CURRICULUM VITAE

MIGUEL PATRICIO ECKSTEIN

Vision & Image Understanding Laboratory
Department of Psychological & Brain Sciences
University of California, Santa Barbara
eckstein@psych.ucsb.edu

EDUCATION

1987–1990	**UNIVERSITY OF CALIFORNIA, BERKELEY** MAJORS: Bachelor's Degree, Physics & Psychology
1990–1994	**UNIVERSITY OF CALIFORNIA, LOS ANGELES** MAJOR: Cognitive Psychology MINOR: Measurement & Psychometrics DEGREE: Ph.D.

POSITIONS

5/94–7/00	**Research Scientist** Department of Medical Physics & Imaging Cedars-Sinai Medical Center
1/96–1/97	**Visiting Scientist** Human Information Processing Branch NASA Ames Research Center
7/00–7/03	**Assistant Professor** Department of Psychology University of California, Santa Barbara
7/03–7/07	**Associate Professor** Department of Psychology University of California, Santa Barbara
7/07–present	**Professor** Department of Psychology (now Psychological and Brain Sciences) University of California, Santa Barbara
9/13–present	**Professor** Graduate Program in Dynamical Neuroscience University of California, Santa Barbara
7/19–present	**Affiliated Faculty** Department of Electrical and Computer Engineering University of California, Santa Barbara
7/20	**Duncan and Suzanne Mellichamp Endowed Chair in Mind and Machine Intelligence**
5/21–present	**Affiliated Faculty** Department of Computer Science University of California, Santa Barbara
7/22–present	**Distinguished Professor** Department of Psychological and Brain Sciences University of California, Santa Barbara

AWARDS & FELLOWSHIPS

International, National, State, Society and Institution Awards & Honors

1998	Optical Society of America Young Investigator Award
2000	Cedars-Sinai Research Institute Young Investigator Award
2002	National Science Foundation CAREER Award
2008	National Academy of Sciences, Troland Research Award
2008	California State Senate Resolution (No. 475) relative to commending MP Eckstein
2019	Guggenheim Fellowship
2020	Duncan and Suzanne Mellichamp Chair in Mind and Machine Intelligence
2024	Anne and Donald Herbert Distinguished Lectureship in Modern Statistical Modeling American Association of Physicists in Medicine (AAPM)

National Agency Travel Awards & Conference prizes

1996	Center for Visual Sciences (Univ. of Rochester) Scholar Award to attend CVS
1997	National Eye Institute Fellowship Travel Award, ARVO Annual Meeting.
1998	Cum Laude Award for best poster at the SPIE, Medical Imaging Annual Meeting Image Perception & Observer Performance Conference.

Internal Institution Fellowships

1991–1994	Four-year recipient of UCLA Non-Resident Tuition Fellowship
1994	Recipient of the Cedars-Sinai Research Institute Fellowship

UC SANTA BARBARA SELECTED CAMPUS POSITIONS

2005–2006	Vice Chair, Psychological and Brain Sciences
2009–2010	Vice-Director, Sage Center for the Study of the Mind
2011–2012	Vice Chair, Psychological and Brain Sciences
2009–present	Executive Council Member, Sage Center for the Study of the Mind
2014–2016	Co-Chair, Neuroscience Initiative Faculty Search Committees
2015–2019	Neuroscience Research Institute, Advisory Board
2018–2019	Chair, Interdepartmental Program in Dynamical Neuroscience
2020–2021	Chair, Interdepartmental Program in Dynamical Neuroscience
2019–present	Co-Director, UCSB Mind and Machine Intelligence Initiative
2024-2026	UCSB AI Committee

PROFESSIONAL ACTIVITIES

Conference/Society chair and conference program committees

1999–2001	Vice-Chair, Optical Soc. of America Annual Meeting, Vision Tech. Group
2001–2003	Chair, Optical Soc. of America Annual Meeting, Vision Tech. Group
2000–2006	Program Committee for the Society for Optical Engineering, Human Vision and Electronic Imaging, (San Jose, CA)
2000–2004	Program Committee for the Society for Optical Engineering, Medical Imaging Meeting, Image Perception & Performance (San Diego, CA)

2001	Program Committee for Medical Image Perception Conference, Virginia
2003	Program Committee 1st International Workshop on Visual Attention, San Miniato, Italy
2004–2006	Conference Chair, Society for Optical Engineering Medical Imaging: Image Perception, Performance and Technology Assessment (San Diego, CA)
2007	Fellowships Committee European Conference on Visual Perception
2007	Chair, 2nd International Workshop on Visual Attention, Buenos Aires
2009	Co-Chair, Medical Image Perception Society Conference, Santa Barbara, CA
2010–2014	Board of Directors, Vision Sciences Society
2011	Program Committee 3rd International Workshop on Visual Attention, India
2012–2014	Treasurer, Vision Sciences Society
2016	Review Committee European Conference on Visual Perception
2016	Chair, 5th International Workshop on Perceptual Learning, Calafate, Argentina
2017–2021	Co-Vice Chair Gordon Conference on Eye Movements
2021–2023	Co-Chair Gordon Conference on Eye Movements

Conference Session Chair and Symposium organization

1997	Chair for the conference session, "Modeling Visual Signal Detection I" at the vision section of the SPIE meeting (Feb. 1997 SPIE, Medical Imaging Conference).
1997	Organizer and Chair for a Special Symposium: "Noise vs. Pattern Masking" at the Vision section of the 1997 Optical Society of America Annual Meeting in Long Beach, CA (Oct. 1997)
1997	Chair for the conference session "Models for visual Signal Detection" at the Far West Image Perception Conference (Arizona, Oct. 1997)
1998	Chair for session "Visual search and memory" at the Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting
1999	Chair for SPIE Image Perception conference session: Display Parameters and Performance I (Feb. 1999, San Diego)
2000	Chair for session "Visual search" at the Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting
2000	Chair for Special symposium, "Letter identification" at the annual meeting of the Optical Society of America
2001	Chair for session ROC and other performance assessment tools II, SPIE Medical Imaging
2001	Organizer of Optical Society of America Meeting Workshop on Visual Attention.
2002	Symposium Organizer for Fall Vision Meeting: Effects of Spatial Context
2003	Chair session "Observer models I: Clinical Applications", SPIE Medical Imaging
2004	Chair for the session "Model observers", SPIE Medical Imaging.
2004	Chair session: "Visual Search", European Conference on Visual Perception, Budapest.
2007	Chair session: "Visual Search", European Conference on Visual Perception, Arezzo
2007	Chair session: "Model Observers", Medical Image Perception Society Conference, Iowa
2013	Symposium Co-organizer, "Perceptual Learning" at Asian Annual Vision Meeting
2020	Co-Chair UC Santa Barbara 1st Mind and Machine Intelligence Summit

2021	Co-Chair UC Santa Barbara 2nd Mind and Machine Intelligence Summit: AI and Health
2022	Co-Chair UCSB 3rd Mind and Machine Intelligence Summit: AI and Neuroscience
2023	Co-Chair UCSB 4th Mind and Machine Intelligence Summit: AI and Decision Making
2024	Co-Chair UCSB 5th Mind and Machine Intelligence Summit: AI Human Creativity
2026	Co-Chair UCSB 6th Mind and Machine Intelligence Summit: AI and Economics

Grant Review/Study Sections

1998	National Institutes of Health, Diagnostic Imaging Study Section (ad hoc)
2000	NASA, Human Factors Study Section (ad hoc)
2002	National Institutes of Health, Diagnostic Imaging Study Section (ad hoc)
2002–2007	NIH, Biomedical Imaging Technology, Study Section (Panel Member)
2003	National Science Foundation, Cognition and Perception (ad hoc)
2004	National Institutes of Health, Central Visual Processes (ad hoc)
2004	Air Force (ad hoc)
2006	National Science Foundation, Cognition and Perception (ad hoc)
2007	NIH Conflict Study Section (Biomedical Imaging Technology)
2007	National Science Foundation, Cognition and Perception (ad hoc)
2008	National Science Foundation Cognition & Perception (ad hoc)
2009	NIH Conflict Study Section (Biomedical Imaging Technology)
2009	National Science Foundation, Cognition, Perception and Action (ad hoc)
2010	NIH Conflict Study Section (Biomedical Imaging Technology)
2010	National Science Foundation, Cognitive Neuroscience (ad hoc)
2011	NASA, Neurocognitive and Sensorimotor Panel
2011	NIH Biomedical Imaging Technology Program Project (ad hoc)
2012	NIH Biomedical Imaging Technology Program Project & Study Section (ad hoc)
2013	NIH Mechanisms of Sensory, Perceptual, and Cognitive Processes (ad hoc)
2014	NIH National Institute of Biomedical Imaging and Bioengineering (R13; ad hoc).
2016–2021	NIH, Sensory Processes & Cognitive Neuroscience (panel member)
2021–2022	NIH, Neuroscience of Basic Visual Processes (panel member)
2023	National Science Foundation (Smart Health, ad hoc)
2024	NIH, Biomedical Imaging, K99/R00 grant panel

Guest editor for special issues

2002	Classification images, Journal of Vision
2007	Image Quality, Journal of Optical Society of America A
2012	Visual Attention, Vision Research
2013	Visual Search, Journal of Vision
2015	Perceptual Learning, Journal of Vision
2016	Computational Models of Visual Attention, Vision Research
2018	Perceptual Learning, Vision Research
2025	Eye Movements, Journal of Vision

Editorial duties for journals

2003–2006	Consulting Editor, Perception & Psychophysics
2004–2006	Editor, SPIE Proc. on Medical Imaging, Image Perception, Observer Performance and Technology Assessment
2005–2011	Vision Topic Editor, Journal of the Optical Society of America A
2006–present	Board of Editors, Journal of Vision
2017–2022	Guest Editor PNAS

National Committees

2025–2027	National Academy of Sciences, Advisory Board on Sensory, Cognitive, and Behavioral Sciences

SUBMITTED GRANTS

2026–2029	National Institutes of Health, NEI, R01: "Computational Framework for Unified Understanding of Covert Attention", PI: M.P. Eckstein

ACTIVE RESEARCH GRANTS

2024–2028	National Institutes of Health, NIBIB, R01: "Visual Search with 3D medical images", PI: M.P. Eckstein
2024–2026	National Institutes of Health, NEI, R21: "Foveated Search Model for Real-World Scenes", PI: M.P. Eckstein
2024–2029	US ARMY, Visual Reasoning in Humans and Machines, Co-PIs: Eckstein, Wang
2024–2026	Noyce Trust Fund, "Computational Virtual Patient for Visual Prostheses" PI: M.P. Eckstein, Co-PI: Michael Beyeler, William Wang

