Aging Centers and Networks – accessing the colleagues and mentors you need

GEMSSTAR/TFWS/DWJS Frailty Meeting
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Outline

• Why study aging?

• Networks to assist you in aging research
  – Alzheimer’s Disease
  – OAICs
  – Nathan Shock Centers
  – Centers on the Demography and Economics of Aging, Roybal Centers, RCMARs
  – GRECCs
  – Others
Why Study Aging if You’re a Specialist?
Causes of Death Among U.S. Adults Aged 65 Years or Older, 2007

- Heart Disease: 28.2%
- Cancer: 22.2%
- Stroke: 6.6%
- Chronic Lower Respiratory Diseases: 6.2%
- Alzheimer's Disease: 4.2%
- Diabetes: 2.9%
- Influenza and Pneumonia: 2.6%
- Unintentional Injury: 2.2%
- All Other Causes: 24.9%

Organ function changes over the lifespan

Figure 1. Age-related changes in measures of pulmonary function. In general, decreases in elasticity result in increased residual volume (ERV). TLC = total lung capacity; VC = vital capacity; IRV = inspiratory reserve volume; RV = residual volume; FRC = functional residual capacity.
Aging is THE most important risk factor for nearly every cause of death now, why . . .
• As humans have increasingly controlled their environment, their life expectancy has dramatically ("Rectangularization" of the survival curve)
"Rectangularization" of the Survival Curve:

<table>
<thead>
<tr>
<th>Transition</th>
<th>Major Factors in Transition</th>
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<tr>
<td>A-B</td>
<td>Improved housing, sanitation, antiseptics</td>
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<tr>
<td>B-C</td>
<td>Public health, hygiene, immunization</td>
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<tr>
<td>C-D</td>
<td>Antibiotics, improved medical practice, nutrition, health education</td>
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<tr>
<td>D-F</td>
<td>Recent biomedical breakthroughs</td>
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Figure 1.5
Human survival curves from ancient times through the twentieth century. The curve representing the 1990s is essentially the same as that of the 1970–1980 decade on this scale. Note the transition from an almost linear decline in survivorship with age in ancient times, to the large bulge of the curves of recent years. The logical extension of this "bulge" of the curve is to become a right angle (see text).
So now, aging is the most important risk factor for nearly every disease that causes major morbidity and mortality.
Frontiers in Geroscience

Journals of Gerontology: BIOLOGICAL SCIENCES
Cite journal as: J Gerontol A Biol Sci Med Sci 2014 June;69(S1):S1–S3
doi:10.1093/gerona/glu041

Supplement Issue Editor:
Ronald A. Kohanski, Ph.D.

Guest Editor-in-Chief:
Felipe Sierra, Ph.D.

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Conceptualization of Aging

Slide courtesy Felipe Sierra, PhD

Sierra & Kohanski
J Gerontol June 2014

López-Otín et al.
Cell 153:1194 (2013)
Aging is the major risk factor for chronic disease

What in the biology of aging might explain that risk?

Slide courtesy Felipe Sierra, PhD
A new paradigm for disease prevention and intervention
The Goal of Aging Research: A New Kind of Old Person

Slide courtesy of Richard Miller, U Michigan

Normal person, age 70  Normal person, age 114
Aging Research: Biggest Bang For the Buck?

- Just Like Today - average 50 year old woman lives to 81
- Cure Cancer Today
- Cure Heart Disease Today
- Cure Cancer and Heart Disease Today
- Cancer, Heart Disease, Stroke, Diabetes
- Slow Down Aging

[The amount diet restriction produces in rats; first published in 1935]

Years of Life Left at Age 50

30 40 50 60 70 80

Slide courtesy of Jeff Halter
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“You’re looking old Indy . . .” Marian

“It’s not the years, Honey, it’s the mileage . . . . . .” Indiana Jones
83 years old; HTN, Hyperlipidemia, prior MI
Figure 1.2a Percentage of Medicare FFS Beneficiaries by Number of Chronic Conditions: 2010

