

Stephen Gandert Romero Ph.D.

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Training & Experience

Employment History:

- 3/2016-present—Director of Interdisciplinary Studies, Union College, Schenectady, NY.
- 3/2016-present –Member of the Scientific Advisor Board for the Davis Phinney Foundation, Boulder, CO.
- 8/2006-present—Associate professor of Psychology, Department of Psychology, Union College, Schenectady, NY.
- 8/2006-Present— Adjunct Associate Professor of Neurology, Department of Neurology, Albany Medical College, Albany, NY
- 8/2002-2010—Founding Neuroscience Co-director, Union College, Schenectady, NY
- 8/2001-8/2007—Assistant Professor of Psychology, Department of Psychology, Union College, Schenectady, NY.
- 8/2001-8/2007— Adjunct Assistant Professor of Neurology, Department of Neurology, Albany Medical College, Albany, NY

Training:

- 1998-8/2001—Post-doctoral fellow, Cognitive Neuroscience Section of the National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD.
- 1993-1998—Ph.D., Cognitive Psychology, University of Colorado, Minors: quantitative, neuroscience
- 1993-1997—Certificate in Cognitive Science, Institute of Cognitive Science, University of Colorado
- 1993-1995—M.A., Cognitive Psychology, University of Colorado
- 1986-1990—B.M., Music Synthesis, Berklee College of Music

Internships:

- National Institutes of Health (NIH) Summer Intern, National Institute of Neurological Disorders and Stroke (NINDS), Cognitive Neuroscience Section. Supervisors: Jordan Grafman & Timothy Rickard. 1995, 1996, & 1997.

Workshops and Summer Schools:

- ERP Boot Camp conducted by Steven Luck and Emily Kappenman, July 14-July 23 2014. University of California Davis.
- McDonnell Summer Institute in Cognitive Neuroscience, June 29-July 12, 1997. Dartmouth College, NH.
- Summer workshop on connectionist modeling conducted by K., Plunkett & E. T., Rolls, July 20-August 2, 1996. Oxford University, Oxford, England
- 3 Caps cognitive simulation workshop conducted by M., Just, H., Haarmann, S., Varma, M., Byrne & A., Miyake, January 11-14, 1996. University of Colorado, Boulder, Colorado.

Teaching:

Assistant & Associate Professor, Union College 2001-present

Developed and taught courses in:

- Cognitive Neuroscience
- Sensation and Perception
- Brain & Behavior
- Introduction to Statistics
- Introduction to Psychology
- Cognition in the Wild

Teaching Assistant, University of Colorado Boulder, 1993-1998.

- 5 semesters introductory statistics
- 1 semester graduate level statistics
- 1 semester psychology of personality
- 1 semester introduction to psychology
- 1 semester psychology of perception
- 4 semesters graduate level research practicum
- 1 semester graduate level issues and methods in cognitive science
- 1 semester graduate level cognitive simulation

Supervisors: Ed Crothers, Peter Polson, David Chiszar, Doris Thomas, Kurt Schlesinger, Howard Bashinski, Lyle Bourne, Alice Healy, Randall O'Reilly, and Mike Eisenberg.

Select Administration, Development and Campus Service activities:

- Steering committee member for development of the Neuroscience major, Union College
- Founding Co-director of the Neuroscience major, Union College
- Founding member of the steering committee for the development of the Advanced Imaging Research Center, Albany Medical College
- Founding member of the Faculty Coalition for Inclusiveness and Diversity, Union College
- Founding Faculty Sponsor for Union College *Alpha in New York Chapter of Nu Rho Psi*, Neuroscience Honor Society.
- Member of campus-wide Computing Advisory Panel, Union College
- Member of campus-wide Space Management and Development Committee, Union College
- Lead PI on successful NSF-ARI grant to build the Union College, Center for Neuroscience (see *Grants Funded*, section below).
- Lead-PI or Co-PI on many other proposals to support the development of Neuroscience research opportunities at Union College and Albany Medical College (see *Grants Submitted* section below)
- Lead member of the Capital Region Neuroimaging Consortium between Union College and the Beckman Center at The University of Illinois
- Director of Interdisciplinary studies, Union College
- Academic Affairs Committee member, Union College
- *Our Shared Humanities* Mellon Foundation Project Director, Union College