PAST RESEARCH GRANTS

2018–2024	National Institutes of Health, NIBIB, R01: "Visual Search with 3D medical images", PI: M.P. Eckstein
2021–2023	Noyce Trust Fund, Mind and Machine Intelligence PI: M.P. Eckstein, Co-I: William Wang
2018–2022	National Institutes of Health, NIBIB, R01: Modeling observer performance in low-dose CT assessments. PI: C.K. Abbey, Co-I: M.P. Eckstein
2019–2022	US ARMY, Improving Machine Intelligence Through Understanding and Optimizing Integration of Humans and Machines, Co-PIs: Eckstein, Grafton, Wang
2019–2021	National Institutes of Health, R21: Neurocognitive basis of attention and eye movement guidance in the real world scenes, PI: A. Ghuman, Co-I: M.P. Eckstein
2015–2020	National Institutes of Health, NIBIB, R01: "Assessment of medical image quality with foveated model observers", PI: M.P. Eckstein
2013–2016	National Institutes of Health, National Eye Institute, R21: "Neural representations of scene context during search", PI: M.P. Eckstein
2013–2017	Department of Defense, "Predicting perceptual decisions and learning from human brain activity using machine learning algorithms from neural activity", PI: M.P. Eckstein

2015–2018	Department of Defense, “Supervisory Controller for Optimal Role Allocation for Cueing of Human Operators”, Co-PI: M.P. Eckstein, F. Bullo
2016–2018	STTR Navy, “Object Cueing Using Biomimetic Approaches to Visual Information Processing”, PI: Eckstein, UCSB
2016–2017	National Geospatial-Intelligence Agency: “Human and machine-enabled group decision for data limited visual search”, PI: M.P. Eckstein
2010–2014	National Institutes of Health, National Eye Institute, R01: “Perceptual learning: human vs. optimal Bayesian”, PI: M.P. Eckstein
2011–2014	National Geospatial-Intelligence Agency: “Human and machine-enabled group decision for data limited visual search”, PI: M.P. Eckstein
2009–2013	Department of Defense, “Predicting perceptual decisions and learning from human brain activity using machine learning algorithms from neural activity”, PI: M.P. Eckstein
2010–2013	Department of Defense, “Adaptive Integration and Optimization of Automated and Neural Processing Systems”, CO-I: M.P. Eckstein; PI: B. Giesbrecht
2008–2012	National Science Foundation, “The effect of cues on multiple fixation visual search”, PI: M.P. Eckstein
2011–2012	Eye Com Corporation: “Neural Correlates of Changes in Cognitive States Measured with Portable Systems”
2005–2011	National Institutes of Health, R01: “Model observer optimization of coronary angiograms”, PI: M.P. Eckstein
2004–2010	National Institutes of Health, National Eye Institute, R01: “Perceptual learning: human vs. optimal Bayesian”, PI: M.P. Eckstein
2006–2008	National Geospatial-Intelligence Agency: “Context effects on change detection” PI: M.P. Eckstein
2002–2008	National Science Foundation CAREER Grant: “Quantitative testing of models of visual attention during search”, PI: M.P. Eckstein
1996–2004	NIH R01: “Model observer optimization of coronary angiograms” PI: M.P. Eckstein
1999–2003	NASA/ARC/AFH, “Quantitative modeling for saccadic targeting during search”, PI: M.P. Eckstein.
1998–2000	NASA/ARC/AFH, “Measuring the relationship between perceived location and saccadic targeting; PI: M.P. Eckstein

PUBLICATIONS

Wen Z, Madinei P, Eckstein MP. Revealing the Gap in Human and VLM Scene Perception through Counterfactual Semantic Saliency. arXiv preprint arXiv:2605.1304. NeurIPS, in press (2026)

Madinei P, Solgi R, Wen Z, Skaza J, Eckstein M, Pedarsani R. INTERLACE: Interleaved layer pruning and efficient adaptation in large vision-language models. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 2947-2956 (2026)

Klein DS, Eckstein MP. Relating the perceived useful field of view to visual search in 2D Images and 3D volumetric images. Attention, Perception, & Psychophysics. 88(4):105. (2026)

Chakravarthula PN, Tsank Y, Eckstein MP. Learned foveal representations, not gaze-mediated information access, underlie perceptual advantages for canonical face configurations. Journal of Vision. 26(6):5 (2026)

Johnson BA, Soni AK, Murlidaran S, Beyeler M, Eckstein MP. Distinct roles of central and peripheral vision in rapid scene understanding. Journal of Vision. 26(6):6 (2026)

Murlidaran, S., Wen, Z., Shehabi, S., & Eckstein, M. P. Why We Look Where We Look: Emergent Human-like Fixations of a Foveated Visual Language Model Maximizing Scene Understanding. arXiv preprint arXiv:2605.17823 (2026)

Murlidaran, S., & Eckstein, M. P. Evolution of Accuracy and Visual-Cognitive Errors in a Decade of Vision-Language AI Models. arXiv preprint arXiv:2607.09654 (2026)

Madinei, P., Karmakar, S., Cohen Hoffing, R. A., Gervitz, F., & Eckstein, M. P. IRIS: Intent Resolution via Inference-time Saccades for Open-Ended VQA in Large Vision-Language Models. arXiv preprint arXiv:2602.16138 (2026)

Skaza, J., Murlidaran, S., Varshney, A., Wen, Z., Eckstein, M. P., & Beyeler, M. Intact early visual representations, not phosphene-adapted features, account for human perceptual behavior with retinal prostheses. bioRxiv, doi:10.1101/2025.06.23.660990 (2026)

Murlidaran S, Eckstein MP. Eye movements during free viewing to maximize scene understanding. Nature Communications. 17(1):940 (2025)

Karmakar S, Eckstein MP. The psychophysics of dynamic gaze-following saccades during search. Journal of Vision. 25(14):14 (2025)

Srivastava S, Wang WY, Eckstein MP. Emergent neuronal mechanisms mediating covert attention in convolutional neural networks. Proceedings of the National Academy of Sciences. e2411909122 (2025)

Gommers, J. J. J., Verboom, S. D., Duvivier, K., van Rooden, C. J., van Raamt, A. F., Houwers, J., Naafs, D. B., Duijm, L., Eckstein, M. P., Abbey, C. K., Broeders, M. J., & Sechopoulos, I. Influence of AI Decision Support on Radiologists' Performance and Visual Search in Screening Mammography. Radiology, 316(1), e243688 (2025)

Jonnalagadda, A., Barufaldi, B. B., Maidment, A. D. A., Weinstein, S. P., Abbey, C. K., & Eckstein, M. P. Convolutional neural network model observers discount signal-like anatomical structures during search in virtual digital breast tomosynthesis phantoms. Journal of Medical Imaging, 12(5), 051809 (2025)

Wen, Z., Skaza, J., Murlidaran, S., Wang, W. Y., & Eckstein, M. P. Predicting Reaction Time to Comprehend Scenes with Foveated Scene Understanding Maps. arXiv preprint arXiv:2505.12660 (2025)

Skaza, J., Madinei, P., Wen, Z., & Eckstein, M. P. DReX: Pure Vision Fusion of Self-Supervised and Convolutional Representations for Image Complexity Prediction. arXiv preprint arXiv:2511.16991 (2025)

Srivastava, S., Wang, W. Y., & Eckstein, M. P. Emergent human-like covert attention in convolutional neural networks. Current Biology, 34(3), 579-593 (2024)

Klein, D. S., Karmakar, S., Jonnalagadda, A., Abbey, C. K., & Eckstein, M. P. (2024). Greater benefits of deep learning-based computer-aided detection systems for finding small signals in 3D volumetric medical images. Journal of Medical Imaging, 11(4), (2024)

Chakravarthula, P. N., & Eckstein, M. P. A preference to look closer to the eyes is associated with a position-invariant face neural code. Psychonomic Bulletin & Review, 1-12 (2024)

Chakravarthula, P. N., Soni, A. K., & Eckstein, M. P. Preferred fixation position and gaze location: Two factors modulating the composite face effect. Journal of Vision, 24(13), 15-15 (2024)

Bower, A. H., Han, N., Soni, A., Eckstein, M. P., & Steyvers, M. (2024). How experts and novices judge other people's knowledgeability from language use. Psychonomic Bulletin & Review, 1-11 (2024)

Seitz, A. R., Sekuler, A., Dosher, B., Wright, B. A., Huang, C. B., Shawn Green, C., ... & Kourtzi, Z. Perceptual learning: Policy insights from basic research to real-world applications. Policy Insights from the Behavioral and Brain Sciences, 10(2), 324-332 (2024)

Lu, Y., Li, X., Fu, T. J., Eckstein, M. P., & Wang, W. Y. From Text to Pixel: Advancing Long-Context Understanding in MLLMs. arXiv preprint arXiv:2405.14213 (2024)

Han, N. X., & Eckstein, M. P. Inferential eye movement control while following dynamic gaze. eLife, 12, e83187 (2023)

Han, N. X., & Eckstein, M. P. (2023). Head and body cues guide eye movements and facilitate target search in real-world videos. Journal of Vision, 23(6), 5-5, (2023)

Layher, E., Santander, T., Chakravarthula, P., Marinsek, N., Turner, B. O., Eckstein, M. P., & Miller, M. B. Widespread frontoparietal fMRI activity is greatly affected by changes in criterion placement, not discriminability, during recognition memory and visual detection tests. NeuroImage, 279, 120307 (2023)

Klein, D. S., Lago, M. A., Abbey, C. K., & Eckstein, M. P. A 2D synthesized image improves the 3D search for foveated visual systems. IEEE Transactions on Medical Imaging (2023)

Abbey, C. K., Samuelson, F. W., Zeng, R., Boone, J. M., Myers, K. J., & Eckstein, M. P. Discrimination tasks in simulated low-dose CT noise. Medical Physics (2023)

Zhu, W., Wang, X., Lu, Y., Fu, Tsu-Jui., Wang, Xin, Eckstein, M and Wang, W. Collaborative Generative AI: Integrating GPT-k for Efficient Editing in Text-to-Image Generation. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing, pages 11113–11122, Singapore. Association for Computational Linguistics (2023)

