Wiete Fehner

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PhD Candidate in Imaging Science | Computational Neuroimaging & HD-DOT

PhD candidate developing computational and optical neuroimaging methods for naturalistic brain mapping. My work focuses on voxelwise encoding/decoding models, high-dimensional semantic representations (>1,000 features), and PCA and clustering frameworks using reproducible Python/MATLAB pipelines. I develop and validate fiber-based and wearable HD-DOT systems and lead experimental design, data acquisition, and post-processing workflows.

Research Interests: computational neuroimaging · naturalistic stimuli · high-density optical imaging · fMRI · encoding/decoding · wearable neurotechnology · semantic models · translational applications

Skills

Neuroimaging: HD-DOT (fiber-based & wearable), fNIRS, fMRI (freesurfer, fMRIPrep, BIDS) data collection & analysis; experimental paradigms & stimulus development (psychtoolbox, psychopy).
Computation & Modeling: Voxelwise encoding/decoding, ridge regression, dimensionality reduction (PCA, Clustering), high-dimensional semantic models, cross-validation & bootstrapping.
Programming: Python (NumPy, SciPy, scikit-learn, h5py, matplotlib, PyTorch), MATLAB (NeuroDOT), Bash, Docker.
Data & Signal Processing: Time-series analysis, filtering/artifact correction, large-scale data handling (HDF5/SNIRF), reproducible pipelines.
Tools: NeuroDOT, Git/GitHub, Adobe Illustrator, Jupyter/Colab, Linux.

Education

Washington University in St. Louis | St. Louis, MO, USA *08/2021 – 05/2026*
PhD Candidate in Imaging Science
- *Thesis title: Advancing High-Density Diffuse Optical Tomography for Visual Semantic Decoding in Naturalistic Settings*
- *Advisor:* Dr. Joseph P. Culver
- *Expected graduation date: 05/2026*

Washington University in St. Louis | St. Louis, MO, USA *08/2021 – 12/2023*
MS in Electrical Engineering (30 USCS, CGPA: 3.83, graded as A)

University of Turku | Turku, Finland *08/2019 - 05/2021*
MS in Human Neuroscience (120 ECTS, CGPA: 5, graded as 'excellent')
- *Thesis title: Functional near-infrared spectroscopy experiment to study functional plasticity in adult auditory cortex after cochlear implant switch-on*
- *Advisor: Dr. Teemu Rinne*

University of Bremen | Bremen, Germany *10/2017 – 07/2019*
Selected Bachelor of Science Courses in Psychology (90 ECTS, CGPA: 1.83, graded as 'good')

Carl von Ossietzky University of Oldenburg | Oldenburg (Oldb), Germany *10/2014 – 06/2017*
BA in Philosophy and Gender Studies (180 ECTS, CGPA: 1.27, graded as 'excellent')
- *Thesis title:* Philosophical/psychological analysis of self-determination within the context of prenatal diagnostics. (translated from German)
- *Advisor: Dr. phil. Christine Zunke*

Research Experience

PhD Research | NeuroPhoto Lab | PI: Dr. Joseph P. Culver *01/2022 – 05/2026*
Biophotonics Research Center, MIR, Washington University in St. Louis
- **Developing computational models for naturalistic semantic encoding and decoding** using high-density diffuse optical tomography (HD-DOT), including voxelwise ridge-regression models, high-dimensional semantic feature spaces (>1000 features), cross-validation, and dimensionality reduction approaches (PCA, Clustering).
- **Designing and running naturalistic neuroimaging experiments**, including fiber-based and wearable HD-DOT acquisition across multiple systems, development of experimental paradigms and stimuli, and fMRI data acquisition. Lead all HD-DOT data collection, preprocessing, post-processing, validation, and data quality assessment.

