Stanford

Stephanie Balters

Clinical Assistant Professor, Psychiatry and Behavioral Sciences - Interdisciplinary Brain Sciences

Bio

BIO

Dr. Stephanie Balters is a neuroscientist, educator, and innovator dedicated to advancing team flourishing and excellence. She directs the Empowerment Neuroscience Lab in Stanford Medicine's Department of Psychiatry & Behavioral Sciences, serves as Director of Research at Stanford's Center for Compassion and Altruism Research and Education (CCARE), and is Scientific Lead of the Stanford Belonging Project. Her research employs portable dual-brain neuroimaging (fNIRS hyperscanning) and advanced computational modeling to elucidate the neural and inter-brain signatures of high-impact, purpose-aligned teams. She also develops and tests targeted, evidence-based interventions that measurably strengthen connection, collaboration, and performance. Partnering across Stanford Medicine, the Graduate School of Business, and Stanford Athletics, Dr. Balters translates biomarkers of human connection into simple, repeatable practices that leaders can train and track over time—turning the neuroscience of connection into a practical engine for culture change. She also leads team-innovation workshops at Stanford, creating high-trust spaces that foster authenticity, alignment, and bold, measurable execution. Beyond academia, she serves as a Human Factors Specialist at NATO, converting neuroscience insights into actionable strategies for resilient, high-performing teams.

ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Psychiatry and Behavioral Sciences - Interdisciplinary Brain Sciences
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Director of Research, Center for Compassion and Altruism Research and Education, Stanford Medicine, (2025- present)
- Scientific Lead, The Stanford Belonging Project, Stanford Medicine, (2025- present)
- Director, Empowerment Neuroscience Lab, Stanford Medicine, (2024- present)

HONORS AND AWARDS

- Stanford IDEAL Honor Roll for Team Innovation Workshops, Stanford University (2024)
- Stanford JEDI Champion Award for Empowerment Workshops at the School of Medicine, Stanford University (2023)
- K99/R00 Pathway to Independence Award, National Institute of Mental Health (2023)
- Stanford Jump Start Award for Excellence in Research, Stanford University (2021)
- Postdoctoral Fellowship from the Center for Automotive Research, Stanford University (2019)
- Postdoctoral Fellowship, Norwegian Centres of Expertise (2018)
- Predoctoral Fellowship from the Scandinavian Consortium for Organizational Research, Stanford University (2017)

- Predoctoral Fellowship from the Vice Dean of Education, Norwegian University of Science and Technology (2014)
- Thesis award, Best Master's Thesis in Automotive Engineering, RWTH Aachen University (2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Team Science Workshop Facilitator, School of Medicine, Stanford University (2024 - present)
- Wellbeing Advisory Committee, Department of Psychiatry and Behavioral Sciences, Stanford University (2024 - present)
- Founding Director, Stanford Women Empowerment Initiative, Stanford University (2022 - present)
- Empowerment Coach, Grant Writing Academy, Stanford University (2021 - present)
- Peer Review Committee, National Science Foundation (2020 - present)
- Human Factors Specialist, NATO (2019 - present)

PROFESSIONAL EDUCATION

- Postdoc, Stanford University, School of Medicine , Interaction Neuroscience (2021)
- Postdoc, Stanford University, School of Medicine , Precision Health (2019)
- Visiting Researcher, Stanford University, Computer Science , Human Computer Interaction (2017)
- Visiting Researcher, Stanford University, Center for Design Research , Human Machine Interaction (2017)
- Ph.D., NTNU , Mechanical Engineering (2017)
- M.Eng., RWTH Aachen University , Mechanical Engineering and Business Administration (2012)
- B.Eng., RWTH Aachen University , Mechanical Engineering and Business Administration (2008)

