

## Atsushi Kikumoto (菊本 篤史)

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### Education

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2013 – 2020	PhD, Psychology and Cognitive Neuroscience University of Oregon, Eugene, OR
2009 – 2012	Bachelor of Science, Psychology (honors), Biology (minor), University of Oregon, Eugene, OR
2008 – 2010	The Associate of Arts Oregon Transfer (AAOT), Lane Community College, Springfield, OR

### Research Experience

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2020 – present	Postdoctoral Research Associate Brown University, Providence, RI, United States Director: David Badre
2018	Visiting Junior Scholar Max Planck Institute of Human Development, Berlin, Germany Director: Ulman Lindenberger, Markus Werkle-Bergner, and Myriam Sander
2010 – 2020	Research assistant / PhD Graduate Student Researcher University of Oregon, Eugene, OR, United States Director: Ulrich Mayr
2010 – 2012	Research assistant University of Oregon, Eugene, OR, United States Director: Ed Vogel
2010 – 2012	Research assistant University of Oregon, Eugene, OR, United States Director: Margaret Sereno

### Publications (\* denotes that authors contributed equally to the work)

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Badre, D., Bhandari, A., Keglovits, H., & **Kikumoto, A.** (2021). The dimensionality of neural representations for control. *Current Opinion in Behavioral Sciences*, 38, 20–28.

**Kikumoto, A.**, & Mayr, U. (2020). Conjunctive representations that integrate stimuli, responses, and rules are critical for action selection. *Proceedings of the National Academy of Sciences of the United States of America*. <https://doi.org/10.1073/pnas.1922166117>

Sereno, M. E., Robles, K. E., **Kikumoto, A.**, & Bies, A. J. (2020). The Effects of Three-Dimensional Context on Shape Perception. *Psychological Science*, 956797620901749. doi:10.1177/0956797620901749

Moss, M. E., **Kikumoto, A.**, & Mayr, U. (2020). Does conflict resolution rely on working memory? *Journal of Experimental Psychology: Learning, Memory, and Cognition*. doi:10.1037/xlm0000801

**Kikumoto, A.**, & Mayr, U. (2019). Balancing model-based and memory-free action selection under competitive pressure. *eLife*, 8. doi:10.7554/eLife.48810

Hubbard, J\*, **Kikumoto, A.**, & Mayr, U. (2019). EEG Decoding Reveals the Strength and Temporal Dynamics of Goal-Relevant Representations. *Scientific Reports*, 9(1), 9051. doi:10.1038/s41598-019-45333-6

**Kikumoto, A.**, & Mayr, U. (2018). Decoding hierarchical control of sequential behavior in oscillatory EEG activity. *eLife*, 7. doi:10.7554/eLife.38550

**Kikumoto, A.**, & Mayr, U. (2017). The nature of task set representations in working memory. *Journal of Cognitive Neuroscience*, 29(11), 1950–1961. doi: 10.1162/jocn\_a\_01173

**Kikumoto, A.**, Hubbard, J., & Mayr, U. (2015). Dynamics of task-set carry-over: evidence from eye-movement analyses. *Psychonomic bulletin & review*, 1-8. doi:10.3758/s13423-015-0944-y

Mayr, U., Kleffner-Canucci, K., **Kikumoto, A.**, & Redford, M.A. (2014). Control of task sequences: What is the role of language? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40(2). doi:10.1037/a0035221

## Publications in preparation

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**Kikumoto, A.**, & Mayr, U. (2020). The Role of Conjunctive Representations in Controlling Actions. In *bioRxiv* (p. 2020.04.30.070227). <https://doi.org/10.1101/2020.04.30.070227>

Tsubomi, H., Fukuda, K., **Kikumoto, A.**, Mayr, U., & Vogel, E (in prep). Dropping no-longer necessary items from visual working memory.

## Invited Talks

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**Kikumoto, A.**, Badre D., Mayr, U. (2020, May). “The content and format of control representation during dynamic action control”, Presentation at University of California Berkeley, California, U.S.

