

Takeo Watanabe

CONTACTS

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EMPLOYMENT

July 2014 to date, The Fred M Seed Professor, Department of Cognitive, Linguistic & Psychological Sciences, Brown University.

July 2014 to date, Member, Department of Psychiatry, Brown School of Medicine.

July 2019 to date, Member, Carney Institute for Brain Science, Brown University

August 2014 to date, Visiting Professor, University of Paris.

July 2012 to date, Member, Neuroscience Graduate Program, Department of Neuroscience, Brown University.

July 2012 to date, Member, the Center for Visual Sciences, Brown University.

July 2012 to date, Member, the Center for Contemplative Studies, Brown University.

July 2012 to 2019, Member, the Brain Institutes for Brain Studies, Brown University.

July 2012 to June 2014, Professor, Department of Cognitive, Linguistic & Psychological Sciences, Brown University.

September 2005 to June 2012, Professor, Department of Psychology, Boston University.

July 2005 to August 2005, Visiting Professor, Department of Computational Brain Science (Mitsuo Kawato), ATR Basic Research Institute, Kyoto, Japan.

September 1998-August 2005, Associate Professor, Department of Psychology, Boston University.

June 2003 to July 2003, Visiting Professor, Department of Computational Brain Science (Mitsuo Kawato), ATR Basic Research Institute, Kyoto, Japan.

September 2000 to 2012, Faculty member, Program in Neuroscience, Boston University

September 1995 to 2012, Research Associate, Department of Cognitive & Neural Systems, Boston University.

September 1995-August 1998, Assistant Professor, Department of Psychology, Boston University.

June 1996-August 1996, Visiting Research Fellow, Department of Neural Information Processing (Keiji Tanaka), Riken Institute, Saitama, Japan.

August 1992-August 1995, Assistant Professor of Psychology, Social and Behavioral Science, Arts & Sciences, Arizona State University

January 1993- August 1995, Affiliate Professor, Department of Systems Engineering, Arizona State University.

June 1994-August 1994, Visiting Research Fellow, Department of Neural Information Processing (Keiji Tanaka), Riken Institute.

September 1989-August 1992, Research Associate, Department of Psychology, Harvard University (Patrick Cavanagh).

April 1988-August 1989, Assistant (Joshu), Department of Behavioral Sciences, College of Arts & Sciences, University of Tokyo.

January 1987-May 1987, Visiting Research Associate, Department of Human Information Processing and Human Factor, ATR Basic Research Institute.

EDUCATION

1989, Psychology, Division of Human Sciences, Graduate School of University of Tokyo, PhD. (Thesis title: The interactions between visual features—psychophysics and computational modeling).

1985, Department of Behavioral Sciences, University of Tokyo, BA. (Distinction thesis title: The effects of irrelevant information on attention-published in JEP:HP&P 1988).

ACADEMIC AWARDS/HONOURS

International Special Award, the Japanese Psychological Association, 2018 (highest award to a Japanese psychologist).

The Fed M Seed Professor of Cognitive, Linguistic and Psychological Sciences, Brown University, 2014.

The Distinguished Graduate Student in the 100th Anniversary of University of Tokyo, 1988

Young Psychologist, International Psychological Association, 1989

EXTERNAL GRANT AWARD

CURRENT

P.I. National Institutes of Health: R01EY019466-14 “Systematic psychophysical investigation of visual learning”. September 2021-August 2025

P.I. National Institutes of Health: R01EY0210982-8 “Framework of perceptual learning”. April 2018-March 2023.

PREVIOUS

P.I. United States-Israel Binational Science Foundation Grant 206958, November 2017 to October, 2023, \$110,000 [Project total for 5 years].

PI. Honda Basic Research Institute Award, November 1, 2019-March 31, 2020

P.I. National Institute of Aging: “Perceptual learning and aging”. June 2019-March, 2020.

P.I. National Institutes of Health: R01EY019466-11 “Systematic psychophysical investigation of visual learning”. April 2018-August 2021

PI. Honda Basic Research Institute Award, November 1, 2017-March 31, 2018.

P.I. Honda Basic Research Institute “Perceptual learning on optic flow”, July 1, 2015 – March 31, 2016.

P.I. National Institutes of Health (Two-PI system, Y. Sasaki, T. Watanabe): R01MH091801 “Perceptual Learning and Sleep”. May 2011- May 2016.

P.I. National Science Foundation- Research Award, “Effects of attention on motion processing”, September, 1996-August, 1999.

P.I. National Science Foundation- Research Award, “Perceptual learning in motion processing”, August 1999-July 2002.

Co-P.I. DANA Foundation—Research Award “Brain activity in music” September 2004-August 2005.

P.I. National Science Foundation- Research Award BCS-0345746, “Multiple stages of motion processing”, April 2004-March 2007.

P.I. National Institutes of Health: R01 EY015980, “The mechanism of perceptual learning”, August 2004-July 2008.

P.I. Human Frontier Foundation: Research Award, RGP18/2004“Role of awareness”, September 2004-August 2008.

P.I. National Science Foundation: Research Award BCS-0549036, “Neural basis and mechanisms of task-irrelevant perceptual learning-fMRI study”, May 2006-April 2010 (one year extension).

P.I. National Institutes of Health: R21 EY018925, “The role of sleep in perceptual learning”, April 2008-February 2010.

Co-P.I. National Science Foundation: BCS-PR04-137, Center of Excellence for Learning in Education, Science, and Technology, October 2004-September 2009. period].

P.I. National Institutes of Health: R01EY019466 “Systematic psychophysical investigation of visual learning”. March 2009-February 2015.

Member, National Institutes of Health, ZRG1 BBBP-J 56. February, 2018.

Member in NIH, NEI, Special Review Panel for the K23 and K08 applications.

GRANT REVIEW BOARD

Regular member

Regular member, National Institutes of Health Central Visual Processing Study Section. February 2007 – June 2010.

Ad-hoc member

Ad-hoc member, National Institutes of Health, the BBBP-4 Study Section. February 2002.

Reviewer, National Science Foundation Science of Learning Centers Program. November 2002.

Reviewer, National Science Foundation Science of Learning Centers Program. November 2003.

Reviewer, National Science Foundation Science of Learning Centers Program. November 2004.

Advisory Panel, National Science Foundation Science of Learning Centers Program. August 2005

Ad-hoc member, National Institutes of Health Central Visual Processing Study Section. June 2005.

Reviewer, National Science Foundation Science of Learning Centers Program. November 2005.

Ad-hoc member, National Institutes of Health Central Visual Processing Study Section. February 2006.

Ad-hoc reviewer, Israel Science Foundation, May 2006.

Ad-hoc reviewer, Air Force Office of Scientific Research (AFOSR). September 2006.

Reviewer, National Science Foundation Science of Learning Centers Program.
November 2006.

Ad-hoc member, National Institutes of Health Central Visual Processing Study Section.
October 2006.

Ad-hoc reviewer, Vanderbilt University Intramural Discovery Grant Program. January
2008.

Ad-hoc reviewer, The US-Israel Binational Science Foundation, January 2008.

Ad-hoc reviewer, The US-Israel Binational Science Foundation, June 2008.

Ad-hoc reviewer, Air Force Office of Scientific Research (AFOSR), December 2009.

Ad-hoc member, National Institutes of Health, Mechanisms of Sensory, Perceptual and
Cognitive Processes Study Section. October 2011.

Ad-hoc member, National Institutes of Health, NEI Special Interest Section. November,
2014.

Ad-hoc member, National Cancer Institute, Special Interest Section. October, 2017.

Ad-hoc member, National Institutes of Health, NEI Special Interest Section. March,
2018.

Ad-hoc member, National Cancer Institute, Special Interest Section. March, 2018.

Ad-hoc member, Special Emphasis Panel review, ZRG1 BBBP-Y, July, 2019

Ad-hoc member, Special Emphasis Panel review, ZRG1 BBBP-Y, July, 2021

JOURNAL EDITOR / CONFERENCE COMMITTEE

Scientific Committee, in the 22nd European Conference of Visual Perception (1999),
Trieste, Italy

Scientific Committee, in the 27th European Conference of Visual Perception (2003), Paris,
France

Reviewing Editor, Human Frontier Science Program Journal (2006 to date).

Reviewing Committee, Vision Sciences Society (2006 to date).

Editor, Current Opinion of Neurobiology: Cognitive Neuroscience (2008).

Honorary Editorial Board, Eye and Brain (2008 to date).

