechanics, clinical conditions like macular degeneration or vestibular neuropathy. This work has required rapid prototyping of hardware, as well as systems integration involving multiple visual and inertial sensors using Python and ROS.
Future work aims to investigate how these everyday behaviors affect perception of visual and vestibular stimuli using psychophysical methods with stimuli applied on a motion platform and through virtual reality, as well as Bayesian modeling methods using previously observed behaviors as priors. Previous work has focused on development and evaluation of virtual reality in an underwater, neutrally buoyant environment for astronaut and commercial training purposes. This required design, creation, and evaluation of a head-mounted display usable in the underwater research environment.

Graduate Research Assistant Sept. 2014 - June 2016
Human Development and Learning Lab, Oregon State University
Advisor: Dr. Kathryn Becker-Blease
My duties in this lab focused around discussing empirical research articles pertinent to research for my thesis, coding data for other ongoing studies, and designing new studies. In addition to these duties I was also tasked with guiding undergraduate research assistants through various tasks including data coding and entry. My work in this lab culminated in the completion of my thesis, wherein I investigated gaps in student success between rural and non-rural students. This involved the creation of a novel method of operationalizing and coding rural status among students.

Undergraduate/Graduate Research Assistant Sept. 2013 - June 2016
Attention and Performance Lab, Oregon State University
Advisor: Dr. Mei-Ching Lien
My primary duty was guiding participants through experimental tasks pertinent to current topics in cognitive psychology. This was primarily through computer-based attention tasks, measured both with behavioral data as well electrophysiological data collected through electroencephalography (EEG). I also collected data by computerizing a pre-existing psychological inventory through online survey software. I was also asked to assist with experimental design; particularly modification of pre-existing experimental paradigms. Additionally, I helped train new undergraduate assistants in EEG operation, as well as data analysis.

Manuscripts In Progress:

Sinnott, C., Hausamann, P. A. & MacNeilage, P. R. (in review). Natural statistics of human head orientation constrain models of vestibular processing. *Scientific Reports.*

Sinnott, C., Hausamann, P. A. & MacNeilage, P. R. (in prep). Characterization of natural head motion: Heading.

Projects In Progress:

Investigating the effect of speed on self-motion perception. Dec. 2022 - Present

Characterization of head pitch perception bias. May 2022 - Present

Quantifying determinants of retinal optical flow. Mar. 2019 - Present

CONFERENCE PRESENTATIONS

Natural statistics of heading in humans: Implications for modeling heading perception.
Presented at the Society for Neuroscience 2022 meeting. Nov. 2022

Characterization of head orientation and heading during everyday activity: Implications for modeling.
Presented at the 31st Annual Neural Control of Movement meeting. Jul. 2022

Natural statistics of head orientation relative to gravity in humans: Implications for modeling spatial orientation.
Presented at the Society for Neuroscience 2021 meeting. Nov. 2021

Natural statistics of gravitational and inertial head acceleration in humans: Implications for modeling spatial orientation.
Presented at the 30th Annual Neural Control of Movement meeting. Apr. 2021

Characterization of human head orientation during natural behavior.
Presented at the 2021 Vestibular-Oriented Research Meeting. Feb. 2021

Underwater virtual reality for neutral buoyancy training: Development and evaluation.
Presented at the 25th ACM Symposium on Virtual Reality Software and Technology. Nov. 2019

Characterization of natural head and eye movements driving retinal flow.
Presented at the Society for Neuroscience 2019 Meeting. Nov. 2019

Characterization of natural head and eye movements driving retinal flow.
Presented at the Vision Sciences Society 2019 Meeting. May 2019

Underwater virtual reality for spatial orientation research.
Presented at the Vision Sciences Society 2019 Meeting. May 2019

Statistical characterization of heading stimuli in natural environments using SLAM.
Presented at the Society for Neuroscience 2018 Meeting. Nov. 2018

Statistical characterization of heading stimuli in natural environments using SLAM.
Presented at the 18th Annual Optical Society of America Fall Vision Meeting. Sept. 2018

Statistical characterization of heading stimuli in natural environments using SLAM.
Presented at the Vision Sciences Society 2018 Meeting. May 2018

Underwater virtual reality for extra-vehicular activity training.
Presented at the 2017 Annual Nevada NASA Statewide Meeting. Nov. 2017

No significant differences between rural and non-rural introductory psychology students.
Presented at the Association for Psychological Science 27th Annual Conference**.** May 2015

Identifying academic performance differences between rural and nonrural students.

