

# Sean P. Curran

University of Southern California

Davis School of Gerontology

3715 McClintock Avenue

Los Angeles, CA 90089-0191

Email: [spcurran@usc.edu](mailto:spcurran@usc.edu)

Professor | James E. Birren Chair in Gerontology

Vice Dean | Dean of Faculty and Research

---

## Education

- 2004 – 2010 Post-doctoral Research Fellow, Harvard Medical School, Genetics and Massachusetts General Hospital, Molecular Biology
- 1999 – 2004 Ph.D., Biochemistry and Molecular Biology, University of California, Los Angeles
- 1995 – 1999 B.S., Biochemistry, University of California, Los Angeles

## Professional Research and Teaching Positions

- 2022 – Present Professor | James E. Birren Chair in Gerontology  
Vice Dean | Dean of Faculty and Research  
Leonard Davis School of Gerontology  
Dornsife College of Letters, Arts, and Sciences, Molecular and Comp Biology  
Keck School of Medicine, Norris Comprehensive Cancer Center
- 2020 – Present USC-Buck Nathan Shock Center of Excellence – *Codirector*  
University of Southern California
- 2018 – Present USC Center for Lifespan Health – *Director*  
University of Southern California
- 2018 – 2022 Leonard Davis School of Gerontology – *Associate Dean of Research*
- 2016 – 2022 University of Southern California – *Associate Professor*
- 2019 – 2020 Leonard Davis School of Gerontology – *Acting Vice Dean*
- 2016 – 2018 University of Southern California – *Assistant Dean of Research*
- 2010 – 2016 University of Southern California – *Assistant Professor*
- 2004 – 2010 *Postdoctoral research fellow*: Functional genomic and genetic identification of shared mechanisms of metabolism, development, and lifespan regulation in *C. elegans*.  
Advisor: Gary Ruvkun, Ph.D.  
Department of Genetics, Harvard Medical School  
Department of Molecular Biology, Massachusetts General Hospital
- 1999 – 2004 *Doctoral Research*: Mitochondrial biogenesis: biochemical characterization of the mechanisms regulating protein import in *S. cerevisiae*.  
Advisor: Carla M. Koehler, Ph.D.  
Department of Chemistry and Biochemistry, University of California, Los Angeles
- 1998 – 1999 *Lab Technician*: Transcriptional responses during fulminant hepatic failure in the brain of *R. norvegicus* and *M. musculus*.  
Advisor: Jody E. Margulies, Ph.D.  
Department of Surgery, Cedars-Sinai Medical Center, Los Angeles

## Awards & Honors:

- 2021 2020 Ethel Percy Andrus Prize
- 2020 Vincent Cristofalo Rising Star Award in Aging Research (AFAR)
- 2019 USC Provost's Mentoring Award
- 2016 Fellow, Gerontological Society of America (GSA)
- 2015 Ewald W. Busse Research Award (Duke University – Center for Aging and Human

Development, award is only given once every four years)  
 2015 Hanson-Thorell Family Research Award (USC Davis School of Gerontology)  
 2014 Nathan Shock New Investigator Award, Gerontological Society of America (GSA)  
 2012 Andrew W. Mellon Foundation Mentoring Award  
 2012 Outstanding Faculty Award - USC Davis School of Gerontology  
 2011 Ellison Medical Foundation – Young Scholar in Aging  
 2009 Glenn Award for research in the biological mechanisms of lifespan regulation, Glenn Foundation  
 2003 Dissertation year fellowship, UCLA  
 2003 John M. Jordan Memorial Award, UCLA  
 2002 Jacobs Award, UCLA  
 2001 Regents award, UCLA  
 2000 Excellence in teaching award, UCLA  
 1998 Gold Family Foundation Scholarship in Biochemistry, UCLA

**Patents:**

U.S. Patent Application No. 61/940,167 - Title: MARKERS FOR LIPID METABOLISM  
 U.S. Patent Application No. (pending) – Title: WDR23 AS A TARGET FOR CANCER THERAPY

**Research Grants (only during independent career)**

**Active Research Funding**

2023 – 2028 Hevolution Foundation HF-AGE-004  
 “RNA editing mediates age-related responses to mitochondrial dysfunction”  
 Role: PI

2022 – 2027 NIA R25 AG076400  
 “Gerontology Enriching MSTEM (GEMSTEM) to Enhance Diversity in Aging”  
 Role: Contact MPI