Lu, Y., Feng, W., Zhu, W., Xu, W., Wang, X. E., Eckstein, M., & Wang, W. Y., Neuro-Symbolic Procedural Planning with Commonsense Prompting. arXiv:2206.02928. Proceedings of the Eleventh International Conference on Learning Representations (ICLR), (2023)

Zhu, W., Yan, A., Lu, Y., Xu, W., Wang, X. E., Eckstein, M. P., & Wang, W. Y. Visualize Before You Write: Imagination-Guided Open-Ended Text Generation. In Findings of the Association for Computational Linguistics: EACL 2023 (2023)

Zhu, W., Wang, X. E., Yan, A., Eckstein, M. P., & Wang, W. Y. ImaginE: An Imagination-Based Automatic Evaluation Metric for Natural Language Generation. In Findings of the Association for Computational Linguistics: EACL 2023, 93-105 (2023)

Han, N. X., Eckstein, M. P. Gaze-cued shifts of attention and microsaccades are sustained for whole bodies but are transient for body parts. Psychonomic Bulletin & Review 1-25 (2022)

Treviño, M., Birdsong, G., Carrigan, A., Choyke, P., Drew, T., Eckstein, M., ... & Wolfe, J. M. Advancing Research on Medical Image Perception by Strengthening Multidisciplinary Collaboration. JNCI Cancer Spectrum, 6(1), (2022)

Lu, Y., Zhu, W., Wang, X. E., Eckstein, M., & Wang, W. Y. (2022). Imagination-augmented natural language understanding. arXiv:2204.08535. In Proceedings of 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL) (2022)

Fu, T. J., Wang, X. E., Grafton, S. T., Eckstein, M. P., & Wang, W. Y. M3L: Language-based Video Editing via Multi-Modal Multi-Level Transformers. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (pp. 10513-10522) (2022)

Zhu, W., Qi, Y., Narayana, P., Sone, K., Basu, S., Wang, X. E., Wu, Q., Eckstein, M. P., & Wang, W. Y. Diagnosing Vision-and-Language Navigation: What Really Matters. In Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 5981-5993 (2022)

Welbourne, L. E., Jonnalagadda, A., Giesbrecht, B., & Eckstein, M. P. The transverse occipital sulcus and intraparietal sulcus show neural selectivity to object-scene size relationships. Communications Biology, 4(1), 1-14, (2021)

Lago, M. A., Jonnalagadda, A., Abbey, C. K., Barufaldi, B. B., Bakic, P. R., Maidment, A. D., & Eckstein, M. P. Under-exploration of Three-Dimensional Images Leads to Search Errors for Small Salient Targets. Current Biology, (2021)

Han, N. X., Chakravarthula, P. N., and Eckstein, M. P., Peripheral facial features guiding eye movements and reducing fixational variability. Journal of Vision, 21(8), 7-7. (2021)

Meghdadi, A. H., Giesbrecht, B., & Eckstein, M. P., EEG signatures of contextual influences on visual search with real scenes. Experimental Brain Research, 1-13, (2021)

Chakravarthula, P. N., Tsank, Y., & Eckstein, M. P. Eye movement strategies in face ethnicity categorization vs. face identification tasks. Vision Research, 186, 59-70, (2021)

Abbey, C. K., Lago, M. A., & Eckstein, M. P. Comparative observer effects in 2D and 3D localization tasks. Journal of Medical Imaging, 8(4), 041206 (2021)

Jonnalagadda, A., Wang, W. Y., Manjunath, B. S., & Eckstein, M. P. FoveaTer: Foveated Transformer for Image Classification. arXiv preprint arXiv:2105.14173 (2021)

Lago, M. A., Abbey, C. K., & Eckstein, M. P. Foveated Model Observers for Visual Search in 3D Medical Images. IEEE Transactions on Medical Imaging, 40(3), 1021-1031 (2020)

Ba, A., Shams, M., Schmidt, S., Eckstein, M. P., Verdun, F. R., & Bochud, F. O., Search of low-contrast liver lesions in abdominal CT: the importance of scrolling behavior. Journal of Medical Imaging, 7(4), 045501, (2020)

Lago, M.A., Sechopoulos, I., Bochud, F.O., Eckstein, M.P., Measurement of the useful field of view for single slices of different imaging modalities and targets, Journal of Medical Imaging 7 (2), 022411, (2020)

Fu, T. J., Wang, X. E., Peterson, M. F., Grafton, S. T., Eckstein, M. P., & Wang, W. Y., Counterfactual vision-and-language navigation via adversarial path sampler. In European Conference on Computer Vision (pp. 71-86). Springer, Cham, (2020)

Fu, T. J., Wang, X., Grafton, S., Eckstein, M., & Wang, W. Y., Iterative Language-Based Image Editing via Self-Supervised Counterfactual Reasoning. In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP) (pp. 4413-4422), (2020)

Schauder, K.B., Park, W.J., Tsank, Y., Eckstein, M.P., Tadin, D., Bennetto, L., Initial eye gaze to faces and its functional consequence on face identification abilities in autism spectrum disorder, Journal of Neurodevelopmental Disorders 11 (1), 1-20, (2019)

Deza A, Surana A., Eckstein, M.P., Assessment of Faster R-CNN in Man-Machine Collaborative Search, Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, 3185-3194, (2019)

Brennan, P.C., Ganesan, A., Eckstein, M.P., Ekpo, E.U., Tapia, K., Mello-Thoms, C, Juni, M., Benefits of Independent Double Reading in Digital Mammography: A Theoretical Evaluation of All Possible Pairing Methodologies, Academic Radiology (2019)

Abbey, C. K., Bakic, P. R., Pokrajac, D. D., Maidment, A. D., Eckstein, M. P., & Boone, J. M. Evaluation of non-Gaussian statistical properties in virtual breast phantoms. Journal of Medical Imaging, 6(2), (2019)

Deza, A., Jonnalagadda, A., & Eckstein, M. P. Towards Metamerism via Foveated Style Transfer. International Conference on Learning Representations (ICLR) (2019)

Abbey, C.K., Samuelson, F.W., Zeng, R., Boone, J.M., Eckstein, M.P., Myers, K, Classification images for localization performance in ramp-spectrum noise, Medical Physics 45 (5), 1970-1984 (2018)

Eckstein, M. P., Yu, C., Sagi, D., Carrasco, M., & Lu, Z. L. (2018). Introduction to Special issue on perceptual learning. Vision Research, 152, 1.

Rosedahl, LA, Eckstein, MP, Ashby, F.G., Retinal-specific category learning, Nature Human Behaviour, 2 (7), 500, (2018)

Eckstein, M.P., Koehler, K., Akbas, E., Welbourne, L., Humans but not deep neural networks miss giant targets in scenes, Current Biology, 27, 2827-2832 (2017)

Juni, M., Eckstein M.P., The wisdom of the crowds for visual search, Proceedings of the National Academy of Sciences, 201610732, (2017)

Eckstein, M.P., Probabilistic computations for attention, eye movements, and search, Annual Review of Vision Science 3, 319-342, (2017)

Akbas, E., Eckstein, M.P., Object Detection with a Foveated Search Model, PLOS Computational Biology, 13 (10), e1005743, (2017)

Tsank Y., Eckstein, M.P., Domain specificity of oculomotor learning after changes in sensory processing, Journal of Neuroscience, 1208-17, (2017)

Koehler, K., Eckstein M.P. Temporal and Peripheral Extraction of Contextual Cues from Scenes during Visual Search, 17 (2), 16-16, Journal of Vision, (2017)

Koehler, K, Eckstein M.P., Beyond Scene Gist: Objects guide visual search more than backgrounds, Journal of Experimental Psychology, Human Perception and Performance, 43, 6, 1177, (2017)

Deza, A., Peters, J. R., Taylor, G. S., Surana, A., & Eckstein, M. P. Attention Allocation Aid for Visual Search. Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, ACM (2017)

Ba, A., Eckstein, M.P., Racine, D., Ott, J.G., Verdun, F., Kobbe-Schmidt, S., Bochud, F. Anthropomorphic model observer performance in three-dimensional detection task for low-contrast computed tomography, Journal of Medical Imaging, 3, 011009, (2016)

Deza, A., Eckstein, M.P. Can Peripheral Representations Improve Clutter Metrics on Complex Scenes?, Neural Information Processing Systems (NIPS), 29, (2016)

Juni, M.Z., Eckstein, M.P. Flexible human collective wisdom. Journal of Experimental Psychology: Human Perception and Performance, 41, (2015)

Tsotsos, J.K., Eckstein, M.P., Landy, M.S, Computational models of visual attention. Vision Research, 116, 93, (2015)

Or, C.C.F., Peterson, M.F., Eckstein M.P., Initial eye movements during face identification are optimal and similar across cultures, Journal of Vision 15 (13), 12-12, (2015)

Eckstein, M.P., Schoonveld, W., Zhang, S., Mack, S.C., Akbas, E. Optimal and human eye movements to clustered low value cues to increase decision rewards during search, Vision Research 113, 137-154, (2015)

Kasper, R.W., Grafton, S.T., Eckstein, M.P., Giesbrecht B., Multimodal neuroimaging evidence linking memory and attention systems during visual search cued by context Annals of the New York Academy of Sciences 1339 (1), 176-189, (2015)

Diaz, I., Abbey, C.K., Timberg, P.A.S., Eckstein, M.P., Verdun, F.R., Castella, C., Bochud, F. Derivation of an Observer Model Adapted to Irregular Signals Based on Convolution Channels, Medical Imaging, IEEE Transactions on 34 (7), 1428-1435 (2015)

Shanmuga Vadivel, K., Ngo, T., Eckstein, M.P., Manjunath, B.S. Eye tracking assisted extraction of attentionally important objects from videos Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, 3241-3250, (2015)

Peters, J. R., Srivastava, V., Taylor, G. S., Surana, A., Eckstein, M. P., & Bullo, F. Human Supervisory Control of Robotic Teams: Integrating Cognitive Modeling with Engineering Design. IEEE Control Systems, 35, 57-80 (2015)

Ludwig, C. J., Davies, J. R., & Eckstein, M. P. (2014). Foveal analysis and peripheral selection during active visual sampling. Proceedings of the National Academy of Sciences, 111(2), E291-E299 (2014)

Cecotti, H., Eckstein, M.P., Giesbrecht B., Single-trial classification of event-related potentials in rapid serial visual presentation tasks using supervised spatial filtering, Neural Networks, and Learning Systems, IEEE Transactions on 25, 2030-2042, (2014)

Kurki, I., & Eckstein, M. P. Template changes with perceptual learning are driven by feature informativeness. Journal of Vision, 14(11), 6, (2014)