Editorial Member, Special Issue “Perceptual Learning”; Vision Research (2009)

Editorial Review Board, Psychological Review (Appointed, 2010 to date)

Editorial Board Member, “F1000 Research” (2012 to date)

Organizing Committee, International Congress of Psychology 2016 (2011 to date)

Organizer, The 3rd Perceptual Learning Workshop in Nara, Japan (2012)

Co-Organizer, The 4th Perceptual Learning Workshop in Lake Lemman (2014)

Invited editor of the Proceedings of the National Academy of Sciences (2015)

Program Committee Member, Cognitive Science Society (2015)

Review Board, the Annual Meeting of Cognitive Science Society (2015)

Organization board, the Annual Conference of Neural feedback (2017)

Co-Organizer, The 6th Perceptual Learning Workshop in Moorea (2018)

Chief Editor, Frontier in Cognition-learning and human development (2022)

PUBLICATION (including under revision and submission)

Book Editor

High-level motion processing—Computational, biophysiological and psychological approaches (1998). (Ed. Takeo Watanabe), MIT Press, Cambridge, MA.

Articles

Frank, SM. Sasaki, Y. Greenlee, M, **Watanabe T.** (2022). Rapid stabilization associated with an increased GABA *Current Biology*, 32(23), 5022-5030.

Marzoll, A. Shibata, K. Toyozumi, T. Chavva, I. **Watanabe T.** (2022). Decrease in signal-related activity by visual training and repetitive visual stimulation. *IScience*, 25(12), 105492

Frank, SM. Otto, A. Volberg, G. Peter, UT. **Watanabe, T.** Greenlee, MW. (2022). Transfer of tactile learning from trained to untrained body parts supported by cortical coactivation in primary somatosensory cortex. *Journal of Neuroscience* 42 (31), 6131-6144

Xu, R. Church, M. Sasaki, Y. **Watanabe T.** (2021) Effects of stimulus and task structure on temporal perceptual learning. *Scientific Reports* 11 (1), 1-8

Wang, Z. Tamaki, M. Frank, SM. Shibata, K. Worden, MS. Yamada, T. Sasaki, Y. **Watanabe, T.** (2021) Visual perceptual learning of a primitive feature in human V1/V2 as a result of unconscious processing, revealed by decoded functional MRI neurofeedback (DecNef) *Journal of Vision* 21 (8), doi:https://doi.org/10.1167/jov.21.8.24

Cortese, A. Tanaka, SC. Amano, K. Koizumi, A. Lau, H. Sasaki, Y. Shibata, K. **Watanabe, T.** Kawato, M. (2021) The DecNef collection, fMRI data from closed-loop decoded neurofeedback experiments. *Scientific data* 8 (1), 1-9

Wang, Z. **Watanabe, T.** Sasaki, Y. (2021) fMRI neurofeedback for perception and attention. *fMRI Neurofeedback*, 85-105

Tamaki, M. **Watanabe, T.** Sasaki, Y. (2021) Coregistration of magnetic resonance spectroscopy and polysomnography for sleep analysis in human subjects. *STAR Protocols* 2 (4), 100974.

Frank, SM, Bründl S, Frank UI, Sasaki Y, Greenlee MW, **Watanabe, T.** *Current Biology*, <https://doi.org/10.1016/j.cub.2020.10.047>

Frank SM., Qi A, Ravasio D., Sasaki Y., Rosen EL. & **Watanabe T.** (2020) Supervised Learning Occurs in Visual Perceptual Learning of Complex Natural Images. *Current Biology*, 30(15):2995-3000.

Frank, SM. Haggai, S. Sasaki, Y. **Watanabe, T.** Censor, N. Early Visual Cortex Stimulation Modifies Well-Consolidated Perceptual Gains. (2020) *Cerebral Cortex*, DOI: 10.1093/cercor/bhaa215

Machizawa, M., Driver, J, **Watanabe, T.** (2020) Localization of quality and quantity of visual working memory. *Cerebral Cortex*, 30(9):4759-4770.

Tamaki M., Wang Z., Barnes-Diana T., Guo DA., Berard AV., Walsh E., **Watanabe T.**, & Sasaki Y. (2020) Complementary contributions of NREM and REM sleep to visual learning. *Nature Neuroscience*, 23, 1150-1156.

Tamaki, M., Berard, AV., Barnes-Diana, T., Siegel, J., **Watanabe, T.**, & Sasaki, Y. (2020) Reward does not facilitate visual perceptual learning until sleep occurs. *Proceedings of the National Academy of Sciences of the United States of America*, 117 (2), 959-968.

Nguyen, KN. **Watanabe, T.** Andersen, GJ. (2020) Role of endogenous and exogenous attention in task-relevant visual perceptual learning. *Plos one* 15 (8), e0237912

Michel M et al. (2019) Opportunities and challenges for a maturing science of consciousness. *Nature Human Behaviour*. 3(2):104-107. DOI: 10.1038/s41562-019-0531-8.

Tan Q., Wang, Z. Sasaki, Y., & **Watanabe, T.** (2019) Category-induced perceptual learning. *Current Biology*, PMID: 30930042. DOI:10.1016/j.cub.2019.03.003.

Shibata K, Lisi G, Cortese A, **Watanabe T**, Sasaki Y, Kawato M. (2019) Toward a comprehensive understanding of the neural mechanisms of decoded neurofeedback *NeuroImage* 188, 539-556

Bruns, P., **Watanabe T.** (2019) Perceptual learning of task-irrelevant features depends on the sensory context *Scientific reports* 9 (1), 1666

Bang, J.W. , Sasaki, Y., **Watanabe, T.**, & Rahnev, D. (2018) Feature-specific awake reactivation in human V1 after visual training. *Journal of Neuroscience* 38 (45), 9648-9657

Bang, Z, Shibata, K, Frank, S, Walsh, E, Greenlee, M, **Watanabe, T***, & Sasaki, Y. (2018) Consolidation and reconsolidation share behavioral and neurochemical mechanisms. *Nature Human Behavior*, in press. (* Corresponding Author)

Kang DW, Kim D, Chang LH, Kim YH, Takahashi E, Cain MS, **Watanabe T**, Sasaki Y. (2018) Structural and Functional Connectivity Changes Beyond Visual Cortex in a Later Phase of Visual Perceptual Learning. *Scientific Report*, 26;8(1):5186.-5193.

Watanabe T, Sasaki Y, Shibata K, Kawato M. (2017) Advances in fMRI Real-Time Neurofeedback. *Trends in Cognitive Sciences* 21(12):997-1010.

Shibata, K., Sasaki, Y., Bang J.W., Chang, L.H., Walsh, E., & **Watanabe, T.** (2017) Overlearning hyper-stabilizes a skill by rapidly making neurochemical processing inhibitory-dominant. *Nature Neuroscience* 20(3):470-475.

Sasaki, Y & **Watanabe, T.** (2017) What is a role of decision making in perceptual learning? *Nature Human Behavior* 1(2):48.

Shibata, K., Kawato, M., **Watanabe, T.**, & Sasaki, Y. (2016) Differential activation patterns in the same brain region led to opposite emotional states. *PLOS Biology* 14(9):e1002546.

Shibata, K., Sasaki, Y., Kawato, M., & **Watanabe, T.** (2016) Neuroimaging evidence for two types of plasticity in association with visual perceptual learning. *Cerebral Cortex* 26(9):3681-9.

Amano, K., Kawato, M., Shibata, K., Sasaki, Y., & **Watanabe, T.** (2016) Learning to associate orientation with color in early visual areas by associative decoded fMRI neurofeedback. *Current Biology* 26(14):1861-6.

Sasaki Y., & **Watanabe, T.** (2016) Perceptual training on a visual motion task promotes job swapping in the brain. *Proceedings of the National Academy of Sciences* 13(22):6092-3.

Yahata, N. et al (2016) A small number of abnormal brain connections predicts adult autism spectrum disorder. *Nature Communications* 7:11254.

Tamaki, M., Bang, J., **Watanabe T.**, & Sasaki, Y. (2016) Night Watch in One Brain Hemisphere during Sleep Associated with the First-Night Effect in Humans. *Current Biology* 26(9):1190-4. [Top #4 in Altmetric factor of all of the biology papers published in 2016]

Žarić, G., Yazdanbakhsh, A ., Nishina, S ., De Weerd, P., & **Watanabe, T.** (2015) Perceived temporal asynchrony between sinusoidally modulated luminance and depth. *Journal of Vision* 15(15):13-13.