2016 – 2026 NIA T32 AG052374  
 “USC-Buck Geroscience Training in the Biology of Aging”  
 Role: PI

2020 – 2025 NIA P30 AG068345  
 “The University of Southern California and Buck Institute Nathan Shock Center”  
 Role: MPI

2019 - 2024 NIA K07 AG060268  
 “Convergent approaches to lifespan health”  
 Role: PI

2019 – 2024 NIA RF1 AG063947  
 “Characterizing WDR23 in Alzheimer's disease pathology”  
 Role: PI

2019 – 2024 NIA R01 AG058610  
 “Age-dependent SKN-1/NRF cytoprotection at the cost of metabolic homeostasis”  
 Role: PI

**Completed Research Funding**

2020 – 2021 NCI P30 CA014089-45S3 - TOTAL DIRECT COSTS: \$90,898  
 “New interdisciplinary research on cancer and aging”  
 Role: co-Project Leader

- 2014 – 2020 NIGMS R01 GM109028  
“Novel roles for Maf1 as a central regulator of lipid homeostasis”  
PI: Sean Curran
- 2017 - 2019 NIGMS R01 GM109028-S1 (Diversity supplement)  
“Novel roles for Maf1 as a central regulator of lipid homeostasis”  
PI: Sean Curran
- 2014 - 2016 American Heart Association Grant 14GRNT20380731  
“Maf1 as a central regulator of diet-induced obesity”  
PI: Sean Curran
- 2013 - 2015 American Federation for Aging Research  
“Characterization of novel skn-1/Nrf activation pathways that influence lifespan”  
PI: Sean Curran
- 2011 - 2015 Ellison Medical Foundation AG-NS-0748-11  
“Molecular Genetics of Exceptional Longevity and Survival”  
PI: Sean Curran
- 2011 - 2014 NIA R00 AG032308  
“Evolutionarily conserved mechanisms of lifespan regulation”  
PI: Sean Curran
- 2011 - 2012 Zumberg Research Grant  
“Identification of O-GlcNAc Modified Proteins”  
coPI: Sean Curran, coPI: Matthew Pratt (Chemistry, USC)
- 2011 - 2012 SCEHSC Research Pilot Grant  
“Identification of environmental toxins and natural products that enhance cell survival”  
PI: Sean Curran
- 2008 - 2010 NIA K99 AG032308  
“Evolutionarily conserved mechanisms of lifespan regulation”  
PI: Sean Curran
- 2005 - 2008 NIA F32 AG026207  
National Research Service Award  
“Neuronal outputs regulated by insulin signaling”  
PI: Sean Curran

**Select Peer Reviewed Publications (only during independent career)**

**Peer-reviewed Research Articles:** (Trainees of my laboratory underlined)

*Pending Publications (submitted and under review)*

Turner CD, Ramos CM, Nair T, Gorla V, Gaglio M, and Curran SP – SKN-1 isoform-c is essential for *C. elegans* development. (under review @microPublication)

Turner CD and **Curran SP** – Constitutive activation of SKN-1 interferes with insulin signaling pathway longevity (under review @Genetics)

Stuhr NL, Ramos CM, Turner CD, **Curran SP**. Dietary lipid composition influences antipathy behavior in *C. elegans* (under editorial review)

Nair T, Weathers BA, Stuhr NL, Nahn JD, Curran SP. Serotonin deficiency from constitutive SKN-1 activation drives a pathogen apathy state (*under editorial review*)

Duangjan C, Spatola BN, Curran SP. Hepatic WDR23 proteostasis mediates insulin clearance by regulating insulin-degrading enzyme activity (*under review @Geroscience*)

