2016 Nathan Shock Center Summit:  
“Personalized Geroscience”

Wednesday, June 1, 2016

1:00 PM – 1:40 PM Keynote address:

1. Rachel Nugent, Vice President, Global Non-communicable Diseases, RTI International, Challenges in aging of the global population

Session 1. Sex and Aging
Chair: Randy Strong

1:40 PM – 1:45 PM Arlan Richardson: Session Introduction

1:45 PM – 2:05 PM 2. Russell Bonduriansky, University of New South Wales, An evolutionary perspective on sex differences in ageing
2:05 PM – 2:25 PM 3. John Tower, University of Southern California, Sex-specific regulation of life span in Drosophila
2:25 PM – 2:45 PM 4. Derek Huffman, Albert Einstein College of Medicine, Sex difference in the GH/IGF-1 Pathway in Mammals

2:45 PM – 3:00 PM Coffee Break

Session 2. Sex and Aging
Chair: Arlan Richardson

3:00 PM – 3:20 PM 5. Randy Strong, University of Texas Health Science Center at San Antonio, What we have learned from the NIA-Intervention Testing Program on sex effects in extending longevity in mice
3:20 PM – 3:40 PM 6. Matt Kaeberlein, University of Washington, Sex-specific interactions between mTOR signaling, cancer, and longevity
3:40 PM – 4:00 PM 7. Willard Freeman, University of Oklahoma, Targeted analyses of DNA methylation and mitochondrial heteroplasmy
4:00 PM – 4:20 PM 8. Christian Pike, University of Southern California, Sex differences in Alzheimer’s Disease: from rodents to humans
4:20 PM – 4:40 PM Roundtable Discussion: Future Research on the Role of Sex in Aging 4:40

PM – 6:30 PM Harbor Cruise Pier 55 (optional)
### Session 3: Molecular signatures of aging  
Chair: Gary Churchill

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Jan Vijg, Albert Einstein College of Medicine</td>
<td>Genome instability: a conserved mechanism of aging?</td>
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<td>9:20 AM</td>
<td>Lorna Harries, University of Exeter</td>
<td>Altered mRNA processing in aging and longevity</td>
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<td>9:40 AM</td>
<td>Steve Horvath, UCLA</td>
<td>Epigenetic clock: recent biological insights and applications</td>
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<td>10:00 AM</td>
<td>Gary Churchill, The Jackson Laboratory</td>
<td>Regulation of the proteome in mammalian aging</td>
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10:20 AM - 10:35 AM Q&A Panel

10:35 AM - 10:55 AM Coffee Break

### Session 4: The role of environment in healthy aging  
Co-chairs: Daniel Promislow and Caleb Finch

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:55 AM</td>
<td>Elissa Epel, UCSF</td>
<td>The role of social disadvantage and stress in early life telomere health</td>
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<td>11:15 AM</td>
<td>Caleb Finch, USC</td>
<td>Evolution of the uniquely human ApoE alleles</td>
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<td>11:35 AM</td>
<td>Josh Snodgrass, University of Oregon</td>
<td>Health and aging among older adults in middle income countries: The WHO’s Study on global AGEing and adult health (SAGE)</td>
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<tr>
<td>11:55 AM</td>
<td>David Walker, UCLA</td>
<td>Analyzing microbiota-health interactions during Drosophila aging</td>
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12:15 PM - 12:30 PM Q & A Panel

12:30 PM - 1:30 PM Lunch (HARBOR ROOM)
Session 5: Natural variation in aging  
Chair: Kathleen Fischer

1:30 PM - 1:50 PM 17. Vera Gorbunova, University of Rochester, **Mechanisms of longevity on long lived mammalian species**
1:50 PM - 2:10 PM 18. Cancelled
2:10 PM - 2:30 PM 19. Jay Olshansky, University of Illinois, Chicago, **In Pursuit of the longevity dividend**
2:30 PM - 2:50 PM 20. Daniel Promislow, University of Washington, **Natural variation for aging and age-related disease in companion dogs**

