

Theodore Zanto, Ph.D.

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EDUCATION

Postdoctoral Fellowship	2006 - 2012
Departments of Neurology and Physiology, University of California San Francisco	
Ph.D. in Complex Systems and Brain Sciences	2001 - 2006
Center for Complex Systems and Brain Sciences, Florida Atlantic University	
B.S. in Physics	1995 - 2001
Department of Physics, University of Wisconsin Whitewater	
B.S. in Psychology	1995 - 2001
Department of Psychology, University of Wisconsin Whitewater	

ACADEMIC APPOINTMENTS

Associate Professor	2020 - Present
Department of Neurology, University of California San Francisco	
Director, Neuroscience Division	2016 - Present
Neuroscape, University of California San Francisco	
Assistant Professor	2012 - 2020
Department of Neurology, University of California San Francisco	
Faculty Instructor	2013
Department of Psychology, California State University East Bay	
Adjunct Faculty Instructor	2011 - 2012
Department of Physics and Astronomy, University of San Francisco	

RESEARCH GRANTS

NIH R61	2023 – 2024
Source: National Institute on Aging	
Title: Accelerating cognitive gains from digital meditation with noninvasive brain stimulation: A pilot study in MCI	
Role: Principal Investigator (Co-PI: Ziegler)	

NIH R03	2021 - 2023
Source: National Institute on Aging	
Title: Neural markers of impending task performance	
Role: Principal Investigator	
Research Grant	2021 - 2022
Source: Anonymous Corporation	
Title: Music & brain interactions on performance & well-being	
Role: Principal Investigator (Co-PI: Gazzaley)	
UCSF Faculty Resource Grant	2020 - 2021
Source: UCSF Chancellor's Resource Fund	
Title: Noninvasive neurostimulation in MCI	
Role: Principal Investigator	
NIH R01	2018 - 2023
Source: National Institute of Child Health and Human Development	
Title: Neural mechanisms underlying compensation in dyslexia	
Role: Consultant (PI: Hoeft)	
NSF Research Grant	2018 - 2021
Source: Cognitive Neuroscience Program, National Science Foundation	
Title: Neural mechanisms in learned multitasking improvements	
Role: Principal Investigator (Co-PI: Gazzaley)	
NIH R21	2018 - 2022
Source: National Institute on Aging	
Title: Feasibility of gamma stimulation to reduce beta-amyloid across species	
Role: Principal Investigator (Co-PI: Zhao)	
NIH R21	2018 - 2022
Source: National Institute on Aging	
Title: Enhancing cognitive control in amnesic mild cognitive impairment via non-invasive brain stimulation	
Role: Principal Investigator (Co-PI: Gazzaley)	
Audibility Working Group Research Grant	2018 - 2020
Source: Pandora	
Title: Effects of brief audio advertisements on long-term memory	
Role: Principal Investigator	
UCSF RAP Award	2017 - 2018
Source: UCSF Academic Senate Committee on Research	
Title: Enhancing cognitive function in aging with at-home rhythm training	
Role: Principal Investigator	
Hart Foundation Grant	2016 - 2017
Source: Hart Foundation for Deep Rhythm	
Title: Rhythms of the brain	
Role: Co-Principal Investigator (Co-PI: Gazzaley)	
Lounsbery Foundation Research Award	2016 - 2017
Source: Richard Lounsbery Foundation	
Title: Rhythm training and the brain	
Role: Co-Principal Investigator (Co-PI: Gazzaley)	

National Science Foundation Conference Award	2016 - 2017
Source: NSF Program in Perception, Action and Cognition	
Title: International Conference on Music Perception and Cognition	
Role: Principal Investigator	
Aroha Pilot Award	2016
Source: Aroha Philanthropies	
Title: Musical experience and retaining cognitive function in aging	
Role: Co-Principal Investigator (Co-PI: Johnson)	
GRAMMY Foundation Research Award	2014 - 2016
Source: GRAMMY Foundation	
Title: Reversing age-related neuro-cognitive decline with rhythm training	
Role: Principal Investigator	
Rio Grande Neurosciences Research Grant	2014 - 2015
Source: Rio Grande Neurosciences	
Title: Assessing pulsed electromagnetic fields during multitasking performance	
Role: Principal Investigator	
Lounsbery Foundation Research Award	2014 - 2015
Source: Richard Lounsbery Foundation	
Title: Achieving cognitive enhancement via rhythm training	
Role: Co-Principal Investigator (Co-PI: Gazzaley)	
NIH R01	2012 - 2016
Source: National Institute of Mental Health	
Title: Causal dynamics in neural networks underlying top-down modulation	
Role: Co-Investigator (PI: Gazzaley)	
Postdoctoral Research Award	2010 - 2011
Source: University of California San Francisco	
Title: Neural networks at the crossroads of attention and memory	
Role: Principal Investigator	
NIH F32 National Research Service Award (NRSA)	2009 - 2012
Source: National Institute on Aging	
Title: Age-related changes in the top-down modulation of working memory	
Role: Principal Investigator	

AWARDS & HONORS

Small Grant Research Award	2021, 2023
UCSF Chancellor's Fund	
N-RIP Award	2022
UCSF Department of Neurology	
Faculty Enrichment Award	2017, 2018, 2020
University of California San Francisco	
Academic Senate Travel Award	2013, 2017
University of California San Francisco	
Loan Repayment Program Award	2010 - 2016
National Institutes of Health	

Postdoctoral Travel Award University of California San Francisco	2008
Student Government Science Award Florida Atlantic University	2005
Graduate Student Travel Award Florida Atlantic University	2002, 2003

