

# Alexander J. Bies, Ph. D.

## CURRICULUM VITAE

September 6, 2018

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Psychology Department  
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Spokane, WA 99258

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### EDUCATION

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- 2017                      Ph. D., Psychology (Cognitive Neuroscience)  
University of Oregon, Department of Psychology
- 2012                      M.S., Psychology (Cognitive Neuroscience)  
University of Oregon, Department of Psychology
- 2008                      B.S. with Honors, Psychology, Philosophy, and Neuroscience  
University of Evansville

### PROFESSIONAL APPOINTMENTS

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- 2018 – present            Assistant Professor  
Psychology Department  
Gonzaga University, Spokane, WA
- 2017 – 2018              Assistant Professor  
Psychology Department  
Middle Tennessee State University, Murfreesboro, TN

### SCHOLARSHIP

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#### Publications

1. Taylor, R. P., Juliani, A. W., Croy, A., **Bies, A. J.**, Spehar, B., & Sereno, M. E. (2017). The implications of fractal fluency for biophilic architecture. *Journal of Biourbanism*, 6(1&2), 23-40. Retrieved from <https://journalofbiourbanism.org/2018/03/20/jbu-volume-vi-12-2017/>
2. **Bies, A. J.** (2016). Cockroaches now evading death by getting bitter about sweeteners. *The Journal of Undergraduate Neuroscience Education*, 15(1), R17-R18.
3. **Bies, A. J.**, Boydston, C. R., Taylor, R. P., & Sereno, M. E. (2016). Relationship between fractal dimension and spectral scaling decay rate in computer-generated fractals. *Symmetry*, 8(7), 66. doi:10.3390/sym8070066

4. Juliani, A. W., **Bies, A. J.**, Boydston, C. R., Taylor, R. P., & Sereno, M. E. (2016). Navigation performance in virtual environments varies with the fractal dimension of the landscape. *Journal of Environmental Psychology*, *47*, 155-165. doi: 10.1016/j.jenvp.2016.05.011
5. **Bies, A. J.**, Blanc-Goldhammer, D., Boydston, C. R., Taylor, R. P., & Sereno, M. E. (2016). Aesthetic responses to exact fractals driven by physical complexity. *Frontiers in Human Neuroscience*, *10*, 210. (Invited). doi: 10.3389/fnhum.2016.00210
6. Roach, S. M., San Juan, J. G., Suprak, D. N., Lyda, M., **Bies, A. J.**, & Boydston, C. R. (2015). Passive hip range of motion is reduced in active subjects with chronic low back pain compared to controls. *International Journal of Sports Physical Therapy*, *10*(1), 13-20. doi: 10.1016/j.ptspt.2009.08.002

## Manuscripts Under Review or Revision

## Conference Abstracts (Talk and Poster Presentations)

1. **Bies, A. J.**, Tate, W., Taylor, R. P., & Sereno, M. E. A factor analytic approach reveals variability and consistency in perceived complexity ratings of landscape photographs. *Vision Sciences Society Annual Meeting*, 2018. Online.
2. Edwards, K., **Bies, A. J.**, Kikumoto, A., Lazarides, S., & Sereno, M. E. Shape constancy in anaglyphs: Effects of drawing training. *Vision Sciences Society Annual Meeting*, 2018. Online.
3. Tate, W., Taylor, R. P., Sereno, M. E. & **Bies, A. J.** Perceived complexity and aesthetic responses to landscape photographs. *Vision Sciences Society Annual Meeting*, 2018. Online.
4. **Bies, A. J.**, Kikumoto, A., Lazarides, S., & Sereno, M. E. Shape constancy in anaglyphs: Effects of angle, context and instruction. *Vision Sciences Society Annual Meeting*, 2017. Online.
5. **Bies, A. J.**, & Sereno, M. E. Understanding the relationship between specific spatial abilities and map reading skills using fMRI. 2016 Neuroscience Meeting Planner. Chicago, IL: *Society for Neuroscience*, 2016. Online.
6. **Bies, A. J.**, Kikumoto, A., Boydston, C., Greenfield, A. L., Chauvin, K. A., Taylor, R. P., & Sereno, M. E. Percepts from noise patterns: The role of fractal dimension in object pareidolia. *Vision Sciences Society Annual Meeting*, 2016. Online.
7. Juliani, A. W., **Bies, A. J.**, Boydston, C., Taylor, R. P., & Sereno, M. E. Spatial localization accuracy varies with the fractal dimension of the environment. *Vision Sciences Society Annual Meeting*, 2016. Online.
8. **Bies, A. J.**, Wekselblatt, J., Boydston, C., Taylor, R. P., & Sereno, M. E. The effects of visual scene complexity on human visual cortex. 2015 Neuroscience Meeting Planner. Chicago, IL: *Society for Neuroscience*, 2015. Online.
9. **Bies, A. J.**, Taylor, R. P., & Sereno, M. E. An edgy image statistic: Semi-automated edge extraction and fractal box-counting algorithm allows for quantification of edge dimension in natural scenes. *Vision Sciences Society Annual Meeting*, 2015. Online.

