

Joaquin A. Anguera, Ph.D.

Curriculum Vitae

OFFICE

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University of California, San Francisco
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RESEARCH INTERESTS

- The role of specific cognitive processes (working memory, attention, inhibition) during distinct motor actions
- The behavioral and neural processes involved during skill acquisition
- The use of different neuroimaging techniques (EEG, fMRI) to elucidate brain structure-function relationships
- How skill acquisition (motor) and interference resolution abilities (cognitive) are affected by normal aging
- Utilizing training-based interventions to remediate age-related declines in motor and cognitive function(s)
- Incorporate aspects of entertainment software in the development of novel experimental and therapeutic paradigms

EDUCATION

- January 2009 - Postdoctoral Fellow, Departments of Neurology and Physiology
Gazzaley Laboratory
Principle Investigator: Adam Gazzaley
University of California, San Francisco
San Francisco, CA
- August 2008 Ph.D. in Kinesiology
Neuromotor Behavior Laboratory
Principal Investigator: Rachael D. Seidler
University of Michigan, Ann Arbor, MI
- Dissertation title: *Contributions of Spatial Working Memory to Visuomotor Adaptation*
Chair: Rachael D. Seidler
- August 2004 M.S. in Kinesiology, graduated with distinction
Area of focus: Biomechanics
California State University, Northridge
Northridge, CA
- Thesis title - *Examination of plantar pressure during forward and backward walking at different inclinations*
Chair: William C. Whiting
- 2000 B.S. Animal Physiology and Neuroscience
Minor (2): Chemistry, Psychology
University of California, San Diego
San Diego, CA

HONORS/AWARDS

2011-2013 NIH Loan Repayment Program recipient

2011 Entertainment Software & Cognitive Neurotherapeutics Society (ESCoNS) Conference Presentation Award

2010 UCSF Postdoctoral Conference Travel Award

2010-2013 UCSF Institutional Research and Career Development Award (IRACDA) (3 years of salary + benefits)

2010 UCSF Postdoctoral Conference Travel Award

2009-2010 Minority Postdoctoral Supplement for Underrepresented Minorities (NIH; 2 years salary + benefits)

2007 ERP Bootcamp Participant, UC Davis [competitive application]

2007 Rackham Graduate Student Dissertation Research Grant

2007 Neural Control of Movement Conference Student Fellowship Award

2006 Technical Assistance Workshop for Minority & Emerging Scientists, Dallas, TX (NIH; all travel expenses)

2006-2008 Minority Predoctoral Supplement for Underrepresented Minorities (NIH; 3 years salary + benefits)

2003-2005 Division of Kinesiology Fellowship

2003 Division of Kinesiology Spring/Summer Fellowship

2003 Masters of Science with Distinction

2002-2003 Graduate Equity Fellowship CSUN

2001-2003 Graduate Teaching Associate Fellowship, CSUN

2001-2003 Dean's List (all 4 semesters), CSUN

2000 Dean's List (Fall, Winter quarters), UCSD

1999 Dean's List (Spring, Winter quarters), UCSD

EMPIRICAL PUBLICATIONS

Anguera, J.A., Bernard, J., Reuter-Lorenz, P.A., Jaeggi, S.M., Buschkuhl, M., Benson, B.L., Jennett, S., Humfleet, J., Jonides, J., & Seidler, R.D. (*in press*). The effects of working memory resource depletion and training on sensorimotor adaptation. *Behavioural Brain Research*.

Anguera, J.A. and Gazzaley, A. (*in press*). Dissociation of motor and sensory inhibition processes in normal aging. *Clinical Neurophysiology*.

Fling, B.W., Chapekis, M., Reuter-Lorenz, P.A., **Anguera, J.**, Bo, J., Langan, J., Welsh, R.C., Seidler, R.D. (2011). Age differences in callosal contributions to processing speed and working memory. *Neuropsychologia*. Jul;49(9): 2564-9.

Benson, B.L., **Anguera, J.A.**, & Seidler, R.D. (2011). An explicit strategy enhances motor performance but interferes with sensorimotor adaptation. *Journal of Neurophysiology*. Jun; 105(6): 2843-51.

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., and Seidler, R.D. (2011). Failure to engage spatial working memory contributes to age-related declines in visuomotor learning. *Journal of Cognitive Neuroscience*. Jan;23(1):11-25.

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., and Seidler, R.D. (2010). Contributions of spatial working memory to visuomotor adaptation. *Journal of Cognitive Neuroscience*. Sep; 22(9): 1917-30.

Anguera, J. A., Seidler, R. D., & Gehring, W. J. (2009). Changes in error monitoring during sensorimotor adaptation. *Journal of Neurophysiology*. Sep;102(3):1868-79.