UNIVERSITY SERVICE

UCSF Health Awards Judges Panel	2021
UCSF Academic Advancement Reviewer	2020 – Present
Neuroscape Speaker Series Organizer	2017 – Present
UCSF Neuroscience Outreach	
Neuroscape Summer Internship Program	2021
UC Berkeley NeuroTech Group	2019 - 2021
Neuroscape Open House	2018, 2019
Kipp SF College Prep High School	2018
Bay School of San Francisco	2018
SF STEM Career Day	2017, 2018
Wallenberg Biotech Academy, San Francisco, CA	2016, 2018
Chinese Academy of Sciences	2017
UCSF-Fresno Biomedical Research Internship Program	2016, 2017
The Branson School, Ross, CA	2014, 2015
The Nueva School, Hillsborough, CA	2014
Phillip & Sala Burton Academic High School, San Francisco, CA	2014
Director of Marketing & Public Relations UCSF Postdoctoral Scholars Association	2010 - 2012
Group Leader UCSF Postdoctoral Boot Camp	2010 - 2011
Co-Founder & Vice President FAU Neurosciences Club	2004 - 2006
President Psi Chi: The International Honor Society in Psychology, UWW Chapter	2000 - 2001
Vice President Psi Chi: The International Honor Society in Psychology, UWW Chapter	1999 - 2000

EDITORIAL SERVICE

Editorial Board, Brain Research	2022 – Present
Editor, Frontiers for Young Minds: Technology & Brain Health	2021 – 2023
Editor, Proceedings of ICMPC14	2016
Editorial Board, Frontiers in Human Neuroscience	2014 – Present

JOURNAL REVIEW SERVICE

Acta Psychologica	Experimental Gerontology
Advances in Cognitive Psychology	Human Brain Mapping
Attention, Perception, & Psychophysics	IBRO Neuroscience Reports
Biological Psychiatry	Journal of Cognitive Neuroscience
Biological Psychology	Journal of Cognitive Enhancement
Brain and Cognition	Journal of Neuroscience
Brain Research	Journal of Vision
Brain Sciences	Journal of Visualized Experiments
Brain Stimulation	Memory & Cognition
Brain Structure and Function	Neurobiology of Aging
Behavioral Brain Research	NeuroImage
Cerebral Cortex	Neuropsychologia
Cognition	Neuroscience
Cognitive, Affect. & Behav. Neuro.	PNAS
Communications Biology	Psychological Bulletin
Cortex	Psychological Research
Current Directions in Psych Science	Psychology and Aging
eNeuro	Psychophysiology
European Journal of Neuroscience	Public Library of Science – One
Experimental Aging Research	Scientific Reports

BOOK REVIEW SERVICE

Of Sound Mind (MIT Press)	2019 – 2020
Handbook of Attention (MIT Press)	2014

GRANT REVIEW SERVICE

HCMF Review Panel, National Institutes of Health	2021, 2023
CCHI Special Emphasis Panel, National Institutes of Health	2022
National Institute of Standards & Tech (NIST) / BIRD Foundation	2022
National Science Foundation	2021, 2022
Velux Stiftung, Switzerland	2020
National Aeronautics and Space Administration (NASA)	2020
SBIR Review Panel, National Institutes of Health	2018, 2020
Biotechnology & Biological Sciences Research Council, UK	2014, 2016, 2020
Rosetrees Trust Interdisciplinary Prize, UK	2019
BBBP Special Emphasis Panel, National Institutes of Health	2018
IFCN Special Emphasis Panel, National Institutes of Health	2016, 2017
National Science Centre, Poland	2014, 2017
Academy of Medical Sciences, UK	2016
National Medical Research Council, Ministry of Health, Singapore	2014
Netherlands Organization for Scientific Research (NWO)	2014

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science
Association for Psychological Science
Cognitive Neuroscience Society
International Society to Advance Alzheimer's Research and Treatment
New York Academy of Sciences
Organization for Human Brain Mapping
Psychonomic Society
Society for Neuroscience

CONFERENCE ORGANIZATION

International Conference on Music Perception and Cognition

Executive Committee 2017 – 2019, 2021 - 2023
Chair, Executive Committee 2019 - 2021
Chair, Organizing Committee 2014 - 2016

Society for Music Perception and Cognition

Scientific Review Board 2017 – 2018, 2022
Program Committee 2017

CONSULTING

Safety Monitoring Committee, SBIR: Magnetic Tides 2022 – 2025
Scientific Advisor, Clarity Health Technologies 2022 – Present
Scientific Review, Tivic Health 2022
Board Member, Advanced Science Exploratory Program 2020 – Present
Scientific Advisor, WHY Music Initiative 2018 – 2020
Scientific Advisor, Humm Technologies 2018 – 2022
Data Safety Monitoring Board, NIH K08 Grant (PI: Weng) 2017 – 2020

INVITED TALKS

Glasgow Interactive Systems Seminar 2023
University of Glasgow, UK
FOCUS: Neuroscience 2022
Level Creek Elementary School, Suwanee, GA
Quantum Photonics 2022
Clubhouse, Virtual Presentation
RRI Annual Conference 2022
Rotman Research Institute, Toronto, Canada
Department of Psychology Research Seminar 2021
York University, UK

Rotary eClub of Silicon Valley Virtual Presentation	2021
WI Home School Science Workshop Virtual Presentation	2021
Trainee Professional Development Panel CNS Virtual Conference	2020
Neuroscience Institute Research Seminar Georgia State University, Atlanta, GA	2019
BrainLENS University of California San Francisco	2018
Department of Psychology Research Seminar Georgia Tech, Atlanta, GA	2018
Senior Center Speaker Series Downtown Senior Center, San Francisco, CA	2018
Worlds Fair Nano Pier 48, San Francisco, CA	2018
SF Village Speaker Series San Francisco Village, San Francisco, CA	2018
ICON-13 Amsterdam, Netherlands	2017
Northern California Neuropsychology Forum California School of Professional Psychology, San Francisco, CA	2017
Eureka! Science + Comedy Show Piano Fight, San Francisco, CA	2017
Learning and the Brain Conference San Francisco, CA	2013 - 2017
APSC Speaker Series Aquatic Park Senior Center, San Francisco, CA	2016
SFVA Research Seminar Veterans Affairs Medical Center, San Francisco, CA	2016
Combining BCI with Non-Invasive Brain Stimulation Workshop Asilomar Conference Grounds, Pacific Grove, CA	2016
Pint of Science Irish Bank, San Francisco, CA	2016
Department of Psychology Research Seminar York University, UK	2016
Training Working Memory and Attention Seminar University of Birmingham, UK	2016
Nerd Nite Rickshaw Stop, San Francisco, CA	2015