Kim YH , Kang DW, Kim D, Kim HJ, Sasaki Y, & **Watanabe T.** (2015) Real-Time Strategy Video Game Experience and Visual Perceptual Learning. *The Journal of Neuroscience* 35(29):10485-10492.

- Watanabe T**, Sasaki Y. (2015) Perceptual learning: toward a comprehensive theory. *Annual Review of Psychology* 66:197-221.
- Kim D, Ling S & **Watanabe T**. (2015) Dual mechanisms governing reward-driven perceptual learning. *i1000 Research* 4:764.
- DeLoss DJ, **Watanabe T**, Andersen GJ. (2015). The effect of aging on noise reduction in perceptual learning. *Psychological Science* 26(4):456-466.
- DeLoss DJ, Bian Z, **Watanabe T**, Andersen GJ.(2015) Behavioral training to improve collision detection. *Journal of vision* 15(10):2.
- Kim D, Seitz A & **Watanabe T**. (2015) Visual perceptual learning by operant conditioning training follows rules of contingency. *Visual Cognition* 23(1-2):147-160.
- Berard A, Kanen M, **Watanabe T**, & Sasaki Y. (2015) Frequent video game players resist perceptual interference. *PLOS ONE* 10 (3):e0120011.
- Imai H, Kim D, Sasaki Y, **Watanabe T**. (2014) Reward eliminates retrieval-induced forgetting. *Proceedings of National Academy of Sciences of the United States of America* 111(48):17326-9.
- Chang LH, Shibata K, Andersen GJ, Sasaki Y, **Watanabe T**. (2014) Age-related declines of stability in visual perceptual learning. *Current Biology* 24(24):2926-9.
- Yotsumoto Y, Chang LH, Ni R, Pierce R, Andersen GJ, **Watanabe T**, Sasaki Y. (2014) White matter in the older brain is more plastic than in the younger brain. *Nature Communications* 5:5504.
- Chang LH, Yotsumoto Y, Salat DH, Andersen GJ, **Watanabe T**, Sasaki Y. (2015) Reduction in the retinotopic early visual cortex with normal aging and magnitude of perceptual learning. *Neurobiology of Aging* 36(1):315-22.
- Kawato M, Lu ZL, Sagi D, Sasaki Y, Yu C, **Watanabe T**. (2014) Perceptual learning—the past, present and future. *Vision Research* 99:1-4.
- Choi, H, **Watanabe, T**. (2014) Can attenuation of attentional blink also evoke removal of repetition blindness? *Vision Research* 99:141-7.
- Shibata, K., Sagi, D., **Watanabe, T**. (2014) Two stage model of perceptual learning. *Year in Cognitive Neuroscience, Annual Review of New York Academy of Sciences* 1316:18-28.
- DeLoss DJ, **Watanabe T**, Andersen GJ. (2014) Optimization of perceptual learning: effects of task difficulty and external noise in older adults. *Vision Research* 99:37-45.
- Tamaki M, Huang TR, Yotsumoto Y, Hämäläinen M, Lin FH, Nájuez JE Sr, **Watanabe T**, Sasaki Y. (2013) Enhanced spontaneous oscillations in the supplementary motor area are associated with sleep-dependent offline learning of finger-tapping motor-sequence task. *Journal of Neuroscience* 1198-13.

- Bang JW, Khalilzadeh O, Hämäläinen M, **Watanabe T**, Sasaki Y (2013) Location specific sleep spindle activity in the early visual areas and perceptual learning. *Vision Research* 99:162-71.
- Bower JD, **Watanabe T**, Andersen GJ. (2013) Perceptual learning and aging: improved performance for low-contrast motion discrimination. *Frontiers in Psychology* 4:66.
- Yotsumoto Y, **Watanabe T**, Chang LH, Sasaki Y. (2013) Consolidated learning can be susceptible to gradually-developing interference in prolonged motor learning. *Frontiers in Computational Neuroscience* 7:69.
- Choi, H., Shibata, K., Sasaki, Y. & **Watanabe, T.** (2012) Resetting capacity limitations: long-lasting elimination of attentional blink through training. *Proceedings of the National Academy of Sciences of the United States of America* 109(30):12242-7.
- Shibata, K. & **Watanabe, T.** (2012) Preference suppression caused by misattribution of task-irrelevant subliminal motion. *Proceedings of the Royal Society B* 279(1742):3443-3448.
- Shibata, K., Kawato, M., Sasaki, S. & **Watanabe, T.** (2012) Monocular deprivation boosts long-term visual plasticity. *Current Biology* 22(2):R291-292.
- Choi, H. & **Watanabe, T.** (2012) Is perceptual learning associated with changes in a sensory region? *F1000 Biology Reports* 4:24.
- Shibata, K., Chang, L-H., Kim, D., Nájuez, J.E. Sr., Kamitani, Y., **Watanabe, T.** & Sasaki, Y. (2012) Decoding Reveals Plasticity in V3A as a Result of Motion Perceptual Learning. *PLOS ONE* 7(8):e44003.
- Sasaki, S., Nájuez, J. E. & **Watanabe, T.** (2012) Recent progress in perceptual learning research. *WIREs Cognitive Science* 3:293-299.
- Dobres, J. & **Watanabe, T.** (2012) Response feedback triggers long-term consolidation of perceptual learning independently of performance gains. *Journal of Vision* 12(8):9.
- Huang, T. & **Watanabe, T.** (2012) Task attention facilitates learning of task-irrelevant stimuli. *PLOS ONE* 7(4):e35946.
- Choi, H. & **Watanabe, T.** (2012) Perceptual learning solely induced by feedback. *Vision Research* 61:77-82.
- Liu, C. C. & **Watanabe, T.** (2012) Accounting for speed-accuracy tradeoff in perceptual learning. *Vision Research* 61:107-14.
- Yotsumoto, Y., Seitz, A. R., Shimojo, S., Sakagami, M., **Watanabe, T.** & Sasaki, Y. (2012) Performance dip in motor response induced by task-irrelevant weaker coherent visual motion signals. *Cerebral Cortex* 22(8):1887-93.
- Shibata, K., **Watanabe, T***, Sasaki, Y. & Kawato, M. (2011) Perceptual learning incepted by decoded fMRI neurofeedback without stimulus presentation. *Science* 334(6061):1413-5. (* Corresponding Author)

- Batson, M. A., Beer, A. L., Seitz, A. R. & **Watanabe, T.** (2011) Spatial Shifts of Audio-Visual Interactions by Perceptual Learning Are Specific to the Trained Orientation and Eye. *Seeing and Perceiving* 24(6):579-94.
- Beer, A. L., Batson, M. A. & **Watanabe, T.** (2011) Multisensory perceptual learning reshapes both fast and slow mechanisms of crossmodal processing. *Cognitive, Affective, & Behavioral Neuroscience* 11(1):1-12.
- Shibata, K. & **Watanabe, T.** (2011) Perceptual learning, consciousness, and Psychiatry. *Japanese Journal of Clinical Psychiatry* 40(4):135-41.
- Andersen, G. J., Ni, R., Bower, J. D. & **Watanabe, T.** (2010) Perceptual learning, aging, and improved visual performance in early stages of visual processing. *Journal of Vision* 10(13):4.
- Nomoto, T., Schultz, W., **Watanabe, T.** & Sakagami, M. (2010) Temporally extended dopamine responses to perceptually demanding reward-predictive stimuli. *Journal of Neuroscience* 30(32):10692-702.
- Sasaki, Y., Gold, J. & **Watanabe, T.** (2010) Perceptual learning: cortical changes when cats learn a new trick. *Current Biology* 20(13):R557-8.
- Seitz, A. R., Protopapas, A., Tsushima, Y., Viahou, E. L., Gori, S., Grossberg, S. & **Watanabe, T.** (2010) Unattended exposure to components of speech sounds yields same benefits as explicit auditory training. *Cognition* 115(3):435-43.
- Lu, Z.L., Yu, C., **Watanabe, T.**, Sagi, D. & Levi, D. (2010) Perceptual learning: functions, mechanisms, and applications, No. 2. *Vision Research* 50(4):365-7.
- Gold, J. I. & **Watanabe, T.** (2010) Perceptual learning. *Current Biology* 20(2):R46-8.
- Roelfsema, P. R., van Ooyen, A. & **Watanabe, T.** (2010) Perceptual learning rules based on reinforcers and attention. *Trends in Cognitive Sciences* 14(2):64-71.
- Ito, N., Sasaki, Y. & **Watanabe, T.** (2010) Recent advancement in study of perception. *Vision* 22(2):115-21.
- Sasaki, Y., Nanez, J. E. & **Watanabe, T.** (2010) Advances in visual perceptual learning and plasticity. *Nature Reviews Neuroscience* 11(1):53-60.
- Lu, Z. L., Yu, C., **Watanabe, T.**, Sagi, D. & Levi, D. (2009) Perceptual learning: functions, mechanisms, and applications. *Vision Research* 49(21):2531-4.
- Nishina, S., Kawato, M. & **Watanabe, T.** (2009) Perceptual learning of global pattern motion occurs on the basis of local motion. *Journal of Vision* 9(9):15.1-6.
- Beer, A. L., **Watanabe, T.**, Ni, R., Sasaki, Y. & Andersen, G. J. (2009) 3D surface perception from motion involves a temporal-parietal network. *European Journal of Neuroscience* 30(4):703-13.
- Choi, H. & **Watanabe, T.** (2009) Selectiveness of the exposure-based perceptual learning: what to learn and what not to learn. *Learning and Perception* 1:89-98.

