ALEX SCHLEGEL

CURRICULUM VITAE

Vicarious, FPC
Union City, CA 94587
tel: 424-242-4342
email: schlegel@gmail.com
web: www.alexschlegel.com

TRAINING

2015 - 2016	SAGE Center for the Study of the Mind, UC Santa Barbara	Postdoctoral Fellowship Advisor: Dr. Michael Gazzaniga
2010 - 2015	Dartmouth College	Ph.D., Cognitive Neuroscience Thesis: “The mental workspace as a distributed neural network” Advisor: Dr. Peter Tse
2007 - 2010	Arizona State University	B.F.A., Sculpture summa cum laude, May 2010
2000 - 2004	North Carolina State University	B.S., Physics B.S., Mathematics B.A., Chemistry valedictorian, May 2004

RESEARCH EXPERIENCE

2016 -	Researcher Vicarious, FPC Artificial Intelligence
2014	Visiting Researcher Kyoto University Primate Research Institute Laboratories of Dr. Tetsuro Matsuzawa and Dr. Ikuma Adachi Higher mental functions in chimpanzees (Pan troglodytes)
2011	ERP Boot Camp, UC Davis with Dr. Steve Luck
2003 - 2010	Research Assistant University College London, Barrow Neurological Institute Laboratories of Dr. Stephen Macknik and Dr. Susana Martinez-Conde Neural basis of visual and sensory awareness and perception
2002 - 2010	Research Assistant Dartmouth College Laboratory of Dr. Peter Tse Cognitive and neural bases of perception, attention, and consciousness

GRANTS FUNDED

Project Title:	Investigating inferential use of metaphors in chimpanzees
Funding Agency:	National Science Foundation
Grant Type:	NSF 13-593, East Asia and Pacific Summer Institutes
Investigator Role:	PI
Funding Dates:	2014-06-01 – 2015-05-31

Project Title:	Can training enhance the neural functions and structures subserving human creativity?
Funding Agency:	National Science Foundation
Grant Type:	NSF Graduate Research Fellowship
Investigator Role:	Fellow
Funding Dates:	2012-06-01 – 2015-06-01

PUBLICATIONS

Schlegel A, Vance B, Alexander P, Tse PU. Decoding the information content of complex interactions in neural and social networks. *Under Review*.

Leal-Campanario R, Alarcon-Martinez L, Rieiro H, Martinez-Conde S, Alarcon-Martinez T, Zhao X, LaMee JP, Osborn PJ, Calhoun ME, Arribas JI, **Schlegel AA**, Stasi LL, Rho JM, Inge L, Otero-Millan J, Treiman DM, Macknik SL (2017) Abnormal capillary vasodynamics contribute to ictal neurodegeneration in epilepsy. *Scientific Reports* 7:1-14.

Schlegel A, Konuthula D, Alexander P, Blackwood E, Tse PU (2016) Fundamentally distributed information processing integrates the motor network into the mental workspace during mental rotation. *Journal of Cognitive Neuroscience* 28(8):1139-1151.

Schlegel A, Alexander P, Tse PU (2016) Information processing in the mental workspace is fundamentally distributed. *Journal of Cognitive Neuroscience* 28(2):295-307.

Alexander P, **Schlegel A**, Sinnott-Armstrong W, Roskies AL, Wheatley T, Tse PU (2016) Readiness potentials driven by non-motor processes. *Consciousness & Cognition* 39:38-47.

Schlegel A, Alexander P, Sinnott-Armstrong W, Roskies A, Tse PU, Wheatley T (2015) Hypnotizing Libet: Readiness potentials with non-conscious volition. *Consciousness & Cognition* 33:196-203.

Schlegel A, Alexander P, Fogelson SV, Li X, Lu Z, Kohler PJ, Tse PU, Meng M (2015) The artist emerges: Visual art learning alters neural structure and function. *NeuroImage* 105:440-51.

Alexander P, **Schlegel A**, Sinnott-Armstrong W, Roskies A, Tse PU, Wheatley T (2014) Dissecting the readiness potential. In A. Mele (Ed.), *Surrounding Free Will: Philosophy, Psychology, Neuroscience* (pp. 203–230). Oxford: Oxford University Press.

