

EDWARD A. VESSEL, PhD

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RESEARCH INTERESTS

Investigating the neural basis for aesthetic judgment and visual preferences. Developing theories of aesthetic preference and information-seeking behavior. Exploring the link between high level visual representations and affective responses. Developing behavioral, psychophysiological, and imaging techniques for measuring preferences, aesthetic responses and information seeking. Brain imaging of prefrontal cortex.

PROFESSIONAL EXPERIENCE

- 4/2009 - present Assistant Research Scientist
Center for Brain Imaging, *New York University*, New York, NY.
Consult with NYU labs on the design and analysis of fMRI imaging experiments, plus protected research time for pursuing independent research. Teach workshops on analysis techniques and software. Additional consulting with several PI's as project lead and co-author for design, data collection and analysis of new research projects.
- 2011 Adjunct Professor
Dept. of Psychology, *New York University*, New York, NY.
- 2008 - 2009 Research Consultant
Nava Rubin, Center for Neural Science, *New York University*, NY
Denis Pelli, Dept. of Psychology, *New York University*, NY
- 2007 – 2008 Adjunct Lecturer
Dept. of Psychology, *New York University*, New York, NY.
Dept. of English, *New York University*, New York, NY.
- 2004 - 2007 Postdoctoral Research Fellow
Center for Neural Science, *New York University*, New York, NY
Advisor: Nava Rubin

EDUCATION

- 2004 Ph.D., Neuroscience
The University of Southern California, Los Angeles, CA
Behavioral and Neural Investigations of Perceptual Affect
Irving Biederman (chair), Richard Thompson, Zhonglin Lu, Bartlett Mel, and

1997 Mitchell Earleywine.
B.A. (Hons.), Cognitive Science
The Johns Hopkins University, Baltimore, MD

HONORS AND AWARDS

9/2003 - 2006 Postdoctoral NRSA award (NEI).
2001 - 2003 Predoctoral NRSA Traineeship: USC Cognitive and Computational
Neuroscience Training Grant.
2001 Fellow at the Dartmouth Summer Institute in Cognitive Neuroscience.
1997 Graduated Phi Beta Kappa, with General Honors, Departmental Honors, and
Honors in Humanities.
1995 – 1996 Treasurer of Psi Chi, the National Honor Society in Psychology. Member
since 1995.
1993 National Merit Scholar, Robert C. Byrd Honors Scholarship, Valedictorian

PUBLICATIONS

Vessel, E.A., Starr, G.G., Rubin, N. (2012). The brain on art: Intense aesthetic experience activates the default mode network. *Frontiers in Human Neuroscience*, 6:66, doi: 10.3389/fnhum.2012.00066.

Vessel, E.A., & Rubin, N. (2010). Beauty and the beholder: Highly individual taste for abstract, but not real-world images. *Journal of Vision*, 10(2): 18, 1-14, <http://journalofvision.org/10/2/18>, doi:10.1167/10.2.18.

Yue, X, **Vessel, E.A.**, & Biederman, I. (2007) The neural basis of scene preferences. *NeuroReport*, 16(6), 525-529.

Biederman, I. & **Vessel, E.A.** (2006) Perceptual pleasure and the brain. *American Scientist*, 94, 249-255.

INVITED TALKS

2011 Central Booking Gallery, New York, NY, Oct. 13. Art: Color and Optics.
2011 Smart Museum of Art, Chicago, Il., April 14. “Art and Emotion: The Brain and Aesthetic Experience.”
2010 Aesthetic Science Symposium, Psychonomics, St. Louis, MO.
2010 Creative Conversation: Processing Vision. Aldrich Contemporary Art Museum, Fairfield, CT, April 25.
2010 UNC Charlotte Symposium on Neuroaesthetics and Neuroethics. U. North Carolina Charlotte, April 22-24, 2010. “Dissecting neuroaesthetics”
2009 Copenhagen Neuroaesthetics Conference. U. Copenhagen Sept. 24-26, 2009. “This is your brain on art”

CONFERENCE PRESENTATIONS

Burakowski, Lauren, Vessel, Edward, Johnson, Scott & Krogh, Lauren. (2011) Unlike adults, infants' visual preferences are driven by lower-level visual features. Poster presented at the Vision Sciences Society Annual Meeting in Naples, Fl. May 8, 2011.