2:50 PM – 3:05 PM Q & A Panel

3:05 PM – 3:25 PM Coffee Break

Session 6: Toward Personalized Geroscience  
Chair: Nir Barzilai

3:25 PM – 3:45 PM 21. Alan Schuldiner, Regeneron Genetics Center, **Identifying functional mutations in populations to inform development of therapies for age-related diseases**
3:45 PM – 4:05 PM 22. Luigi Ferruci, NIA, **Longitudinal study of aging; a three legged stool for personalized medicine**
4:05 PM – 4:25 PM 23. Gustavo Glusman, Institute for Systems Biology, **The 100K Wellness Project: A data-rich longitudinal study for the digital age**
4:25 PM – 4:45 PM 24. Yousin Suh, Albert Einstein College of Medicine, **Functional genomics approach to develop targets for slowing aging in humans**

4:45 PM – 5:00 PM Q & A Panel

NATHAN SHOCK SUMMIT ADJOURNS

3:00 pm – 6:00 pm American Aging Association Conference Registration
2016 American Aging Association Annual Meeting
“Targeting Aging: The Ultimate Preventative Medicine”

45th Annual Meeting of the American Aging Association

Thursday, June 2, 2016

6:30 PM – 8:00 PM Panel Discussion: *From bench to clinic: Translating aging research.*

25. Mark Collins, Glenn Foundation, Human Aging is the Climate Change of Biology: Plan for it, not Against it

Panelists: Mark Collins, Joan Mannick, Nir Barzilai, Tom Rando

8:00 PM – 10:00 PM Opening Reception

Friday, June 3, 2016

7:00 AM - 8:00 AM Breakfast (Foyer)

8:00 AM – 9:15 AM Keynote Address: Introduction by George Martin, University of Washington.

26. Brian Kennedy, Buck Institute for Research on Aging, Gender specificity in the TOR pathway with respect to metabolism and aging

Session 1: Mitochondrial and metabolic mechanisms of healthy aging
Chair: George Martin

9:15 AM - 9:30 AM 27. Dana Miller, University of Washington, Interactions between HIF-1 and SKN-1 in Hydrogen Sulfide

9:30 AM - 9:45 AM 28. Marcia Haigis, Harvard, Role of mitochondria in immune aging

9:45 AM - 10:00 AM 29. Dan Gottschling, Calico, Wrestling with how interconnected biological systems change with age

10:00 AM -10:15 AM 30. Allon Canaan, Yale, How does FAT10 silencing extend lifespan in mice?

10:15 AM -10:35 AM Q & A Panel

10:35 AM - 10:50 AM Coffee Break and Networking
Session 2: Systemic signals and stem cells  
Chair: Weiwei Dang

10:50 AM - 11:05 AM  31. Tom Rando, Stanford University, Epigenetic regulation of stem cell aging

11:05 AM - 11:20 AM  32. Graham Pawelec, University of Tuebingen, Immunosenescence and Cancer

11:20 AM - 11:35 AM  33. Zhongjun Zhou, Hong Kong University, Nuclear lamin A in chromatin remodeling, DNA damage repair and aging

11:35 AM – 11:50 AM  34. Seung Jae Lee, POSTECH, Sensory regulation of longevity via neuroendocrine insulin-like peptide in C. elegans

11:50 AM – 12:10 PM Q & A Panel

12:10 PM - 1:30 PM Lunch on your own

12:10 PM - 1:30 PM AGE Journal Editorial Board Meeting (COVE)

1:30 PM – 2:30 PM Special Session: Targeting Aging with MEtformin (TAME): A study to target aging in humans
35. Nir Barzilai, Albert Einstein College of Medicine, - Dr. Barzilai will give an update on planning for the TAME trial and will take questions from the audience.

2:30 PM – 3:30 PM Session 3: Selected Abstracts  
Chair: Carissa Perez Olsen

2:30 PM- 2:40 PM 36. Jeremy Van Raamsdonk, Van Andel Research Institute, Targeting aging as a therapeutic strategy for the treatment of neurodegenerative disease

2:40 PM – 2:50 PM 37. Victoria Gibbs, UAB, Increased energy expenditure under fixed food intake reduces body fat and increases longevity in male C57BL/6J mice

2:50 PM – 3:00 PM 38. Vyacheslav Labunskyy, Boston University, CAN1 arginine permease deficiency extends yeast replicative lifespan via translational activation of integrated stress response