Peterson, M. F., & Eckstein, M. P. Learning optimal eye movements to unusual faces. Vision Research, 99, 57-68 (2014)

Koehler, K., Guo, F., Zhang, S., & Eckstein, M. P. What do saliency models predict? Journal of Vision, 14(3), 14. (2014)

Kasper, R. W., Cecotti, H., Touryan, J., Eckstein, M. P., & Giesbrecht, B. Isolating the neural mechanisms of interference during continuous multisensory dual-task performance. Journal of Cognitive Neuroscience, 26(3), 476-489 (2014)

Abbey, C. K., & Eckstein, M. P. Observer efficiency in free-localization tasks with correlated noise. Frontiers in Psychology, 5, (2014)

Peterson, M. F., & Eckstein, M. P. Individual Differences in Eye Movements During Face Identification Reflect Observer-Specific Optimal Points of Fixation, Psychological Science, 24(7), 1216-25, (2013)

Preston, T. J., Guo, F., Das, K., Giesbrecht, B., & Eckstein, M. P. Neural Representations of Contextual Guidance in Visual Search of Real-World Scenes, The Journal of Neuroscience, 33(18), 7846-7855 (2013)

Eckstein, M. P., Mack, S. C., Liston, D. B., Bogush, L., Menzel, R., & Krauzlis, R. J. Rethinking human visual attention: Spatial cueing effects and optimality of decisions by honeybees, monkeys and humans, Vision Research, 85:5-19 (2013)

Carrasco, M., Eckstein, M., Krauzlis, R., & Verghese, P. Attentional modulation: Target selection, active search and cognitive processing, Vision Research, 85, 1 (2013)

Abbey, C. K., Eckstein, M. P., & Boone, J. M. Estimating the relative utility of screening mammography. Medical Decision Making, 33(4), 510-520 (2013)

Karthikeyan, S., Jagadeesh, V., Shenoy, R., Eckstein, M. and Manjunath, B.S., From Where and How to What We See, Proc. IEEE International Conference on Computer Vision (ICCV), Sydney, Dec. (2013)

Srivastava, V., Surana, A., Eckstein, M. P., & Bullo, F. Mixed Human-Robot Team Surveillance. arXiv preprint arXiv:1311.2796 (2013)

Peterson, M. F., & Eckstein, M. P. Looking just below the eyes is optimal across face recognition tasks. Proceedings of the National Academy of Sciences, 109(48), E3314-E3323 (2012).

Eckstein M.P., Das K., Pham, B.T., Peterson M., Abbey, C.K., Sy J., Giesbrecht, B., Neural decoding of collective wisdom with multi-brain computing, NeuroImage, 59. 94-108, (2012)

Guo F., Preston T.J., Das K., Giesbrecht B., Eckstein M.P., Feature-independent neural coding of target detection during search of natural scenes, Journal of Neuroscience, 32, 9499-510, (2012)

Shimozaki S.S., Schoonveld W.A., Eckstein M.P., A unified Bayesian observer analysis for set size and cueing effects on perceptual decisions and saccades, Journal of Vision, 12, (2012)

Carrasco, M., Eckstein, M. P., Krauzlis, R., & Verghese, P. Vision Research special issue on "Visual attention." Vision Research, 74, 1 (2012)

Eckstein M.P, Visual Search: a retrospective, Journal of Vision, 11, (2011)

Mack S., Eckstein M.P., Object co-occurrence serves as a contextual cue to guide and facilitate visual search in a natural viewing environment, Journal of Vision, 11, (2011).

Zhang S., Eckstein M.P., Evolution and Optimality of similar neural mechanisms for perception and action during search, PLoS Comput Biol., 6(9), (2010)

Das K., Giesbrecht B., Eckstein M.P., Predicting variations of perceptual performance across individuals from neural activity using pattern classifiers, NeuroImage, 51(4):1425-37 (2010).

Peterson M.F., Das K., Sy J.L., Li S., Giesbrecht B., Kourtzi Z., Eckstein M.P., Ideal observer analysis for task normalization of pattern classifier performance applied to EEG and fMRI data, Journal of the Optical Society of America A, 27, 2670-83, (2010)

Abbey C.K., Eckstein M.P., Observer Models as a Surrogate to Perception Experiments The Handbook of Medical Image Perception (E. Samei and E.A. Krupinski, Eds.). Cambridge University Press, New York, (2010).

Trenti E.J., Barraza J.F., Eckstein M.P. Learning motion: Human vs. optimal Bayesian learner, Vision Research, 50(4):460-72, (2010)

Abbey C.K., Eckstein M.P., Boone J.M., An Equivalent Relative Utility Metric for Evaluating Screening Mammography, Medical Decision Making, 30(1):113-22, (2010)

Kasper, R., Das, K., Eckstein, M. P., Giesbrecht, B. Decoding information processing when attention fails: An electrophysiological approach. In T. Marek, W. Karwowski, & V. Rice (Eds), Advances in Understanding Human Performance: Neuroergonomics, Human Factors, and Special Populations. CRC Press/Taylor & Francis. (2010)

Das, K., Li, S., Giesbrecht, B., Kourtzi, Z., Eckstein, M. P., Predicting perceptual performance from neural activity. In T. Marek, W. Karwowski, & V. Rice (Eds), Advances in Understanding Human Performance: Neuroergonomics, Human Factors, and Special Populations. CRC Press/Taylor & Francis (2010)

Eckstein MP, Peterson MF, Pham BT, Droll JA., Statistical decision theory to relate neurons to behavior in the study of covert visual attention, Vision Research, 49, 1097-128, (2009)

Droll J.A., Eckstein, M.P., Gaze control and memory for objects while walking in a real world environment, Visual Cognition, Special Issue on Eye Guidance in Natural Scenes (2009)

Zhang S., Abbey C.K., Eckstein M.P., Virtual evolution for visual search in natural images results in behavioral receptive fields with inhibitory surrounds, Visual Neuroscience, 26, 93-108, (2009)

Droll J.A., Abbey C.K., Eckstein M.P., Learning cue validity through performance feedback. Journal of Vision, 9(2):18.1-23, (2009)

Abbey C.K., Eckstein M.P., Frequency tuning of perceptual templates changes with noise magnitude., J Optical Society of America A, 26, B72-83, (2009)

Castella C., Eckstein M.P., Abbey C.K., Kinkel K., Verdun F.R., Saunders R.S., Samei E., Bochud F.O., Mass detection on mammograms: influence of signal shape uncertainty on human and model observers, Journal of the Optical Society of America A, 26, 425-36, (2009)

Peterson M.F., Abbey C.K., Eckstein M.P., The surprisingly high human efficiency at learning to recognize faces, Vision Research, 49, 301-14 (2009).

Carrasco, M., Eckstein, M. P., Verghese, P., Boynton, G., & Treue, S. Visual attention: Neurophysiology, psychophysics and cognitive neuroscience. Vision Research, 49(10), 1033-1036 (2009)

Stone L.S., Liston D., Beutter B.R., Eckstein M.P., Oculomotor Control: Perception and eye movements, New Encyclopedia of Neuroscience, edited by Larry Squire et al, Elsevier, (2008)

Abbey C.K., Pham B.T., Shimozaki S.S., Eckstein M.P., Contrast and stimulus effects in rapid learning of a visual task, Journal of Vision, 8,2, (2008)

Castella, C., Kinkel, K., Descombes, F., Eckstein, M.P., Sottas, P., Verdun, F.R. and Bochud, F.O., Mammographic texture synthesis: second-generation clustered lumpy backgrounds using a genetic algorithm, Optics Express, 16, 7595-7607, (2008)

Eckstein, M.P., Beutter, B.R., Pham, B.T., Shimozaki, S.S., Stone, L.S., Similar neural representations of the target for saccades and perception during search, Journal of Neuroscience, 27, 1266-1270 (2007)

Shimozaki, S.S., Chen, K., Eckstein, M.P., Probing the temporal dynamics of attention to the periphery with classification movies, Journal of Vision, 7,1-20 (2007)

Abbey, C.K., Eckstein M.P., Classification images for simple detection and discrimination tasks in correlated noise, Journal of the Optical Society of America A, 24, 110-124 (2007)

Castella, C., Abbey, C.K., Eckstein, M.P., Verdun, F.R., Kinkel, K., Bochud, F.O., Human linear template with mammographic backgrounds estimated with genetic algorithm, Journal of the Optical Society of America A, 24, 1-12 (2007)

Castella C, Kinkel K, Eckstein MP, Sottas PE, Verdun FR, Bochud FO., Semiautomatic mammographic parenchymal patterns classification using multiple statistical features. Acad Radiol. 14, 1486-1499, (2007)

Schoonveld, W., Shimozaki, S.S., & Eckstein, M.P., Optimal observer model of single-fixation oddity search predicts a shallow set-size function. Journal of Vision, 7(10):1, 1-16, (2007)

Ludwig, C.J., Eckstein, M.P., Beutter, B.R., Limited flexibility in the filter underlying saccadic targeting, Vision Research, 47, 280-288, (2007)

Zhang, Y., Pham, B.T., Eckstein M.P., Evaluation of internal noise methods for Hotelling observer models, Medical Physics, 34, 3312-3322 (2007)

Zhang, Y., Pham, B.T., Eckstein, M.P., The effect of non-linear human visual system components on channelized Hotelling model observer performance, IEEE Transactions on Medical Imaging, 25, 1348-1362, (2006)

Eckstein, M.P., Drescher, B.A., Shimozaki, S.S., Attentional cues in real scenes, saccadic targeting and Bayesian priors, Psychological Science, 17, 973-980 (2006)

Shimozaki, S, Kingstone, A, Olk, B, Stowe, R, Eckstein, M.P., Classification images of two right hemisphere patients: A window into the attentional mechanisms of spatial neglect, Brain Research, 29, 1080, 26-52. (2006)

Zhang, Y., Abbey, C.K., Eckstein M.P., Adaptive mechanisms for visual detection in statistically non-stationary oriented noise, Journal of the Optical Society of America A., 23, 1549-1558, (2006)

Abbey, C.K., Eckstein, M.P., Classification images for detection, contrast discrimination, and identification tasks with a common ideal observer. Journal of Vision, 6, 335-355, (2006)

Shimozaki, S.S., Eckstein, M.P., Abbey, C.K. Spatial profiles of local and nonlocal effects upon contrast detection/discrimination from classification images, Journal of Vision 5, 45-57 (2005)