- **Building large-scale, reproducible data pipelines in Python and MATLAB** (NeuroDOT), including bootstrapped model fitting, time-series analysis, PCA-based shared semantic space analyses, clustering, and BIDS-compatible data management.
- **Validation of a next-gen wearable HD-DOT imaging system**, including standardized localizer tasks, naturalistic movie mapping, and piano playing (system validation paper in preparation).
- **Mentoring** undergraduate and graduate students, leading onboarding, weekly research meetings, abstract/poster preparation, and training in HD-DOT data collection and analysis pipelines.
- **Contributing to grant writing**, collaborating on NIH R01 proposals, and foundation applications.

Graduate Research Assistant | Ances Bioimaging Laboratory | PI: Dr. Beau Ances *09/2021 – 01/2022*
Department of Neurology, Washington University in St. Louis

- Analyzed white matter microstructure in Alzheimer's and Down syndrome cohorts using diffusion tensor imaging (DTI).
- Preprocessed MRI data with FSL and bash, conducting statistical analysis in R.

Internship | Cognitive Neuroimaging Lab | PI: Dr. Gabriele Gratton & Dr. Monica Fabiani *09/2021 – 01/2022*
Beckman Institute, University of Illinois Urbana-Champaign (virtual because of COVID)

- Training in diffuse optical imaging methodologies such as fNIRS, EROS, pulse-DOT, and the full data analysis pipeline.

Graduate Research Assistant | TBMC Optical Imaging Lab | PI: Dr. Teemu Rinne *10/2019 – 05/2021*
University of Turku, Faculty of Medicine

- Designed an auditory fNIRS paradigm to study cortical changes from cochlear implantation; collected and analyzed data in Python.
- Collected fMRI data for an auditory study and anatomical data for fNIRS optode modeling.
- Established the optical imaging lab, enhancing experimental and research infrastructure.

Undergraduate Research Assistant | PI: Dr. Blanka Hartmann *10/2017 – 03/2019*
University of Bremen, Department of Education

- Supported educational research through data collection, comprehensive literature review, and administrative task management.

PUBLICATIONS (IN REVIEW)

1. Fogarty, M., Sherafati, A., Markow, Z.E., **Fehner, W.**, Camacho, M.C., Tang, J., Huth, A.G., Anastasio., M.A., Culver, J.P., (In Review). Leveraging large-scale fMRI datasets to simulate and evaluate the potential performance of human optical neuroimaging systems. Imaging Neuroscience.

PUBLICATIONS (SUBMITTED)

1. **W. Fehner**, M. Fogarty, J. Tang, A. Bajracharya, Z.E. Markow, D. Wilhelm, A. Hines, J. Trobaugh, A. G. Huth*, J. P Culver*, (Submitted). Semantic Visual Encoding and Identification of Naturalistic Movies via Very High-Density Diffuse Optical Tomography.

PUBLICATIONS (IN PREP)

1. A. Bajracharya*, **W. Fehner***, D. Wilhelm, Z.E. Markow, M. Fogarty, J.E. Peelle, T. Hershey, J.W. Trobaugh, & J.P. Culver, (In prep) "Precision High-Density Diffuse Optical Tomography (pHD-DOT) for Single-Subject Functional Cortical Mapping".
2. William T. Hamic*, **Wiete Fehner***, Morgan Fogarty, Alvin S. Agato, Hannah E. DeVore, Sean M. Rafferty, Dana Wilhelm, Anthony C. O'Sullivan, Calamity F. Svoboda, Jason W. Trobaugh, AdamT. Eggebrecht, Edward J. Richter, Joseph P. Culver, (In prep) "Mapping and decoding of naturalistic activities with full-head wearable DOT".
3. **W Fehner***, W. T. Hamic*, M. Fogarty, J. Tang, D. Wilhelm, Sean M Rafferty, A. Hines, J. Trobaugh, A. G. Huth, J. P Culver, (In prep). Model-based Semantic Encoding and Decoding with Wearable High-Density Diffuse Optical Tomography.
4. **Fehner, W.**, Fogarty, M., Thakur, S., Duncan, K., Foss, C., Shafiullah, A., Easley, T., Park, S., Khanal, N., Boyd, E., Culver, J. P., & O'Sullivan, J. A. (in prep). Bridging Gaps in Mathematical Preparedness: A Student-Led Summer Course Designed for STEM Graduate Students. Abstract accepted for ASEE 2026; full paper to be submitted January 2026.