NIMH Symposium on Brain Stimulation Based Neural Circuit Modeling Fairmont Millennium Park, Chicago, IL	2015
Center for Complex Systems and Brain Sciences Research Seminar Florida Atlantic University	2015
Grammy Foundation / Recording Academy Meeting San Francisco, CA	2014
Synaptic Hour Yerba Buena Center for the Arts, San Francisco, CA	2014
KQED Personal Biology Initiative Quadrus Center, Menlo Park, CA	2013
Bay Area Vision Research Day Conference University of California Berkeley	2013
Department of Psychology Research Seminar Oxford University, UK	2013
Wellcome Trust Centre for Neuroimaging Brain Meeting University College London, UK	2013
Capacitor Labs Synaptic Motion Meeting Counter Pulse, San Francisco, CA	2013
Bay Area Neuroscience Gathering, Keynote Speaker Stanford University	2013
Brain Wellness Fair, Keynote Speaker Acacia Creek Retirement Community, Union City, CA	2012, 2013
Four Seasons of Health Expo, Keynote Speaker Fremont Senior Center, Fremont, CA	2012
Neuroscience Club Touro University, Vallejo, CA	2012
Neuroimaging Center Colloquium University of California San Francisco	2009
Department of Psychology Research Seminar University of California Berkeley	2009
Center for Complex Systems and Brain Sciences Research Seminar Florida Atlantic University	2003, 2005

MEDIA

2023	LA Times	2022	AARP Magazine
2022	PsyPost	2021	Forbes
2022	NBC (KCRA – 8am news)	2021	Men’s Health Magazine
2022	Daily Mail (UK)	2020	The Scientist Magazine
2022	New Scientist	2019	Wall Street Journal
2022	EurekaAlert (AAAS)	2019	New York Magazine
2022	Evolving Past Alzheimer’s Podcast	2018	Wired

2017	PBS (KQED)	2016	CNET
2017	CBS (KPIX – 5pm news)	2015	UCSC Science Notes
2017	SF Chronicle	2013	Spectrum News
2017	Medscape	2010	News Medical
2017	EdSurge	2010	Science Daily

PUBLICATIONS

- Ostrand, A.E., **Zanto, T.P.**, Johnson, V., Gazzaley, A. (In Preparation). The musicianship advantage to the cocktail party problem.
- Hsu, W.Y., Zanto, T.P., Park, J.E., Gazzaley, A., Bove, R. (Submitted). Effects of transcranial alternating current stimulation on cognitive function in people with multiple sclerosis.
- Jones, K., Gallen, C.L., Ostrand, A.E., Rojas, J., Wais, P., Rini, J., Chan, B., Lario Lago, A., Boxer, A., Zhao, M., Gazzaley, A., **Zanto, T.P.** (Submitted). Gamma neuromodulation improves episodic memory in amnesic mild cognitive impairment: A feasibility study.
- Zanto, T.P.**, Giannakopoulou, A., Gallen, C.L., Ostrand, A.E., Younger, J.W., Anguera-Singla, R., Anguera, J.A., Gazzaley, A. (Submitted). Digital rhythm training improves reading fluency in children.
- Liu, Q., Jiao, Y., Yang, W., Gao, B., Hsu, D.K., Nolta, J., Russell, M., Lyeth, B., **Zanto, T.P.**, Zhao, M. (Submitted). Gamma Electrical Stimulation regulates microglia activation, reduces beta-amyloid load, and facilitates memory in a mouse model of Alzheimer’s disease.
- Jones, K., Ostrand, A.E., Gazzaley, A., **Zanto, T.P.** (Submitted). Enhancing cognitive control in amnesic mild cognitive impairment via at-home non-invasive neuromodulation.
- Ku, Y., **Zanto, T.P.**, Clapp, W., Gazzaley, A. (Submitted). Age-related changes in neural oscillations underlying distraction and interruption.
- Nandi, B., Ostrand, A., Johnson, V., Ford, T.J., Gazzaley, A., **Zanto, T.P.** (2023). Musical training facilitates exogenous temporal attention via delta phase entrainment within a sensorimotor network. *Journal of Neuroscience*.
- Zanto, T.P.**, Johnson, V., Ostrand, A., Gazzaley, A. (2022). How musical rhythm training improves working memory for faces. *Proceedings of the National Academy of Sciences*, 119(41): 1-10.
- Jones, K., Johnson, E.L., Gazzaley, A., **Zanto, T.P.** (2022). Structural and functional network mechanisms of rescuing cognitive control in aging. *NeuroImage*, 262: 199547.
- Jones, K., Smith, C.C., Gazzaley, A., **Zanto, T.P.** (2022). Research outside of the laboratory: Longitudinal at-home neurostimulation. *Behavioral Brain Research*, 428: 113894.
- Johnson, V., Zhu, Z., Anguera, R., Bollinger, J., Hardtke, D., Breza, M., **Zanto, T.P.** (2021). Increasing brand awareness: Memory for short audio ads. *Psychology & Marketing*, 38: 1960-1972.