Select Reviewing Activities:

- Ad hoc reviewer for the following journals: Psychological Science, Neuropsychologia, Cognitive Neuropsychology, Clinical Neurophysiology, NeuroImage, Cortex, Journal of the international Neuropsychological Society, Perception and Psychophysics
- Peer Reviewer for the Alzheimer's disease association grants cycle.
- Ad hoc reviewer for Thomson Wadsworth publishing, psychology text division.
- Ad hoc reviewer for Palgrave Macmillan publishing, psychology text division.
- Ad hoc reviewer for Sinauer Associates inc.
- Review panelist for Cognitive Rehabilitation for Traumatic Brain Injury Clinical Trial Award (CRCTA) - Psychological and Behavioral Interventions (PBI) for the Psychological Health and Traumatic Brain Injury (PH-TBI) program of the Department of Defense.
- Review panelist for Major Research Instrumentation program, National Science Foundation.

Professional Experience:

- Statistical consultant for the Statistical Computing and Consulting office of the Information Technology Services at the University of Colorado. Supervisor: Alex Pearson. 1993-1998
- Consultant for the Computer Laboratory for Instruction in Psychological Research. University of Colorado. Supervisor: Jon Roberts. Spring 1997.

Association Memberships

- Psychonomic Society
- Cognitive Neuroscience Society
- Nu Rho Psi Neuroscience Honor Society

Honors

- Protected class fellowship, University of Colorado at Boulder, 1993, 1994, 1995, 1996, 1997, 1998.
- Deans small grant award, University of Colorado at Boulder, 1997.
- Studentship, Oxford University summer workshop on connectionist modeling, 1996.
- Letter of commendation, Summer internship program, National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), August, 1995.
- University fellowship, University of Colorado at Boulder, 1993, 1995.

Current Research

Current research pursues three general goals: (1) Investigating neuronal plasticity associated with acquisition of new cognitive skills, recovery of function after brain injury, and associated with neurological and psychological disorders. These studies include the use of behavioral, neuroimaging and EEG methods with patients and unimpaired volunteers; (2) Investigating the role of optimism in cognitive skill learning through the use of behavioral, EEG, and Neuroimaging methods with patients and unimpaired volunteers; (3) Investigating neurological basis of musical processing through the use of behavioral, EEG, and Neuroimaging methods with patients and unimpaired volunteers.

Grants Funded

Project Director on **Andrew W. Mellon Foundation Initiative** (awarded 7/2015)

Award: \$800,000

Title: Our Shared Humanities Initiative at Union College.

Strategic Partner on **Getty Education and Community Investment award** (awarded 1/2016)

Award: \$20,000

Title: Creating and evaluation of the Empire State Youth Orchestra Creating Harmony Invigorating Music Education (CHIME™) program

Principal Investigator on **Union College Faculty Research Grant** (awarded 2/2012)

Award: \$3000.00

Title: Investigation of training related changes in P300 indexed cognitive processing with high density EEG.

Principal Investigator on **National Science Foundation Academic Research Infrastructure Grant** (awarded 10/2010)

Award: \$900,000.00

Title: Union College Renovation Project for Faculty and Undergraduate Research Facility

Principal Investigator on **Union College Faculty Research Grant** (awarded 2/2010)

Award: \$3000.00

Title: Replacement of high-end workstation for neuroimaging analysis

Principal Investigator on **Union College Faculty Research Grant** (awarded 3/04)

Award: \$600.00

Title: MRI data analysis support

Co-Principal Investigator with Seth Greenberg on **Union College Faculty Research Grant** (awarded 3/04)

Award: \$945.00

Title: Does own face activate the fusiform face area?