Anguera, J.A., Russell, C.A., Noll, D.C., & Seidler, R.D. (2007). Neural correlates associated with intermanual transfer of sensorimotor adaptation. *Brain Research*, 1185: 136-51.

REVIEW PAPERS / BOOK CHAPTERS

Anguera, J.A., Bo, J., & Seidler, R.D. Aging effects on motor learning, Invited review chapter for Encyclopedia of the Sciences of Learning. N. Seel, editor. Springer Publishing, (2011).

Goble DJ, **Anguera J.A.** (2010). *Journal of Neurophysiology*. Plastic changes in hand proprioception following force-field motor learning. Sep;104(3):1213-5.

Seidler, R. D., Bangert, A. S., **Anguera, J.A.**, & Walsh, C. M. Motor Performance, pp.801 - 806. Invited review chapter for Encyclopedia on Aging. R. Schulz, L. Noelker, K. Rockwood, R. Sprott, eds. Springer Publishing, 2006.

Seidler, R. D., Bangert, A. S., **Anguera, J.A.**, & Walsh, C. M. Motor Control, pp. 228-236. Encyclopedia of Gerontology (Second Edition): Age, Aging and the Aged. J. Birren, editor. Elsevier press, 2006.

MANUSCRIPTS IN REVIEW / IN PREPARATION

Lyman, K., **Anguera, J.A.**, Gazzaley, A., & Terman, D. A role for beta activity in healthy basal ganglia function. (*in review*).

Seidler, R.D., Bo, J., **Anguera, J.A.** (*in review*). Neurocognitive contributions to motor skill learning: the role of working memory.

Anguera, J.A., Boccanfuso, J., Rintoul, J.L., Al-Hashimi, O., Kong E., Cristo, Y., Faraji, F., Moustafa, R., Johnston, E., & Gazzaley, A. (2011). Training age-related multitasking deficits in older adults through an action driving video game. (*in preparation*).

Anguera, J.A., Faraji, F., Rintoul, J.L., Boccanfuso, J., Al-Hashimi, O., Johnston, E., & Gazzaley, A. A differential cost for multitasking and distractibility across the adult lifespan (*in preparation*).

Anguera, J.A., Lyman, K., Bollinger, J., & Gazzaley, A. The neural correlates of response inhibition after-effects. (*in preparation*).

CONFERENCE ABSTRACTS

Anguera, J.A., Boccanfuso, J., Rintoul, J.L., Al-Hashimi, O., Kong, E., Cristo, Y., Faraji, F., Moustafa, R., Johnston, E., & Gazzaley, A. (2011). Training age-related multitasking deficits in older adults through an action driving video game. *Entertainment Software & Cognitive Neurotherapeutics Society (ESCoNS) Conference, San Francisco, CA.*

Anguera, J.A., Rintoul, J.L., Al-Hashimi, O., Johnston, E., Faraji, F., Gazzaley A. (2010). Age-related changes in distraction & multitasking during a driving video game. *Society for Neuroscience annual meeting, San Diego, CA.*

Lyman, K., **Anguera, J.A.**, Gazzaley, A. (2010). Lyman, K., Age-related changes associated with response inhibition after effects. *Society for Neuroscience annual meeting, San Diego, CA.*

Benson, B.L., **Anguera, J.A.**, & Seidler, R.D. (2009). The effect of an explicit strategy on visuomotor adaptation. *Society for Neuroscience annual meeting, San Diego, CA.*

Anguera, J.A., Lyman, K., Gazzaley, A. (2010). Neural correlates of response inhibition after-effects. *Human Brain Mapping, Barcelona, Spain.*

Fling, B.W., Reuter-Lorenz, P.A., **Anguera, J.A.,** Bo, J., Langan, J., Welsh, R.C., Seidler, R.D. (2010). Age differences in callosal contributions to performance. *Human Brain Mapping, Barcelona, Spain.*

Lyman, K., **Anguera, J.A.,** Gazzaley, A., Terman, D. (2010). A mathematical model of human inhibitory control. *Computational Neuroscience Meeting, San Antonio, Texas.*

Benson, B.L., **Anguera, J.A.,** & Seidler, R.D. (2009). The effect of inter-trial interval on implicit and explicit visuomotor learning. *Society for Neuroscience annual meeting, Chicago, IL.*

Anguera, J.A., Yang, B., Barbhaiya, N., Gazzaley A. (2009). The relationship between motor and sensory inhibition: an EEG study. *Society for Neuroscience annual meeting, Chicago, IL.*

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., Noll, D.C., and Seidler, R.D. (2007). Contributions of spatial working memory to visuomotor adaptation in young and older adults. *Society for Neuroscience annual meeting, San Diego, CA.*

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., Noll, D.C., and Seidler, R.D. (2007). Contributions of spatial working memory to visuomotor adaptation in young and older adults. *LIFE Fall Academy, Ann Arbor, MI.*