Zhang, Y., Pham, B.T., Eckstein, M.P., Task-based model/human observer evaluation of SPIHT wavelet compression with human visual system-based quantization. Academic Radiology, 12, 324-36 (2005)

Caspi, A., Beutter, B.R., Eckstein, M.P., The time course of visual information accrual guiding eye movement decisions, Proceedings of the National Academy of Sciences, 101: 13086-13090, (2004)

Zhang, Y., Pham, B.T., Eckstein, M.P., Automated optimization of JPEG 2000 Encoder Options Based on Model Observer Performance for detecting variable signals in X-ray coronary angiograms, IEEE Transactions on Medical Imaging, 23, 459-474, (2004)

Zhang, Y., Pham, B.T., Eckstein, M.P., Evaluation of JPEG 2000 encoder options: human and model observer detection of variable signals in X-ray coronary angiograms. IEEE Trans Med Imaging.23: 613-32, (2004)

Bochud, F.O., Abbey, C.K., Eckstein, M.P., Search for lesions in mammograms: statistical characterization of observer responses, Medical Physics, 31, 24-36, (2004)

Eckstein, M. P., Abbey, C. K., Pham, B. T., & Shimozaki, S. S. Perceptual learning through optimization of attentional weighting: Human versus optimal Bayesian learner. Journal of Vision, 4(12), 1006-1019, (2004)

Eckstein, M.P., Pham B.T., Shimozaki, S.S., The footprints of visual attention during search with 100% valid and 100% invalid cues, Vision Research, 44, 1193-207, (2004)

Eckstein, M.P., Active Vision, Perception, 33, (2004)

Baldassi, S, Burr D, Carrasco M, Eckstein M, Verghese P., Visual Attention, Vision Research, 44,1189-91, (2004)

Cameron, EL, Tai JC, Eckstein MP, Carrasco M., Signal detection theory applied to three visual search tasks--identification, yes/no detection and localization, Spatial Vis., 17:295-325, (2004)

Baldassi, S., Burr, D., Carrasco, M., Eckstein, M. P., & Verghese, P. Visual attention. Vision Research, 44(12), 1189-1191 (2004)

Eckstein, M.P., Bartroff J.L., Abbey, C.K., Whiting, J.S., Bochud, F.O., Automated computer evaluation and optimization of image compression of x-ray coronary angiograms for signal known exactly detection tasks, Optics Express, 11, 460-475, (2003)

Shimozaki, S. S., Eckstein, M. P., & Abbey, C. K., Comparison of two weighted integration models for the cueing task: linear and likelihood. Journal of Vision, 3(3), 209-229, http://journalofvision.org/3/3/3/, DOI 10.1167/3.3.3., (2003)

Beutter, B.R., Eckstein, M.P., Stone, L.S., Saccadic and perceptual performance in visual search tasks. I. Contrast detection and discrimination. J Opt Soc Am A Opt Image Sci Vis, 20, 1341-55, (2003)

Murray, R., Beutter, B.R., Eckstein, M.P., Stone, L.S., Saccadic and perceptual performance in visual search tasks. II. Letter discrimination, J Opt Soc Am A Opt Image Sci Vis., 20, 1356-70, (2003)

Shimozaki, S.S., Eckstein, M.P., & Abbey, C.K., An ideal observer with channels vs. feature independent processing of spatial frequency and orientation in visual search performance. J. Opt. Soc. Am. A Image Sci Vis., 20, 2197-2215, (2003)

Abbey, C.K., Eckstein, M.P., Optimal shifted estimates of human-observer templates in two-alternative forced-choice experiments, IEEE Transactions on Medical Imaging, 21, 429-440, (2002)

Shimozaki, S.S., Eckstein M.P., Abbey, C.K., Stimulus information contaminates summation tests of independent neural representation of features, Journal of Vision, 2(5), http://journalofvision.org/2/5/1/, (2002)

Eckstein, M.P., Ahumada, A.J., Jr. Classification images: A tool to analyze visual strategies. Journal of Vision, 2(1), http://journalofvision.org/2/1/3 , (2002)

Eckstein, M.P., Shimozaki, S.S., Abbey, C.K., The footprints of visual attention in the Posner paradigm revealed by classification images. Journal of Vision, 2(1), 25-45, http://journalofvision.org/2/1/3 (2002)

Abbey, C. K. & Eckstein, M. P. Classification image analysis: Estimation and statistical inference for two-alternative forced-choice experiments. Journal of Vision, 2(1), 66-78, http://journalofvision.org/2/1/5 (2002)

Shimozaki, S.S. , Thomas J.P. , Eckstein, M.P., Effects of luminance oscillations on simulated lightness discriminations. Perception and Psychophysics, 63, 1048-1062 (2001)

Eckstein, M.P., Beutter, B.R., Stone, L.S., The information limits of saccadic targeting during visual search, Perception, 30, 1389-1401 (2001)

Eckstein, M.P., The perception of medical images: 1941-2001. Optics and Photonics News, 12, 34-40, (2001)

Eckstein, M. P., Thomas, J.P, Palmer, J., Shimozaki, S.S., A signal detection model predicts effects of set size on visual search accuracy for feature, conjunction, triple conjunction and disjunction displays, Perception & Psychophysics, 62,425-451 (2000)

Eckstein, M.P., Abbey, C.K., Bochud, F.O., Practical guide to model observers in synthetic and real noisy backgrounds, in Handbook of Image Perception, Physics and Psychophysics, Editors, J. Beutel, SPIE Press, (2000)

Eckstein, M.P., Bochud F.O., Abbey, C.K., Visual signal detection in structured backgrounds IV. Figures of merit for model observers in multiple alternative forced choice with response correlations, Journal of the Optical Society of America A, 17, 206-217, (2000)

Bochud, F.O., Abbey, C.K., Eckstein, M.P., Visual signal detection in structured backgrounds III. Calculation of figures of merit for model observers in statistically non-stationary backgrounds, Journal of the Optical Society of America A, 17, 193-216, (2000)

Abbey, C.K., Eckstein, M.P., Derivation of a detectability index for correlated responses in multiple-alternative forced-choice experiments. J. Opt. Soc. Am. A. 17(11):2101-4. (2000).

Morioka, C.A., Abbey, C.K., Eckstein, M.P., R. Close, J.S. Whiting, and M. LeFree, Simulating coronary arteries in x-ray angiograms, Medical Physics, 27(10):2438-2444, (2000)

Carrasco, M., Penpeci-Talgar, C., Eckstein, M.P., Spatial covert attention increases contrast sensitivity across the CSF: support for signal enhancement, Vision Research, 40, 1203-1215, (2000)

Shimozaki, S.S., Eckstein, M.P., Thomas, J.P., The maintenance of lightness for an object, Journal of Experimental Psychology, 25, 1433-1453, (1999)

Eckstein, M.P., Bartroff, J.L., Morioka, C.A., Vodopich, D.J., Whiting, J.S, Feature stabilized digital x-ray coronary angiograms improve human visual detection in JPEG compressed images, Optics Express, 6, 193-199, (1999)

Bochud, F. O., Abbey, C.K., Eckstein, M.P., Statistical texture synthesis of mammographic images with clustered lumpy backgrounds, Optics Express, 4, 33-43, (1999)

Morioka, C.A., Eckstein, M.P., Bartroff, J.L., Hausleiter J., Whiting, J.S., Observer performance for JPEG vs. wavelet image compression of x-ray coronary angiograms, Optics Express, 5, 8-19, (1999)

Eckstein, M.P., The lower efficiency for conjunctions is due to noise and not serial attentional processing, Psychological Science, 9, 111-118, (1998)

Eckstein, M.P., Whiting, J.S., Why do anatomic backgrounds reduce lesion detectability? Investigative Radiology, 33, 203-208 (1998)

Eckstein, M.P, Ahumada, A.J, Watson, A.B., Visual signal detection in structured backgrounds. II. Effect of contrast gain control, background variations and white noise, J. of the Opt. Soc. of Am A. (Special issue on visual contrast sensitivity), 14, 2406-2419, (1997)

Eckstein, M.P., Whiting, J.S. Thomas, J.P., Role of knowledge in human visual temporal integration in spatiotemporal noise, J. Optical Society of America A, 13, 1960-1968, (1996)

Eckstein, M. P., Whiting J.S., Visual Signal Detection in structured backgrounds I: Effect of number of possible spatial locations and signal contrast, Journal of the Optical Society of America A, 13, 1777-1787, (1996)

Eckstein, M.P., Whiting, J.S., Lesion detection in structured noise, Academic Radiology, 3, 249-253 (1995)

Eigler, N, Eckstein, M.P., Honig, D., Whiting, J.S., Improving detection of coronary morphologic features from digital angiograms: Effect of stenosis stabilized display, Circulation Vol. 89, 6, p 2700-2709, (1994)

Conference Proceedings

Abbey, C. K., Gommers, J. J., Eckstein, M. P., Broeders, M. J., & Sechopoulos, I. A bivariate binormal model for modeling double reading of screening mammograms. In Medical Imaging 2024: Image Perception, Observer Performance, and Technology Assessment (Vol. 12929, pp. 149-155). SPIE (2024)

Zhou, W., & Eckstein, M. P. Optimal visual search strategy with inter-saccade response correlations. In Medical Imaging 2023: Image Perception, Observer Performance, and Technology Assessment (Vol. 12467, pp. 12-18). SPIE, (2023)

Abbey, C. K., Samuelson, F. W., Zeng, R., Boone, J. M., Eckstein, M. P., & Myers, K. Predictive accuracy of model observers in lesion discrimination tasks. In Medical Imaging 2023: Image Perception, Observer Performance, and Technology Assessment (Vol. 12467, pp. 111-119). SPIE. (2023)

Abbey, C. K., Sengupta, S., Zhou, W., Badal, A., Zeng, R., Samuelson, F. W., ... & Brankov, J. G. Analyzing neural networks applied to an anatomical simulation of the breast. In Medical Imaging: Image Perception, Observer Performance, and Technology Assessment (Vol. 12035, pp. 16-25). SPIE (2022)

Zhou, W., & Eckstein, M. P. A deep Q-learning method for optimizing visual search strategies in backgrounds of dynamic noise. In Medical Imaging: Image Perception, Observer Performance, and Technology Assessment (Vol. 12035, pp. 60-67). SPIE (2022)

Murlidaran, S., Wang, W. Y., & Eckstein, M. P. Comparing Visual Reasoning in Humans and AI. arXiv preprint arX, Workshop: How can findings about the brain improve AI systems? International Conference on Learning Representations (ICLR) (2021)

Han, N. X., Wang, W. Y., & Eckstein, M. P. Gaze Perception in Humans and CNN-Based Model. arXiv preprint arXiv:2104.08447, Workshop: How can findings about the brain improve AI systems? International Conference on Learning Representations (ICLR) (2021).