- Zanto, T.P.**, Jones, K., Ostrand, A., Hsu, W.Y., Campusano, R., Gazzaley, A. (2021). Individual differences in neuroanatomy and neurophysiology predict tACS effects on performance. *Brain Stimulation*, 14(5): 1317-1329.
- Hsu, W.Y., Cheng, C.H., **Zanto, T.**, Gazzaley, A., Bove, R. (2021). Effects of transcranial direct current stimulation on cognition, mood, pain, and fatigue in multiple sclerosis: A systematic review and meta-analysis. *Frontiers in Neurology*, 12: 626113.
- Ashton, C., Gouws, A., Glennon, M., **Zanto, T.P.**, Tipper, S., McNab, F. (2020 Pre-Print). Distinct profiles of stimulus specific cortical activity for ignoring distraction during working memory encoding and maintenance, and associations with performance. *Research Square*. doi: 10.21203/rs.3.rs-49061/v1
- Johnson, V., Hsu, W.Y., Ostrand, A., Gazzaley, A., **Zanto, T.P.** (2020). Multimodal sensory integration: Diminishing returns in rhythmic synchronization. *Journal of Experimental Psychology: Human Perception and Performance*, 46(10): 1077-1087.
- Liu, Q., Jiao, Y., Yang, W., Gao, B., Hsu, D.K., Nolta, J., Russell, M., Lyeth, B., **Zanto, T.P.**, Zhao, M. (2020). Intracranial alternating current stimulation facilitates neurogenesis in a mouse model of Alzheimer's disease. *Alzheimer's Research & Therapy*, 12(89):1-12.
- Zanto, T.P.**, Liu, H., Pan, P., Gazzaley, A. (2020). Temporal attention is not affected by working memory load. *Cortex*, 130: 351-361.
- Zhao, Y., Kuai, S., **Zanto, T.P.**, Ku, Y. (2020). Neural correlates underlying the precision of visual working memory. *Neuroscience*, 425: 301-311.
- Zanto, T.P.**, Padgaonkar, N.A., Nourishad, A., Gazzaley, A. (2019). A tablet based assessment of rhythmic ability. *Frontiers in Psychology*, 10:2471.
- Caverzasi, E., Battistella, G., Chu, S.A., Rosen, H.L., **Zanto, T.P.**, Karydas, A.M., Shwe, W., Coppola, G., Geschwind, D.H., Rademakers, R., Miller, B.L., Seeley, W.W., Gorno-Tempini, M.L., Lee, S.E. (2019). Gyrification abnormalities in presymptomatic C9ORF72 expansion carriers. *Journal of Neurology, Neurosurgery and Psychiatry*, 90: 1005-1010.
- Hsu, W.Y., **Zanto, T.P.**, Gazzaley, A. (2019). Parametric effects of transcranial alternating current stimulation on multitasking performance. *Brain Stimulation*, 12: 73-83.
- Zanto, T.P.**, Gazzaley, A. (2018). Aging of the frontal lobe. In: D'Esposito M. & Grafman, J.H. (Eds.). *Handbook of Clinical Neurology: The Frontal Lobes*, Volume 163, pp. 369-390. San Diego, Elsevier BV.
- Hsu, W., **Zanto, T.P.**, van Schouwenberg, M.R., Gazzaley, A. (2017). Enhancement of multitasking performance and modulation of neural oscillations by transcranial alternating current stimulation. *PLoS One*, 12(5): e0178579.
- Zanto, T.P.** & Gazzaley, A. (2017). Cognitive control and the ageing brain. In: Egner, T. (Ed.). *Handbook of Cognitive Control*, pp. 476-490. John Wiley & Sons, Inc.
- Lee, S.E., Sias, A.C., Mandelli, M.L., Brown, J.A., Brown, A.B., Khazenon, A.M., Vidovszky, A.A., **Zanto, T.P.**, Karydas, A.M., Pribadi, M., Dokuru, B.S., Coppola, G., Geschwind, D.H., Rademakers, Gorno-Tempini, M.L., R., Rosen,

- H.J., Miller, B.L., Seeley, W.W. (2017). Network degeneration and dysfunction in presymptomatic C9ORF72 expansion carriers. *NeuroImage: Clinical*, 14: 286-297.
- Van Schouwenburg, M.R., **Zanto, T.P.**, Gazzaley, A. (2017). Spatial attention and the effects of frontoparietal alpha band stimulation. *Frontiers in Human Neuroscience*, 10: 658.
- Zanto, T.P.** & Gazzaley, A. (2017). Selective attention and inhibitory control in the aging brain. In: Cabeza, R., Nyberg, L., Park, D.C. (Eds.). *Cognitive Neuroscience of Aging: Linking Cognitive and Cerebral Aging, 2nd Ed.*, pp. 207-234. New York, NY: Oxford University Press.
- Padgaonkar, N.A., **Zanto, T.P.**, Bollinger, J., Gazzaley, A. (2017). Predictive cues and age-related declines in working memory performance. *Neurobiology of Aging*, 49: 31-39.
- Porat, S., Goukasian, N., Hwang, K.S., **Zanto, T.P.**, Do, T., Pierce, J., Joshi, S., Woo, E., Apostolova, L. (2016). Dance experience and associations with cortical gray matter thickness in the aging population. *Dementia and Geriatric Cognitive Disorders Extra*, 6: 508-517.
- Zanto, T.P.** (Ed.) (2016). Proceedings of the 14th International Conference on Music Perception and Cognition (ICMPC14), July 2016, San Francisco. Adelaide: Causal Productions.
- Zanto, T.P.**, Clapp, W.C., Rubens, M.T., Karlsson, J., Gazzaley, A. (2016). Expectations of task demands dissociate working memory and long-term memory systems. *Cerebral Cortex*, 26: 1176-1186.
- Ng, A.S.L., Sias, A.C., Pressman, P.S., Fong, J.C., Karydas, A.M., **Zanto, T.P.**, Coppola, G., Geschwind, D.H., Miller, B.L., Lee, S.E. (2015). Young-onset frontotemporal dementia in a homozygous tau R406W mutation carrier. *Annals of Clinical and Translational Neurology*, 2(12): 1124-1128.
- Al-Hashimi, O., **Zanto, T.P.**, Gazzaley, A. (2015). Neural sources of performance decline during continuous multitasking. *Cortex*, 71: 49-57.
- Hsu, W., Ku, Y., **Zanto, T.P.**, Gazzaley, A. (2015). Effects of non-invasive brain stimulation on cognitive function in healthy aging and Alzheimer's disease: A systematic review and meta-analysis. *Neurobiology of Aging*, 36: 2348-2359.
- Hsu, W., **Zanto, T.P.**, Anguera, J.A., Lin, Y., Gazzaley, A. (2015). Delayed enhancement of multitasking performance: Effects of anodal transcranial direct current stimulation on the prefrontal cortex. *Cortex*, 69: 175-185.
- Zanto, T.P.**, & Rissman, J. (2015). Top-down suppression. In: Toga, A.W. (Ed.). *Brain Mapping: An Encyclopedic Reference*, vol.3, pp. 261-267. Academic Press: Elsevier.
- Chadick, J.Z., **Zanto, T.P.**, Gazzaley, A. (2014). Structural and functional differences in medial prefrontal cortex underlie distractibility and suppression deficits in ageing. *Nature Communications*, 4(4223): 1-12.
- Zanto, T.P.** & Gazzaley, A. (2014). Attention and aging. In: Nobre, A.C. & Kastner, S. (Eds.). *Handbook of Attention*, pp. 927-971. Oxford, UK: Oxford University Press.