10. Chauvin, K. A., Sereno, M., Blanc-Goldhammer, D., & **Bies, A.** The role of object detection in natural scene aesthetics. *Annual Biomedical Research Conference for Minority Students*, 2014. Online.
11. **Bies, A. J.**, Sigler, B., Reuter, S. R., & Becker, L. A. Overhand throwing in adaptation to prism lenses generalizes to other throwing motions. 2009 Neuroscience Meeting Planner. Chicago, IL: *Society for Neuroscience*, 2009. Online.
12. **Bies, A. J.**, Craig, M. B., & Becker, L. A. 2009. Anxiolytic effects of prenatal phytoestrogen exposure on social interaction behaviors in peripubescent rats. *Developmental Psychobiology*, 51(7).

### Manuscripts in Preparation

1. **Bies, A. J.**, Croy, A. T., Kikumoto, A., Boydston, C., Taylor, R. P., & Sereno, M. E. Physical complexity guides illusory perceptions.
2. **Bies, A. J.**, Lazarides, S., DiRicco, R., Kikumoto, A., & Sereno, M. E. Shape memory affected by training in realistic drawing.
3. **Bies, A. J.**, Lee, B. H., Taylor, R. P., & Sereno, M. E. Relationship between fractal dimension and spectral scaling decay rate in photographs of clouds and savannahs.
4. **Bies, A. J.**, Sereno, M. E. Taylor, R. P., & Hägerhäll, C. M. Synergistic effects of categorical and mathematical image statistics in the prediction of scene aesthetics.
5. Roe, E., **Bies, A. J.**, Montgomery, R., Watterson, W., Boydston, C. R., Sereno, M. E., & Taylor, R. P. Aesthetic solar panels.
6. Sereno, M. E., **Bies, A. J.**, Wekselblatt, J., Boydston, C. R., Kikumoto, A., & Taylor, R. P. Neural encoding of scene complexity in the human visual cortex as a basis for pareidolic perception.

### AWARDS & HONORS

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2016	American Psychological Association Dissertation Research Award
2009	NIH Travel Award

### GRANTS & FELLOWSHIPS

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2016 – 2017	University of Oregon College of Arts and Sciences Dissertation Fellowship
2009	UExplore Research Grant to Alexander Bies and Lora Becker, “Generalization of motor movement during prism adaptation” University of Evansville, \$340

### TALKS

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#### Invited Talks

1. Examining the relationship between perceived complexity and beauty in natural scenes. *Transdisciplinary Workshop: Science, Art and Cognition*. Centro Internacional de Ciencias A. C., Cuernavaca, Mexico, December 12, 2017.
2. Visual aesthetics of fractals. University of Southern Indiana, Evansville, IN, May 2, 2016.
3. A fresh perspective on drawing with perspective: why some individuals' drawings are more accurate than others. *Crick Lectures in Cognitive and Neural Science*. University of Evansville, Evansville, IN, April 24, 2015.

### Campus Talks

1. Beauty of Scenes and Patterns: A Psychological Perspective. *College of Behavioral and Health Sciences Spring 2018 Faculty Research Lunch Series*. Middle Tennessee State University, Murfreesboro, TN, February 2, 2018.