Collaborator on **Tinnitus Research Consortium** (Awarded 5/07)

Award: \$177,000

Title: Mechanisms of tinnitus suppression using repetitive transcranial magnetic stimulation (rTMS): A prospective randomized sham-controlled proton magnetic resonance spectroscopy (¹H MRS) study

Collaborator on **Tinnitus Research Initiative award** (Awarded 5/07)

Award: \$80,000

Title: Structural and neurobiochemical correlates of noise induced tinnitus: A Magnetic Resonance Imaging and Spectroscopy study.

Grants submitted under review and under revision

Faculty Mentor/Senior Personnel on **Arnold and Mabel Beckman Foundation proposal**,

(Submitted June 2015, under revision)

Award: \$104,000

Title: 2016 Beckman Scholars Program

Principal Investigator on **National Science Foundation Research at Undergraduate**

Institutions (Submitted 2/15, Resubmitted 2/17)

Award: \$562,442.00

Title: RUI: Advancing Cognitive Neuroscience Research Through the Further Development of the EEG Research Core at Union College

Principal Investigator on **National Science Foundation Major Research Instrumentation**

(Submitted 1/14, unfunded)

Award: \$439,484.00

Title: MRI: Acquisition of a g.tec Integrated EEG/Eye-Tracking System to Further Develop State of the Art Cognitive Neuroscience Research and Research Training at Union College

Faculty Mentor on Arnold and Mabel Beckman Foundation proposal, "2016 Beckman Scholars Program" (Submitted, unfunded)

Award: \$104,000.00

Title: MRI: Acquisition of a g.tec Integrated EEG/Eye-Tracking System for Cognitive Neuroscience Research and Research Training

Principal Investigator on **National Science Foundation Major Research Instrumentation**

(Submitted 2/13, recommended for funding but unfunded due to sequester cuts)

Award: \$436,023.00

Title: MRI: Acquisition of a g.tec Integrated EEG/Eye-Tracking System for Cognitive Neuroscience Research and Research Training

Principal Investigator on **National Science Foundation Major Research Instrumentation**

award (Submitted 1/11, unfunded)

Award: \$189,847

Title: MRI: Acquisition of a g-tec high density EEG System for the Center for Neuroscience at Union College

Co Investigator on **DOD - PH/TBI Research Program - Investigator-Initiated Research**

Award (Submitted 10/2009, unfunded)

Award: \$491,541

Title: Virtual Reality Model of PTSD Re-experiencing Symptoms

Principal Investigator on **National Science Foundation Major Research Instrumentation award** (Submitted 1/08, unfunded)

Award: \$397,501.00

Title: MRI: Acquisition Of Instrumentation To Support Simultaneous EEG And Fmri Studies And To Establish An Undergraduate Image Analysis Laboratory At Union College

Collaborator on **Department of Defense** (submitted 12/07, unfunded)

Award: \$16,193,192.00

Title: Dedicated Head-Only High Field MRI System for Improved Assessment of Traumatic Brain Injury and Post-Traumatic Stress Disorder

Principal Investigator on **Beckman Scholars Program** (submitted 11/07, unfunded)

Award: \$77,200

Title: Union College Beckman Application

Collaborator on **American Tinnitus Association award** (submitted 7/06, unfunded)

Award: \$99,130.00

Title: Testing the release from inhibition hypothesis of noise-induced tinnitus: A magnetic resonance spectroscopy study.

Principal Investigator on SOMAS program. **New investigator award.** (submitted 2/06, unfunded)

Award: \$50,000

Title: fMRI of item specific and relational memory processes.

Collaborator on **NIH SBIR**, Principal investigator Janie Tremlett, Cyclebridge Inc. Framingham, MA (Submitted 7/03, unfunded)

Award: \$182,000.

Title: Knowledge Integration Across Distributed Heterogeneous Data Sources.

Principal Investigator on Alzheimer's Disease Association, **New investigator award**, (submitted 12/2003, unfunded)

Award: \$100,000.

Title: Social Cognition in Alzheimer's Disease: A voxel-based morphometric analysis

Principal Investigator on **NIH R-15 AREA**, (submitted 12/2002, unfunded)

Award: \$100,000.

Title: Systems Level Neuroplasticity in Alzheimer's Disease: Behavioral and Neuroimaging Studies of Cognitive Skill.