Schlegel A, Kohler PJ, Fogelson SV, Alexander P, Konuthula D, Tse PU (2013) Network structure and dynamics of the mental workspace. *Proceedings of the National Academy of Sciences* 110(40):16277–82.

Schlegel A, Alexander P, Sinnott-Armstrong W, Roskies A, Tse PU, Wheatley T (2013) Barking up the wrong free: readiness potentials reflect processes independent of conscious will. *Experimental Brain Research* 229(3):329-35.

Schlegel AA, Rudelson JJ, Tse PU (2012) White matter structure changes as adults learn a second language. *Journal of Cognitive Neuroscience* 24(8):1664-70.

Troncoso XG, Tse PU, Macknik SL, Caplovitz GP, Hsieh PJ, **Schlegel AA**, Otero-Millan J, Martinez-Conde S (2007) BOLD activation varies parametrically with corner angle throughout human retinotopic cortex. *Perception* 36:808-20.

Tse PU, Martinez-Conde S, **Schlegel AA**, Macknik SL (2005) Visibility, visual awareness, and visual masking of simple unattended targets are confined to areas in the occipital cortex beyond human V1/V2. *Proceedings of the National Academy of Sciences* 102(47):17178-83.

MEDIA COVERAGE

2016-02-21	*The Week*	“How to survive solitary confinement”
2015-02-11	*Pacific Standard*	“How learning artistic skills alters the brain”
2014-04	*Interalia Magazine*	“How do brains imagine?” (Interview)
2014-01-05	*To Vima*	“Πού κατοικεί η φαντασία”
2013-10-04	*Bioscience Technology*	“Science finds 'home' of imagination”
2013-09-22	*Voice of Russia, The Prism*	“Imagination relies on wide neural network: study” (Interview)
2013-09-17	*Huffington Post*	“Research uncovers how and where imagination occurs in the brain”
2013-09-16	*Popular Science*	“How imagination works”
2013-09-16	*Live Science*	“The roots of creativity found in the brain”
2008-10-08	*Gizmodo*	“A Safe So Complicated That No One Will Ever Open It, Ever”
2008-10-07	*Boing Boing*	“A strange and wonderful wooden safe”
2008-10-07	*Make Magazine Blog*	“Turning-drawer Wooden Safe”
2008-09-10	*Sci-Fi Channel*	Interviewed on episode of “Destination Truth”
2006-02-27	*National Geographic Channel*	Research featured on episode of “Is it Real?”

PRESENTATIONS

CONFERENCE TALKS

2015 February — “Information flow in the mental workspace.” *PBS / Neurology Summit*, Dartmouth Hitchcock Medical Center, Lebanon, NH.

2014 November — “The artist emerges: tracking neural changes in visual art students.” *Culture, Brain, Learning*, Lund, Sweden.

2012 September “Tracking perceptual learning in visual art students.” *Visual Science of Art Conference*, Alghero, Sardinia.

2012 January “Readiness potentials are independent of conscious will.” *Big Questions in Free Will Conference*, Tallahassee, FL.

INVITED TALKS

2015 April “The mental workspace as a distributed neural network.” *Georgetown University* Psi Chi Spring Colloquium, Washington D.C.

2014 November “What do chimpanzees imagine?” *River Valley Community College*, Claremont, NH.

2014 June "Understanding the neural basis of the mental workspace." Primate Research Institute, *Kyoto University*, Inuyama, Aichi, Japan.

2013 November "A neural network supporting mental operations on visual imagery.” *River Valley Community College*, Claremont, NH.

2013 June “CEF Learning: Dartmouth brain research, education summit, and future initiatives.” *Creative Problem Solving Institute*, Buffalo, NY.

2012 June “How does creativity training enhance the function and structure of the brain?” *Creative Problem Solving Institute*, Atlanta, GA.

2012 December “Tracking neural reorganization in visual art students.” Department of Cognitive and Neural Systems, *Boston University*, Boston, MA.

2012 July “Simple and constructive visual mental imagery are behaviorally and neurally separable.” Department of Cognitive and Neural Systems, *Boston University*, Boston, MA.

2011 October “What do we mean when we talk about 'consciousness'?” Department of History, Philosophy, and Social Studies Education, *Plymouth State University*, Plymouth, NH.