3:00 PM – 3:10 PM 39. Alex Freitas, University of Kent, Selecting Gene Ontology Terms for Predicting the Pro-Longevity or Anti-Longevity Effect of Genes with Machine Learning Methods

3:10 PM – 3:20 PM 40. Kelvin Yen, USC, The mitochondrial derived peptide humanin is a conserved regulator of healthspan and lifespan

3:20 PM – 3:30 PM Q & A Panel

3:30 PM - 3:50 PM Coffee Break and Networking
3:50 PM – 4:50 PM **Session 4: Trainee Chapter Symposium.** Chair: Mike Anson

3:50 PM – 4:00 PM 41. Mark McCormick, Buck Institute for Research on Aging, *Lessons learned from a comprehensive analysis of aging in yeast*

4:00 PM – 4:10 PM 42. Stefano Tarantini, University of Oklahoma, *Treatment with the mitochondrial targeted antioxidant peptide SS-31 Improves cerebromicrovascular function in aged mice*

4:10 PM – 4:20 PM 43. Kaitlyn Lewis, Calico, *Cancer resistance in the long-lived naked mole-rat*

4:20 PM – 4:30 PM 44. Shih-Yin Tsai, Buck Institute for Research on Aging, *The role of 4E-BP1 in diet- and aging-induced metabolic stresses*

4:30 PM – 4:40 PM 45. Stephanie Matyi, University of Oklahoma, *Calorie restriction significantly alters the intestinal microbiota of mice*

4:40 PM – 4:50 PM Q & A Panel

5:00 PM – 7:00 PM **Poster Session and Reception 1**

7:00 PM – 10:00 PM AGE Board of Directors Meeting (COVE)
Student Data Blitz (HARBOR ROOM)

**Saturdays June 4**

8:00 AM – 9:00 AM Continental Breakfast

**Session 5: Mechanisms of Cellular Homeostasis**
Chair: Alex Mendenhall

9:00 AM - 9:15 AM 46. Carissa Perez Olsen, Fred Hutchinson Cancer Research Center, *The role of membrane composition in aging*

9:15 AM - 9:30 AM 47. Ana Maria Cuervo, Albert Einstein College of Medicine, *Contribution of selective autophagy to proteostasis in aging*

9:30 AM - 9:45 AM 48. Kelvin Davies, USC, *Impairment of adaptive homeostasis*

9:45 AM - 10:00 AM 49. Aric Rogers, Mountain Desert Island Biological Laboratory, *Enhanced ER stress resistance mediated by restricting translation initiation: A novel role for HSF-1*

10:00 AM – 10:20 AM Q & A Panel

10:20 AM – 10:40 AM Coffee Break and Networking
Session 6: Interventions to promote healthy aging  
Chair: Seung-Jae Lee

10 AM 50. Peter Rabinovitch, University of Washington, **Transient treatments that produce persistent rejuvenation. The Holy Grail of interventions to promote healthy aging?**

10 AM 51. Cathy Slack, University College London, **BSRA Korenchevsky speaker, Repurposing Ras pathway inhibitors: from anti-cancer to anti-ageing**

10:40 AM 52. Dudley Lamming, University of Wisconsin, **Decreased consumption of specific macronutrients promotes metabolic health and longevity**

10:55 AM 53. Pankaj Kapahi, Buck Institute for Research on Aging, **Identifying natural genetic variants that regulate healthspan versus lifespan in D. melanogaster**

11:40 AM – 12:00 PM Q & A Panel

12:00 PM – 1:20 PM **Denham Harman Award Lecture and Luncheon (Harbor Room)**  
Lifetime Achievement Award  
Arlan Richardson: opening introduction for awardee

54. Holly Van Remmen, Oklahoma Medical Research Foundation, **The role of mitochondria and oxidative stress in aging and sarcopenia**

Session 7: New pathways and emerging concepts in aging  
Chair: Seung Jae Lee

1:30 PM 55. Alex Mendenhall, University of Washington, **Why genetically identical animals age differently**

1:45 PM - 2:00 PM 56. Weiwei Dang, Baylor School of Medicine, **HSP70 chaperones and vacuolar proteinases regulate Sir2 stability in aged yeast cells**

2:00 PM - 2:15 PM 57. Kylie Kavanaugh, Wake Forest, **Vulnerability to intestinal barrier dysfunction and insulin resistance in old sarcopenic monkeys**