### TEACHING EXPERIENCE

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#### Gonzaga University

Biological Psychology	Fall 2018
Scientific Principles in Psychology (Research Methods)	Fall 2018
Statistics for Psychology	Fall 2018

#### Middle Tennessee State University

Basic Statistics for Behavioral Science	Spring 2018
Human Brain, Behavior, and Consciousness	Summer 2018
Introduction to Cognitive Psychology	Summer 2018
Research Methods	Fall 2017
Psychology of Sensation and Perception	Fall 2017, Spring 2018

#### University of Oregon – Instructor of Record

Brain Mechanisms of Behavior	Summer 2013
Cognition	Summer 2012
Human Sexuality	Fall 2011
Learning & Memory	Summer 2014, Summer 2016
Perception†	Summer 2015
Seminar on Neuropsychology & Art	Spring 2016
† Taught with co-instructor	

#### University of Oregon – Laboratory Instructor

Biopsychology	Spring 2012, Winter 2015
Research Methods	Spring 2013, Spring 2014, Fall 2015
Statistical Methods in Psychology	Fall 2012, Winter 2013, Fall 2013

### University of Oregon – Teaching Assistant

Brain Mechanisms of Behavior	Spring 2011
Human Sexuality	Winter 2012
Learning & Memory	Winter 2016
Mind and Brain (Introductory Psychology)	Fall 2010, Winter 2011
Perception	Winter 2014, Fall 2014

### RESEARCH EXPERIENCE

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2016 – 2017	Dissertation Research Fellow, University of Oregon, Eugene, OR
2011 – 2017	Graduate Research Assistant, Margaret Sereno's Laboratory, Department of Psychology, University of Oregon, Eugene, OR
2011	Graduate Research Assistant, Shawn Lockery's Laboratory, Department of Psychology, University of Oregon, Eugene, OR
2010 – 2011	Graduate Research Assistant, Mike Wehr's Laboratory, Department of Psychology, University of Oregon, Eugene, OR
2006 – 2010	Laboratory Manager/Research Assistant, Lora Becker's Laboratory, University of Evansville, Department of Psychology, Evansville, IN

### CONSULTING EXPERIENCE

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2015 – 2016	Neuroscience and fMRI Consultant, University of Oregon, Visiting Artists Program, Eugene, OR
2014 – 2015	Statistics Consultant, Tensegrity Physical Therapy, Eugene, OR

### SERVICE TO PROFESSION

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#### Editorial Positions

2018 – Present	<i>Journal of Experimental Neuroscience</i> – Section Editor for Cognition and Perception
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#### Ad-hoc Reviewer

*Applied Sciences* (2018)

*Spatial Navigation and Computation* (2018)

## **DEPARTMENTAL/UNIVERSITY SERVICE**

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### **Gonzaga University**

### **University of Oregon**

2015 – 2016 Graduate Education Committee, Department of Psychology  
 2012 – 2017 Graduate Admissions Committee, Department of Psychology

## **SUPERVISION OF STUDENT RESEARCH**

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### **Gonzaga University**

### **Middle Tennessee State University**

2017 – 2018 Whitney Tate, masters (quantitative), Psychology Department  
 2017 – 2018 Mitchell Walden, masters (clinical), Psychology Department

### **University of Oregon**

2016 – 2017 Ailin Jin, undergraduate thesis project, Psychology Department  
 2014 Kristen Chauvin, University of Oregon Summer Program for Undergraduate Research (SPUR), Life Sciences laboratories  
 2012 – 2013 Stefanos Lazarides, undergraduate thesis project, Psychology Department  
 2011 Elisa Jamarillo, University of Oregon SPUR, Life Sciences laboratories  
 2011 Ariel Love, University of Oregon SPUR, Life Sciences laboratories

## **EXTRACURRICULUAR UNIVERSITY SERVICE**

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2011 – 2016 Summer Program for Undergraduate Research (SPUR) Mentor, University of Oregon  
 2008 At Risk Student Advisor, Center for Academic Advisement, University of Evansville  
 2007 21<sup>st</sup> Century Scholar Mentor, Center for Academic Advisement, University of Evansville

## **COMMUNITY OUTREACH**

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- 2016 Summer Academy to Inspire Learning (SAIL) Instructor, University of Oregon
- 2009 – Present Brain Awareness Week, locations/activities varied

## **PROFESSIONAL AFFILIATIONS**

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- 2016 – Present American Psychological Association (APA)
- 2015 – Present American Academy for the Advancement of Science (AAAS)
- 2015 – Present Association for Psychological Science (APS)
- 2015 – Present Faculty for Undergraduate Neuroscience (FUN)
- 2014 – Present Vision Science Society (VSS)
- 2009 – Present Society for Neuroscience (SfN)
- 2009 – 2010 International Society for Developmental Psychobiology (ISDP)

## **REFERENCES**

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Lora A. Becker, Ph.D.  
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Associate Professor, Department of Psychology, University of Oregon  
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