2009 July Talk on sculptural video work at “Artists on Artists,” *Scottsdale Museum of Contemporary Art*, Scottsdale, AZ.

DEPARTMENTAL TALKS

2015 October “The mental workspace as a distributed neural network.” *UC Santa Barbara.*

2014 October “Multivariate methods for analyzing information sharing and transfer.” *Dartmouth College*.

2014 September “Information flow in the mental workspace.” *Dartmouth College*.

2012 April “Simple and constructive visual mental imagery are behaviorally and neurally separable.” *Dartmouth College*.

2011 March “Longitudinal DTI: White matter reorganizes with second language learning.” *Dartmouth College*.

2010 November “Tononi’s Information Integration Theory of Consciousness.” *Dartmouth College*.

POSTERS

Schlegel A, Alexander P, Tse P (2015) Information flow in the mental workspace. Poster at *Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA, 2015 March.

Schlegel A, Alexander P, Tse P (2014) Dorsolateral prefrontal cortex both represents and manipulates mental images. Poster at *Cognitive Neuroscience Society Annual Meeting*, Boston, MA, 2014 April.

Schlegel A, Kohler PJ, Fogelson S, Alexander P, Konuthula D, Tse P (2013) A neural network supporting mental operations on visual imagery. Poster at *Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA, 2013 April .

Schlegel A, Kohler PJ, Fogelson S, Tse P (2012) Simple and constructive visual mental imagery are behaviorally and neurally separable. Poster at *European Conference on Visual Perception*, Alghero, Sardinia, 2012 September.

Schlegel A, Fogelson S, Li X, Lu Z, Alexander P, Meng M, Tse P (2012) Visual art training in young adults changes neural circuitry in visual and motor areas. Poster at *Vision Sciences Society Annual Meeting*, Naples, FL, 2012 May.

Schlegel A, Sinnott-Armstrong W, Wheatley T, Roskies A, Tse P (2011) Visually-evoked readiness potentials reflect anticipation and/or preparation of future movements rather than acts of will. Poster at *Vision Sciences Society Annual Meeting*, Naples, FL, 2011 May.

2014 August Information flow in the mental workspace. *Decoding Population Responses Workshop*, Center for Cognitive Neuroscience, Dartmouth College.

2013 April A neural network supporting mental operations on visual imagery. *Arts and Sciences Poster Session,* Dartmouth College.

AWARDS & HONORS

2015 *Neukom Travel Grant*, Neukom Institute

2014 *Fellow,* NSF East Asian and Pacific Summer Institute

2014 *Graduate Student Award*, Cognitive Neuroscience Society

2013 *Neukom Prize for Outstanding Graduate Research in Computational Science*, Neukom Institute

2013 *Outstanding Graduate Student Teacher Award*, Dartmouth Center for the Advancement of Learning

2013 *Graduate Poster Session Winner*, Dartmouth Arts & Sciences

2012 - 2015 *Fellow*, NSF Graduate Research Fellows Program

2011 *Full scholarship*, ERP Boot Camp, UC Davis

2003 *Arts Education Award*, Raleigh United Arts Council

2000 - 2004 *Park Scholar*, full undergraduate scholarship and stipend, NC State University

PROFESSIONAL ACTIVITIES & MEMBERSHIPS

2014 *Teacher/Mentor*, Maple Ave. Elementary School Human Systems Exhibit Project, Claremont, NH

2011 - 2014 *Organizer,* Cognitive Brown Bag Series, Dartmouth College

2008 - *Interviewer and application reviewer*, Park Scholarship Selection Committee, NC State University

PROFESSIONAL MEMBERSHIPS

Cognitive Neuroscience Society
Vision Sciences Society

JOURNAL & CONFERENCE REVIEWER

Journal of Cognitive Neuroscience
NeuroImage
European Conference on Visual Perception

TEACHING

2016 Winter *Graduate Seminar on Consciousness*, team taught with Dr. Michael Gazzaniga, Psychological & Brain Sciences, UC Santa Barbara