** Authors contributed equally.*

GRANTS & FELLOWSHIPS

Imaging Science Pathway Fellowship (NIH T32) | Washington University in St. Louis, USA *01/2023 – 10/2024*

Deutschlandstipendium Scholarship | University of Bremen, Germany *10/2017 - 07/2019*
Hans Böckler Foundation Scholarship | Carl von Ossietzky University of Oldenburg, Germany *04/2016 - 06/2017*

AWARDS & HONORS

SPIE Photonics West 2026 travel grant | San Francisco, USA 11/2025
Trainee Professional Development Award for the Society for Neuroscience Conference 2025 | San Diego, USA 08/2025
Trainee Travel Award for the Neuroscience of the Everyday World Conference 2025 | Boston, USA 06/2025
1st Place Poster Award at Imaging Science Pathway Retreat 2024 | St. Louis, USA 04/2024
Imaging Science Outstanding Leadership Award 05/2024
Nominated by WashU for the Google PhD Fellowship 04/2024
Danforth Scholar | Washington University in St. Louis *09/2021 – present*
Jane Street Graduate Research Fellowship Workshop, Top Applicant | NYC, USA 04/2024
- *Selected as a top applicant and invited to present a poster at this exclusive workshop*

McKelvey Engineering Professional Development Award | Washington University in St. Louis 03/2024
Traineeship Award | University of Turku, Finland *05/2020*
Nowetas-Foundation Travel Award | University of Bremen, Germany *01/2019*
Wissenschaftspreis (Science Award) of the OLB-Foundation | *02/2019*
- *2nd Place, with bachelor's thesis, €3,500 Prize.*

TEACHING & MENTORING EXPERIENCE

Undergraduate Research Mentoring | NeuroPhoto Lab *01/2025–present*
Washington University in St. Louis
- Mentoring an undergraduate student conducting research in wearable neuroimaging technologies during the academic year and summer.
- Provide weekly one-on-one guidance on experimental design, data analysis, and scientific communication.
- Supported successful fellowship application (MIRSRP2025 fellow) and preparation for internal research presentations.

Graduate Student Mentoring | NeuroPhoto Lab 09/*2023–present*
Washington University in St. Louis
- Mentored two PhD rotation students, providing weekly meetings on DOT data collection, preprocessing, and modeling pipelines; guided abstract writing, poster preparation, and proposal presentations.
- Onboarded two new graduate students, training them in HD-DOT experimental setup, data workflow, and analysis codebase.
- Mentoring one incoming Master's student, providing weekly guidance on foundational computation, experimental skills, and project planning.
- Designed internal teaching materials for lab-wide onboarding (data structures, preprocessing workflow, modeling tutorials).

fNIRS Summer School Organizer *01/2025 – 08/2025*
Washington University in St. Louis
- Co-organizer for the fNIRS Summer School 2025 hosted at WashU in collaboration with the Society for fNIRS. Involved with programming, budget planning, connecting with speakers, and setting up online presence.

Graduate Teaching Assistant | Practicum in Computational Imaging (ESE 5934) *01/2024 – 05/2024*
McKelvey School of Engineering, Washington University in St. Louis
- Mentored engineering graduate students in developing their semester-long computational research projects, focusing on deep learning and machine learning applications in imaging science. Facilitated discussions that guided project formulation and execution. One student published their project at CVPR.