- Seitz, A. R. & **Watanabe, T.** (2009) The Phenomenon of Task-Irrelevant Perceptual Learning. *Vision Research* 49(21):2604-10.
- Yotsumoto, Y., Chang, L. H., **Watanabe, T.** & Sasaki, Y. (2009) Interference and feature specificity in visual perceptual learning. *Vision Research* 49(21):2611-23.
- Choi, H., Seitz, A. R. & **Watanabe, T.** (2009) When Attention Interrupts Learning: Inhibitory Effects of Attention on TIPL. *Vision Research* 49(21):2586-90.
- Yotsumoto, Y., Sasaki, Y., Chan, P., Vasios, C. E., Bonmassar, G., Ito, N., Nández, J. E. Sr., Shimojo, S. & **Watanabe, T.** (2009) Location-specific cortical activation changes during sleep after training for perceptual learning. *Current Biology* 19(15):1278-82.
- Tsushima, Y. & **Watanabe, T.** (2009) Roles of attention in perceptual learning from perspectives of psychophysics and animal learning. *Learning and Behavior* 37(2):126-32.
- Beer, A. L. & **Watanabe, T.** (2009) Specificity of auditory-guided visual perceptual learning suggests crossmodal plasticity in early visual cortex. *Experimental Brain Research* 198(2-3):353-61.
- Seitz, A. R., Kim, D. & **Watanabe, T.** (2009) Rewards evoke learning of unconsciously processed visual stimuli in adult humans. *Neuron* 61(5):700-7.
- Seitz, A. R. & **Watanabe, T.** (2008) Is task-irrelevant learning really task-irrelevant? *PLOS ONE* 3(11):e3792.
- Yotsumoto, Y. & **Watanabe, T.** (2008) Defining a link between perceptual learning and attention. *PLOS Biology* 6(8):e221.
- Tsushima, Y., Seitz, A. & **Watanabe, T.** (2008) Task-irrelevant learning occurs only when the irrelevant feature is weak. *Current Biology* 18(12):R516-7.
- Yotsumoto, Y., **Watanabe, T.** & Sasaki, Y. (2008) Different dynamics of performance and brain activation in the time course of perceptual learning. *Neuron* 57(6):827-33.
<See Preview in *Neuron* by Carmel, D & Carrasco, M. (2008) 57(6):799-801>
- Nishina, S., Seitz, A. R., Kawato, M. & **Watanabe, T.** (2007) Effect of spatial distance to the task stimulus on task-irrelevant perceptual learning of static Gabors. *Journal of Vision* 7(13):1-10.
- Tanaka, K. & **Watanabe, T.** (2007) Introduction to the current issue of Current Opinion of Neurobiology: Cognitive Neuroscience. *Current Opinion of Neurobiology: Cognitive Neuroscience* 17(2):129-31.
- Nishina, S., Yazdanbakhsh, A., **Watanabe, T.** & Kawato, M. (2007) Depth propagation across an illusory surface. *Journal of the Optical Society of America A: Optics, Images Science, and Vision* 24(4):905-10.
- Tsushima, Y., Sasaki, Y. & **Watanabe, T.** (2006) Greater disruption due to failure of inhibitory control on an ambiguous distractor. *Science* 314(5806):1786-8.
<See Perspectives in *Science* by Stoerig, P. (2006) 314(5806):1694-5>
- Seitz, A. R., Nanez, J. E. Sr., Hollaway, S. & **Watanabe, T.** (2006) Perceptual learning

of motion leads to faster flicker perception. *PLOS ONE* 1:28-35.

Seitz, A. R., Nanez, J. E. Sr., Holloway, S., Tsushima, Y. & **Watanabe, T.** (2006) Two cases requiring external reinforcement in perceptual learning. *Journal of Vision* 6(9):966-73.

Koyama, S., Sasaki, Y., Andersen, G. J., Tootell, R., Matsuura, M. & **Watanabe, T.** (2005) Separate processing of different global motion structure in visual cortex revealed by fMRI. *Current Biology* 15(22):2027-32.

Seitz, A. R., Yamagishi, N., Werner, B., Goda, N., Kawato, M. & **Watanabe, T.** (2005) Task specific disruption of perceptual learning. *Proceedings of the National Academy of Sciences of the United States of America* 102(41):14895-900.

Seitz, A., Lefebvre, C., **Watanabe, T.** & Jolicoeur, P. (2005) The requirement of high-level processing in subliminal learning. *Current Biology* 15(18):R753-5.

Seitz, A. R., Náñez, J. E., Holloway, S. R. & **Watanabe, T.** (2005) Visual experience can substantially alter critical flicker fusion thresholds. *Human Neuropharmacology* 20(1):55-60.

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Watanabe, T. & Oyama, T. (1988) Are illusory contours a cause or a consequence of apparent differences in brightness and depth in the Kanizsa square? *Perception* 17:513-21.

Watanabe, T. (1988) Effect of the amount of the irrelevant disparity on *different* reaction times. *Japanese Psychological Research* 30:132-42.

Watanabe, T. (1988) Attention to visual dimensions. *Mathematical Science* 297:15-21.

Watanabe, T. (1987) The mechanism for a visual surface. *ITEJ Technical Report* 11:31-5.

Watanabe, T. (1984) Models of parallel distributed associative memory. *The Japanese Journal of Psychonomic Science* 3:31-40.

Oyama, T. **Watanabe, T.** & Funakawa, M. (1983) Effect of test-mask similarity on forward and backward masking of patterns by patterns. *Psychological Research* 45:303-13.

Book Chapter or Section

Sasaki, Y., & **Watanabe, T.** (2015) Visual Perceptual Learning and Sleep. *Clinical Systems Neuroscience* 343-357. Springer, Japan

Watanabe, T. (2013) Perceptual Learning. *The New Visual Neuroscience* (Ed. John S. Werner & Leo M. Chalupa) in press. MIT Press, Cambridge, MA.

Choi, H., & **Watanabe, T.** (2012) Exposure-based perceptual learning. *Encyclopedia of the Sciences of Learning* (Ed. Seel, N. M.) pp. 1249-51. Springer, New York, NY.

Sasaki, Y. & **Watanabe T.** (2008) Types of Learning Curve. *Encyclopedia of Neuroscience* (Ed. Ono, T.) Springer-Verlag, Germany.

Mukai, I. & **Watanabe, T.** (2005) Brain science and psychology: between behavior and physiological processing. *New Trend in Psychological Theory* (Ed. Shimoyama, H.) Chapter 6, pp. 109-38. Seishin Press, Tokyo.

Watanabe, T. (2005) Synergy between top-down and bottom-up processings. *Computational Mechanisms of the Brain- Dynamics of Top-Down and Bottom-Up Processings* (Eds. Doya, K., Gomi, H., Sakaguchi, Y. & Kawato, M.) Chapter 13. Asakura Press, Tokyo.

Watanabe, T. & Miyauchi, S. (1998) Interactions in visual motion processing: Psychophysical and brain imaging studies. *High-level motion processing— Computational, biophysiological and psychological approaches* (Ed. Takeo Watanabe) pp95-114. MIT Press, Cambridge, MA.

Watanabe T. (1985) Mental imagery. *Introduction to experimental psychology using BASIC* (Ed. Shinichi Ichikawa) Tokyo University Press, Tokyo.

Watanabe T. (1985) Nominal codes and visual codes. *Introduction to experimental psychology using BASIC* (Ed. Shinichi Ichikawa) Tokyo University Press, Tokyo.