**Kikumoto, A.**, Byers A., Mayr, U. (2018, April). “Towards optimal competitive behavior: wins versus losses determine model-based versus random choices in competitive task switching”, Presentation at University of Kansei Gakuin, Kyoto, Japan.

**Kikumoto, A.**, Tsubomi, H., Fukuda, K. & Mayr, U. (2017, August). “Tracking individual representation in visual working memory”, Presentation at Max Planck Research Institute for Human Development, July 2017, Berlin, Germany.

**Kikumoto, A.**, & Mayr, U. (2013, August). “Nature of task set carry-over”, Primate Research Institute Kyoto University, Kyoto, Japan.

## Conference Talks

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**Kikumoto, A.** & Mayr, U. (2019). “The role of conjunctive representations in stopping actions”. Psychonomic Society, November 2019, Montreal, QC, Canada.

**Kikumoto, A.** & Mayr, U. (2019). “Conjunctions between rules and stimulus-response codes drive action selection”. Control Processes, May 2019, Providence, RI, USA.

**Kikumoto, A.** & Mayr, U. (2018). “The nature of rule-based action selection”. Psychonomic Society, November 2018, New Orleans, LA, USA.

**Kikumoto, A.** & Mayr, U. (2018). “Probing the nature of task-set representations”. Presentation for Experimental Psychology Society, January 2018, London, UK.

**Kikumoto, A.** & Mayr, U. (2017). “Competitive task switching: balancing model-based and memory-free action selection”. Psychonomic Society, November 2017, Vancouver, BC, Canada.

**Kikumoto, A.** & Mayr, U. (2014). “Using the contralateral delay activity to probe the nature of task set representations”, Presentation for the Psychonomic Society, November 2014, Long Beach, CA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K. (2012). “Stability of visual working memory representations across changes in eye positions”, Presentation for the Cognitive Science Association for Interdisciplinary Learning (CSAIL), August 2012, Hood River, OR, USA.

## Conference Poster Presentations

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**Kikumoto, A.**, Sameshima, T. & Mayr, U. (2019). “How does stopping of actions affect action-relevant representations?”, Poster for the Cognitive Neuroscience Society, March 2019, San Francisco, CA, USA.

**Kikumoto, A.**, Sameshima, T. & Mayr, U. (2018). “Sticky rules: conjunctions between rules and stimulus-response Codes Drive Action Selection”, Poster for the Cognitive Neuroscience Society, March 2018, Boston, MA, USA.

Tsubomi, H., Fukuda, K., **Kikumoto, A.**, Mayr, U. & Vogel, E. (2018). "Removal of no-longer necessary items from working memory after task accomplishment", Poster for the Psychonomic Society, November 2015, Louisiana, LA, USA.

Moss, M., **Kikumoto, A.** Mayr, U. (2018). "Efficient coding of abstract inter-chunk relationship", Poster for the Psychonomic Society, November 2015, Louisiana, LA, USA.

**Kikumoto, A.**, Corona,C., Karpf, J. & Mayr, U. (2017). "Towards optimal competitive behavior: wins versus losses determine model-based versus random choices in competitive task switching", Poster for the Cognitive Neuroscience Society, March 2017, San Francisco, CA, USA.

Moss, M., **Kikumoto, A.** & Mayr, U. (2017). "Do working memory and conflict resolution share common cognitive resources", Poster for the Cognitive Neuroscience Society, March 2017, San Francisco, CA, USA.

Bies, A., **Kikumoto, A.**, Lazarides, S., & Sereno, M. (2017). "Shape constancy in anaglyphs: Effects of angle, context and instruction", Poster for Vision Science Society, May 2017, FL, USA.

**Kikumoto, A.**, Schäfer, T., Sameshima, T., Anderson, D., McGuirk, W. & Mayr, U. (2016). "Mapping out the representational space for decision using EEG delta oscillations", Poster for the Cognitive Neuroscience Society, November 2016, NewYork, NY, USA.

