MIA ANTHONY

PhD student, Brain and Cognitive Sciences

manthon6@ur.rochester.edu

RESEARCH FOCUS

Neural mechanisms of brain aging and plasticity
Models of brain aging trajectories in neurodegenerative disease

---

PUBLICATIONS
(+ equal contribution)

2022
Kluka B+, **Anthony M+**, Chen S, Baran TM, Lin F. Brain small‑worldness properties and perceived fatigue in mild cognitive impairment. *Journal of Gerontology: Series A.*

2021
Koenig J, Abler B, Agartz I, Åkerstedt T, Andreassen OA, **Anthony M,** et al. Cortical thickness and resting-state cardiac function across the lifespan: A cross-sectional pooled mega-analysis. *Psychophysiology* .

2020
Chen Q, Yang H, Rooks B, **Anthony M**, Zhang Z, Tadin D, HeffnerK, Lin F. Autonomic flexibility reflects learning and associated neuroplasticity in old age. *Human Brain Mapping*. doi: 10.1002/hbm.25034

Lin F, Tao Y, Chen Q, **Anthony M**, Tadin D, Heffner K. Processing speed and attention training modifies autonomic flexibility: A mechanistic intervention study. *NeuroImage*. doi: 10.1016/j.neuroimage.2020.116730

Rooks B+, **Anthony M+**, Chen Q, Lin Y, Baran T, Zhang Z, Lichtenberg P, Feng L. A generic brain connectome map linked to different types of everyday decision-making in old age. *Brain Structure and Function*. doi: 10.1007/s00429-019-02013-5

2019
Ren P, **Anthony M**, Aarsland D, Wu, D. Commentary: A posterior-to-anterior shift of brain functional dynamics in aging. *Frontiers in Aging Neuroscienc*e. doi: 10.3389/fnagi.2019.00341

Wang X, Heffner K, **Anthony M**, Lin F. Stress adaptation in older adults with and without cognitive impairment: an fMRI pattern-based similarity analysis. Aging. doi: 10.18632/aging.102204

2017
Anthony M & Lin F. A systematic review for functional neuroimaging studies of cognitive reserve across the cognitive aging spectrum. *Archives of Clinical Neuropsychology*. doi: 10.1093/arclin/acx125

Lin F, Ren P, Wang X, **Anthony M**, Tadin D, Heffner K. Cortical thickness is associated with altered autonomic function in cognitively impaired and non-impaired older adults. *Journal of Physiology*. doi: 10.1113/JP274714

Ren P, **Anthony M**, Chapman BP, Heffner K, Lin F. Amygdala functional connectivity is associated with locus of control in the context of cognitive aging. *Neuropsychologia*. doi: 10.1016 j.neuropsychologia.2017.03.016

BIBLIOGRAPHY

https://www.ncbi.nlm.nih.gov/myncbi mia.anthony.1/bibliography/public/

EDUCATION

University of Rochester
2019 - 2024 (expected)
PhD, Brain and Cognitive Sciences
Advisors: Duje Tadin and F. Vankee Lin

University of Rochester
2016 | Rochester, NY
BS, Neuroscience

TECHNICAL SKILLS

Brain imaging preprocessing and analysis
Graph network analysis
Neuroimaging database management
Programming: R, python, MATLAB, bash

RESEARCH EXPERIENCE

CogT Lab | **University of Rochester Center for Advanced Brain Imaging and Neurophysiology (CABIN)**

Principal Investigator, Dr. Feng (Vankee) Lin, PhD, MB, RN
www.cogtlab.com

CogT Lab, Data Manager
Jan.2018 - Aug.2019 | Rochester, NY

Responsibilities across studies:
Coordinated data management between project coordinators and graduate/post-doctoral students;

Designed and maintained management information systems for tracking participant study progress;

Coded and verified neuropsychological data;

Programmed and ran scripts (MATLAB, R, SPSS) to clean and prepare datasets for analyses;

Coordinated neuroimaging data transfers between the CogT Lab, University of Rochester Center for Advanced Brain Imaging and Neurophysiology (CABIN), and other university labs.