INVITED LECTURES & SYMPOSIUM PRESENTATIONS

Invited lecture on “Learning and stabilization”, in the Symposium “Visual Learning”, ATR Brain Research Institute, Kyoto, in December 2022

Invited lecture on “Learning and stabilization”, in the Annual Symposium of Brain and Mind, Brain Research Institute, Tamagawa University, Tokyo, in November 2022

Invited lecture on “Roles of excitatory and inhibitory signals in perceptual learning during wakefulness and sleep” in the symposium “Perception and brain processing”, Ecole Normale Supérieure Paris, in July, 2022

Invited lecture on “Roles of excitatory and inhibitory signals in perceptual learning” in the Annual Symposium of the McGovern Institute for Brain Research, Beijing, in June, 2022.

Invited plenary lecture on "Roles of excitatory and inhibitory signals in perceptual learning during wakefulness and sleep" in the 99th annual conference in the Japanese Physiological Association, in Sendai, in May, 2022

Invited plenary lecture on "Roles of excitatory and inhibitory signals in perceptual learning during wakefulness and sleep" in the symposium of the 10 year's anniversary of CiNET, in Osaka University Medical School, in April, 2022

Invited lecture on "Roles of excitatory and inhibitory signals in perceptual learning" in Department of Neuroscience, McGill University, in April, 2020.

Invited lecture on "Roles of excitatory and inhibitory signals in perceptual learning" in École normale supérieure, Paris, in July, 2019.

Invited lecture on "Decoded fMRI neurofeedback influences visual and cognitive processing" in the "Online fMRI feedback workshop" in National Institute of health, in March, 2019.

Invited lecture on "Neurochemical changes associated with plasticity and stability in visual perceptual learning" in Workshop in Brain Health, Geneva, in March, 2019.

Invited lecture on "Mechanisms of perceptual learning" in Workshop in Sleep Studies, Tsukuba, in November 2018.

Invited lecture on "Neurochemical changes associated with perceptual learning" in the MRS workshop, Tokyo Institute of Technology, Tokyo in November 2018

Invited lecture on "Neurochemical changes associated with perceptual learning" in the 7th International Workshop of Sleep Studies, Tokyo in November 2018

Plenary talk on "Mechanisms of perceptual learning" to be given in the Conference of Ophthalmology and Visual Sciences in WengZou, China, in September 2018.

Invited lecture on "Perceptual Learning" in the Biannual Summer School on Visual Neuroscience in Rauschholzhausen, in September 2018.

The Most Distinguished Japanese Psychologist Award Lecture, in the Annual Meeting of the Japanese Psychological Association to be in Sendai, Japan in September, 2018.

Plenary talk on "Mechanisms of perceptual learning" to be given in Asian Pacific Conference of Vision in HangZou, China, in July 2018

Ending lecture on "The future of perceptual learning" to be given in Moorea in June 2018.

Invited presentation on "Roles of neurotransmitter in stabilization of learning" in the Symposium entitled "Studies using Functional Magnetic Spectroscopy" in the annual meeting of the *Society of Neural Control of Movement* in Santa Fe. May 2018.

Invited presentation on "Perceptual learning" in the Symposium "Perceptual Learning", University of Pennsylvania, Philadelphia. May 2017.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in the Department of Neuroscience, University of Paris, France. July 2017.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Neurology Unit, Assan Hospital, Seoul, South Korea. January 2017.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Kyoto University, the School of Medicine, Kyoto, Japan. January 2017.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Karasuyama Hospital, Showa University, Tokyo, Japan. December 2016.

Invited presentation on “Creating of episodic memory by decoded neurofeedback” in the Workshop entitled “Neurofeedback”, Kyoto, Japan. December 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in University of Leuven, Belgium. October 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Justus-Liebig-Universität Giessen, Germany. October 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Medical School, University of Geneva, Switzerland. October 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in the University of Paris, France. September 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Maastricht University, Netherland. September 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Ecole Polytechnique Federale de Lausanne, Switzerland. September 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in University of Glasgow, UK. April 2016.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in 1st ECHSS Cognitive Neuroscience Symposium at National Yang-Ming University, Taiwan. November 2015.

Plenary Lecture on “Roles of Attention and Reinforcement Signals in Perceptual learning” in the opening ceremony of neuroimaging center at national Taiwan University, Taiwan. November 2015.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in the minisymposium at Society for Neuroscience, Chicago. October 2015.

Invited lecture on “Perceptual Learning” in the Department of Biomedical Engineering at Boston University, Massachusetts. September 2015.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” in the symposium “Learning and Memory” at Ruhr University Bochum, Germany. April 2015.

Invited lecture on “Roles of Attention and Reinforcement Signals in Perceptual learning” in Physics Laboratories at Johns Hopkins University, Baltimore. January 2014

Invited lecture on “Roles of Attention and Reinforcement Signals in Perceptual learning” at Beijing University, Beijing. April 2014

Invited lecture on “Roles of Attention and Reinforcement Signals in Perceptual learning” at Gordon Conference, Sunnyside River Resort, Maine. July 2014

Invited lecture on “Roles of Attention and Reinforcement Signals in Perceptual learning”, the Medical School of University of Alabama Birmingham, Birmingham, Alabama. November 2014

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at the symposium entitled, “Rovertto Attention Workshop” in the University of Trento, Italy. October 2013.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at the Department of Psychology, Université Paris Descartes, Centre Biomédical des Saints Pères, France. October 2013.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at the Department of Psychology, Columbia University, New York. October 2013.

Invited presentation on “Perceptual learning with aging” at 2013 International Workshop on Degenerated Brain in ATR BICR, Kyoto, Japan. July 2013

Invited presentation on “Perceptual learning with younger and older people” at Center for Information and Neural Networks, Osaka, Japan. July 2013

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at the Department of Psychology, Dartmouth College, Dartmouth. June 2013.

Invited presentation on “Decoded on-line neurofeedback (DecNef) can change visual and emotional systems” at Entertainment Software and Cognitive Neurotherapeutics Society (ESCoNs), University of Southern California, Los Angeles. March 2013.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at the symposium entitled *Brain Science for the Future*, organized by Professor Masamichi Sakagami, Tokyo, Japan. December 2012.

Director-invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at National Institute for Physiological Sciences Department of Developmental Physiology, Okazaki, Japan. December 2012.

Invited presentation on “Perceptual Learning Consists of Reinforcement-Driven Exposure-Based Learning + Task-Driven Rule-Based Learning” at the 3rd Perceptual Learning Workshop, Nara, Japan. December 2012.

Invited presentation on “Roles of Attention and Reinforcement Signals in Perceptual learning” at Department of Psychology, Yale University, New Haven, Connecticut. November 2012.

Invited talk on “Roles of attention and reward in perceptual learning” at Perceptual (Chikaku) Colloquium, Kiyosato, Japan. March 2012.

Invited Talk on “Roles of attention and reward in perceptual learning” at Duke-NUS Graduate Medical School, Singapore. March 2012.

Scientific Steering Committee and speaker on “Plasticity in Neural Systems” at the 1st Entertainment Software and Cognitive Neurotherapeutics Society (ESCoNS) conference at University of California San Francisco, California. September 2011.

Invited talk on “Roles of Reward and Attention in Perceptual Learning” at Department of Optometry, University of California Berkeley, California. September 2011.

Invited plenary lecture on “Unconscious processing in the brain” at the 33rd Japanese Society of Biological Psychiatry Annual Meeting, Tokyo, Japan. May 2011.

Invited lecture on “Task-Irrelevant Perceptual Learning” at NTT Communication Science Laboratory, Kanagawa, Japan. May 2011.

Invited lecture on “Perceptual Learning” at Honda Research Institute, Saitama, Japan. May 2011.

Invited lecture on “Recent Progress of Perceptual Learning” at ATR Institute, Kyoto, Japan. May 2011.

Invited lecture on “Perceptual Learning” at Honda Research Institute at Saitama, Japan. May 2011.

Invited lecture on “Roles of Attention and Reward on Perceptual Learning” at University of Rochester, Rochester, New York. April 2011.

Invited lecture on “Roles of Reward and Attention in Perceptual Learning” at the University of Maryland College Park, College Park, Maryland. April 2011.

Symposium speaker on “Consciousness and Perceptual Learning” at the Department of Philosophy, Harvard University, Cambridge, Massachusetts. March 2011.

Invited lecture on “Perceptual learning” at University of Texas, Houston, Texas. November 2010.

Invited lecture on “Perceptual learning” at Rutgers University, New Jersey. September 2010.

Invited lecture on “Perceptual learning” at Japan Neuro 2010 Conference, Japan. March 2010.