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., Noll, D.C., and Seidler, R.D. (2007). Contributions of spatial working memory to visuomotor adaptation. *Human Brain Mapping, Chicago, IL.*

Anguera, J.A., P.A. Reuter-Lorenz, D.T. Willingham, D.C. Noll, and R.D. Seidler. (2007). Neural Mechanisms of Visuomotor Adaptation in Older Adults. *Second Annual Aging Research Symposium at University of Michigan, Ann Arbor, MI.*

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., Noll, D.C., and Seidler, R.D. (2007). Contributions of spatial working memory to visuomotor adaptation. *Neural Control of Movement, Sevilla, Spain.*

Anguera, J.A., Reuter-Lorenz, P.A., Willingham, D.T., Noll, D.C., and Seidler, R.D. (2006). Contributions of spatial working memory to visuomotor adaptation. *Society for Neuroscience, Atlanta, GA.*

Anguera, J.A., Seidler, R.D., and Gehring, W.J. (2006). Changes in error monitoring during motor learning. *Cognitive Neuroscience, San Francisco, CA.*

Anguera, J.A., Seidler, R.D., and Gehring, W.J. (2005). Changes in error monitoring during motor learning. *Neural Control of Movement, Key Biscayne, FL.*

Anguera, J.A., Russell, C.A., Noll, D.C., and Seidler, R.D. (2004). Sensorimotor adaptation: neural correlates and intermanual transfer of learning." *Society for Neuroscience, San Diego, CA.*

INVITED PRESENTATIONS

October, 2010. *Distinct Cognitive Contributions during Motor Learning/Performance.* Department of Epidemiology & Cancer Control, St. Jude Children's Research Hospital, Memphis, TN.

May, 2009. *Distinct Cognitive Contributions during Motor Learning/Performance.* Department of Biomedical Kinesiology, Katholic University of Leuven, Belgium.

October, 2007. *Contributions of Spatial Working Memory to Visuomotor Adaptation in Young and Older Adults*. University of Michigan Cognition and Perception Forum. Ann Arbor, MI.

May, 2007. *Neural Mechanisms of Visuomotor Adaptation in Older Adults*. LIFE Fall Academy Program, Berlin, Germany.

November, 2006. *Contributions of Spatial Working Memory to Visuomotor Adaptation*. Technical Assistance Workshop for Minority & Emerging Scientists, Dallas, TX.

UNIVERSITY TEACHING / PROFESSIONAL EXPERIENCE

2012 (Summer) – Psych 700: Graduate Seminar in Neuroscience

San Francisco State Univ.

- Will lead Master's students through a new class at SFSU. Responsibilities include the organization and presentation of appropriate material for this required course, including lectures, quizzes, homework assignments, and examinations

2011 (Fall) – Psych 400: Introduction to Research in Psychology

San Francisco State Univ.

- Acting as teaching assistant for Dr. Ezequiel Morsella (SFSU). Responsible for original lectures given throughout the semester on various topics, holding office hours for students, and assisting with examination creation

2005-2006 – MVS 110: Motor Control

University of Michigan

- Responsible for the organization and presentation of appropriate material for this required course, including lectures and laboratory experiments, as well as quizzes, homework assignments, and examinations

2003-2005 – PE 310: Anatomy & Physiology

University of Michigan

- Responsible for the organization and presentation of appropriate material for this required course, including lectures and laboratory experiments, as well as quizzes, homework assignments, and examinations

2001-2003 – KIN 345 Biomechanics Laboratory

Cal State Univ., Northridge

- Organized and presented lecture material for each 2 hour weekly meeting as well as developed weekly quizzes, homework assignments, written assignments, and final examination
- Provided instruction regarding the use of equipment in the lab, including force plates, electromyography, and motion analysis systems

2001-2003 – KIN 124 Strength Training, KIN 125 Fitness for Life, KIN126 Basketball, KIN 131 Golf, KIN 250 Basketball for PE majors

Cal State Univ., Northridge

- Creation of each class as a whole, including both daily activities, semester-long goals, weekly quizzes, homework assignments, written assignments, and final examination

1997-2001 - UCSD ORTHOMED- Exercise Physiologist/Athletic Trainer

Univ. of California, San Diego

- Certified through UCSD School of Medicine to develop, evaluate, and incorporate rehabilitation programs for patients/clients seeking physical therapy via MED-X rehabilitation machinery
- Performed personal training duties, including the development, monitoring, and updating of each prescribed program for each client as well as the development of long-term nutrition plans for patients/clients

STUDENT MENTORING

2009-present

UC San Francisco

20+ students since 2009 from a variety of disciplines (Molecular and Cellular Biology, Neuroscience, Psychology, Mathematics, Bioengineering, Medicine): Mentoring involved the development of different projects, training on testing protocols, neuropsychological administration, data collection using both behavioral and neural measures, data analysis, writing a research proposal, and/or creating presentations of this work.