2014 Spring *Anatomy & Physiology II* (lecture & lab), River Valley Community College, Claremont, NH

2013 Fall *Anatomy & Physiology I* (lecture & lab), River Valley Community College, Claremont, NH

2012 - 2015 *Workshop Leader*, Summer Seminar for Composition Research, Dartmouth College

2013 Spring *Teaching Assistant*, Cognition, Dartmouth College

2012 Spring *Teaching Assistant*, Experimental Design, Methodology, and Data Analysis Procedures, Dartmouth College

2012 Winter *Teaching Assistant*, Principles of Human Brain Mapping with fMRI, Dartmouth College

2011 Winter *Teaching Assistant*, Physiological Psychology, Dartmouth College

2006 - 2007 *7th and 8th Grade Science Teacher*, NYC Teaching Fellows, Brownsville, Brooklyn, NY

2004 - 2005 *Substitute Teacher / Math Tutor*, Glendale Union High School District, Glendale, AZ

2000 - 2004 *Founder / Teacher*, CreARTivity after school art program, Raleigh, NC

GUEST LECTURES

2014 Spring	On animal cognition, *Cognition* (undergraduate)
2013 Fall	On free will, *Mind and Brain* (undergraduate)
2013 Spring	On consciousness, *Cognition* (undergraduate)
2011 Winter	On the visual system, *Physiological Psychology* (undergraduate)

MENTORED STUDENTS

Jake Bassin	(2015 –), volunteer
Claire Noemer	(2015 –), volunteer
Sean Scheiner	(2015 –), volunteer
Ravenn Triplett	(2015 –), volunteer
Ethan Blackwood	(2014 –), full time RA, Presidential Scholar
Ali Siddiqui	(2014 –), Presidential Scholar
Gina D'Andrea-Penna	(2014 –), now completing honors thesis
Hamza Abbasi	(2014 –), now completing honors thesis
Sanjana Awasty	(2014 – 2015), completed honors thesis, now an M.D. student at Ohio State University
Peter Horak	(2013 –), full time RA
Michaela LeDoux	(2013 – 2014), Women in Science Program Scholar
Adam Tong	(2013 – 2014), Presidential Scholar
Dedeepya Konuthula	(2012 – 2014), completed honors thesis, now an M.D. student at Yale
Yvette Zou	(2012 – 2013), Women in Science Program Scholar
Natalie Salmanowitz	(2012 – 2013), Presidential Scholar, graduated valedictorian, now a Masters student at Duke University
Prescott Alexander	(2011 – 2014), full time RA, now a Ph.D. student at UC Davis
Michael Gillis	(2011 – 2012), full time RA
Raina Lin	(2011 – 2012), volunteer
Theresa Ramponi	(2011 – 2012), Howard Hughes Medical Institute Scholar
Christina Ma	(2010 – 2011), Women in Science Program Scholar
Devin Routh	(2010 – 2011), volunteer
Chris Woods	(2010 – 2011), Howard Hughes Medical Institute Scholar

ARTISTIC EXHIBITIONS

2011	Sculpture shown at “Beacons”, *Urban Institute for Contemporary Design*, Grand Rapids, MI
2010	“Build a rotating tumbler safe” published in *Scroll Saw Woodworking & Crafts*, Issue 40, 2010 Fall
2010	Sculpture shown at “Lighthouse”, *Alwun House*, Phoenix, AZ
2009	Sculpture shown at “Totally in the Dark”, *Art One*, Scottsdale, AZ
2009	Installation shown at “Of 6 Minds”, *Gallery 100*, Tempe, AZ
2009	Sculpture shown at “Solid Solutions”, *Step Gallery*, Tempe, AZ
2009	Sculpture shown at “Grand Delusion”, *Bragg's Pie Factory*, Phoenix, AZ
2009	Video work purchased by *City of Houston Art Collection*, Houston, TX
2009	Video work shown at “Material Afterlife”, *Urban Institute for Contemporary Arts*, Grand Rapids, MI
2009	Video work shown at “Imagined Geographies”, *Bragg's Pie Factory*, Phoenix, AZ
2009	Video work shown at “ARGB!”*, Step Gallery*, Tempe, AZ
2009	Video work shown at *Ice House*, Phoenix, AZ
2008	Sculpture shown at “Protoduction”, *PRISM Lab*, Tempe, AZ