Symposium speaker on “Consciousness and perception” in the symposium “Consciousness” in the Annual Meeting of Vision Sciences Society, Florida. May 2010.

Invited lecture on “Perceptual learning” at Japan National Institute for Basic Biology (NIBB) Conference, Japan. March 2010.

Invited lecture on “Visual plasticity by Implicit processing” at the Department of Psychology, Boston College, Massachusetts. March 2010.

Invited lecture on “Perceptual learning” at the Department of Psychology, New York University, New York. February 2010.

Invited lecture on “Perceptual learning” at the Department of Psychology, University College London, England. February 2010.

Plenary lecture on “Perceptual learning” at the Biannual Conference of the Vision Society of Japan, Japan. January 2010.

Plenary lecture on “Perceptual learning” at the Japanese Neuroscience, Mechanism of Brain and Mind Workshop, Japan. January 2010.

Invited symposium organizer on “Perceptual Learning” at the 32nd European Conference of Visual Perception, Regensburg, Germany. August 2009.

Symposium Speaker on “Perceptual learning reinforced by attention and reward” at McDonnell-RIKEN Symposium, Wako, Japan. June 2009.

Invited lecture on “Perceptual learning and visual plasticity” at the University of Massachusetts Medical Campus, Massachusetts. Hosted by Dr. Motojiro Yoshihara. March 2009.

Symposium speaker on “fMRI Study of Perceptual Learning” at the McDonnell & Riken symposium “Limits to Brain Plasticity in Adulthood”, Wako, Japan. June 2009.

Symposium speaker on “Current Tendency of Perceptual Learning” at the Netherlands Institute for Neuroscience 2008 Conference: Perceptual Learning, Motor Learning, and Automaticity, Amsterdam, the Netherlands. December 2008.

Invited lecture on “Perceptual Learning” at Smith Kettlewell Eye Research Institute, San Francisco, California. Hosted by Dr. Christopher Tyler. October 2008.

Symposium co-organizer on “Symposium of Perceptual Learning” with Zhonglin Lu, Dov Sagi and Cong Yu, Beijing, China. October 2008.

Invited lecture on “Perceptual Learning” at Dartmouth University, Hanover, New Hampshire. Hosted by Dr. Mark Greenlee. August 2008.

Symposium speaker on “Perceptual Learning” at ERATO Shimojo Project Meeting, Shuzenji, Japan. July 2008.

Plenary talk on “Recent tendency in neuroscience in USA” at the Conference of Brain Machine Interfaces” at National Institute of Physiology, Okazaki, Japan. July 2008.

Symposium speaker on “Perceptions of Perceptual Learning: Perceptual Learning Studied by Means of Visual Psychophysics and Physiology” at the Annual conference of Eastern Psychological Association, Boston, Massachusetts. March 15, 2008.

Invited lecture on “Implicit Perceptual Learning” at Collège de France INSERM-CEA Cognitive Neuroimaging Unit, France. Hosted by Prof. Stanislas Dehaene. February 2008.

Symposium speaker on “Effects of “Invisible” stimuli on plasticity” at Neuro 2007 Conference. Yokohama, Japan. September 2007.

Invited lecture on “Effects of subthreshold signals on vision and visual plasticity” at Rikkyo University, Japan. Hosted by Professor Yoshihisa Osada. September 2007.

Invited lecture on “Task-irrelevant perceptual learning and inhibitory control on subthreshold invisible stimuli” at Brandeis University, Waltham, Massachusetts. Hosted by Professor Robert Sekuler. June 2007.

Invited lecture on “Task-irrelevant perceptual learning and inhibitory control on subthreshold invisible stimuli” at the Salk Institute, La Jolla, California. Hosted by Professor Thomas Albright. February 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at Brigham & Women Hospital, Boston, Massachusetts. Hosted by Jeremy Wolfe. February 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at Harvard University, Cambridge, Massachusetts. Hosted by Professor Patrick Cavanagh. February 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at Stanford University, Stanford, California. Hosted by Professor Brian Wandell. January 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at University of California, Davis, Davis, California. Hosted by Professor David Whitney 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at Massachusetts General Hospital, Boston, Massachusetts. Hosted by Professor Moshe Bar. January 2007.

Invited lecture on “Inhibitory control on subthreshold invisible stimuli” at Osaka University, Osaka, Japan. Hosted by Professor Ichiro Fujita. December 2006.

Invited lecture on “Passive perceptual learning” at Ruhr University Bochum, Germany. Hosted by Professor Hubert Dinse. May 2006.

Symposium speaker, on “Task-irrelevant learning” at a Satellite Symposium at the 2006 Vision Sciences Society, Florida. May 2006.

Symposium speaker on “Perceptual Learning without Attention” at a Satellite Symposium at the 2006 Annual Meeting of the Cognitive Neuroscience Society. April 2006.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, Yale University, New Haven, Connecticut. Hosted by Professor Marvin Chun. October 2005.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, University of Pennsylvania, Philadelphia. Hosted by Professor Benjamin Backus. October 2005.

Invited lecture on “Passive perceptual learning” at ERATO meeting. Los Angeles, California. Hosted by Professor Shinsuke Shimojo. June 2005.

Symposium speaker on “Passive perceptual learning” at 9th International Conference on Cognitive and Neural Systems in the Department of Cognitive and Neural Systems, Boston University, Boston Massachusetts. May 2005.

Invited lecture “Implicit Processing in Visual Perception, Decision Making and Learning” at American Psychological Society 17th Annual Convention, Los Angeles, California. May 2005.

Invited lecture on “Passive perceptual learning” at Riken Brain Science Institute, Tokyo, Japan. Hosted by Dr. Keiji Tanaka. May 2005.

Invited lecture on “Task-irrelevant learning is actually active” at Harvard University, Cambridge, Massachusetts. Hosted by Professor Ken Nakayama. April 2005.

Invited lecture on “Passive perceptual learning” at ATR Institute, Kyoto, Japan. Hosted by Dr. Mitsuo Kawato. December 2004.

Symposium speaker on “Passive perceptual learning” at the Fall Vision Meeting (the offshoot of vision at Optical Society of America) in Rochester University, New York. October 2004.

Keynote lecture on “Passive perceptual learning” in the 9th conference of Association of Consciousness and Science, Antwerp. June 2004.

Invited lecture on “Passive perceptual learning” in the Symposium, "Learning and brain" in Rochester University, New York. June 2004.

Symposium speaker on “Passive perceptual learning” in the Symposium, "Attention and brain" at Tamagawa University, Japan. May 2004.

Invited lecture on “Passive perceptual learning” at the Department of Cognitive and Brain Science, Massachusetts Institute of Technology, Cambridge, Massachusetts. December 2003.

Invited lecture on “Passive perceptual learning” at Computational Neural Division, ATR Institute, Kyoto, Japan. November 2003.

Symposium speaker on “Passive perceptual learning” in the Symposium, “Perceptual learning” in the 26 European Conference on Visual Perception, Paris. August 2003.

Invited lecture on “Passive perceptual learning” at the Department of Neurophysiology, Osaka University, Osaka, Japan. Hosted by Professor Ichiro Fujita. August 2003.

Invited lecture on “Passive perceptual learning” at the Department of Psychiatry, Tokyo University Hospital, Tokyo, Japan. August 2003.

Symposium speaker on “Passive perceptual learning” in the symposium “Brain and consciousness”, Nagano, Japan. August 2003.

Invited lecture on “Passive perceptual learning” at Brain Science Research Center, Tamagawa University Research Institute, Japan. Hosted by Professor Minoru Tsukada. 2003.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, University of Connecticut, Storrs, Connecticut. Hosted by Professor Michael Turvey. 2003.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, University of Montreal, Quebec, Canada. Hosted by Professor Pierre Jolicoeur. 2003.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, Arizona State University, Tempe, Arizona. Hosted by Professor José Náñez. 2002.

Invited lecture on “Perceptual learning” at Brain & Vision, Biomedical Engineering, Boston University, Boston, Massachusetts. Hosted by Professor Lucia Vaina. March 2002.

Invited lecture on “Passive perceptual learning” at ATR Institute, Kyoto, Japan. Hosted by Dr. Mitsuo Kawato.

Invited lecture on “Visual perception” at the Department of Biology and Human Life Science, University of Tokyo, Tokyo, Japan. Hosted by Professor Kuniaki Sasaki.

Invited lecture on “Passive perceptual learning” at NMR Center, Massachusetts General Hospital, Boston, Massachusetts. Hosted by Dr. Moshe Bar. 2001.