Four-year multi-site clinical trial research study investigating the efficacy and synergistic mechanisms of combined aerobic exercise and cognitive training in older adults aged 65 years or older with mild cognitive impairment (NIH/NIA R01 AG055469, NIH/NIA R01 AG059654):

Managed the pipeline for data entry into REDCap and supervising undergraduate research assistants;

Maintained databases for recruitment and subject progress; and data entry and tracking;

Screened participants for research MRI contraindications; scheduled and conducted fMRI assessments;

Managed fMRI data transfer between University of Rochester Center for Advanced Brain Imaging and Neurophysiology, University of Minnesota Center for Magnetic Resonance Research, and Mayo Clinic;

Trained to preprocess fMRI data.

CogT Lab, Health Project Coordinator
May.2016 - Jan.2018 | Rochester, NY

Two-year research study that investigated how effectively neuroeconomic paradigms induce central fatigability compared to executive function computer tasks in cognitively healthy older adults aged 65 years or older (NIH/NIA R21 AG053193):

Lead project coordinator responsible for project and data management. Recruited and screened participants; administered neuropsychological, fMRI, and transcranial direct current stimulation (tDCS) assessments.

Four-year longitudinal research study that compared the efficacy of two computerized cognitive training paradigms on functional and structural neural connectivity in adults aged 60 years or older with MCI (NIH/NINR R01 NR015452):

Administered training sessions to participants on vision-based speed of processing and mental leisure activities to support independent training at home;

Administered fMRI and neuropsychological assessments; tracked and facilitated subject adherence to training.

CogT Lab, Research Assistant
Jan.2015 - May.2016 | Rochester, NY

Two-year research study investigating the neural mechanisms of stress regulation in the neurodegenerative process using fMRI and computer-based executive function tasks (Alzheimer's Association New Investigator Research Grant, NIRG 14-317353):

Administered cognitive stress tasks to older adults aged 60 years or older with and without MCI. Collected electrocardiography (ECG) data and saliva samples to assess heart-rate variability and cortisol levels;

Trained to preprocess ECG data.

FELLOWSHIPS AND SCHOLARSHIPS

2020

NSF Research Traineeship Data-Enabled Science and Engineering (NRT-DESE): Data-Enabled Research into Human Behavior and its Cognitive and Neural Mechanisms | **Fellowship for Graduate Training**
Rochester, NY. $32,000

2019

NSF Research Traineeship Data-Enabled Science and Engineering (NRT-DESE): Data-Enabled Research into Human Behavior and its Cognitive and Neural Mechanisms | **Fellowship for Graduate Training**
Rochester, NY. $32,000

NIH/NIA Collaboratory on Research Definitions: 1st Workshop on Research Definitions for Reserve and Resilience in Cognitive Aging and Dementia | **Travel scholarship**
Bethesda, MD. $500

2015

Gerontological Society of Aging 68th Annual Scientific Meeting | **University of Rochester Undergraduate Travel Scholarship**
Orlando, FL. $500

CONFERENCE POSTERS & ACCEPTED ABSTRACTS

**Presenter

2020
Anthony M**, Rooks B, Lin F. Application of an economic decision-making model to understand mechanisms of cognitive reserve. *Alzheimer's Association International Conference* (accepted abstract, unable to present).
Amsterdam, Netherlands

2018
Wang X**, Heffner K, **Anthony M**, Lin F. Stress adaptation in older adults with and without cognitive impairment: an fMRI pattern-based similarity analysis. *Alzheimer's Association International Conference*.
Chicago, IL

2015
Anthony M**, Ren P, Lin F. Potential Mechanisms of Cognitive Reserve Seen in fMRI Studies of Alzheimer's Disease. *Gerontological Society of Aging 68th Annual Scientific Meeting.*
Orlando, FL