Inati, Souheil, Velasco, Pablo & Vessel, Edward A. (2011). A new method for robust functional to structural alignment using multi-echo GRE B0 and R2* mapping. Poster presented at the Organization for Human Brain Mapping Annual Meeting in Quebec City, Canada, June 26-30, 2011.

Vessel, Edward A., Rubin, Nava, & Starr, G. Gabrielle (2009) This is your brain on art. Poster presented at the Vision Sciences Society Annual Meeting in Naples, Fl. May 8-13, 2009.

Vessel, Edward A. & Rubin, Nava. (2007) Preferences for novel abstract images are reflected in the activation of human reward networks. Paper presented at the Society for Neuroscience Annual Meeting in San Diego, California.

Vessel, Edward A. & Rubin, Nava. (2006) Direct comparison of preferences for abstract images and real-world scenes. Poster Presented at the Vision Sciences Society conference in Sarasota, Florida.

Vessel, Edward A. & Rubin, Nava. (2005) When beauty is in the eye of the beholder: individual differences dominate preferences for abstract images but not real-world scenes. Paper presented at European Conference for Visual Perception in A Coruña, Spain.

Vessel, Edward A., Biederman, Irving, & Cohen, Mark. (2004) Parahippocampal fMRI activity is modulated by scene type. Poster Presented at the Vision Sciences Society conference in Sarasota, Florida.

Vessel, Edward A., Biederman, Irving, & Cohen, Mark S. (2003) How opiate activity may determine spontaneous visual selection. Paper presented at the Vision Sciences Society conference in Sarasota, Florida.

Biederman, Irving, Vessel, Edward A., & Greene, Michelle R. (2003) The grouping of contours into an L-Vertex depends on contrast polarity: Evidence for the incorporation of image statistics into mechanisms of perceptual grouping. Poster presented at the Vision Sciences Society conference in Sarasota, Florida.

Behizadeh, Rosemary, Vessel, Edward A., & Biederman, Irving. (2003) Verifying objects in minimal scenes. Poster presented at the Vision Sciences Society conference in Sarasota, Florida.

Vessel, Edward A., Biederman, Irving, Cohen, Mark S., Albistegui-Dubois, Richard M., Glahn, David C. (2003) The neural basis of spontaneous perceptual selection. Poster presented at the Cognitive Neuroscience Society Annual Meeting in New York, New York.

Biederman, Irving, Vessel, Edward A., Cohen, Mark S., Glahn, David C., & Albistequi-Dubois, Richard M. (2002) A neurocomputational theory of perceptual and cognitive pleasure. Paper presented at the 43rd Annual Meeting of the Psychonomic Society in Kansas City, Missouri.

Vessel, Edward A., & Biederman, Irving. (2002) An fMRI investigation of preference habituation. Poster presented at the Vision Sciences Society conference in Sarasota, Florida.

Vessel, Edward A., & Biederman, Irving. (2001) Why do we prefer looking at some scenes rather than others? Paper presented at the Object Perception and Memory conference in Orlando, Florida.

Vessel, Edward A., Biederman, Irving, Lee, Ka Hung, Subramaniam, Suresh. (2001) Contour grouping into L vertices depends on contrast polarity: evidence for the incorporation of image statistics into mechanisms of perceptual grouping. Poster presented at the Vision Sciences Society conference in Sarasota, Florida.

Vessel, Edward A., & Biederman, Irving (2000) Picture Preference Habituation of Full Color Scenes. Poster for Object Perception and Memory Conference in New Orleans, Louisiana.

