

Neuroscience and Aging

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MEDICINE *of* THE HIGHEST ORDER



UR OFFICE FOR AGING RESEARCH AND HEALTH SERVICES

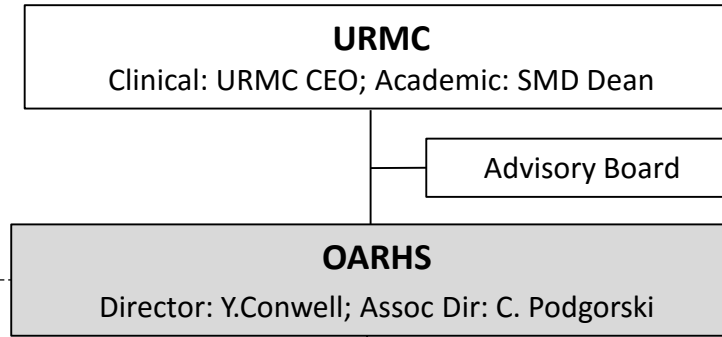
Linkages and Activities – FY16

UR Affiliates

- UR Depts of
 - Psychiatry
 - Neurology
 - Medicine
 - Public Health Sci
 - Emergency Med
 - Ophthalmology
- UR CA Center
- UR SON
- RoAR Center

Extra-UR Affiliates

- FLHSA
- NYS Office for the Aging
- Alzheimer's Association
- Lifespan
- Eldersource
- Catholic Family Center
- Canandaigua VAMC
- Zhejiang Univ



Clinical Initiatives

- Memory Care Program (MCP)#
- Telemental Health in NHs #

Service System Development

- Finger Lakes Center of Excellence in Alzheimer's Disease (FLCEAD)*#
- Finger Lakes Alzheimer's Caregiver Institute*#

Education & Training

Geriatric Workforce Development

- Finger Lakes Geriatric Workforce Enhancement Program (GWEP)*
- ECHO Telementoring Programs*# in geriatric MH & dementia care; palliative care
- Primary Care
- Nursing Home

Sponsored presentations

- Social Connectedness Seminar Series**
- Ger Med Gr Rnds and conference presentations
- Ger MH Interest Group

Academic Mentoring

- Faculty in
 - School of Nursing
 - Psych
 - Medicine
 - Emerg Med
 - VAMC

Research w/ direct OARHS links (funded)

- RoAR Pilots**
- AD-CARE*#
- NIMH/NINR*#
- WUN*
- CDC*
- Alzheimer's Assoc*#
- AiC projects**#
- Research (planning)
- Aging in Context**
- NIA Pepper Center
- VA GRECC

* Extramural funding; ** UR funding; # Planned component of the UR Center of Excellence in Aging & Memory Care

Geriatric Mental Health Research Initiatives

Outcomes and Services Research

- Studies of integrated care models for late life depression and comorbid health conditions
 - Conwell: COACH (NIMH); Primary care-based; depression & HTN
- Transitional care interventions: short stay NH to home
 - Simning, Conwell, Seplaki, Temkin-Greener
 - Simons (VA VISN2), Conwell, Cai
- Geospatial data applications to older adult healthcare
 - Conwell, Seplaki, Ramchandran, Simning
- Finger Lakes Center of Excellence in Alzheimer's Disease
 - Podgorski

Geriatric Mental Health Research Initiatives

Clinical Research

- Experimental therapeutics for Alzheimer’s Disease and Related Dementias (ADRD)
 - AD-CARE: Porsteinsson et al.
 - ~25 clinical trials; one of the largest ADRD clinical trials operations in the U.S.
- Social determinants of mental health in later life
 - Loneliness, social isolation, depression, suicide: Van Orden, Conwell
- Cognitive training for MCI: Lin

Related Initiatives

- **Memory Care Program**
 - Multidisciplinary care for older adults with memory disorders
- **Center for Aging and Memory Care**
 - Proposed center for multidisciplinary care for older adults with mental illness and memory disorders; training of the geriatric MH workforce; and conduct of research
 - 315 Science Parkway; approval for move pending
- Programmatic research and research training in sensory impairments (hearing, vision, balance) and sensory integration in later life

Biobehavioral Research on Aging

- Aging is characterized by a host of biological, psychological, cognitive, and social changes, whose interplay impacts health and longevity at older ages.
- Our research is guided by an integrative, psychoneuroimmunological model of stress and health that underscores biopsychosocial pathways to physical, biological, cognitive, and emotional well-being in older adulthood. Key concepts are:
 - **Biological:** integration of central (brain) and peripheral (body: physiological; immune) pathways
 - **Psychological/behavioral:** emotion regulation; depressive and anxiety symptoms; personality, cognitive function; sleep
 - **Social:** social connectedness; family context; socioeconomic conditions