Undergraduate Teaching Assistant | Basics of Neuropsychology *11/2018 – 03/2019*
University of Bremen, Department of Education
- *Developed and delivered supplementary lectures on the "Basics of Neuropsychology," focusing on central nervous system fundamentals and neuropsychological disorders such as ASD and ADHD.*

LEADERSHIP EXPERIENCE & COMMUNITY SERVICE (SELECTED ACTIVITIES)

Founder & Lead Curriculum Developer, Summer Math Crash Course *01/2022 – present*

Imaging Science Student Council, Washington University in St. Louis

- **Founded and led the Annual Summer Math Crash Course**: Established a program to address the diverse mathematical needs of graduate students transitioning from various academic backgrounds or re-entering academia. As team leader of 14 student curriculum developers and instructors, ensured the successful execution of the course.
- **Designed a Comprehensive Curriculum**: Developed a 9-week program covering linear algebra, calculus, and signals and systems, integrating programming projects in Google Colab to enhance practical application.
- **Secured Funding and Expanded Impact**: Secured an annual $10k budget and collaborated closely with faculty to tailor the curriculum. Successfully scaled the course, achieving 120+ student registrations annually.
- **Institutional Integration and Recognition**: Elevated the course to a staple program at Washington University, now incorporated into the McKelvey School of Engineering's recruiting strategy for prospective graduate students.

Skype a Scientist *11/2025 - present*

- *Present research to high-school students.*

Communications Committee SfNIRS *01/2025 - present*

- *Enhance communication between the society and its members through a newsletter and an online presence.*

WTFT Representative with WUSTL ENDURE *Summer 2024*

Washington University in St. Louis

- Mentored an undergraduate participant from the WUSTL ENDURE program, supporting underrepresented groups in neuroscience.

Vice President, Association of Graduate Engineering Students (AGES) *05/2023 – 05/2024*

Washington University in St. Louis

- Providing guidance and support to the new executive board to ensure continuity and effective leadership.

President, Association of Graduate Engineering Students (AGES) *05/2022 – 05/2023*

Washington University in St. Louis

Responsible for leading the executive board, driving strategic initiatives, and collaborating with the engineering school administration to improve student resources and opportunities.

- Organized professional development events with industry representatives and networking events to promote interdisciplinary connections across engineering departments.

Graduate Ambassador, McKelvey School of Engineering *05/2022 – present*

Washington University in St. Louis

- Support prospective and incoming graduate engineering students with their transition to graduate school and represent WashU McKelvey School of Engineering in recruitment and outreach events.

Imaging Science Leadership, McKelvey School of Engineering *12/2021 – 04/2024*

Washington University in St. Louis

- Assist faculty in planning and executing the Imaging Science Pathway Retreat. Help organize social and educational events for Imaging Science students to promote collaboration and a positive academic environment.

Community Outreach Coordinator and Teacher *08/2016 – 12/2018*

Rabulo e.V., Oldenburg (Oldb), Germany

- Trained long-term unemployed women, refugees (ages 15-50), and students in intercultural competence and communication. Customized educational content to meet the unique needs and backgrounds of participants.

PROFESSIONAL SOCIETIES

Optica
Organization for Human Brain Mapping
Society for Functional Near Infrared Spectroscopy
Society of Photo-Optical Instrumentation Engineers
Society for Neuroscience
ASEE

LECTURES AND SEMINARS

1. **Fehner, W.** "Naturalistic Semantic Mapping with HD-DOT", Invited lecture for the fNIRS Summer School 2025, St. Louis, USA, July 2025.

2. **Fehner, W.** “Head Model Validation and Post-Processing”, Invited hands-on session for the fNIRS Summer School 2025, St. Louis, USA, July 2025.
3. J.P Culver, **W. Fehner**, M. Fogarty, “From fMRI to Optical Imaging: A Paradigm Shift in Naturalistic Cortical Mapping”, Symposia Organizers, Organization for Human Brain Mapping, June 25, 2025, Brisbane, Australia.