Klein, D. S., Lago, M. A., & Eckstein, M. P. The perceptual influence of 2D synthesized images on 3D search. In Medical Imaging 2021: Image Perception, Observer Performance, and Technology Assessment (Vol. 11599, p. 115990P). International Society for Optics and Photonics (2021)

Jonnalagadda, A., Lago, M. A., Barufaldi, B., Bakic, P. R., Abbey, C. K., Maidment, A. D., & Eckstein, M. P., Evaluation of convolutional neural networks for search in 1/f2. 8 filtered noise and digital breast tomosynthesis phantoms. In SPIE Medical Imaging 2020: Image Perception, Observer Performance, and Technology Assessment (Vol. 11316, p. 1131617). (2020)

Lago, M. A., Barufaldi, B., Bakic, P. R., Abbey, C. K., Maidment, A. D., & Eckstein, M. P., Foveated model observer to predict human search performance on virtual digital breast tomosynthesis phantoms. In SPIE Medical Imaging 2020: Image Perception, Observer Performance, and Technology Assessment (Vol. 11316, p. 113160V). (2020)

Abbey, C. K., Samuelson, F. W., Zeng, R., Boone, J. M., Eckstein, M. P., & Myers, K. J., Human observer templates for lesion discrimination tasks. In SPIE Medical Imaging 2020: Image Perception, Observer Performance, and Technology Assessment (Vol. 11316, p. 113160U), (2020)

Abbey, C.K, Samuelson, F.W., Zeng, R., Boone, J.M., Eckstein, M.P., Myers, K., Template models for forced-localization tasks, SPIE, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, 10952 (2019)

Lago, M. A., Abbey, C. K., & Eckstein, M. P. A foveated channelized Hotelling search model predicts dissociations in human performance in 2D and 3D images. In Medical Imaging 2019: Image Perception, Observer Performance, and Technology Assessment (Vol. 10952, p. 109520D). International Society for Optics and Photonics (2019)

Eckstein, M. P., Lago, M. A., & Abbey, C. K. Evaluation of search strategies for microcalcifications and masses in 3D images. In Medical Imaging 2018: Image Perception, Observer Performance, and Technology Assessment (Vol. 10577, p. 105770C). International Society for Optics and Photonics, (2018)

Lago, M. A., Abbey, C. K., Barufaldi, B., Bakic, P. R., Weinstein, S. P., Maidment, A. D., & Eckstein, M. P. Interactions of lesion detectability and size across single-slice DBT and 3D DBT. In Medical Imaging 2018: Image Perception, Observer Performance, and Technology Assessment (Vol. 10577, p. 105770X). International Society for Optics and Photonics, (2018).

Abbey, C. K., Lago, M. A., & Eckstein, M. P. Observer templates in 2D and 3D localization tasks. In Medical Imaging 2018: Image Perception, Observer Performance, and Technology Assessment (Vol. 10577, p. 105770T). International Society for Optics and Photonics, (2018)

Lago M., Abbey, C.K., Eckstein, M.P., Foveated Model Observers to predict human performance in 3D images, SPIE Medical Imaging, 101360P, (2017)

Eckstein, M. P., Lago, M. A., & Abbey, C. K. The role of extra-foveal processing in 3D imaging. In Medical Imaging 2017: Image Perception, Observer Performance, and Technology Assessment (Vol. 10136, p. 101360E). International Society for Optics and Photonics (2017)

Abbey, C.K., Samuelson, F.W., Wunderlich, A., Popescu, L.M., Eckstein, M.P., Boone, J.M. Approximate maximum likelihood estimation of scanning observer templates SPIE Medical Imaging, 94160O, (2015)

Ba A., Racine, D., Ott, J.G., Verdun, F.R., Kobbe-Schmidt, S., Eckstein, M.P., Bochud, F. Low contrast detectability in CT for human and model observer in multi-slice data sets, SPIE Medical Imaging, 94160F-8, (2015)

Koehler K., Eckstein, M.P., Scene Inversion Slows the Rejection of False Positives through Saccade Exploration During Search, Proceedings of the 37th Annual Meeting of the Cognitive Science Society. Pasadena, CA: Cognitive Science Society. (2015)

Akbas, E., Wadhwa, A., Eckstein, M.P., Madhow, U., A framework for machine vision based on neuro-mimetic front end processing and clustering, Communication, Control, and Computing (Allerton), 52nd Annual Allerton Conference, 311-318 (2014)

Cecotti, H., Eckstein, M. P., & Giesbrecht, B. Single-trial classification of neural responses evoked in rapid serial visual presentation: Effects of stimulus onset asynchrony and stimulus repetition. In Engineering in Medicine and Biology Society (EMBC), 1282-1285, (2014)

Abbey, C. K., Bakic, P. R., Pokrajac, D. D., Maidment, A. D., Eckstein, M. P., & Boone, J. M. Non-Gaussian statistical properties of virtual breast phantoms. In SPIE Medical Imaging (pp. 90370G-90370G). International Society for Optics and Photonics. (2014)

Cecotti, H., Eckstein, M. P., & Giesbrecht, B. Effects of performing two visual tasks on single-trial detection of event-related potentials. In Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE (pp. 1723-1726). IEEE. (2012)

Cecotti H., Ries A.J., Eckstein M.P., Giesbrecht B., Multiclass classification of single trial evoked EEG responses, IEEE Engineering in Medicine and Biology Society, 1719-22, (2012)

Abbey, C. K., Eckstein, M. P. Modeling observer performance for optimizing medical image acquisition and processing. In IS&T/SPIE Electronic Imaging (pp. 82910S-82910S). International Society for Optics and Photonics (2012)

Diaz, I., Eckstein, M.P., Lyet, A., Bize, P., Bochud, F.O. , Measurements of the detectability of hepatic hypovascular metastases as a function of retinal eccentricity in CT images, Proc. SPIE 8318, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, (2012)

Kasper, R. W., Eckstein, M. P., & Giesbrecht, B. A signal detection analysis of the effects of repeated context on visual search. Proceedings of the 34th Annual Meeting of the Cognitive Science Society (2012)

Cecotti, H., Kasper, R.W., Elliott, J.C., Eckstein, M.P., Giesbrecht, B., Multimodal target detection using single trial evoked EEG responses in single and dual-tasks, IEEE Engineering in Medicine and Biology Society, 6311-4, (2011)

Cecotti, H., Sato-Reinhold, J., Sy, J.L., Elliott, J.C., Eckstein, M.P., Giesbrecht, B., Impact of target probability on single-trial EEG target detection in a difficult rapid serial visual presentation task, IEEE Engineering in Medicine and Biology Society, 6381-4, (2011)

Abbey, C.K., Nosratieh, A., Zhang, S., Eckstein, M.P., and Boone, J.M., Characterizing non-Gaussian properties of breast images with a noisy-Laplacian distribution, Proc. SPIE Medical Imaging, Image Perception, Observer Performance, Technology Assessment, 7966, (2011)

Zhang S., Abbey C.K., Teymoorian A, Da X., Whiting J.S., Eckstein M.P., Model observers for complex discrimination tasks: assessments of multiple coronary stent placements, Proc. SPIE Medical Imaging, Image Perception, Observer Performance, Technology Assessment, 7627, (2010)

Abbey C.K., Eckstein M.P., High human-observer efficiency for forced-localization tasks in correlated noise, Proc. SPIE Medical Imaging, Image Perception, Observer Performance, Technology Assessment, 7627, (2010)

Das K., Zhang, S. B. Giesbrecht, M. P. Eckstein, Using Rapid Visually Evoked EEG Activity for Person Identification, in Proc. of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2490-3, (2009)

Sheng Zhang, Craig K. Abbey, Arian Teymoorian, Xiaolin Da, James S. Whiting, and Miguel P. Eckstein, Motion and display effects on perception of multiple coronary stents, Proc. SPIE Medical Imaging, Vol. 7263, 726306, (2009)

Abbey C.K., Sohl-Dickstein J.N., Olshausen B.A., Eckstein M.P., and Boone J.M., Higher-order scene statistics of breast images, Proc. SPIE Medical Imaging, Vol. 7263, (2009)

Castella C., Ruschin M., Eckstein M.P., Abbey C.K., Kinkel K., Verdun, F.R., Tingberg A., Bochud F.O., Mass detection in breast tomosynthesis and digital mammography: a model observer study, Proc. SPIE Medical Imaging, Vol. 7263, (2009)

Abbey, C.K., Teymoorian, A., Schoonveld W., Da, X., Zhang, S., Whiting J.S., Eckstein M.P., Perceptual assessment of multiple stent deployment, Proc. SPIE Medical Imaging, 6917, 17, (2008)

Castella C., Kinkel, K., Eckstein, M.P., Abbey, C.K., Verdun, F.R., Saunders, R.S., Samei, E. and Bochud, F.O., Mass detection on mammograms: signal variations and performance changes for human and model observers, SPIE Proc. Vol., 6917: Medical Imaging, (2008)

Castella C., Kinkel K., Verdun FR, Eckstein MP, Abbey CK, and Bochud, Mass detection on real and synthetic mammograms: human observer templates and local statistics, Proc. SPIE Medical Imaging, Observer Performance and Technology Assessment,Vol. 6515, (2007)

Abbey, C.K., Insana, M.F., Eckstein, M.P. and Boone, J.M., A bivariate binormal ROC methodology for comparing new methods to an existing standard for screening applications, Proc. SPIE Medical Imaging, Image Perception, Observer Performance and Technology Assessment, Vol. 6515, (2007)

Castella, C, Kinkel, K, Descombes F, Eckstein, M.P., Sottas, P.E., Verdun, F.R., Bochud, F.O., Mammographic texture synthesis using genetic programming and clustered lumpy background, Proc. SPIE, Medical Imaging, Image Perception, Observer Performance, and Technology Assessment, 6146, (2006)

Zhang, Y., Abbey, C.K., Eckstein, M.P., Observer performance detecting signals in globally non-stationary oriented noise, Proc. SPIE, Medical Imaging, Image Perception, Observer Performance, and Technology Assessment, 6146, (2006)