Principal Investigator on Alzheimer's Disease Association, **New investigator award**, (Submitted 12/2001, resubmitted 12/2002, unfunded)

Award: \$100,000.

Title: Systems Level Neuroplasticity in Alzheimer's Disease: Behavioral and Neuroimaging Studies of Cognitive Skill

Publications

* Denotes Student co-authors

Submitted

Morey, M. C., Voltraw, J., *Hasan, S., & Romero, S. G. (Submitted) Decisions to talk politics: Effects of opinion and identity similarity.

Romero, S. G., *Laitman, L., Cacace, A. T., Hu, J., & Xuan Y. (submitted) Voxel-based Morphometric assessment of neuronal plasticity associated with low frequency *rTMS* for the treatment of noise-induced Tinnitus.

2018

Cacace, A. T., Hu, J., Romero, S. G., & Xuan, Y. and Tyler, R. S. (2018) Glutamate is down-regulated and tinnitus loudness-levels decreased following *rTMS* over auditory cortex of the left hemisphere: A prospective randomized single-blinded sham-controlled cross-over study, *Hearing Research*, 358, 59-73.

2008

Romero, S. G., McFarland D. J., *Faust R., *Farrell, L. & Cacace A. T., (2008) Electrophysiological markers of skill-related neuroplasticity, *Biological Psychology*, 78, 221-230

2006

Romero, S. G., Rickard, T. Bourne, L. E., Jr. (2006) On verification of multiplication facts: An investigation using retrospective protocols. *American Journal of Psychology*, 119, 87-120

2005

Wood, J.N., Romero, S.G., Knutson K. M., & Grafman, J. (2005). Representation of attitudinal knowledge: Role of prefrontal cortex, amygdala, and parahippocampal gyrus *Neuropsychologia*. 43, 249-259.

2003

Wood, J.N., Romero, S.G., Makale, M., & Grafman, J. (2003) Category-specific representations of social and non-social knowledge in the human prefrontal cortex. *Journal of Cognitive Neuroscience*.15, 236-248.

2002

Romero, S. G., Manly, C., & Grafman J., (2002) Investigating cognitive neuroplasticity in single cases: Lessons learned from applying functional neuroimaging techniques to the traditional neuropsychological case study framework. *Neurocase*.8, 355-368.

2001

Grafman, J., Romero, S. G., (2001) Appearances May Not Be Deceiving: Calculation Deficits Due to a Brain Structure Abnormality in Neurologically Normal Children. *Brain*, 124, 1681-1682.

2000

Rickard, T., Romero, S. G., Wharton, C., Basso, G., Flitman, S., & Grafman, J. (2000). The calculating brain: A fMRI study. *Neuropsychologia*, 38, 325-335

1998

Buck-Gengler, C., Romero S. G., Healy, A. F. & Bourne L. E. Jr. (1998) The Effect of Alphabet and Fluency on Unitization Processes in Reading. In Healy, A. F., & Bourne L. E. Jr. (Eds.) *Foreign language learning: Psycholinguistic experiments on training and retention*. Mahwah, NJ: Erlbaum.

Healy, A. F., Barshi, I., Crutcher, R., Tao, L., Rickard T., Marmie, W. R., Schneider, V., Feldman, A., Buck-Gengler, C., Romero, S. G., Sherrod, N. B., Parker, J., & Bourne L. E. Jr. (1998) Towards the improvement of training in foreign languages. In Healy, A. F., & Bourne L. E. Jr. (Eds.) *Foreign language learning: Psycholinguistic experiments on training and retention*. Mahwah, NJ: Erlbaum.

Book Reviews

Romero, S. G. (2000). Review of: *What counts: How Every Brain is Hardwired for Math*, Butterworth, B. *Quarterly Review of Biology*, 75, 368.

Manuscripts in Preparation or under revision

Romero, S. G., Ludwig, N., *Staples, N., Zimmerman, E., & Grafman J. (in prep) A fMRI Study of Cognitive Skill Related Neuronal Plasticity.