2:15 PM - 2:30 PM 58. Kathleen Fischer, UAB, **The impact of dietary restriction using a formulated diet on growth, reproduction, and survival in the short-lived killifish (Nothobranchius furzeri).**

2:30 PM - 2:45 PM 59. Bess Frost, Barshop Institute, **Identification of Alzheimer’s Disease as a Neurodegenerative Laminopathy**

2:45 PM – 3:05 PM Q & A Panel

3:05 PM – 3:25 PM Coffee Break and Networking
Session 8: AFAR Symposium  
Chair: Yousin Suh

3:25 PM – 3:40 PM 60. Christin Burd, Ohio State, Examining the relationship between T-cell p16^{INK4a} Levels, immunosenescence and geriatric assessments in patients with multiple myeloma


3:55 PM – 4:10 PM 62. Ashley Webb, Brown University, Elucidating the transcriptional networks that preserve stem cells during aging

4:10 PM - 4:25 PM 63. Adam Hughes, University of Utah, Dissecting the link between mitochondria and lysosomes in aging
4:25 PM – 4:45 PM Q & A Panel

4:45 PM – 6:00 PM AGE General Membership Meeting

6:00 PM – 8:00 PM Poster Session and Reception II

Sunday June 5th

7:00 AM -8:00 AM Continental Breakfast

Session 9: AGE Fellows Symposium  
Chair: Holly Brown-Borg

8:00 AM – 8:10 AM Introduction of new AGE Fellows

8:10 AM – 8:30 AM 64. Janko Nikolich-Zugich, University of Arizona, Are the rules governing immune defense age-sensitive?

8:30 AM – 8:50 AM 65. James F. Nelson, Barshop Institute, Sex differences in age-specific mortality in genetically heterogeneous mice: Influence of age and environment

8:50 AM – 9:10 AM 66. LaDora Thompson, University of Minnesota, Muscle Dysfunction and Frailty – The Role of Protein Quantity and Quality

9:10 AM – 9:30 AM 67. Rochelle Buffenstein, Calico, Pushing the limits; robust proteostasis in the long-lived naked mole-rat
9:30 AM – 9:45 AM Q & A Panel

9:45 AM – 10:05 AM Coffee Break and Networking
Session 10: The biology of human aging.
Chair: Scott Leiser

10:05 AM - 10:25 AM 68. Yousin Suh, Albert Einstein College of Medicine, **Enhancer mechanisms in aging and disease**

10:25 AM - 10:45 AM 69. Jing Dong Han, Chinese Academy of Science- MPG Partner Institute, Shanghai, **A systems approach to reverse engineer lifespan extension by dietary restriction**

10:45 AM – 11:05 AM 70. Evan Hadley, NIH, **CALERIE: A two-year randomized controlled trial of human caloric restriction: feasibility and effects on predictors of health span and longevity**

11:05 AM – 11:25 AM 71. Joan Mannick, Novartis, **Developing mTOR inhibitors for the treatment of aging-related conditions in humans**

11:25 AM – 11:40 AM Q & A Panel

11:40 AM – 12:00PM Coffee Break and Networking

Session 11: James Joseph Address

12:00 PM – 1:00 PM Introduction by Donald Ingram

72. Barbara Shukitt-Hale, Tufts, **Berry fruit can improve age-associated neuronal and cognitive deficits: from the laboratory to the clinic**

1:00 PM - 1:30 PM **Awards Ceremony and Close of Meeting**

1:30 PM GENERALMEETINGADJOURNS

AGE Trainee Chapter Events: Sunday June 5

1:30 PM - 2:30 PM **Trainee Chapter Networking Luncheon**

2:30 PM – 4:00 PM **Career Development Panel** Chair: Matt Kaeberlein **Panel participants:**
Alex Mendenhall, Assistant Professor, University of Washington
Scott Leiser, Assistant Professor, University of Michigan
Carissa Perez Olsen, Assistant Professor, Fred Hutchinson Cancer Research Center
Jing-Dong Han, Chinese Academy of Science, Shanghai
Bita Nakhai, NIA

4:00 PM – 8:00 PM **Trainee Chapter Social, Pike Brewery**