Biobehavioral Researchers in the SON and Psychiatry

- **Kathi Heffner, PhD:** understanding how chronic stressors affect immune function and inflammation in older populations; interventions to mitigate those effects and promote older adults' emotional and physical health
- **Jan Moynihan, PhD:** interventions for at risk populations of aging adults; specifically, interventions to promote adaptive immunity and decreased inflammation
- **Vankee Lin, PhD:** neurophysiological mechanisms of cognitive impairment; behavioral interventions targeting those mechanisms to promote neuroplasticity and ultimately prevent dementia
- **Kim Van Orden, PhD:** social connectedness as a mechanism for preventing suicide in later life; interventions to promote social connectedness in later life
- **Benjamin Chapman, PhD:** focus on the interface between social class and individual psychological traits related to "healthy aging"

Funding portfolio includes 6 R01s, 1 R21 and 1 K23

CTSI incubator invited proposal: *Social Modifiers of Stress Regulation and Healthy Aging*

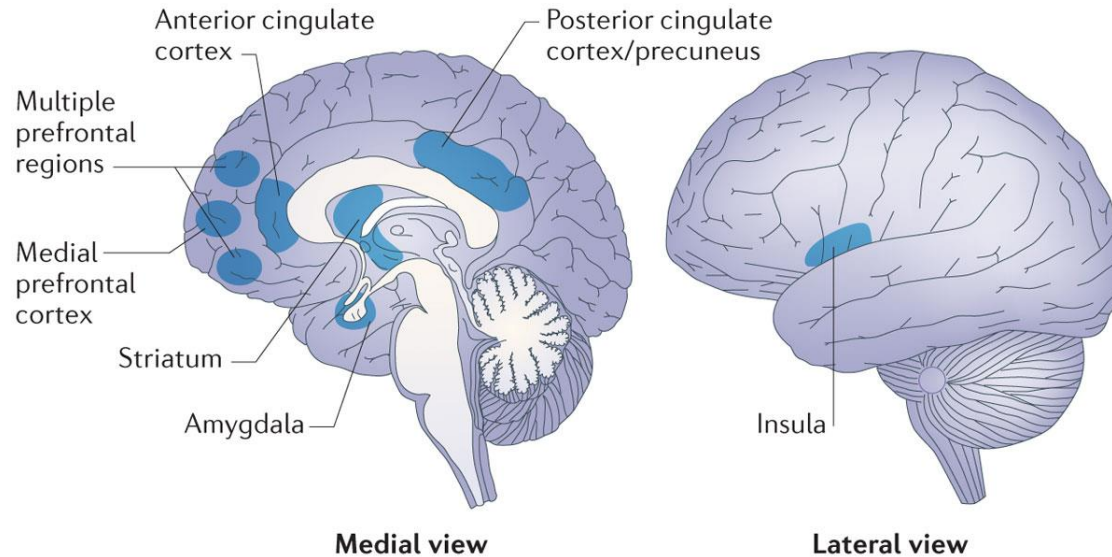
Social connectedness is critical to older adults' stress adaptation and is a key contributor to healthy aging.

- **Project 1.** We will test the hypothesis that older subjects will show greater negative affect and poorer physiological adaptation in response to social rejection. This age effect will be explained by 'neural depletion' in frontal brain regions.
- **Project 2.** Clinician-researchers and computer scientists developed an affective computing system—the "Aging and Engaging Program" (AEP)—to help older adults improve social communication. This pilot project will establish the efficacy of the program, as well as investigate neurobiological mechanisms.

Aspirations for Collaborations with the Del Monte Institute

- Using cutting edge technology, to integrate the “neuro” in our psychoneuroimmunological models; to identify the central nervous system links between:
 - chronic stressors and immune/inflammatory-related outcomes
 - physiological pathways (autonomic nervous system, inflammatory) and social-emotional, cognitive, and physical health
- To identify novel intervention strategies that target multiple levels (behavioral, neurological, cellular) to promote critical domains of healthy aging:
 - Cognitive aging
 - Social-emotional well-being in late life
 - Immune aging/“inflammaging”

An example: the Neuroscience of Mindfulness Meditation



Nature Reviews | [Neuroscience](#)

Tang, Y., Hölzel, B.K. and Posner, M.I. 2015. *Nature Reviews/Neuroscience* 16: 213-225