Invited Colloquia and Addresses

- Romero S. G., Properties of skill acquisition applied to the classroom. University of Idaho, Moscow, ID March, 2017.
- Romero S. G., Left brain-right brain: A discussion of brain laterality. Boise State College of Innovation and Design. Boise ID, December 2016
- Romero S. G., How the Brain can change: A discussion of neuronal plasticity. Boise State College of Innovation and Design. Boise ID, December 2016
- Romero S. G., Mindfulness, exercise and the brain. Boise State College of Innovation and Design. Boise ID, December 2016
- Romero S. G., Career Plasticity Leads to the Study of Neuronal Plasticity. National Institute of Neurological Disorders and Stroke, Bethesda, MD, July 2015
- Romero S. G., Electrophysiological markers of skill-related neuroplasticity University of Colorado, Boulder, CO, February 16 2012
- Romero, S. G., Neuroscience at Union College. Schenectady County Public Library, Schenectady, NY, March 28, 2011
- Romero, S. G., Toward understanding cognitive neuroplasticity. Lewis and Clark College, Portland OR, February 4, 2008
- Romero, S. G., Toward understanding cognitive neuroplasticity Willamette University, Salem OR, December 3, 2007
- Romero, S. G., Magnetic resonance imaging in the study of the human brain: Function and dysfunction, Skidmore College, Saratoga Springs NY, February 15, 2007
- Romero, S. G., Magnetic resonance imaging in the study of the human brain: Function and dysfunction, Williams College, Williamstown, MA, January 26, 2006
- Romero, S. G., Magnetic resonance imaging in the study of the human brain: Function and dysfunction, Skidmore College, Saratoga Springs NY, March 9, 2006
- Romero, S. G., Magnetic resonance imaging in the study of the human brain: Function and dysfunction, Skidmore College, Saratoga Springs NY, February 23, 2005
- Romero, S. G. Neuroplasticity in cognitive and social neuroscience. State University of New York, Albany, September 25, 2003.
- Romero, S. G., Investigating cognitive neuroplasticity in single cases and patient groups. Hudson Berkshire Neuroscience group, Albany, October 16, 2001.
- Romero, S. G., Learning and memory in developmental dyscalculia, University of Chicago, Chicago February 21, 2001.
- Romero, S. G., Skill Acquisition and Neuronal Plasticity, University of Chicago, Chicago, February 20, 2001.
- Romero, S. G., Learning and memory in developmental dyscalculia, The Neurosciences Institute, San Diego, February 2, 2001.
- Romero, S. G., Learning and memory in developmental dyscalculia. Cognitive Science Colloquia, University of Delaware, Newark, April 24, 2000.
- Romero, S. G., Learning and memory in developmental dyscalculia. Psychology Department, Union College, Schenectady, January 20, 2000
- Romero, S. G., Learning and memory in developmental dyscalculia. Cognitive Neurology and Alzheimer's Disease Center, Department of Neurology, Northwestern University, Chicago, January 6, 2000

Published Abstracts and Presentations

Morey A. C., Votraw J., Hasan S., & Romero S. G. (2017, May) Political Talk Decisions: Preferences and Response Times. Annual meeting of the International Communication Association, San Diego CA.