- Zanto, T.P.,** Chadick, J.Z., Gazzaley, A. (2014). Anticipatory alpha phase influences visual working memory performance. *NeuroImage*, 85: 794-802.
- Zanto, T.P.,** Pa, J., Gazzaley, A. (2014). Reliability measures of functional magnetic resonance imaging in a longitudinal evaluation of mild cognitive impairment. *NeuroImage*, 84: 443-452.
- Zanto, T.P. & Gazzaley, A.** (2013). Fronto-parietal network: Flexible hub of cognitive control. *Trends in Cognitive Sciences*, 17(12): 602-603.
- Zanto, T.P.,** Chadick, J.Z., Satris, G., Gazzaley, A. (2013). Rapid functional reorganization in human cortex following neural perturbation. *Journal of Neuroscience*, 33(41): 16268-16274.
- Anguera, J.A., Lyman, K., **Zanto, T.P.,** Bollinger, J., Gazzaley, A. (2013). Reconciling the influence of task-set switching and motor inhibition processes on stop signal after-effects. *Frontiers in Psychology*, 4(649). doi: 10.3389/fpsyg.2013.00649
- Mishra, J., **Zanto, T.P.,** Nilakantan, A., Gazzaley, A. (2013). Comparable mechanisms of intrasensory working memory interference for auditory and visual motion in youth and aging. *Neuropsychologia*, 51: 1896-1906.
- Zanto, T.P.,** Sekuler, R., Dube, C., Gazzaley, A. (2013). Age-related changes in expectation based modulation of motion detectability. *PLoS One*, 8(8): e69766.
- Rubens, M.T. & **Zanto, T.P.** (2012). Parameterization of transcranial magnetic stimulation. *Journal of Neurophysiology*, 107, 1257-1259.
- Zanto, T.P.,** Pan, P., Liu, H., Bollinger, J., Nobre, A.C., Gazzaley, A. (2011). Age-related changes in orienting attention in time. *Journal of Neuroscience*, 31(35), 12461-12470.
- Zanto, T.P.,** Rubens, M.T., Thangavel, A., Gazzaley, A. (2011). Causal role of the prefrontal cortex in top-down modulation of visual processing and working memory. *Nature Neuroscience*, 14(5), 656-661.
- Rubens, M.T. & **Zanto, T.P.** (2011). Characterizing the involvement of rostralateral prefrontal cortex in prospective memory. *Journal of Neuroscience*, 31(25), 9067-9069.
- Chapin, H.L., **Zanto, T.P.,** Jantzen, K.J., Kelso, S., Steinberg, F., Large, E.W. (2010). Neural responses to complex auditory rhythms: The role of attending. *Frontiers in Psychology*, 1(224).
- Zanto, T.P.,** Rubens, M.T., Bollinger, J., Gazzaley, A. (2010). Top-down modulation of visual feature processing: The role of the inferior frontal junction. *NeuroImage*, 53(2), 736-745.
- Bollinger, J., Rubens, M.T., **Zanto, T.P.,** Gazzaley, A. (2010). Expectation-driven changes in cortical functional connectivity influence working memory and long term memory performance. *Journal of Neuroscience*, 30(43), 14399-14410.
- Zanto, T.P.,** Hennigan, K., Östberg, M., Clapp, W.C., Gazzaley, A. (2010). Predictive knowledge of stimulus relevance does not influence top-down suppression of irrelevant information in older adults. *Cortex*, 46, 564-574.

- Zanto, T.P.**, Toy, B., Gazzaley, A. (2010). Delays in neural processing during working memory encoding in normal aging. *Neuropsychologia*, 48(1), 13-25.
- Berry, A.S., **Zanto, T.P.**, Clapp, W.C., Hardy, J.L., Delahunt, P.B., Mahncke, H.W., Gazzaley, A. (2010). The influence of perceptual training on working memory in older adults. *PLoS One*, 5(7), e11537
- Zanto, T.P.** & Gazzaley, A. (2009). Neural suppression of irrelevant information underlies optimal working memory performance. *Journal of Neuroscience*, 29(10), 3059-3066.
- Berry, A.S., **Zanto, T.P.**, Rutman, A.M., Clapp, W.C., Gazzaley, A. (2009). Practice-related improvement in working memory is modulated by changes in processing external interference. *Journal of Neurophysiology*, 102(3), 1779-1789.
- Zanto, T.P.**, Snyder, J.S., Large, E.W. (2006). Neural correlates of rhythmic expectancy. *Advances in Cognitive Psychology*, 2(2-3), 221-231.
- Zanto, T.P.**, Large, E.W., Fuchs, A., Kelso, J.A.S. (2005). Gamma-band responses to perturbed auditory sequences: Evidence for synchronization of perceptual processes. *Music Perception*, 22(3), 535-552.