LINKS

- Explore My Lab: https://empowering.stanford.edu/

Publications

PUBLICATIONS

- **Avoidant coping behaviors as risk factor in the relationship between heterosexism and PTSD severity among young sexual minority women.** *Psychological trauma : theory, research, practice and policy*
  Balters, S., Brier, Z. M., Kaysen, D.
  2025
- **Navigating Heterosexism: Unveiling the Impact of Isolation on Posttraumatic Stress Disorder Severity in Sexual Minority Women.** *Violence against women*
  Balters, S., Brier, Z. M., Miller, J. G., Kaysen, D.
  2025: 10778012251341262
- **Effects of focal brain damage on political behaviour across different political ideologies.** *Brain : a journal of neurology*
  Siddiqi, S. H., Balters, S., Zamboni, G., Cohen-Zimerman, S., Grafman, J. H.
  2025
- **Navigating Heterosexism: Unveiling the Impact of Isolation on PTSD Severity in Sexual Minority Women** *Violence Against Women*
  Balters, S., Brier, Z., Miller, J. M., Kaysen, D.
  2025; in print
- **Avoidant Coping Behaviors as Risk Factor in the Relationship Between Heterosexism and PTSD Severity Among Young Sexual Minority Women** *Psychological Trauma: Theory, Research, Practice, and Policy*
  Balters, S., Brier, Z., Kaysen, D.
  2025; in review
- **A month in review: longitudinal dynamics between daily PTSD symptom networks, affect, and drinking behaviors in female college students** *Frontiers in Psychology*

Balters, S., Schlichting, M., Walton, T. O., Kochenderfer, M. J., Kaysen, D.
2024; 15

- **Neural responses to gender-based microaggressions in academic medicine.** *Journal of neuroscience research*
  Balters, S., Foland-Ross, L. C., Bruno, J., Periyakoil, V. S., Valantine, H., Reiss, A. L.
  2023
- **Virtual (Zoom) Interactions Alter Conversational Behavior and Inter-Brain Coherence.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
  Balters, S., Miller, J. G., Li, R., Hawthorne, G., Reiss, A. L.
  2023
- **Expressing appreciation is linked to interpersonal closeness and inter-brain coherence, both in person and over Zoom.** *Cerebral cortex (New York, N.Y. : 1991)*
  Balters, S., Miller, J. G., Reiss, A. L.
  2023
- **A Neuroscience Approach to Women Entrepreneurs' Pitch Performance: Impact of Inter-Brain Synchrony on Investment Decisions** *Design Thinking Research*
  Balters, S., Heaton, S., Reiss, A. L.
  Springer.2023
- **Design science and neuroscience: A systematic review of the emergent field of Design Neurocognition** *DESIGN STUDIES*
  Balters, S., Weinstein, T., Mayseless, N., Auernhammer, J., Hawthorne, G., Steinert, M., Meinel, C., Leifer, L. J., Reiss, A. L.
  2023; 84
- **Current opinions on the present and future use of functional near-infrared spectroscopy in psychiatry.** *Neurophotonics*
  Li, R., Hosseini, H., Saggar, M., Balters, S. C., Reiss, A. L.
  2023; 10 (1): 013505
- **Priming Activity to Increase Interpersonal Closeness, Inter-brain Coherence, and Team Creativity Outcome** *Design Thinking Research*
  Balters, S., Hawthorne, G., Reiss, A. L.
  Springer.2023
- **Conflicting spatial representations impairs object tracking performance in an aerospace environment** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Geeseman, J. W., Balters, S.
  2022; 167
- **Cortical activation predicts posttraumatic improvement in youth treated with TF-CBT or CCT.** *Journal of psychiatric research*
  Espil, F. M., Balters, S., Li, R., McCurdy, B. H., Kletter, H., Piccirilli, A., Cohen, J. A., Weems, C. F., Reiss, A. L., Carrion, V. G.
  2022; 156: 25-35
- **Towards assessing subcortical "deep brain" biomarkers of PTSD with functional near-infrared spectroscopy.** *Cerebral cortex (New York, N.Y. : 1991)*
  Balters, S., Schlichting, M. R., Foland-Ross, L., Brigadoi, S., Miller, J. G., Kochenderfer, M. J., Garrett, A. S., Reiss, A. L.
  2022
- **Interpersonal Trust Activity to Increase Team Creativity Outcome: An fNIRS Hyperscanning Approach.** *In Design Thinking Research. Springer.*
  Balters, S., Weinstein, T., Hawthorne, G., Reiss, A. L.
  2022
- **The NATO Guidebook for Human Experimentation with Unmanned Aerial Systems**
  Geeseman, J. W., Hou, M., Balters, S., Darrah, S., Kuffner, M., Richardson, D., Vorm, E.
  NATO Headquarters.2022
- **Functional near-infrared spectroscopy brain imaging predicts symptom severity in youth exposed to traumatic stress.** *Journal of psychiatric research*
  Balters, S., Li, R., Espil, F. M., Piccirilli, A., Liu, N., Gundran, A., Carrion, V. G., Weems, C. F., Cohen, J. A., Reiss, A. L.
  2021; 144: 494-502