Invited lecture on “Passive perceptual learning” at ATR Institute, Kyoto, Japan. Hosted by Dr. Mitsuo Kawato. 2001.

Invited lecture on “Passive perceptual learning” at the Department of Psychology, Harvard University, Cambridge, Massachusetts. Hosted by Dr. Ken Nakayama. 2001.

Invited lecture on “Passive perceptual learning”. Hosted by Dr. Aaron Nelson. 2001.

Invited lecture on “Passive perceptual learning” at the Department of Cognitive and Linguistics, Brown University, Providence, Rhode Island. 2000.

Invited lecture on “Passive perceptual learning” at the Japanese Neural Network Summer Seminar, Kanagawa, Japan. 2000.

Invited lecture on “Passive perceptual learning” at NTT Research Laboratories, Tokyo, Japan. Hosted by Dr. Shin’ya Nishida. 2000.

Invited lecture on “Perceptual learning in motion processing” at the Department of Psychology, Rutgers University, Newark, New Jersey. Hosted by Professor Alan Gilchrist. 2000.

Invited lecture on “Perceptual learning in motion processing” at the Department of Psychology, NEC Research Institute, Princeton, New Jersey. Hosted by Dr. Bosco Chen. 2000.

Invited lecture on “Motion perception” at the Center for the Adaptive System, Boston University, Boston, Massachusetts. Organizer: Professor Ennio Mingolla. 1999.

Invited lecture on “The effect of attention and surface/form on motion processing” at Brown University, Providence, Rhode Island. Hosted by Professor William Warren. 1997.

Invited lecture on “The effect of attention on motion processing revealed by fMRI” at Massachusetts General Hospital, Charlestown, Massachusetts. Hosted by Professor Hans Breiter. 1997.

Invited lecture on “The effect of attention and surface/form on motion processing” at the Cambridge Basic Research Institute, Cambridge, Massachusetts. Hosted by Dr. Robert Rensink. 1997.

Invited lecture on “The effect of attention and surface/form on motion processing” at the University of Tokyo, Tokyo, Japan. Hosted by Professor Yotaro Takano. 1997.

Invited lecture on “The effect of attention on motion processing” at the Salk Institute, San Diego, California. Hosted by Professor Thomas Albright. 1997.

Invited lecture on “The effect of attention on motion processing” at California Institute of Technology, Pasadena, California. Hosted by Professor Pietro Perona. 1997.

Invited lecture on “The effect of attention on motion processing” at UCLA, Los Angeles, CA. Hosted by Professor Philip Kellman. 1997.

Invited lecture “The effect of attention on motion processing” at Northeastern University, Boston, Massachusetts. Hosted by Professor Rhea Eskew. 1997.

Invited lecture on “The effect of attention on motion processing” at Annual Symposium of the Japanese Psychometric Society, Tokyo, Japan. Organizer: Professor Morihiro Sugishita. 1997.

Invited Keynote lecture on “Motion Perception, surface processing and attention” at 60th Meeting of the Japanese Psychological Association, Tokyo, Japan. Organizer: Professor Yoshihisa Osada. 1996.

Invited keynote lecture on “Motion Perception, surface processing and attention” at Japanese Optical Society, Yamanashi, Japan. Organizer: Professor Mitsuo Ikeda. 1996.

Invited lecture on “Filling-in and interactions of visual features such as color, motion and texture” at Rockefeller University, New York. Organizer: Professor Charles Gilbert. 1994.

Lecture on “Motion perception” at the Center for the Adaptive System, Boston University, Boston, Massachusetts. Organizer: Professor Ennio Mingolla. 1994.

Invited lecture on “A low level representation of amodal completion”, NTT Basic Research Institute, Kanagawa, Japan. Organizer: Dr. Takao Sato. 1994.

Invited lecture on “Motion perception and higher-level processing” at the Salk Institute, San Diego, California. Hosted by Professor Thomas Albright. 1993.

Invited lecture on “Motion perception and higher-level processing” at the Primate Institute, Kyoto University, Kyoto, Japan. Hosted by Professor Akichika Mikami. 1993.

Lecture on “The propagation of motion constraint” at Riken, Saitama, Japan. Hosted by Dr. Keiji Tanaka. 1993.

Lecture on “Transparency and surface representation” at the Center for the Adaptive System, Boston University, Boston, Massachusetts. Organizer: Professor Ennio Mingolla. 1992.

Invited lecture on “Perception of transparency in visual information processing” at Japanese Optical Society, University of Tokyo, Tokyo, Japan. Organizer: Professor Shinsuke Shimojo. 1990.

Lecture on “Computational model of visual illusions” at Tulane University, New Orleans, Los Angeles. Organizer: Professor Chizuko Izawa. 1984.

ACADEMIC MEMBERSHIP

Member of American Psychological Society
Member of Vision Sciences Society
Member of Society for Neuroscience
Member of Japanese Psychological Association

TEACHING

Arizona State University

Fall, 1992, Sensation & Perception, PSY323.

Spring, 1993, Memory & Cognition, PSY 324.

Spring, 1993, Sensation & Perception, PSY323.

Fall, 1993, Sensation & Perception, PSY323.

Spring, 1994, Memory & Cognition, PSY 324.

Fall, 1994, Memory & Cognition, PSY 324.

Boston University

Fall 1995 Experimental Design of Psychology, PS 211.

Fall 1995 Psychology of Perception, PS 222.

Spring 1996 Psychology of Perception, PS 222.

Spring 1996 Visual Perception, PS822.
Fall 1996 Visual Perception, PS822.
Fall 1996 Cognitive Psychology, PS845.
Spring 1997 Psychology of Perception, PS 222.
Spring 1997 Visual Perception, PS822.
Fall 1997 Psychology of Perception, PS 222.
Fall 1997 Visual Perception, PS822.
Spring 1998 Psychology of Perception, PS 222.
Spring 1998 Visual Perception, PS822.
Fall 1998 Psychology of Perception, PS 222.
Fall 1998 Neural Correlates of Attention, PS835.
Spring 1999 Psychology of Perception, PS 222.
Spring 1999 Visual Perception, PS822.
Fall 1999 Psychology of Perception, PS 222.
Fall 1999 Neural Correlates of Attention, PS835.
Spring 2000 Psychology of Perception, PS 222.
Spring 2000 Neural Correlates of Attention, PS835.
Spring 2000 Experimental Neuroscience, BI 755 & PS738 / BI756 (two lectures).
Fall 2000 Visual Perception, PS822.
Fall 2000 Psychology of Perception, PS 222.
Spring 2001 Psychology of Perception, PS 222.
Spring 2001 Neural Correlates of Attention, PS835.
Fall 2001, on sabbatical.
Spring 2002 Psychology of Perception, PS 222.
Spring 2002 Visual Perception, PS822.
Fall 2002 Psychology of Perception, PS 222.

Fall 2002 Visual Perception, PS822.
Spring 2003 Psychology of Perception, PS 222.
Spring 2003 Neural Correlates of Attention, PS835.
Fall 2003 Psychology of Perception, PS 222.
Fall 2003 Visual Perception, PS822.
Fall 2004 Psychology of Perception, PS222.
Fall 2004 Visual Perception, PS822.
Spring 2005 Psychology of Perception, PS222.
Fall 2005 Visual Perception, PS822.
Spring 2006 Visual Perception, PS822.
Spring 2007 Visual Perception, PS822.
Fall 2007 Visual Perception, PS822.
Fall 2007 Attention, PS835.
Spring 2008 Psychology of Perception, PS222.
Fall 2009 Psychology of Perception, PS222.
Spring 2010 Attention, PS835.
Fall 2010 Psychology of Perception, PS222.
Fall 2011 Psychology of Perception, PS222

Brown University

Spring 2013 Perceptual Learning, CLPS1570
Fall 2013 Visual Consciousness, CLPS1571
Spring 2014 Perceptual Learning, CLPS1570
Fall 2014 Visual Consciousness, CLPS 1571
Spring 2015 Perceptual Learning, CLPS1570
Fall 2015 Perceptual Learning, CLPS1570
Fall 2016 Visual Consciousness, CLPS 1571
Spring 2016 Science of Consciousness, CLPS1570

Spring 2018 Perceptual Learning, CLPS1570

Spring 2018 Perception, Attention and Consciousness, CLPS 1580

Fall 2019

SERVICE

Arizona State University

1993

Member, Interaction between ASU West and its community

Member, Psychology Degree Committee

1994

Chair, Search Committee of Lecturer (Experimental Psychology).