CONFERENCE PRESENTATIONS

- Zanto, T.P.**, Giannakopoulou, A., Ostrand, A.E., Anguera-Singla, R., Johnson, V., Gallen, C.L., Younger, J., Nandi, B., Ford, T.J., Anguera, J., Gazzaley, A. (2023). Effects of digital rhythm training on cognitive abilities in children and older adults. Spoken presentation at the *International Conference on Music Perception and Cognition*, Tokyo, Japan.
- Jones, K., Gallen, C.L., Ostrand, A.E., Rojas, J., Wais, P., Rini, J., Chan, B., Lario Lago, A., Boxer, A., Zhao, M., Gazzaley, A., **Zanto, T.P.** (2023). Gamma-band transcranial alternating current stimulation in amnesic mild cognitive impairment: A pilot study. Poster presented at the *Alzheimer's Association International Conference*, Amsterdam, Netherlands.
- Giannakopoulou, A., **Zanto, T.P.**, Gallen, C.L., Ostrand, A.E., Younger, J.W., Anguera-Singla, R., Anguera, J.A., Gazzaley, A. (2023). Using digital rhythm training to improve reading fluency in children. Presented at *IEEE International Conference on Acoustics, Speech and Signal Processing*, Rhodes Island, Greece.
- Jones, K., Ostrand, A., Gazzaley, A., **Zanto, T.P.** (2023). At-home neuromodulation to facilitate cognitive control in older adults with mild cognitive impairment. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Nandi, B., Johnson, V., Ostrand, A., Ford, T.J., Gazzaley, A., **Zanto, T.P.** (2022). Musical training facilitates exogenous temporal attention via delta phase entrainment within a sensorimotor network. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Zanto, T.P.**, Nandi, B., Ostrand, A., Johnson, V., Gazzaley, A. (2022). Cognitive improvements and neuroplastic changes following rhythm training in older non-musicians. Spoken presentation at the *Cognitive Aging Conference*, Atlanta, GA.

- Zanto, T.P.**, Jones, K., Smith, C.C., Gazzaley, A. (2021). Feasibility of at-home tACS to facilitate cognitive control. Poster presented at the *4th International Brain Stimulation Conference*, Charleston, SC.
- Jones, K., Johnson, E.L., Gazzaley, A., **Zanto, T.P.** (2021). Predictors and mechanisms of neurostimulation effects on cognitive control in aging. Poster presented at the *Society for Neuroscience Meeting*, Virtual Conference.
- Ostrand, A., Jones, K., Hsu, W., Gazzaley, A., **Zanto, T.P.** (2021). Predictive factors of tACS effects. Poster presented at the *2nd International Workshop on Non-Invasive Brain Stimulation*, Virtual Conference.
- Zanto, T.P.**, Jones, K., Ostrand, A., Hsu, W., Gazzaley, A. (2020). Individual differences in neuroanatomy and neurophysiology predict effects of transcranial alternating current stimulation. Poster presented at the *NYC Neuromodulation Conference*, Virtual Conference.
- Levy, A.E., Yusufzic, M., Younger, J.W., **Zanto, T.P.**, Gazzaley, A. (2020). The role of audio-visual integration in the relationship between rhythm and reading skill. Poster presented at the *Society for the Scientific Study of Reading Conference*, Newport Beach, CA.
- Jones, K., **Zanto, T.P.**, Ostrand, A., Hsu, W., Gazzaley, A. (2020). Individual differences in neuroanatomy predict neurostimulation related multitasking gains in older adults. Poster presented at the *Cognitive Neuroscience Society Meeting*, Virtual Conference.
- Zanto, T.P.**, Johnson, V., Ostrand, A., Gazzaley, A. (2020). Musical rhythm training improves temporal attention and working memory in aging. Poster presented at the *Cognitive Neuroscience Society Meeting*, Virtual Conference.
- Lee, S.E., Caverzasi, E., Battistella, G., Chu, S.A., Rosen, H.L., **Zanto, T.P.**, Karydas, A.M., Coppola, G., Geschwind, D.H., Rademakers, R., Miller, B.L., Seeley, W.W., Gorno-Tempini, M.L., (2019). Gyrification abnormalities in presymptomatic C9ORF72 expansion carriers. Poster presented at the *Alzheimer's Association International Conference*, Los Angeles, CA.
- Gao, B., Jiao, Y., Liu, Q., Russell, M., **Zanto, T.P.**, Bai, Y., Yang, W., Zhao, M. (2019). Computer simulation to predict current distribution in mouse brain induced by transcranial electrical stimulation. Poster presented at the *Bay Area Brain Symposium*, San Francisco, CA.
- Gallen, C.L., **Zanto, T.P.**, Gazzaley, A. (2018). Brain network predictors of TMS-induced changes in cognitive control performance. Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Walsh, C., **Zanto, T.P.**, Richards, A., Ruoff, L.M., Neylan, T.C. (2018). Deficits in sleep spindle characteristics in Progressive Nuclear Palsy vs. healthy controls. Poster presented at the *International Conference on Sleep Spindling*, Budapest, Hungary.
- Johnson, V., **Zanto, T.P.**, Padgaonkar, N., Gazzaley, A. (2017). Effects of expectation on working memory performance in cognitive aging. Poster presented at the *Society for Neuroscience Meeting*, Washington, D.C.