CONFERENCE TALKS

1. Fogarty, M., Sherafati, A., Markow, Z.E., **Fehner, W**., Camacho, M.C., Tang, J., Huth, A.G., Anastasio., M.A., Culver, J.P., “Leveraging large-scale fMRI datasets to simulate and evaluate the potential performance of human optical neuroimaging systems”, Neuroscience of the Everyday World, July 2025, Boston, MA.
2. Z. Li, S. Chen, **W. Fehner**, Z. E. Markow, A. R. Bice, S. H. Gaines, and J. P. Culver, "Predicting Naturalistic Visual Representations in Mouse Cortex Via Wide-Field Calcium Imaging and Motion Energy Modeling," in Optica Biophotonics Congress 2025, Technical Digest Series (Optica Publishing Group, 2025), paper BW1B.5.
3. **Fehner, W.**, Fogarty, M., Bajracharya, A., Markow, Z. E., Wilhelm, D., Tang, J., Trobaugh, J. W., Huth, A. G., & Culver, J. P. (2025). Semantic mapping of visual object categories in movies using very high-density diffuse optical tomography. Neural Imaging and Sensing 2025, 20. https://doi.org/10.1117/12.3041378
4. Bajracharya A, Wilhelm D, Markow Z, Fogarty M, **Fehner W**, Peelle JE, Hershey T, Culver JP. (2024) Functional Brain Mapping of Single-Subjects Using Precision High-Density Diffuse Optical Tomography. Talk at Society for fNIRS Conference 2024, Birmingham, GB (10 September 2024).
5. Bajracharya A, Wilhelm D, Markow Z, Fogarty M, **Fehner W**, Peelle JE, Hershey T, Culver JP. Developing Methods for Precision High-Density Diffuse Optical Tomography. Talk at Organization for Human Brain Mapping (OHBM), Seoul, South Korea, 2024.
6. **Fehner, W.**, Markow, Z., Fogarty, M., Bajracharya, A., Wilhelm, D., Huth, A. G., Culver, J. P. (2024). "Towards Semantic Visual Decoding of Naturalistic Movies with High-Density Diffuse Optical Tomography." Invited talk for the MIR Research Symposium 2024, St. Louis, USA, May 2024.
7. Lin, C.-H. P.*, **Fehner, W**.*, Inema Orukari, Lisa Kobayashi Frisk, Agato, A., Verma, M., O’Sullivan, A. J., Svoboda, C., Sumana Chetia, Eggebrecht, A. T., Turgut Durduran, Culver, J. P., & Trobaugh, J. W. (2023). "Fiber-Based Speckle Contrast Optical Tomography for Neuroimaging in Humans: Simulation of High-Density vs. Sparse Arrays and In Vivo Human Measurements." Talk presented at the Biophotonics Congress: Optics in the Life Sciences 2023, Vancouver, Canada (27 April 2023). DOI: https://doi.org/10.1364/brain.2023.bth2b.2.
8. **Fehner, W**., Fogarty, M., Anastasio, M. A., & Culver, J. P. (2023). "Evaluation of multivariate approaches to functional connectivity mapping with fNIRS." In Proceedings of SPIE PC12365, Neural Imaging and Sensing 2023, PC123650C (17 March 2023).
9. **W. Fehner**, M. Fogarty, M.A. Anastasio, J.P. Culver. (2023). “Comparison of Multivariate and Bivariate Functional Connectivity Approaches using High-Density Diffuse Optical Tomography for Human Brain Mapping.” Invited talk presented at the Imaging Science Pathway Retreat 2023, St. Louis, USA (30 March 2023).
10. **Fehner, W.**, & Defne Aksit. (2021). “Are Personality Characteristics of Students Related to the Study Subject? Insights from a Survey Study.” Talk presented at World CUR 2019, Oldenburg, Germany (25 May 2019).