Morales, P.J., Hubbard, J., **Kikumoto, A.** & Mayr, U. (2016). "Probability contexts modulate mediofrontal prediction error signals in response to gains and losses". Poster for the Cognitive Neuroscience Society, November 2016, NewYork, NY, USA.

Bies, J. A., **Kikumoto , A.**, Boydstonb, R., Greenfielda. A., Chauvina, A., Taylor. R., & Sereno, M., (2016). "Percepts from noise patterns: The role of fractal dimension in object pareidolia", Poster for Vision Science Society, May 2016, FL, USA.

**Kikumoto, A.**, Corona,C., Sameshima, T. & Mayr, U. (2015). "Decoding hierarchical representations of complex sequences from EEG oscillatory activity", Poster for the Psychonomic Society, November 2015, Chicago, IL, USA.

Tsubomi, H., Fukuda, K., **Kikumoto, A.** & Vogel, E. (2015). "Forgetting no-longer necessary items from visual working memory", Poster for the Psychonomic Society, November 2015, Chicago, IL, USA.

Jost, K., Mayr, U., **Kikumoto, A.** & Schwarzkopp, T. (2015). "Visual working memory and filtering out distractors: evidence for an age-specific delay in filtering". Poster for the Cognitive Neuroscience Society, May 2015, San Francisco, CA, USA.

**Kikumoto, A.**, Williams, L., Robson, S. & Mayr, U. (2014). "Using the contralateral delay activity to probe the nature of task set representations", Poster for the Cognitive Neuroscience Society, March 2015, San Francisco, CA, USA.

Hubbard, J., **Kikumoto, A.** & Mayr, U. (2014). "Pupillometric indicator of proactive control in task-switching", Poster for the Psychonomic Society, November 2014, Long Beach, CA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K. (2012). "Stability of visual working memory representations across changes in eye positions", Poster for the Society for the Neuroscience (SfN), August 2012, New Orleans, LA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K., (2012). "Stability of visual working memory representations across changes in eye positions", Poster for the Society for the Neuroscience (SfN), August 2012, New Orleans, LA.

**Kikumoto, A.** & Mayr, U. (2011). "Passive listening to music engages executive control", Poster for the NorthWest Cognition & Memory (NOWCAM), May 2011, Vancouver, BC, USA.

## **Awards, Scholarships, and Fellowships**

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2021: JSPS Overseas Fellowships (Japan Society for Promotion of Science, \$12,556,000)

2019: Graduate Student Travel Award (University of Oregon, \$500)

2018: Pre-doctoral stipend of Max Planck Society (Max Planck Institute of Human Development)

2017: Gregores Research Award (University of Oregon, \$500)

2014: Graduate Student Award for the Cognitive Neuroscience Society

2011: Best Poster Presentation Award for the Northwest Cognitive & Memory

2009: International Deans Excellence Award Scholarship (University of Oregon, \$24,000)

2008: Shining Star Scholarship (Lane Community College, \$1000)

## **Teaching and Mentorship**

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2013 – 2019 Graduate student mentor for honors program: Chihoko Hayashi, Lauren Williams, Dagger Anderson, Caitlin Corona, Megan Carson, Tesufuai Sameshima, Ali Byers, Izabella Dickerson, Vy Tran

2017 Teaching assistant and lab instructor for PSY302: Statistical method.

2016 Teaching assistant for PSY449/549: Human Neuropsychology.

2016 Teaching assistant and guest lecture for PSY438/538: Perception.

2015 Teaching assistant for PSY436/536: Human performance.

2014 Teaching assistant for PSY202: Mind and Brain.

2008 – 2010 Psychology tutor with the CRLA Advanced level tutor certificate

## **Training**

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2018: fsl course for neuroimaging analysis at University of Oxford

2017: Model-based neuroscience summer school at University of Amsterdam