- **Individualized stress detection using an unmodified car steering wheel.** *Scientific reports*
  Balters, S., Gowda, N., Ordonez, F., Paredes, P. E.
  2021; 11 (1): 20646
- **Dynamic Inter-Brain Synchrony in Real-life Inter-Personal Cooperation: A Functional Near-infrared Spectroscopy Hyperscanning Study.** *NeuroImage*
  Li, R., Mayseless, N., Balters, S., Reiss, A. L.
  2021: 118263
- **Inter-Brain Synchrony and Innovation in a Zoom World Using Analog and Digital Manipulatives** *Design Thinking Research*
  Balters, S., Baker, J., Hawthorne, G., Reiss, A. L.
  Springer.2021
- **The NATO Human-System Integration Guidebook**
  Geeseman, J. W., Hou, M., Balters, S., Darrah, S., Kuffner, M., Richardson, D., Vorm, E.
  NATO Headquarters.2021
- **Inter-brain Synchrony and Innovation in a Zoom World Using Analog and Digital Manipulatives.** *In Design Thinking Research. Springer.*
  Balters, S., Mayseless, N., Grace, H., Reiss, A. L.
  2021
- **Dyadic Sex Composition and Task Classification Using fNIRS Hyperscanning Data** *20th IEEE International Conference on Machine Learning and Applications (ICMLA)*
  Kruse, L. A., Reiss, A. L., Kochenderfer, M. J., Balters, S.
  2021
- **A Methodological Review of fNIRS in Driving Research: Relevance to the Future of Autonomous Vehicles.** *Frontiers in human neuroscience*
  Balters, S., Baker, J. M., Geeseman, J. W., Reiss, A. L.
  2021; 15: 637589
- **Unobtrusive stress sensing via a commercial steering wheel.** *Scientific Reports*
  Balters, S., Gowda, N., Ordonez, F., Paredes, P. E.
  2021
- **Capturing Human Interaction in the Virtual Age: A Perspective on the Future of fNIRS Hyperscanning** *FRONTIERS IN HUMAN NEUROSCIENCE*
  Balters, S., Baker, J. M., Hawthorne, G., Reiss, A. L.
  2020; 14: 588494
- **Functional Near-Infrared Spectroscopy (fNIRS) in an Aerospace Environment: Challenges and Considerations** *AEROSPACE MEDICINE AND HUMAN PERFORMANCE*
  Geeseman, J., Balters, S., Cotton, O., Kiehl, Z., Lucia, L., Tenison, C.
  2020; 91 (10): 833–35
- **Mayday, Mayday, Mayday: Using salivary cortisol to detect distress (and eustress!) in critical incident training** *INTERNATIONAL JOURNAL OF INDUSTRIAL ERGONOMICS*
  Balters, S., Geeseman, J. W., Tveten, A., Hildre, H., Ju, W., Steinert, M.
  2020; 78
- **Calm Commute: Guided Slow Breathing for Daily Stress Management in Drivers** *Interactive, Mobile, Wireless, Ubiquitous Technologies*
  Balters, S., Mauriello, M., Park, S., Landay, J., Paredes, P.
  2020
- **Back to School: Impact of Training on Driver Behavior and State in Autonomous Vehicles**
  Sibi, S., Balters, S., Fu, E., Strack, E. G., Steinert, M., Ju, W., IEEE
  IEEE.2020: 1189-1196
- **The Neuroscience of Team Cooperation versus Team Collaboration** *Design Thinking Research*
  Balters, S., Mayseless, N., Hawthorne, G., Reiss, A. L.
  Springer.2020