- Mandart J, E., Merklen, C. & Romero S. G. (2015, November) A Study of the Emotional Perception of Musical Harmony. Annual meeting of the Psychonomic Society, Chicago, IL.
- Cacace, AT, Hu, J., Yang, X., Romero, S. (2012 March) Glutamate is downregulated and loudness level decreased following rTMS for tinnitus suppression. Annual Meeting of the American Auditory Society, Phoenix, AZ.
- Anderson-Hanley, C., Brickman, A. M., Wasserman, B. T., Provenzano, F. A., Romero S. G., & *Harmon E. D., (2012 February) Neuroimaging effect of exercise for older adults: pilot results from the Cybercycle Study
- Romero, S. G., *Laitman, L., Cacace, A. T., Hu, J., & Xuan Y. (2011 August) Voxel-based Morphometric assessment of neuronal plasticity associated with low frequency rTMS for the treatment of noise-induced Tinnitus. Poster presented at the 5th International TRI Tinnitus Conference. Niagara Falls NY.
- Cacace, A. T., Hu, J., Romero, S. G., & Xuan, Y. (2011 August) Neurobiochemical and psychometric correlates of noise-induced Tinnitus following low frequency rTMS over the left temporal lobe in human. Talk presented at the 5th International TRI Tinnitus Conference. Niagara Falls NY.
- *Ludwig, N. Romero, S. G., *Staples, N., Zimmerman, E., & Grafman J. (2010 April) A fMRI Study of Cognitive Skill Related Neuronal Plasticity. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Montreal CA
- Cacace, A. T., Romero, S. G., *Guay, R. C., Silver, S. M. (2007, July) Structural and Neurobiochemical correlates of noise-induced tinnitus: A magnetic resonance imaging and spectroscopy study. Poster presented at the annual meeting of the Tinnitus Research Consortium, Monte Carlo, Monaco.
- Romero, S. G., McFarland, D. J., *Faust, R., *Farrell, L. & Cacace, A. T. (2007, May) Electrophysiological markers of skill-related neuroplasticity. Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY.
- *Hutchison, E., Hancu, I., & Romero S. G., (2004, April) A Study Examining The Impact of Signal to Noise Ratio on the Repeatability of Proton Magnetic Resonance Spectroscopy (H-MRS) Data Quantification, and The Sensitivity of the Newly Developed PRESS-J H-MRS Technique in Alzheimer's Disease Patients. Poster presented at the annual National Conference for Undergraduate Research. Indianapolis, IA.
- *Chuang, L., & Romero S. G., (2003, May) Neuroplasticity and Alzheimer's Disease. Poster presented at the annual Stanford Undergraduate Psychology Conference, Palo Alto, CA
- *Chuang, L., & Romero S. G., (2003, May) Neuroplasticity and Alzheimer's Disease. Poster presented at the annual Pace University Undergraduate Psychology Conference, New York, NY
- Wood, J. N., Romero, S. G., & Grafman J. (2002, November) Social cognition and the brain: An fMRI study of emotional attitudes Poster presented the annual meeting of the Society for Neuroscience, Orlando, FL.
- Wood, J. N., Romero, S. G., Makale, M. & Grafman, J. (2002, April) Category-specificity of representational knowledge in the human prefrontal cortex. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Romero, S. G. (2001, September) Investigating cognitive neuroplasticity in single cases and patient groups. Talk presented at the Albany conference on Biotechnology in the Capital Region, Rensselaerville, NY.
- Manly, C. F., Romero, S. G., Harris A., Lobo, A., Makale, M., & Grafman J., (2001, March) Individual differences in strategy preference and associated cerebral blood flow during route information recall. Poster presented at the meeting of the Cognitive Neuroscience Society, New York, NY.
- Romero, S. G., Granetz, J., Makale, M., Manly, C., & Grafman, J. (2000, April) Learning and memory in developmental dyscalculia. Poster session presented at the seventh annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.

- Basso G., Romero S. G., Pietrini P, Beeson P. M., Rapczack S., Grafman J. (1998, June)
Neurofunctional correlates of language reorganization after massive hemisphere stroke.
Poster session presented at the Fourth International Conference On Functional Mapping Of
The Human Brain, Montreal, Canada.
- Grafman J., Basso G., Romero S. G., Beeson P. M., Rapczack S., Pietrini P., Rickard T., (1998,
April) Mathematical abilities after massive left hemisphere stroke: fMRI studies prior to, and
after, training. Presented at the annual Meeting of the American Academy of Neurology,
Minneapolis, MN.
- Romero, S. G., Rickard, T. C., Basso, G., Wharton, C., Grafman, J. (1997, March) Where the
brain verifies a numerical fact. Poster session presented at the annual meeting of the
Cognitive Neuroscience Society, Boston, MA.
- Romero, S. G., Rickard, T. C., Bourne, L. E. Jr., (1994, November). On verification of
multiplication facts: An investigation using retrospective protocols. Poster session presented
at the annual meeting of the Psychonomic Society, St. Louis, MO.