- Hsu, W., **Zanto, T.P.**, Gazzaley, A. (2016). Enhancement of multitasking performance by transcranial alternating current stimulation (tACS). Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Zanto, T.P.**, Padgaonkar, N., Gazzaley, A. (2016). Assessment of rhythm abilities on a tablet-based mobile platform. Spoken presentation at the *International Conference on Music Perception and Cognition*, San Francisco, CA.
- Padgaonkar, N., **Zanto, T.P.**, Gazzaley, A. (2015). Effects of predictive information on selective attention and working memory performance in aging. Poster presented at the *Organization for Human Brain Mapping Meeting*, Honolulu, HI.
- Porat, S., Hwang, K.S., Woo, E., **Zanto, T.P.**, Goukasian, N., Apostolova, L. (2015). Personal experience with dance & cortical gray matter thickness: Correlations with cognitively normal & mild cognitive impaired elderly. Poster presented at the *International Neuropsychological Society meeting*, Denver, CO.
- Al-Hashimi, O., **Zanto, T.P.**, Anguera, J.A., Gazzaley, A. (2015). Efficient task switching underlies optimal multitasking performance. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Ku, Y., **Zanto, T.P.**, Gazzaley, A. (2015). Age-related changes in alpha oscillations underlying distraction and interruption. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Zanto, T.P.**, Liu, H., Pan, P., Gazzaley, A. (2014). Assessment of working memory load on temporal expectation processes during visual discrimination. Poster presented at the *Cognitive Neuroscience Society Meeting*, Boston, MA.
- Hsu, W., **Zanto, T.P.**, Gazzaley, A. (2013). Anodal transcranial direct current stimulation of dorsolateral prefrontal cortex enhances multitasking performance. Poster presented at the *Bay Area Memory Meeting*, San Francisco, CA.
- Zanto, T.P.**, Padath, T., Gazzaley, A., Nagarajan, S.S., Marco, E.J. (2013). Excessive neural processing of irrelevant sensory stimuli in autistic children. Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Ziegler, D.A., Rubens, M.T., Warbrik, T., **Zanto, T.P.**, Gazzaley, A. (2013). Neural correlates of age-related changes in fluctuations of attention. Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Zanto, T.P.**, Chadick, J.Z., Gazzaley, A. (2013). Timing of cortical excitability during a visual working memory task. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Zanto, T.P.**, Sekuler, R., Dube, C., Gazzaley, A. (2012). Age-related changes in expectation based modulation of motion detectability. Poster presented at the *Organization for Human Brain Mapping Meeting*, Beijing, China.
- Zanto, T.P.**, Pan, P., Liu, H., Barres, V., Gruson-Daniel, C., Bollinger, J., Nobre, A.C., Gazzaley, A. (2010). Older adults do not effectively utilize temporal attention to enhance perceptual performance. Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Zanto, T.P.**, Chadick, J.Z., Gazzaley, A. (2010). Spatio-temporal dynamics in working memory for motion direction: an fMRI guided EEG/TMS study. Poster

- presented at the *Organization for Human Brain Mapping Meeting*, Barcelona, Spain.
- Chadick, J.Z., **Zanto, T.P.**, Gazzaley, A. (2010). Effects of IFJ-rTMS on frontal attention networks during a selective attention working memory task. Poster presented at the *Organization for Human Brain Mapping Meeting*, Barcelona, Spain.
- Chadick J.Z., **Zanto T.P.**, Gazzaley A. (2010). Dynamic alterations in attention and default-mode region functional connectivity with visual cortices in normal aging. Poster presented at the *Aging and Cognition Conference*, Dallas, TX.
- Zanto, T.P.**, Rubens M.T., Thangavel A., Gazzaley A. (2009). Top-down modulation for visual features: Evidence from functional and causal connectivity. Talk presented at the *Society for Neuroscience Meeting*, Chicago, IL.
- Bollinger, J., Masangkay, E., **Zanto, T.P.**, Gazzaley, A. (2009). Age differences in N170 amplitude modulation by selective attention and working memory load. Poster presented at the *Society for Neuroscience Meeting*, Chicago, IL.
- Berry, A.S., **Zanto, T.P.**, Rutman, A.M., Clapp, W.C., Hardy, J.L., Gazzaley, A. (2009). Influence of perceptual discrimination training on working memory in older adults. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Zanto, T.P.** & Gazzaley, A. (2008). Neural suppression of irrelevant information underlies optimal working memory performance. Talk presented at the *5th Annual Bay Area Memory Meeting*. Davis, CA.
- Zanto, T.P.**, Hennigan, K., Clapp, W.C., Gazzaley, A. (2008). The role of stimulus anticipation in an age-related top-down suppression deficit. Poster presented at the *Society for Neuroscience Meeting*, Washington, D.C.
- Clapp, W.C., Karlsson, J., Rubens, M.T., **Zanto, T.P.**, Gazzaley, A. (2008). Variations in task difficulty dissociate activity in prefrontal cortex and medial temporal lobe during working memory encoding. Poster presented at the *Organization for Human Brain Mapping*, Melbourne, Australia.
- Zanto, T.P.**, Toy, B., Gazzaley, A. (2008). Age related changes in top-down modulation of low-level visual processing. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Berry, A., Rutman, A., Clapp, C., **Zanto, T.P.**, Gazzaley, A. (2008). The impact of attending to distractors: A study of low-level visual working memory. Poster presented at the *Cognitive Neuroscience Society Meeting*, San Francisco, CA.
- Zanto, T.P.**, Hennigan, K., Gazzaley, A. (2007). Top-down modulation of low-level visual processing: Bridging attention and working memory. Poster presented at the *Society for Neuroscience Meeting*, San Diego, CA.
- Zanto, T.P.**, Chapin, H., Large, E.W., Kelso, S., Steinberg, F. (2007). Neural correlates of dynamic attending to syncopated rhythms. Poster presented at the *Cognitive Neuroscience Society Meeting*, New York, NY.
- Zanto, T.P.**, Chapin, H.L., & Large, E.W. (2006). Attending to Syncopated Rhythms: Preliminary EEG & fMRI Results. Talk presented at the *4th Annual Entrainment Conference*, Boca Raton, FL.