CONFERENCE POSTER PRESENTATIONS

1. **W. Fehner**, M. Fogarty, A. Bajracharya, Z.E. Markow, D. Wilhelm, J. Tang, A. Hines, J. Trobaugh, A. G. Huth, J. P Culver, “Decoding of Naturalistic Movie Clips with a Semantic Model using HD-DOT”, Neuroscience of the Everyday World, July 2025, Boston, USA.
2. W.T. Hamic, **W. Fehner**, M. Fogarty, A.S. Agato, H.E. DeVore, S.M. Rafferty, D. Wilhelm, A.C. O'Sullivan, C.F. Svoboda, J.W. Trobaugh, A.T. Eggebrecht, E.J. Richter, J.P. Culver, “Wearable High-Density Diffuse Optical Tomography in Naturalistic Environments”, Neuroscience of the Everyday World, July 2025, Boston, USA.
3. M. Fogarty, **W. Fehner**, A. Bajracharya, J. Tang, Z.E. Markow, J. Trobaugh, A.G. Huth, J.P. Culver, “Voxel-wise encoding of Naturalistic audio stimuli using very-high-density diffuse optical tomography”, Organization of Human Brain Mapping, June 2025, Brisbane, Australia.

4. W.T. Hamic, **W. Fehner**, M. Fogarty, A.S. Agato, H.E. DeVore, S.M. Rafferty, D. Wilhelm, A.C. O'Sullivan, C.F. Svoboda, J.W. Trobaugh, A.T. Eggebrecht, E.J. Richter, J.P. Culver, “Whole Head Wearable High Density Diffuse Optical Tomography”, Organization of Human Brain Mapping, June 2025, Brisbane, Australia.
5. **W. Fehner**, M. Fogarty, A. Bajracharya, Z.E. Markow, D. Wilhelm, J. Trobaugh, J. Tang, A. Hines, A.G. Huth, J.P. Culver, “Advancing Semantic Mapping for Naturalistic Settings with High-Density Diffuse Optical Tomography”, Organization of Human Brain Mapping, June 2025, Brisbane, Australia.
6. **Fehner, W.,** Fogarty, M., Bajracharya, A., Markow, Z.E., Wilhelm, W., Trobaugh, J., Huth, A. G., Culver, J. P. (2024). “Towards Semantic Encoding of Visual Content in Movies via High-Density Diffuse Optical Tomography.” Poster at Society for fNIRS Conference 2024, Birmingham, GB (10 September 2024).
7. Fogarty, M., **Fehner, W.**, Bajracharya, A., Tang, J., Markow, Z.E., Trobaugh, J., Huth, A. G., Culver, J. P. (2024) Voxel-wise modeling of naturalistic auditory stimuli using very-high-density diffuse optical tomography. Poster at Society for fNIRS Conference 2024, Birmingham, GB (10 September 2024).
8. **Fehner, W.**, Markow, Z., Fogarty, M., Bajracharya, A., Wilhelm, D., Huth, A. G., Culver, J. P. (2024). "Towards Semantic Visual Decoding of Naturalistic Movies with High-Density Diffuse Optical Tomography." Poster presentation at the Organization for Human Brain Mapping (OHBM) 2024, Seoul, South Korea, June 2024.
9. **Fehner, W.**, Fogarty, M., Markow, Z., Bajracharya, A., Wilhelm, D., Trobaugh, J. W. , Huth, A. G., Culver, J. P. (2024). "Towards Semantic Visual Encoding of Naturalistic Movies with High-Density Diffuse Optical Tomography." Poster at the Jane Street Graduate Research Fellowship Workshop 2024, New York City, USA, April 2024.
10. **Fehner, W.**, Fogarty, M., Markow, Z., Bajracharya, A., Wilhelm, D., Trobaugh, J. W. , Huth, A. G., Culver, J. P. (2024). "Towards Semantic Visual Encoding of Naturalistic Movies with High-Density Diffuse Optical Tomography." Poster presented at the Imaging Science Pathway Retreat 2024, St. Louis, USA (12 April 2024).
11. **W. Fehner**, M. Fogarty, M.A. Anastasio, J.P. Culver. (2022). “Comparison of Multivariate and Bivariate Functional Connectivity Approaches using High-Density Diffuse Optical Tomography for Human Brain Mapping”. Poster presented at 2023 Neuroscience Retreat, St. Louis, USA (12 October 2023).