Figure 3.1a  Per Capita Medicare Spending for Medicare FFS Beneficiaries by Number of Chronic Conditions: 2010

Average spending for Medicare FFS beneficiaries: $9,738
NIH Centers of Excellence (COE)  
Division of Neuroscience  

- Alzheimer’s Disease Centers (n=29)  
  - Research in AD, research training, outreach, and tech transfer; memory clinics; brain banks  
  - each center has its own area of emphasis, a common goal of the ADCs is to enhance research on Alzheimer's disease by creating a network that shares new ideas and research results. Collaborative studies draw upon the expertise of scientists from many different disciplines.

National Alzheimer's Coordinating Center (NACC)  
The Center coordinates data collection and fosters collaborative research among ADCs.  
Walter Kukull, Ph.D., Director  
National Alzheimer's Coordinating Center  
Seattle, WA 98105  
Website: www.alz.washington.edu  
Information Line: 206-543-8637  
E-mail: naccmail@u.washington.edu  
Fax: 206-616-5927
NIH Centers of Excellence
Division of Geriatrics and Clinical Gerontology

• Claude D. Pepper Older Americans Independence Centers (n=14)
  – Research to maintain and restore Independence in older adults
  – Research career development/training
  – Each center has its own theme
  – Increasing cross-OAIC collaboratives some with pilot funding (two R24s – HIV/Aging, HMORN/OAIC in MCCs) and large multi-site trials (STRIDE, LIFE)

OIAC Coordinating Center
The Center coordinates data collection and fosters collaborative research among OAICs.
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NIH Centers of Excellence
Division of Aging Biology

• Nathan Shock COE In Basic Biology of Aging (n=5)
  • Centers provide leadership in basic research of the biology of aging through a Research Development Core which administers small start-up funds locally, and organizes national annual meetings
  • Specialized Cores that provide services to members, as well as for-fee services to the community at large.
    • The Jackson Laboratory
    • University of Michigan
    • University of Texas Health Sciences Center in San Antonio
    • University of Washington
    • Albert Einstein College of Medicine
NIH Centers of Excellence
Division of Behavioral and Social Research

• Centers on the Demography and Economics of Aging (n=11)
  – Support the infrastructure and pilot data necessary for larger research projects;
  – development of national and international networks of researchers; and
  – development of methods for the analysis of state-of-the art, often-longitudinal, social science data
NIH Centers of Excellence
Division of Behavioral and Social Research

- Roybal Centers for Translational Research On Aging (n=13)
  - Research translation from laboratory into programs and practices that improve lives and helps society adapt to an aging population
  - Enhance the productivity of relevant basic research and existing projects;
  - Accelerate the development of new ideas or applications (including successful grant funding from other sponsors);
  - Facilitate collaborations among academic researchers and commercial interests and recruitment of new researchers to aging;
  - Provide a context for assembling multidisciplinary teams to solve practical problems.
NIH Centers of Excellence
Division of Behavioral and Social Research

• Resource Centers for Minority Aging (RCMAR)
  – 6 currently funded; 11 total over life of RCMAR

• Mission:
  – Support URM faculty to establish a career path in research on minority aging and/or health disparities
  – Further the science of health disparities research
VA Networks

- GRECCs (n=19) attract scientists and health science students to the field of geriatrics to help increase the basic knowledge of aging, transmit this knowledge to health care providers, and improve the quality of care delivered to elders.
- Each GRECC contains a research component, a education component, and a clinical component.
- GRECCs are not meant to be large enterprises but centers of excellence with a core staff of 12 full time employees.
VA Networks
Local Centers & Programs

- Institute or Center on Aging
- Research centers/programs of research focused on aging or age-related issues: sleep, prostate CA, PD, CISA, CHF, osteoarthritis, depression in primary care, caregiving, pain
- Geriatric Medicine Departments/Divisions
- Nursing, Social Work programs in aging
- Clinical Centers for Geriatric Health Care
Questions?