- Zanto, T.P.**, Marshall, M.L., Fuchs, A., Large, E.W. (2005). Sparse Sampling in Auditory fMRI Experiments: A Necessity or a Waste of Time? A Combined Functional MRI and EEG Study. Poster presented at the *Society for Neuroscience Meeting*, Washington, D.C.
- Zanto, T.P.**, Large, E.W., Fuchs, A., Kelso, J.A.S. (2004). Gamma-Band Responses to Perturbed Auditory Sequences: Evidence for Synchronization of Perceptual Processes. Talk presented at the *New England Sequencing and Timing Conference*, New Haven, CT.
- Zanto, T.P.**, Large, E.W., Fuchs, A., Kelso, J.A.S. (2003). Gamma-Band Activity During Temporally Perturbed Auditory Sequences. Poster presented at the *Society for Neuroscience Meeting*, New Orleans, LA.
- Snyder, J.S., **Zanto, T.P.**, Large, E.W., Kelso, J.A.S. (2003). Gamma-Band Activity During Rhythmic Processing: Temporal Structure, Meter, and Attention. Poster presented at the *Society for Neuroscience Meeting*, New Orleans, LA.
- Marshall, M.L., Fuchs, A., **Zanto, T.P.**, Modestino, E.J. (2003). Short and Long-Duration Needle Stimulation of Acupoint GB37: An EEG Study. Poster presented at the *Society for Neuroscience Meeting*, New Orleans, LA.

Publications (non-peer reviewed)

Zanto, T.P. (2023). Our Cybernetic Selves. *Slate / Future Tense*.

PRIOR RESEARCH EXPERIENCE

Research Assistant	2001 - 2006
Center for Complex Systems and Brain Sciences, Florida Atlantic University	
Research Assistant	1998 - 2001
Department of Psychology, University of Wisconsin Whitewater	

TEACHING EXPERIENCE

Guest Lectures	
<i>Functional Neuroimaging (NEUR-4530)</i>	2019
Neuroscience Institute, Georgia State University	
<i>Advanced Research Methods (PSYC-388)</i>	2018
Department of Psychology, University of San Francisco	
<i>Computer Game Design (CSC-205)</i>	2018
Department of Computer Science, San Francisco State University	
<i>Cognitive Neuroscience (PSY-498)</i>	2012, 2013, 2015, 2016
Department of Psychology, San Francisco State University	
<i>Training the Mind (NEURO-170.10)</i>	2015
School of Medicine, University of California San Francisco	
<i>Perception (PSY-492)</i>	2014

Department of Psychology, San Francisco State University

Faculty Co-Instructor

Cognitive Neuroscience (NS-245) 2015
Neuroscience Graduate Program, University of California San Francisco

Faculty Instructor (temporary appointments)

Physiological Psychology (PSYC-4520) 2013
Department of Psychology, California State University East Bay

Introduction to Physics Laboratory (PHYS-100L) 2011 - 2012
Department of Physics and Astronomy, University of San Francisco

Graduate Student Instructor

Mathematics Boot Camp 2003 - 2005
Center for Complex Systems and Brain Sciences, Florida Atlantic University

Introduction to Matlab 2005
Departments of Psychology and Computer Science, Florida Atlantic University

Teaching Assistant

Auditory Perception (EXP-4120) 2003, 2005
Department of Psychology, Florida Atlantic University

Music Perception & Cognition (EXP-4180) 2002, 2004
Department of Psychology, Florida Atlantic University

MENTORING EXPERIENCE

Research Assistant Supervisor 2007 - Present
Departments of Neurology & Physiology, University of California San Francisco
Trained and supervised 35 lab volunteers from the community and various high schools and undergraduate institutions including UC Berkeley, San Francisco State University, University of San Francisco, and the Ecole Normale Supérieure in France.

Postdoctoral Supervisor 2012 - Present
Department of Neurology, University of California San Francisco
Trained and supervised 5 postdoctoral scholars.

Undergraduate Thesis Supervisor 2014 - 2020
Department of Neurology, University of California San Francisco
Supervised 3 senior thesis projects from undergraduate students at the University of California Berkeley.

Medical Student Research Rotation Supervisor 2008 - 2018
Departments of Neurology & Physiology, University of California San Francisco
Trained and supervised 10 medical students during their neuroscience research rotation through various medical schools: UCSF Medical School, Dartmouth University, Linköping University in Sweden, Palermo University in Italy, and the Karolinska Institute in Sweden.

Graduate Student Supervisor 2010 - 2018
Departments of Neurology & Physiology, University of California San Francisco
Trained and supervised a visiting Master's degree candidate from the University of Utrecht in the Netherlands as well as a Ph.D. candidate at UCSF and 4 visiting Ph.D. candidates from various institutions: National Yang-Ming University in Taiwan, East China Normal

University, Pierre and Marie Curie University in France and the Iran University of Science and Technology.

Visiting Faculty Host 2015 – 2016, 2022 – Present
Department of Neurology, University of California San Francisco
Supervised / collaborated on research projects with a visiting neurologist from the Tel Aviv Sourasky Medical Center in Israel and a neuropsychiatrist from Seoul National University in South Korea.

High School Senior Project Mentor
Dougherty Valley High School, San Ramon, CA 2014 - 2015
Bay School of San Francisco, San Francisco, CA 2008 - 2009

OTHER WORK EXPERIENCE

Counselor 1996 - 2001
Homes for Independent Living, Fort Atkinson, WI