Chair, Search Committee of Lecturer (Social Psychology).

Member, Diversity Document Committee

Member, Psychology Degree Committee

Member, Peer Committee for Dr. Jose Nanez

1995

Member, Social Interaction Laboratory Planning Committee

Member of Advisory Board to Award Master Degree in the Computer Science Department

Member, Faculty Salary Equity Committee

Member, Organization of Interdisciplinary Behavioral Science Degree Committee

Boston University

1996

Member, Premedical and Predental Advisory Board (university level).

Screening of graduate applicants (program level).

Distinction Committee

- Carrie A. Racine, Boston University Department of Engineering (Member)
- David van Whitney, Department of Psychology (Chair & 1st Reader)

1997

Member, Premedical and Predental Advisory Board (university level).

Screening of graduate applicants (program level).

Distinction Committee

- Scott Oddo, Boston University CNS Department (Chair)

1998

Member, Premedical and Pre dental Advisory Board (university level).

Curriculum Committee (department level).

Lecturer in Mind and Brain: The Inner Frontier (to high-school students and parents), October 1998, in Boston University

Dissertation Committee

- Michael Anes (2nd Reader)
- Lars Liden in CNS (2nd Reader)
- Christopher Pack in CNS (Member)
- Fank Kelly in CNS (Member)
- Gregory Gancarz in CNS (Member)

1999

Member, Premedical and Pre dental Advisory Board (university level).

Curriculum Committee (department level).

Distinction Committee

- David Chuah, Boston University Department of Psychology (Chair & 1st Reader).
- Joshua Newhouse, Boston University Department of Psychology

Dissertation Committee

- Ikuko Mukai, Boston University Department of Psychology (1st Reader)
- Michael Anes, Boston University Department of Psychology (2nd Reader)
- Joe Morrissey, Boston University Department of Psychology

Qualification Exam Advisor

- Daniel Palomo, Boston University Department of Psychology (Primary)
- Shinichi Koyama, Boston University Department of Psychology (Secondary)

2000

Member, Premedical and Pre dental Advisory Board (university level).

Curriculum Committee (department level).

Dissertation Committee

- Rebecca Alexander, Boston University Department of Psychology (2nd Reader)
- Aafia Siddiqui, Brandies University Department of Psychology (Member)
- John Elfar (Harvard Medical School Department of Neuroscience (3rd Reader)
- Rajeev Raizada, Boston University CNS Department (Member)

Committee member, Cognitive Psychologist Search

2001

Member, Premedical and Pre dental Advisory Board (university level).

Curriculum Committee (department level).

Dissertation Committee

- Daniel Palomo, Boston University Department of Psychology (1st Reader)
- David Whitney, Harvard University Department of Psychology (3rd Reader)
- Seungwoo Hwang, Boston University CNS Department (Chair & Member)

2002

Member, Premedical and Predental Advisory Board (university level)

Advisor, the Boston University Japanese Student Association. (university level)

Dissertation Committee

- Shinichi Koyama, Department of Psychology, Boston University (1st Reader)
- Piers Howe, Boston University CNS Department (2nd Reader)
- Aaron Seitz, Boston University CNS Department (3rd Reader)

Distinction Committee

- Maureen McKenzie, Boston University Department of Psychology (1st Reader)

2003

Member, Premedical and Predental Advisory Board (university level)

Advisor, the Boston University Japanese Student Association. (university level)

2004

Judge for the Science Day (university level)

Member, Premedical and Predental Advisory Board (university level)

Advisor, the Boston University Japanese Student Association. (university level)

Judge, promotion of a faculty member at MIT

2005

Judge, Science and Engineering Symposium (university level)

Board Member, Premedical and Predental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Facilitator, Publication Ethics Committee (university level)

Dissertation Committee

- Wonmok Shim, Harvard University Department of Psychology
- Yuko Yotsumoto, Brandeis University Volen Center for Complex Systems
- Feng Zhou, Brandeis University Volen Center for Complex Systems
- Arash Yazdanbakhsh, Boston University CNS Department
- Alexander Harner, Boston University Program in Neuroscience
- Stephanie McMains, Boston University Department of Psychology

Distinction Committee

- Verena Krause, Boston University Department of Psychology
- Azin Aliabadi, Boston University Department of Psychology

2006

Judge, Science and Engineering Symposium (university level)

Board Member, Premedical and Predental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Assistant to Provost David Campbell for a meeting with Tokyo University administrators (university level)

Assistant to Associate Dean Peter Doeringer for a meeting with Tokyo University professors (university level)

Graduate Students Candidate Admission Committee (department level)

Judge for Promotion of a Faculty Member

- University of Texas at Austin
- University of Louisville
- Denison University

Dissertation Committee

- Elif Ozdemir, Boston University Department of Psychology
- Levin Kuhlmann, Boston University Department of Cognitive and Neural Systemas

2007

Judge, Science and Engineering Symposium (university level)

Board Member, Premedical and Predental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Graduate Students Candidate Admission Committee (department level)

Judge for Promotion of a Faculty Member

- University of Sydney, Australia
- Pennsylvania College of Optometry

Dissertation Committee

- Jasha Swisher, Boston University Program in Neuroscience (2nd Reader)
- Liang Fang, Boston University CNS Department (3rd Reader)
- Jonathan Winawer, Massachusetts Institute of Technology Department of Brain and Cognitive Sciences (3rd Reader)
- Barbara Bliem, Ruhr University, Germany (3rd Reader)

2008

Board Member, Premedical and Pre-dental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Graduate Students Candidate Admission Committee (department level)

Judge for Promotion of a Faculty Member

- Boston University (university level)

Dissertation Committee

- Ramon Iovin, Boston University CNS Department (2nd Reader)
- Mark Halko, Boston University Department of Psychology (2nd Reader)
- Yoshiaki Tsushima, Boston University Program in Neuroscience (1st Reader)

2009

Board Member, Premedical and Pre-dental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Graduate Students Candidate Admission Committee (department level)

Dissertation Committee

- Melissa Batson, Boston University Program in Neuroscience (1st Reader)
- Tsung-Ren Huang, Boston University Cognitive Neural Systems (3rd Reader)
- Martina Poletti, Boston University Cognitive Neural Systems (Additional Reader)
- Hee Kyoung Ko, Boston University Cognitive Neural Systems (Additional Reader)

Organizer, Boston University Vision Colloquium Series

2010

Board Member, Premedical and Pre-dental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Graduate Students Candidate Admission Committee (department level)

Dissertation Committee

- Katherine Bettencourt, Boston University Department of Psychology (2nd Reader)

Organizer, Boston University Vision Colloquium Series

2011

Board Member, Premedical and Pre-Dental Studies (university level)

Advisor, Boston University Japanese Student Association (university level)

Graduate Students Candidate Admission Committee (department level)

2012

Advisor, Boston University Japanese Student Association (university level)

Distinction Committee:

- Eli Fredman, Boston University Department of Psychology

Dissertation Committee:

- Harald Ruda, Boston University Cognitive and Neural Systems (3rd Reader)
- Jonathan Dobres, Boston University Department of Psychology (1st Reader)
- Dongho Kim, Boston University Department of Psychology (1st Reader)

Brown University

2014

Dissertation Committee:

- Li-Hung Chang, Brown University, Department of Cognitive, Linguistic and Psychological Sciences (1st Reader)

2015

Committee member on selecting fellowship awardees in Visual Science Center

BIBS grad students support screening committee

Andrew Lynn, First year project committee

Leslie Lai, First year project committee

Jianfei Guo, First year project committee

2016

- Naghmeh Mostofi, Boston University, Department of Psychological and Brain Sciences (2nd Reader)
- Christine Gamble, Brown University, Department of Cognitive, Linguistic and Psychological Sciences

2017 Sabbatical

2018

Member of the Committee of Academic Standing (CAS), University Governance
Member of Graduate students fellowship screening in Department of Neuroscience
Member of Graduate students fellowship screening in Center for Visual Sciences
Member of the Review Board of the Carney Institute Innovation Awards.

2019

Member of the Committee of Academic Standing (CAS), University Governance
Advisor of Cognitive Neuroscience Concentration
Committee member of Award

2020 Spring (Sabbatical in the fall)

Member of the Committee of Academic Standing (CAS), University Governance
Advisor of Cognitive Neuroscience Concentration
Committee member of Award

2021

Advisor of Cognitive Neuroscience Concentration
Committee member of Award

2022

Advisor (chief) of Cognitive Neuroscience Concentration
Committee member of Award
Search committee member
Promotion committee member