Eckstein, M.P., Pham, B.T., Abbey, C.K., Zhang Y, The efficiency of reading around learned backgrounds, Proc. SPIE, Medical Imaging, Image Perception, Observer Performance, and Technology Assessment, 6146, (2006)

Zhang, Y., Pham BT, Eckstein MP, Evaluation of internal noise methods for Hotelling observers, Proc. SPIE, Medical Imaging, Image Perception, Observer Performance, and Technology Assessment,5749, 162 (2005)

Eckstein, M.P., Zhang, Y., Pham, B.T., Metrics of medical image quality: task-based model observers vs. image discrimination/perceptual difference models, Proc SPIE Vol. 5272, 42-52, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, (2004)

Zhang, Y., Eckstein M.P., Pham, B.T., The effect of non-linear human visual system components on linear model observers, Proc SPIE Vol. 5272, 31-41, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, (2004)

Eckstein, M.P., Zhang Y., Abbey C.K, Optimization of model observer performance for signal known exactly but variable tasks leads to optimized performance in signal known statistically tasks, Proc. SPIE Vol. 5034, p. 371-382, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, (2003)

Zhang, Y., Pham B., Eckstein, M.P., JPEG 2000 encoder options on model observer performance in signal known exactly but variable tasks (SKEV), Proc. SPIE Vol. 5034, p. 371-382, Medical Imaging: Image Perception, Observer Performance, and Technology Assessment, (2003)

Eckstein, M.P., Abbey, C.K., B. Pham, Effect of image compression for model and human observers in signal known statistically tasks, Proc. SPIE, Image Perception, 4686, 13-24, (2002)

Abbey, C.K., Eckstein, M.P., Shimozaki, S.S., Baydush, A.H., Catarious, C.E., Floyd, C.E., Human observer templates for detection of a simulated lesion in mammographic images, Proc. SPIE, Image Perception, 4686, 25-36, (2002)

Abbey, C.K., Eckstein, M.P., Theory for estimating human-observer templates in two-alternative forced-choice experiment. Proc. 17th Int. Conf. On Information Processing in Medical Imaging (M.F. Insana and R. Leahy, Eds.), Springer-Verlag, Berlin, (2001).

Eckstein, M.P., Abbey, C.K., Model observers for signal-known-statistically tasks, Proc. SPIE, Image Perception and Performance, 4324, 91-103, (2001)

Abbey, C.K., Eckstein, M.P., Maximum likelihood and maximum a posteriori estimates of human observer templates, Proc. SPIE, Image Perception and Performance, 4324, 114-123, (2001)

Eckstein, M.P., Abbey C.K., Bartroff, J.L., Model observer based optimization of JPEG image compression, Proc. SPIE, Image Perception and Performance, 3981, 106-115, (2000)

Abbey, C.K., Eckstein, M.P., Estimates of human-observer templates for a simple detection task in correlated noise, Proc. SPIE, Image Perception and Performance, 3981, 70-77, (2000)

Abbey, C.K., Eckstein, M.P., Bochud, F.O., Estimation of human templates for 2 alternative forced choice tasks, Proc. SPIE, Image Perception, 3663, 284-295, (1999)

Bochud F. O., Abbey C.K., Eckstein M.P., Further investigation of the effect of phase spectrum on visual detection in structured backgrounds, Proc. SPIE Image Perception, 3663, 273-283, (1999)

Eckstein M.P., Abbey C.K., Whiting, J.S., The effect of image compression in model and human observers, Proc. SPIE Image Perception, 3663, 242-252, (1999)

Bartroff, J., Morioka, C.A., Whiting, J.S., Eckstein, M.P., Image compression and feature stabilization of dynamically displayed coronary angiograms, Medical Imaging, Image Perception, Proc. SPIE Image Perception, 3663, 342-346, (1999)

Carney, T., Klein, S. A., Tyler, C. W., Silverstein, A. D., Beutter, B., Levi, D., Watson, A. B., Reeves, A. J., Norcia, A. M., Chen, C.-C., Makous, W., & Eckstein, M. P. The development of an image/threshold database for designing and testing human vision models. In B. Rogowitz & T. Pappas (Eds.), Proceedings of the SPIE (Vol. 3644, pp. 542-551). Bellingham, WA: SPIE. (1999)

Morioka, C. A., Bochud, F. O., Abbey, C. K., Eckstein, M. P., & Whiting, J. S. Investigation of a band-pass filter using view-specific image sequences for edge enhancement in quantitative coronary angiography. Proc. SPIE Medical Imaging, 3661 (1999)

Eckstein, M. P., Abbey, C.K., Whiting, J.S., Human vs model observers in anatomic backgrounds Proceedings SPIE Image Perception, 3340, 15-26, (1998)

Barrett, H.H., Abbey, C.K., Eckstein M.P., Stabilized estimates of Hotelling observer detection performance in patient-structured noise, Proceedings SPIE Image Perception, 3340, 27-43, (1998)

Eckstein, M.P., Wickens, T.D., Aharonov G., Ruan G., Morioka C.A., Whiting, J.S., Quantifying the limitations of the use of consensus expert committees in ROC studies, Proceedings SPIE Image Perception, 3340, 128-134, (1998)

Eckstein, M.P., Ahumada, A.J., Watson, A.B., Image discrimination models predict visual detection in natural image backgrounds, Proceedings of SPIE Electronic Imaging, Human Vision & Applications, 3016, 44-56 (1997)

Eckstein, M.P, Ahumada, A.J, Watson, A.B., Whiting, J.S., What is degrading human performance in natural medical image backgrounds?, Medical Imaging, Image Perception,. Proceedings SPIE, 3036, 50-63 (1997)

Abbey, C.K., Barrett, H.H., Eckstein, M.P., Practical issues and methodology for using model observers as metrics of image quality, in Medical Imaging: The Physics of Medical Imaging, R.L. Van Metter and J. Beutel, eds., Proc. SPIE 3032, 182-194, (1997)

Eckstein M. P., Whiting J.S., Thomas J.P., Detection and discrimination of moving signals in Gaussian uncorrelated noise, in Medical Imaging, Image Perception, Harold L. Kundel, Editor, Proc. SPIE 2712, 9-25, (1996)

Whiting J.S., Eckstein, M. P., Morioka, C.A., Eigler, N., Effect of additive noise, signal contrast and feature motion on signal detection in structured noise, in Medical Imaging, Image Perception, Harold L. Kundel, Editor, Proc. SPIE 2712, 39-47, (1996)

Morioka, C. A., Whiting J.S., Eckstein, M. P., Shaw, K., Multiframe quantitative coronary arteriography, in Medical Imaging, Proc SPIE, 2710, 94-102, (1996)

Eckstein, M.P., Morioka, C.A., Whiting, J.S., Eigler, N., Psychophysical evaluation of the effect of JPEG, Full-frame DCT and Wavelet image compression on signal detection in medical image noise, in Medical Imaging, Image Perception, Harold Kundel, Editor, Proc. SPIE 2436, 79-89 (1995)

Technical Reports

Quantitative metrics relating perceptual and oculomotor performance during search, M.P. Eckstein, B.R. Beutter, L.S. Stone, NASA Technical Memorandum, (1998)

Analytic Representation of Guided Search model for accuracy in localization tasks, M.P. Eckstein, B.R. Beutter, NASA Technical Memorandum, (2000)

PUBLISHED ABSTRACTS AND PRESENTATIONS

Vision Sciences Society Annual Meeting

Optical Society of America Annual Meeting

European Conference on Visual Perception Annual Meeting

Society for Neuroscience Annual Meeting

Computational and Systems Neuroscience Annual Meeting

Medical Image Perception Conference Meeting

Association for Research in Vision and Ophthalmology Meeting

Society for Cognitive Neuroscience Meeting

SELECTED INVITED TALKS

Conference/Workshop/Symposia invited talks

Vision Sciences Society Visual Attention Symposia (2025)

Mind and Machine Intelligence, Human and Computer Vision Workshop UCSB (2025)

American Association of Physicists in Medicine (AAPM): Anne and Donald Herbert Distinguished Lecture in Statistical Modeling (2024)

European Conference on Visual Perception Panel Member: Out of the lab and into the world: Interdisciplinary approaches in applied vision research (2024)

Invited Speaker, Vision Sciences Society Workshop: Unveiling the Potential of AI (2024)

Keynote Speaker, Smith-Kettlewell Eye Research Institute 50th Anniversary (2023)

UT Austin, Natural Environments & Task Intelligence Workshop (2023)

NeurIPS Workshop, Eye Movement Models and Medical Images (2022)

Plenary Lecture, Workshop on Prediction and Categorization, Giessen, Germany (2022)

SPIE Medical Imaging, Eye Movements Workshop (2022)
Keynote Speaker, Third Latin American Workshop on Vision Sciences (2021)
NeurIPS Workshop: Shared Visual Representations in Human/Machine Intelligence (2020)
Mind and Machine Intelligence Workshop UC Santa Barbara (2020)
NIH Think Tank on Cognition and Perception in Medical Imaging (2019)
European Conference on Visual Perception Symposium on Eye Movements (2018)
Gordon Research Conference on Eye Movements (2017)
University of British Columbia, Current Directions in Vision Science (2017)
Workshop on Attention, Value and Rewards, University of Marburg (2016)
Computational and Systems Neuroscience, COSYNE, Workshop (2016)
International Workshop on Perceptual Learning, Calafate, Argentina (2016)
International Workshop on Perceptual Learning, Switzerland (2014)
Keynote Speaker, Spatial Search Meeting, Santa Barbara (2014)
Summer Institute on Cognitive Neuroscience (2014)
Workshop on Visual Search, National Cancer Institute (2014)
Workshop on Natural Environment Tasks and Intelligence, UT Austin (2014)
Keynote Speaker, SPIE Medical Imaging, Image Perception Conference (2013)
Symposium in Perceptual Learning, Asia Pacific Conference in Vision (2013)
International Workshop on Perceptual Learning (Nara, Japan, 2012)
Keynote Speaker, Eye Movements and Applications Meeting (USA, 2012)
International Workshop on Visual Attention (Allahabad, India, 2011)
International Workshop on Perceptual Learning (Eilat, Israel, 2010)
1st Brazilian Meeting in Brain and Cognition (São Paulo, 2010)
Annual Meeting for Brazilian Society for Neuroscience (Caxambu, 2010)
Vision Sciences Society Symposium, Attention and Reward (2010)
Dinner Banquet Lecture, SPIE Human Vision & Electronic Imaging (2010)
Summer Institute on Cognitive Neuroscience (2009)
National Geospatial-Intelligence Agency Workshop on Visual Search, Virginia (2009)
Workshop on Model observers for breast tomosynthesis and computed tomography, University of Chicago (2009)
Workshop on eye movements and perception, Computational and Systems Neuroscience Meeting, Utah (2009)
Workshop on Perceptual Learning, Beijing, China (2008)
Workshop on Natural Environment Tasks and Intelligence, UT Austin (2008)
Vision Sciences Society, Symposium on classification images, Florida (2007)
American Association of Physicists in Medicine, Annual Meeting (2005)
Joint Symposium on Neural Computation, UCLA (2005)
American Psychological Society, Annual Meeting, Visual Attention Symposium (2005)
International Workshop on Visual Attention, Italy (2003)
Munich Visual Search Symposium (2003)
Mathematical Psychology Meeting: Multidimensional Signal Detection Symposium (2002)
Optical Society of America Meeting, Eye movements during search symposium (1999)

