**Institute for Successful Longevity – Biosketch**

**Caterina Gratton**

Dr. Caterina Gratton is an Associate Professor in the Department of Psychology at Florida State University. She received her Ph.D. in Neuroscience from the University of California, Berkeley in 2013. Dr. Gratton’s research is focused on characterizing how human brain networks are organized and how they contribute to complex, goal-directed behaviors such as attention. Her lab studies the neural substrates underlying these processes in the healthy population as well as how they are altered with neurological and psychiatric disorders. As a part of this work, Dr. Gratton has helped lead the development of ‘precision’ fMRI techniques to improve our understanding of individual brain organization and function. Recent work in the lab has focused on individual differences in brain organization across the adult lifespan and how these are related to preservation and loss of goal-directed behavior with age.

**Grants related to aging research:**

(ongoing) R01 MH118370 - Supplement 9/2021 – 6/2024

Gratton (PI)

*Individual differences in human brain networks across the adult lifespan*

Goal: Examine the trait-like characteristics of individual differences in brain networks in 60 adults ages 35-75, and measure their relationship to altered task activations and behavior in cognitive control

(completed) P30 AG13854 7/2019 – 6/2020

Gratton (Sub-Project PI)

*Precision scanning of functional brain networks in older adults*

Goal: Pilot grant to measure resting-state functional network reliability and stability in a small sample of older adults to establish feasibility of collecting precision fMRI in this population

(pending – scored 9th percentile)R01 NS124738 9/2022 – 8/2027

Gratton (Co-PI)

*Precision-mapping functional connectivity in Parkinson’s Disease*

Goal: Examine large-scale brain network disruptions in precisely phenotyped participants with Parkinson’s Disease and healthy age-matched controls to find links to individual differences in cognitive and motor symptoms in the disorder

**Conference abstracts related to our recent research on precision fMRI in older adults:**

Perez, D. C., Tran, G., Hernandez, J. J., **Gratton, C.** (abstract) Precision scanning of brain networks in older adults: daily and longitudinal stability. Presented at the Cognitive Neuroscience Society meeting, April 2022, San Francisco, CA

Perez, D. C., **Gratton, C.** (abstract) Precision scanning of brain networks in older adults. Cognitive Neuroscience Society meeting, March 2021 [Virtual due to COVID-19]

**Peer-reviewed papers in older adult populations:**

**Gratton, C**., Dworetsky, A., Coalson, R. S., Adeyemo, B., Laumann, T. O., Wig, G., Kong, T.S., Gratton, G., Fabiani, M., Barch, D. M., Tranel, D., Miranda-Dominguez, O., Fair, D. A., Dosenbach, N.U.F.D., Snyder, A.Z., Perlmutter, J.S., Petersen, S.E., Campbell, M.C. (2020). Removal of high frequency contamination from motion estimates in single-band fMRI saves data without biasing functional connectivity. *Neuroimage*, 217, 116866 <*Previous version available at: bioRxiv.>*

Kong, TS, **Gratton, C,** Low, KA, Tan, CH, Chiarelli, AM, Fletcher, MA, Zimmerman, B, Maclin, EL, Gratton, G, Fabiani, M. (2019) Age-related differences in functional brain network segregation are associated with a cascade of cerebrovascular, structural, and cognitive effects. *Network Neuroscience,* 1-26.

**Gratton, C**, Koller, JM, Shannon, W, Greene, DJ, Snyder, AZ, Petersen, SE, Perlmutter, JS, Campbell, MC. (2018). Emergent functional network effects in Parkinson disease. *Cerebral Cortex,* 6, 2509-2523 PubMed

Li, L, **Gratton, C**, Fabiani, M, Knight, R. T. (2013). Control of bottom-up and top-down attention in aging: an ERP Study. *Neurobiology of Aging. 34, 477-488.* PMCID: PMC4090105 PubMed

**Gratton, C**\*, Nomura, EM\*, Perez, F, D’Esposito, M. (2012). Focal brain lesions to critical locations cause widespread disruption of the modular organization of the brain. *Journal of Cognitive Neuroscience*, 24, 1275- 1285. PMCID: PMC3575518 *\* Joint first authors* PubMed

Nomura, EM, **Gratton, C**, Visser, RM, Kayser, A, Perez, F, & D’Esposito, M. (2010). Double dissociation of two cognitive control networks in patients with focal brain lesions. *Proceedings of the National Academy of Sciences of the United States of America*, *107*(26), 12017-12022. PMCID: PMC2900657 PubMed

*In review*

Kong, T. S., Low, K. A., Perez, D. R., **Gratton, C.**, Tan, C. H., Chiarelli, A. M., Fletcher, M. A., Zimmerman, B., Maclin, E. L., Sutton, B. P., Gratton, G., Fabiani, M. (in review). A distribution-based examination of network segregation in aging.