The USC-Buck Nathan Shock Center of Excellence in Research in the Biology of Aging

*Town Hall*

*Feb 24, 2021*

Administrative/Program Enrichment Core – Sean Curran/Gordon Lithgow

Geroscience Technology Core – Sean Curran/Gordon Lithgow

Research Development Core – Julie Andersen/Kelvin Davies

Cell Senescence and Beyond Core – Judy Campisi/Birgit Schilling

Genomic Translation Across Species Core – Em Arpawong/Eileen Crimmins

Application Process/Funding – Tara Riley

Q&A
Nathan Shock Centers of Excellence
Nathan Shock was known as the "father of gerontology" and head of the Gerontology Research Center of the National Institutes of Health for nearly 35 years - until 1976. He then became scientist emeritus at the center.

He was one of the first scientists to foresee the importance of using longitudinal methods to study human aging. He clocked the rate at which different organs of the body age and showed that different individuals age at different rates.

He was the author of more than 300 journal articles and books, and detailed his research in Scientific American 206:100-10, 1962.
Nathan Shock Centers of Excellence in the Basic Biology of Aging

What do the Nathan Shock Centers do?

• The Centers provide leadership in the pursuit of basic research into the biology of aging. They do so through a Research Development Core which administers small start-up funds locally, and organizes national annual meetings to highlight specific areas of research.

• In addition, each Nathan Shock Center has several specialized cores that provide services to Shock Center members, as well as for-fee services to the community at large. The cores are different in each Center, depending on the strengths of each Institution.
USC-Buck NSC is greater than the sum of its parts

Co-leaders:
Sean Curran and Gordon Lithgow
Organization

- **Internal Advisory Board (IAB)**
- **Administrative/Program Enrichment Core (APEC)**
- **External Advisory Board (EAB)**

**Resource Cores (RCs)**
- Genomic Translation Across Species Core (GTASC)
- Cellular Senescence & Beyond Core (CSBC)
- Geroscience Technology Core (GTC)

- **Andersen/Davies**
- **Arpawong/Crimmins**
- **Campisi/Schilling**
- **Longo/Melov**
Invigorating the geroscience research community

Engage geroscience experts
Spark innovative geroscience research
Facilitate and foster new geroscience collaborations
Provide access to geroscience technology
Train the next generation of geroscience researchers
Provide geroscience project support
Administrative support

**Programmatic**
- Tara Riley
- Linda Hall/Gillian Miller

**Financial**
- Kira Harvath
- Sarah Lines

**Communication**
- Orli Belman
- Robin Snyder
Geroscience Technology Core

Co-leaders
Valter Longo and Simon Melov
## Core Pilots and Vouchers

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<th>Core Pilots and Vouchers</th>
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<tr>
<td>Mouse Phenotyping Core</td>
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<td>Biomarker Core</td>
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<td>Mitochondria Core</td>
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<td>Bioinformatics Core (NSC-GTASC)</td>
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Funding for faculty partnerships

https://gero.usc.edu/faculty/  https://www.buckinstitute.org/research/faculty/

**Single cell RNA seq** - 10X genomics

**Miniseq** – small genome sequencer (invertebrates, mitochondria, etc.)

**Model systems**: yeast, worm, fly, killifish, mouse, etc.

**Focused projects on**: mitochondrial peptides, diet, air pollution, multiscale imaging, sexual dimorphism, etc.
https://usc buck nsc.org/