Selected university invited talks

Department of Cognitive Science, UC Irvine (2026)

Optical Sciences Center, University of Arizona (2026)
Department of Psychology, University of Nevada Reno (2026)
Department of Psychology, Goethe University Frankfurt (2023, virtual)
Department of Psychology, Humboldt University of Berlin (2022)
Neuroscience and Behavior Seminar, UMass, Amherst (2021)
Army Research Lab, Fellows and Regional Site Leads Colloquium (2020)
Institute of Neuroscience, CNRS, Marseille, France (2020)
Department of Experimental and Applied Psychology, Vrije Univ., Netherlands (2020)
Institute of Optics, Consejo Superior de Investigaciones Científicas, Spain (2019)
Department of Neuroscience, Baylor College of Medicine (2019)
MindCore Lecture, University of Pennsylvania (2018)
Boynton Colloquium, Center for Vision Sciences, University of Rochester (2017)
Department of Psychological Sciences, Vanderbilt Univ. (2015)
Ground Breaking Research and Innovative Technology Lecture, Santa Barbara (2014)
Department of Psychology, Georgia Tech (2013)
Department of Psychology, Peking University (2013)
Brain and Cognitive Sciences, MIT (2012)
Computational Neuroscience Group, UCLA (2011)
Two-week workshop: Department of Physics, University of Buenos Aires (2011)
Kavli Institute for Theoretical Physics, UC Santa Barbara (2010)
Institute for Applied Radiophysics, Lausanne, Switzerland (2009)
École Polytechnique Fédérale de Lausanne, Switzerland (2009)
Vision Science Program, UC Berkeley (2008)
Electrical Engineering and Computer Science, UC Merced (2008)
New York Vision Seminar Series (NYU, Columbia, Cornell Medical, SUNY, 2008)
Neurobiology Institute, Freie University, Germany (2007)
Bernstein Center for Computational Neuroscience, Germany (2007)
Dept. of Psychology, University of Birmingham, UK (2007)
Dept. of Psychology, University of Bristol, UK (2007)
Institute for Light and Vision, University of Tucuman, Argentina (2007)
Center for Visual Sciences, University of Rochester (2006)
Max Planck Institute, Tübingen, Germany (2005)
Department of Radiology, University of Chicago (2005)
Siemens Research Center, Princeton, New Jersey (2004)
Department of Psychology, University of Pennsylvania (2004)
Department of Psychology, UCLA (2004)
Quantitative Methods in Social Sciences, UC Santa Barbara (2003)
Interactive Digital Multimedia Seminar Series, UC Santa Barbara (2003)
Department of Psychology, University of Texas, Austin (2002)
The Sloan-Swartz Center for Theoretical Neurobiology at the Salk Institute (2002)
Smith-Kettlewell Eye Research Institute (2002)
Department of Engineering, UC Santa Barbara (2002)
Dept. of Cognitive Science, University of California Irvine (2001)
NASA Ames Research Center (2001)

Dept. of Psychology, New York University (2000)
Dept. of Psychology, University of Illinois, Urbana (1999)
Dept. of Psychology, University of Toronto (1999)
Center for Visual Sciences, Univ. of Rochester (1999)
Dept. of Psychology, UC Santa Barbara (1998)
Pavlov Institute of Physiology, Russian Academy of Sciences (1997)
Swedish Center for Optical Research, Stockholm (1997)
NASA Ames Research Center (1996)
Dept. of Psychology, Harvard University (1995)
Optical Sciences Center, University of Arizona (1995)

MENTORING

Former Ph.D. Students

Matthew F. Peterson, Ph.D., Psychology
Subsequently VIU postdoctoral researcher; postdoctoral researcher, MIT

Stephen C. Mack, Ph.D., Psychology
Current: Riot Games

Kathryn L. Koehler, Ph.D., Psychological & Brain Sciences
Current: Senior UX Researcher, Meta

Arturo Deza, Ph.D., Dynamical Neuroscience
Subsequently postdoctoral researcher, Harvard University
Current: Assistant Professor, Computer Science, UTEC (Peru)

Thuyen V. Ngo, Ph.D., Electrical and Computer Engineering (co-advised with B. S. Manjunath)
Current: Uber

Yuliy Tsank, Ph.D., Psychological & Brain Sciences
Current: Architecture Technology Corporation

Luke A. Rosedahl, Ph.D., Dynamical Neuroscience (co-advised with F. Gregory Ashby)
Current: Assistant Professor, Biomedical Engineering, Florida Atlantic University

Puneeth N. Chakravarthula, Ph.D., Psychological & Brain Sciences
Subsequently VIU postdoctoral researcher
Current: Postdoctoral Researcher, Washington University in St. Louis

Nicole X. Han, Ph.D., Psychological & Brain Sciences
Current: Vision Scientist, ByteDance

Aditya Jonnalagadda, Ph.D., Electrical and Computer Engineering
Current: U.S. Food and Drug Administration (FDA)

Devi S. Klein, Ph.D., Psychological & Brain Sciences
Current: Dolby Laboratories

Sudhanshu Srivastava, Ph.D., Dynamical Neuroscience
Current: Postdoctoral Researcher, UC San Diego

Wanrong Zhu, Ph.D., Computer Science (co-advised with William Y. Wang)
Current: Research Scientist, Meta Superintelligence Labs (previously Adobe Research)

Tsu-Jui (TJ) Fu, Ph.D., Computer Science (co-advised with William Y. Wang)
Current: Senior Research Scientist, Apple

Shravan Murlidaran, Ph.D., Psychological & Brain Sciences
Current: Postdoctoral Scholar, VIU Lab, UC Santa Barbara

Byron A. Johnson, Ph.D., Psychological & Brain Sciences (co-chaired with Michael Beyeler)
Current: Postdoctoral Researcher, UC Berkeley

Yujie Lu, Ph.D., Computer Science (co-advised with William Y. Wang)
Current: AI Research Scientist, Meta Superintelligence Labs

Former Postdoctoral Researchers

François O. Bochud
Current: Professor and Director, Institute of Radiation Physics, Lausanne University Hospital (CHUV) and University of Lausanne

Steven S. Shimozaki
Current: Nike

Yani Zhang, Ph.D.
Current: Apple

Sheng Zhang, Ph.D.
Current: Google

Binh T. Pham
Current: Idaho National Laboratory

Avi Caspi
Current: Jerusalem College of Technology (Israel)

Christoph Rasche
Current: Researcher, Polytechnic University of Bucharest

Jason A. Droll
Current: Talas Engineering, Inc.

Koel Das
Current: Indian Institute of Science Education and Research (IISER) Kolkata

Mordechai Z. Juni

Current: Insurance Industry

Eamon Caddigan
Current: Federal Aviation Administration (FAA)

Ilmari Kurki
Current: Lecturer, University of Helsinki

Emre Akbas
Current: Professor, Middle East Technical University (Turkey)

Charles C.-F. Or
Current: Assistant Professor, Nanyang Technological University (Singapore)

Lauren E. Welbourne
Current: Research Scientist, York University, UK

Miguel A. Lago
Current: U.S. Food and Drug Administration (FDA)

Amir H. Meghdadi
Current: Advanced Brain Monitoring

Weimin Zhou
Current: Assistant Professor, Department of Medical Imaging, University of Arizona

Former Master's Students

Kelly Chen, M.A., Psychology
Current: Attorney

Fei Guo, M.A., Psychology
Current: Puppet Labs

Barbara A. Drescher, Psychology

Wade Schoonveld, Ph.D., Psychology, N/A

Former Undergraduate Researchers

Jay Bartroff
Current: Department of Statistics and Data Science at the University of Texas at Austin

Ansh K. Soni, B.S., Physics and Psychology
Subsequently Ph.D. student, Kording Lab, University of Pennsylvania (NSF Graduate Research Fellow)

Tanish Mendki
Current: Staff Research Assistant, Kriegeskorte Lab, Zuckerman Institute, Columbia University

Awards to Mentees and VIU Lab Members (as advisor)

1999	Craig Abbey, National Eye Institute Fellowship Award for abstract 1999 ARVO Annual Meeting
2004	Yani Zhang, Cum Laude Award for best poster at the SPIE, Medical Imaging Annual Meeting Image Perception & Observer Performance Conference
2005	Wade Schoonveld, Vision Sciences Society Travel Award
2008	Sheng Zhang, Cum Laude Award for best poster at SPIE, Medical Imaging Annual Meeting Image Perception & Observer Performance Conference.
2015	Kathryn Koehler, Vision Sciences Society Travel Award
2019	Yuliy Tsank: Insight Data Science Fellowship (following Ph.D.)
2020	Aditya Jonnalagadda, Honorable Mention Award for best poster at SPIE, Medical Imaging Annual Meeting Image Perception & Observer Performance Conference, Evaluation of convolutional neural networks for search in $1/f^{2.8}$ filtered noise and digital breast tomosynthesis phantoms
2022	Byron A. Johnson: Travel Award, Biennial Perceptual Learning Workshop (Alyeska, Alaska)
2022	Byron A. Johnson: Helmsley Charitable Trust Travel Award, Computational Neuroscience: Vision course, Cold Spring Harbor Laboratory
2022	Byron A. Johnson: Travel Fellowship, Center for Visual Science 32nd Symposium on Active Vision, University of Rochester
2024	Ansh K. Soni: National Science Foundation Graduate Research Fellowship
2026	Srijita Karmakar: FoVea (Females of Vision et al.) Travel and Networking Award
2026	Sana Shehabi: National Science Foundation Graduate Research Fellowship