- **On-road Guided Slow Breathing Interventions for Car Commuters**
  Balters, S., Landay, J. A., Paredes, P. E., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019
- **On-road Stress Analysis for In-car Interventions During The Commute**
  Balters, S., Bernstein, M., Paredes, P. E., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019
- **Breath Booster! Exploring In-Car, Fast-Paced Breathing Interventions to Enhance Driver Arousal State**
  Balters, S., Murnane, E. L., Landay, J. A., Paredes, P. E., ACM
  ASSOC COMPUTING MACHINERY.2018: 128-137
- **Just Breathe: In-Car Interventions for Guided Slow Breathing** *Journal of ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*
  Paredes, P. E., Zhou, Y., Hamdam, N., Balters, S., Murnane, E., Ju, W., Landay, J. A.
  2018
- **Driving with the Fishes: Towards Calming and Mindful Virtual Reality Experiences for the Car** *Journal of ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*
  Paredes, P., Balters, S., Qian, K., Murnane, E., Ju, W., Landay, J. A.
  2018
- **Capturing emotion reactivity through physiology measurement as a foundation for affective engineering in engineering design science and engineering practices** *JOURNAL OF INTELLIGENT MANUFACTURING*
  Balters, S., Steinert, M.
  2017; 28 (7): 1585-1607
- **Learning-by-Doing: Using Near Infrared Spectroscopy to Detect Habituation and Adaptation in Automated Driving**
  Balters, S., Sibi, S., Johns, M., Steinert, M., Ju, W., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2017: 134-143
- **Assessing Driver Cortical Activity during Varying Levels of Automation with Functional Near Infrared Spectroscopy**
  Sibi, S., Balters, S., Ju, W., Steinert, M.
  2017
- **Towards New Affect Integrated Interaction Design: Papers on Theory, Instrument, and Context of Affective Engineering. Doctoral Thesis.** *Norwegian University of Science and Technology*
  Balters, S.
  2017
- **Smell – Forgotten yet Critical Dimension in Product Development?**
  Limseth, G., Cuesta, K., Balters, S., Garcia Cifuentes, J. P., Steinert, M.
  2016
- **Introducing the Wayfaring Approach for the Development of Human Experiments in Interaction Design and Engineering Design Science**
  Leikanger, K. K., Balters, S., Steinert, M.
  2016
- **Experimental studies in interaction design and engineering design science - a repository for experiment setups.**
  Kriesi, C., Balters, S., Steinert, M.
  2016
- **Impact of road- and vehicle-related parameters on the energy efficiency of hybrid city buses.** *International Journal of Electric and Hybrid Vehicles*
  Balters, S., Scholz-Starke, K., Eckstein, L.
  2015
- **Physiology and sensorial based quantification of human-object interaction - the QOSI matrix.**
  Balters, S., Jensen, M. B., Steinert, M.
  2015

- **Measuring Prototypes – A Standardized Quantitative Description of Prototypes and their Outcome for Data Collection and Analysis.**
  Jensen, M. B., Balters, S., Steinert, M.
  2015
- **Distributed Experiments in Design Sciences, A Next Step in Design Observation Studies?**
  Kriesi, C., Balters, S., Steinert, M.
  2015
- **Photography - A New Tool in Needfinding.**
  Wulvik, A., Balters, S., Steinert, M.
  2015
- **Decision-Making in engineering—A call for affective engineering dimensions in applied engineering design and design sciences.**
  Balters, S., Steinert, M.
  2014
- **Physiological Data Acquisition for Deeper Insights into Prototyping.**
  Kriesi, C., Steinert, M., Meboldt, M., Balters, S.
  2014