Vessel, Edward A., & Biederman, Irving. (2000) Brightness judgments within minimal part-types are easier than across part types [ARVO Abstract]. Invest Ophthalmol Vis Sci. 2000; 41(4):S226. Abstract nr 1183.

Vessel, Edward A., Mangini, Michael, and Biederman, Irving. (1999) Experts vs. novices performing subordinate-level RSVP identification. Poster for Object Perception and Memory Conference in Los Angeles, California.

Vessel, Edward A., Subramaniam, Suresh, and Biederman, Irving. (1999) A change in contrast at an L-junction unbinds its segments [ARVO Abstract]. Invest Ophthalmol Vis Sci. 1999;40(4):S810. Abstract nr 4267.

Vessel, Edward A., Subramaniam, Suresh, and Biederman, Irving. (1998) When does variation in contrast polarity affect contour grouping in object recognition? Poster for Object Perception and Memory conference in Dallas, Texas.

Fine, E.M., Vessel, E.A., & Rubin, G.S. (1997). Reading with half a visual field. Vision Science and Its Applications 1997 Technical Digest Series Vol. 1, (pp. 212- 215). Optical Society of America: Washington, DC.

TEACHING EXPERIENCE

- 2011 Experiments in Beauty, Undergraduate advanced seminar course, Dept. of Psychology, New York University.
- 2011 Functional Magnetic Resonance Imaging Lab, Graduate course in Dept. of Psychology, New York University, with David Heeger & Pablo Velasco.

2010 - present MRI lab: Lab in Neural Science II, core Graduate course, Center for Neural Science, New York University

2010 - present MRI and fMRI labs: Behavioral and Cognitive Neuroscience, core Graduate course, Psychology Department, New York University

2008 - present MRI and fMRI labs: Behavioral Integrative Neuroscience, core Undergraduate course, Center for Neural Science, New York University

2007 Neural Aesthetics, Graduate course in Depts. of Psychology & English, New York University, with Gabrielle Starr.

2007 Cognitive Psychology, core undergraduate course, Psychology Department, New York University

2007 Perception, core undergraduate course, Psychology Department, New York University, with Denis Pelli.

2006 - 2007 Guest Lecturer on preference, aesthetics and functional imaging for undergraduate and graduate courses in Depts. of Psychology, Center for Neural Science, and School of Continuing Education, NYU.

2000 Teaching Assistant: Topics in Neuroscience, Dept. of Biology, U. Southern California

1998 Teaching Assistant: Introductory Biology, Dept. of Biology, U. Southern CA

REVIEWER SERVICE

Emotion, Neuropsychologia, Perception, PLoS ONE

PROFESSIONAL MEMBERSHIPS

2010 - Organization for Human Brain Mapping (OHBM)

2003, 2010, 2012 Cognitive Neuroscience Society

1998-2001, 2007 Society for Neuroscience

2001 - Vision Sciences Society

SKILLS

fMRI experimental design and analysis (FSL, Brain Voyager, SPM, AFNI, mrLoadRet, Freesurfer), psychophysical and behavioral experimental design and analysis. stimulus design and presentation (PsychToolbox, MGL, Maya 3D, Adobe), statistical analysis (regression, ANOVA, GLM, logistic regression), data simulation, eye movement analysis, programming (C, Matlab, PASCAL, UNIX shell scripts, HTML), system administration (Linux)

REFERENCES

Elizabeth A. Phelps, Ph.D.

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Department of Psychology, New York University
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Nava Rubin, Ph.D.

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Irving Biederman, Ph.D.

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COLLABORATORS

Meineck, Peter (Classics, NYU)
Johnson, Scott (Psychology, UCLA)
Kubota, Jennifer (Psychology, NYU)
Inati, Souheil (Section on Functional Imaging Methods, NIH)
Rubin, Nava (Center for Neural Science, NYU)
Starr, G. Gabrielle (English, NYU)
Pelli, Denis (Psychology, NYU)
Freeman, Jeremy (Psychology, NYU)
Velasco, Pablo (Center for Brain Imaging, NYU)