Medical/Graduate Students

- Omar Al-Hashimi, M.D. (UC Berkeley/UCSF)
- Jacqueline Boccanfuso, M.S. (UC San Diego)
- Yudy Cristo, M.S. (SFSU)
- Arul Thangavel, M.D. (UCSF)

Undergraduate Students

- Jorge Avila, B.S. (UC Davis)
- Namrata Barbahiya, B.S. (UC Berkeley)
- Melissa Bromley, B.S. (UC Berkeley)
- Joey Essoe, B.S. (SFSU)
- Alexandra Ewencyk, B.S. (Brown)
- Farshid Faraji, B.S. (UC Berkeley)
- Meike Gugel, B.S. (Univ. of Cologne, Germany)
- Erwin Kong, B.S. (UC Davis)
- Kyle Lyman, B.S. (The Ohio State University)
- Radwa Moustafa, B.S. (UC Santa Cruz)
- Yasha Rezaeihaghighi, B.S. (UC Los Angeles)
- Jennifer Ringler, B.S. (UC Berkeley)
- Cammie Rolle, B.S. (UC Davis)
- Pedro Szybel, B.S. (SFSU)
- Carol Vong, B.S. (UC Berkeley)
- Anrey Wang, B.S. (Oberlin College)
- Betty Yang, B.S. (UC Berkeley)
- Dan Yerukhimov, B.S. (UC Berkeley)

2004-2008

University of Michigan

10 students from a variety of disciplines (Kinesiology, Psychology, Neuroscience, Mathematics, AFAR Medical Student): Assisted students with project development, trained them on testing protocols, neuropsychological administration, data analysis, writing a research proposal, and/or creating presentations of their work.

Medical Student

- Tim Mitchell (New York Medical College)

Undergraduate Students

- Bryan Benson, B.S.
- Hasan Cheema, B.S.
- Steve Crafton, B.S.
- Kamran Haydar, B.S.
- Katherine Popadokus, B.S.
- Clare Porter, B.S.
- Colleen Russell, B.S.
- Adam Savine, B.S.
- Carla Teruz, B.S.

PROFESSIONAL AFFILIATIONS / SERVICE ACTIVITIES

- 2011-present: NIH LRP Ambassador Network
- 2011-present: Blogger for SharpBrains.com [<http://www.sharpbrains.com/>]
- 2009-present: Reviewer for Cerebral Cortex, Neuroimage, Experimental Brain Research
- 2008-2009: Graduate student representative for Division of Kinesiology Dean Search Committee
- 2007-present: Human Brain Mapping, member
- 2006-2008: LIFE collaborative international graduate training program
- 2006-present: Gerontological Society of America, member
- 2006-present: The American Physiological Society, member
- 2006-present: Cognitive Neuroscience Society, member
- 2005-present: “Talk to a real scientist!” Los Alamos Elementary School, 4th Grade, Compton, CA
- 2003; 2005: Brain’s Rule! At the Ann Arbor Hands-On Museum
- 2003-present: The Society for the Neural Control of Movement, member
- 2003-present: The Society for Neuroscience, member

AD HOC REVIEWING

- Brain Research
- Cerebral Cortex
- Experimental Brain Research
- Journal of Cognitive Neuroscience
- Journal of Neurophysiology
- Neuroimage
- Psychology and Aging
- Spanish Journal of Psychology

REFERENCES

Adam Gazzaley, MD/Ph.D. [Postdoctoral advisor]
Associate Professor of Neurology and Physiology
University of California, San Francisco
San Francisco, CA 94143
adam.gazzaley@ucsf.edu

Rachael D. Seidler, Ph.D. [Dissertation chair and primary graduate advisor]
Associate Professor
School of Kinesiology, Department of Psychology, Neuroscience Program, and Institute of Gerontology
University of Michigan
Ann Arbor, MI USA
rseidler@umich.edu

Patricia Ann Reuter-Lorenz, Ph.D. [Dissertation committee member and collaborator]
Professor of Psychology
University of Michigan
Department of Psychology
Ann Arbor, Michigan 48109-1043
parl@umich.edu

William J. Gehring, Ph.D. [Dissertation committee member and collaborator]
Associate Professor
Arthur F. Thurnau Collegiate Professor
Department of Psychology
University of Michigan
Ann Arbor, MI USA
wgehring@umich.edu

David Terman, Ph.D. [collaborator]
Professor
Department of Mathematics
The Ohio State Univeristy
Columbus, OH USA
terman.1@osu.edu

Ezequiel Morsella, Ph.D. [Teaching mentor via IRACDA program]
Assistant Professor
Department of Psychology
San Francisco State University
San Francisco, CA 94132-4168
morsella@sfsu.edu