Presented at the Western Psychological Association 95th Annual Conference. April 2015

An electrophysiological study of emotional processing in alexithymia.
Presented at the CUE Colloquium, Oregon State University. May 2014

RELATED WORK EMPLOYMENT HISTORY

Department of Psychology, Reno, NV
Graduate Teaching Assistant Aug. 2017 - Present
Helped faculty proctor and grade exams. Managed online grading system (Canvas) to provide grades and other feedback to students. Provided students with individual meetings as well as office hours to aid understanding and delivery of course material. Led review sessions before exams as well as after homework assignments were submitted. Conducted lectures in-person, via Zoom, and in hybrid formats. Classes assisted include Introduction to Statistics and Experimental Psychology.

School of Mechanical, Industrial, and Manufacturing Engineering, Corvallis, OR
Academic Advisor March 2017 – July 2017
Served as part of a four-person advising team advising around 8,000 undergraduate students studying mechanical, industrial, manufacturing, and energy systems engineering. Duties involved advisement and verification of student-made two-year academic plans, registration PIN disbursal, referral to campus services, and graduation preparation. I also assisted internship interviewing and placement processes, creation and presentation of seminars targeted at first-year and prospective students, and department-based work retreats designed to improve outreach and recruitment of underrepresented student populations to engineering majors at Oregon State University.

School of Psychological Science, Corvallis, OR
Graduate Teaching Assistant Sep. 2014 - June 2016
Assisted faculty with tasks including exam proctoring, exam grading, essay grading as well as led review sessions leading up to exams. Online grading systems including BlackBoard and Canvas were also managed. I was also responsible for leading weekly recitation sections with duties such as lecturing, grading assignments and essays, and assisting students through operation of statistical analysis software. Classes assisted include Personality, Human Lifespan Development, Introductory Psychology, and Research Methods in Psychology.

School of Psychological Science, Corvallis, OR
Student Office Assistant Apr. 2013 – Sep. 2014
Ran administrative tasks such as scheduling advising appointments and meetings, operating copiers, computer programs including Word, Outlook and Excel; ordering supplies, hiring new employees, and troubleshooting various technical problems.

SERVICE

Graduate Student Reviewer Mar. 2021
Served as a graduate student member of the reviewing team for the Eye Tracking Research and Applications (ETRA) ActivEye workshop. The topic of submissions for this workshop included eye

tracking accuracy, head pose tracking, data annotation, best practices in eye tracking, eye tracking with special populations, and ergonomic design of mobile eye trackers. I was tasked with providing feedback to four submissions on a short timetable (6 days). I also received and processed review rebuttals.

Graduate Advising Assistant Jan. 2015 – Jun. 2015
Assisted advisors within department with undergraduate student advising duties. I was responsible for helping students schedule courses, guiding and informing them of on-campus resources, linking upcoming students to opportunities within as well as outside of department, assisting prospective students with graduate school application processes, and preparing students for graduation.

Student Promotion Committee – Chair Oct. 2015 - Nov. 2015
I led a four-person committee to write a letter with regards to a faculty member's promotion in the department. We compiled and summarized letters written by students who have interacted with the faculty member in the past; as well as synthesizing those summaries with information from the faculty member's teaching dossier.

SKILLS

PupilLabs Eye-Tracking, Python 3, R, Matlab, ROS, Unity, 32-Channel EEG Operation, Neuroscan 4.5, Qualtrics Survey Platform, IBM SPSS 32, Canvas LMS, Blackboard Learn, Microsoft Office Suite

LANGUAGES

English – C2 level as dictated by CEFR
German - B1 level as dictated by CEFR

PROFESSIONAL MEMBERSHIPS

Society for Neural Control of Movement
Vision Sciences Society
Society for Neuroscience

AWARDS

Graduate Dean's Merit Scholarship, *University of Nevada, Reno* Oct. 2020

Graduate Dean's Merit Scholarship, *University of Nevada, Reno* Oct. 2017

Graduate Teaching/Research Assistantship, *University of Nevada, Reno* Aug. 2017 - Present

Graduate Teaching Assistantship, *Oregon State University* Sep. 2014 - June 2016

Undergraduate Research Fellow, *Oregon State University* May 2013

Dean's List, *Oregon State University*	Sep. 2013 - Dec. 2013
Pell Grant, *Oregon State University*	Sep. 2009 - June 2014
Oregon Opportunity Grant, *Oregon State University*	Sep. 2009 - June 2014