12. Bajracharya A, Wilhelm D, Markow Z, Fogarty M, **Fehner W**, Peelle JE, Hershey T, Culver JP. Precision functional mapping of cortical activity using High-Density Diffuse Optical Tomography (HD-DOT). Neuroscience Retreat, Washington University in St.Louis, MO, USA, 2023.
13. Lin, C.-H. P.*, **Fehner, W.***, Orukari, I.*, Frisk, L. K., Agato, A., Verma, M., O’Sullivan, A. J., Svoboda, C., Sumana Chetia, Eggebrecht, A. T., Turgut Durduran, Culver, J. P., &, Trobaugh, J. W. (2023). "Validating fiber-based speckle contrast optical tomography through simulation and human neuroimaging: Imaging CBF using SCOT." Poster presented at the Organization for Human Brain Mapping (OHBM) 2023, Montreal, Canada, July 2023. DOI: 10.13140/RG.2.2.28035.89128.
14. Bajracharya A, Wilhelm D, Markow Z, Fogarty M, **Fehner W**, Peelle JE, Hershey T, Culver JP. Precision functional mapping of cortical activity using High-Density Diffuse Optical Tomography. Organization of Human Brain Mapping, Montreal, Canada, 2023.
15. Aahana Bajracharya, Wilhelm, D., Markow, Z. E., Fogarty, M., **Fehner, W**., Peelle, J. E., Hershey, T., & Culver, J. P. (2023). Precision Functional Mapping of Cortical Activity Using High-Density Diffuse Optical Tomography (HD-DOT). Poster presented at the Biophotonics Congress: Optics in the Life Sciences 2023, Vancouver, Canada (27 April 2023). https://doi.org/10.1364/boda.2023.jtu4b.15
16. **W. Fehner**, M. Fogarty, M.A. Anastasio, J.P. Culver. (2023). “Multivariate vs Bivariate Functional Connectivity using High-Density Diffuse Optical Tomography for Human Brain Mapping.” Poster presented at 2023 Graduate Research Symposium, St. Louis USA (4 April 2023).
17. Bajracharya A, Wilhelm D, Markow Z, Fogarty M, **Fehner W**, Peelle JE, Hershey T, Culver JP. Precision High-Density Diffuse Optical Tomography (pHD-DOT) for single-subject functional cortical mapping. Imaging Science Pathway Retreat, Washington University, St.Louis, MO, USA, 2023.
18. **W. Fehner**, M. Fogarty, M.A. Anastasio, J.P. Culver. (2022). “Multivariate vs Bivariate Functional Connectivity with High-Density Diffuse Optical Tomography.” Poster presented at 2022 SPECTRA Conference, St. Louis, USA (21 October 2022).
19. **W. Fehner,** M. Fogarty, M.A. Anastasio, J.P. Culver, “Multivariate vs Bivariate Functional Connectivity with High-Density Diffuse Optical Tomography.” Poster presented at Society for fNIRS Conference 2022, Boston, USA (11 October 2022).

20. **W. Fehner**, M. Fogarty, M.A. Anastasio, J.P. Culver. (2022). “Multivariate vs Bivariate Functional Connectivity using High-Density Diffuse Optical Tomography”. Poster presented at 2022 Neuroscience Retreat, Potosi MO, USA (6 October 2022).
21. **Fehner, W.**, & Defne Aksit. (2021). Are Personality Characteristics of Students Related to the Study Subject? Insights from a Survey Study. “Forsch!” - Studentisches Online-Journal Der Universität Oldenburg, 1, 67–74. https://ojs.uni-oldenburg.de/journals/ojs1/ojs/index.php/forsch/article/view/77
22. **W. Fehner**, T. Rinne, “Functional near-infrared spectroscopy experiment to study functional plasticity in adult auditory cortex after cochlear implant switch-on.” Poster presented at the Human Neuroscience Symposium 2021, Turku, Finland (24 April 2021).