Accepted & Published

52. Turner CD\*, Ramos CM\*, **Curran SP** - Disrupting the SKN-1 homeostat: mechanistic insights and phenotypic outcomes (in press @*Frontiers in Aging*)
51. Duangjan C, Irwin R, Curran SP - Loss of the WDR23 proteostasis impacts mitochondrial homeostasis in the mouse brain. *Cell Signal*. 2024 Jan 17;116:111061. doi: 10.1016/j.cellsig.2024.111061. PMID: 38242270
50. Liu J, Duangjan C, Irwin R, Curran SP - WDR23 mediates NRF2 proteostasis and cytoprotective capacity in the hippocampus *Mech Ageing Dev*. 2024 Jan 30:111914. doi: 10.1016/j.mad.2024.111914. PMID: 38301772
49. Turner CD, Stuhr NL, Ramos CM, Van Camp BT, Curran SP. A dicer-related helicase opposes the age-related pathology from SKN-1 activation in ASI neurons. *Proc Natl Acad Sci U S A*. 2023 Dec 26;120(52):e2308565120. doi: 10.1073/pnas.2308565120. Epub 2023 Dec 19. PMID: 38113255 PMCID: PMC10756303
48. Ramos CM and Curran SP. Comparative analysis of the molecular and physiological consequences of constitutive SKN-1 activation. *Geroscience*. 2023 Sep 26. doi: 10.1007/s11357-023-00937-9. Online ahead of print. PMID: 37751046
47. Stuhr NL and Curran SP. Different methods of killing bacteria diets differentially influence *Caenorhabditis elegans* physiology. *MicroPubl Biol*. 2023 Sep 7;2023:10.17912/micropub.biology.000902. doi: 10.17912/micropub.biology.000902. eCollection 2023. PMID: 37746065
46. Cedillo L, Ahsan FM, Li S, Stuhr NL, Zhou Y, Zhang Y, Adedoja A, Murphy LM, Yerevanian A, Emans S, Dao K, Li Z, Peterson ND, Watrous J, Jain M, Das S, Pukkila-Worley R, **Curran SP**, Soukas AA. Ether lipid biosynthesis promotes lifespan extension and enables diverse pro-longevity paradigms in *Caenorhabditis elegans*. *Elife*. 2023 Aug 22;12:e82210. doi: 10.7554/eLife.82210. PMID: 37606250
45. Yerevanian A, Murphy LM, Emans S, Zhou Y, Ahsan FM, Baker D, Li S, Adedoja A, Cedillo L, Stuhr NL, Gnanatheepam E, Dao K, Jain M, **Curran SP**, Georgakoudi I, Soukas AA. Riboflavin depletion promotes longevity and metabolic hormesis in *Caenorhabditis elegans*. *Aging Cell*. 2022 Sep 30:e13718. doi: 10.1111/accel.13718. PMID: 36181246
44. Stuhr NL, Nhan JD, Hammerquist AM, Van Camp B, Reoyo D, Curran SP. Rapid Lipid Quantification in *Caenorhabditis elegans* by Oil Red O and Nile Red Staining *Bio Protoc*. 2022 Mar 5;12(5):e4340. doi: 10.21769/BioProtoc.4340. PMID: 35592599 PMCID: PMC8918222
43. Villa O, Stuhr NL, Yen C-A, Crimmins EM, Arpawong TE, Curran SP. Genetic variation in ALDH4A1 is associated with muscle health over the lifespan and across species. *Elife*. 2022 Apr 26;11:e74308. doi: 10.7554/eLife.74308. PMID: 35470798 PMCID: PMC9106327 DOI: 10.7554/eLife.74308
42. Raffaele M, Kovacovicova K, Biagini T, Lo Re O, Frohlich J, Giallongo S, Nhan JD, Giannone AG, Cabibi D, Ivanov M, Tonchev AB, Mistrik M, Lacey M, Dzubak P, Gurska S, Hajdуч M, Bartek J, Mazza T, Micale V, **Curran SP**, Vinciguerra M. Nociceptin/orphanin FQ opioid receptor (NOP) selective ligand MCOPPB links anxiolytic and senolytic effects. *Geroscience*. 2022 Feb;44(1):463-483. doi: 10.1007/s11357-021-00487-y. Epub 2021 Nov 24. PMID: 34820764

41. Duangjan C and **Curran SP**. Oolonghomobisflavans from *Camellia sinensis* increase *Caenorhabditis elegans* lifespan and healthspan. *Geroscience*. 2022 Feb;44(1):533-545. doi: 10.1007/s11357-021-00462-7. Epub 2021 Oct 12. PMID: 34637108
40. **Curran SP**, Lithgow GJ, Verdin E, Cohen P. University of Southern California and buck institute nathan shock center: multidimensional models of aging. *Geroscience*. 2021 Jul 16. doi: 10.1007/s11357-021-00416-z. Online ahead of print. PMID: 34269983
39. Hammerquist AM, Yen C-A, **Curran SP**. Analysis of *C. elegans* sperm number, size, activation and mitochondrial content. *Bio Protoc*. 2021 Jun 5;11(11):e4035. doi: 10.21769/BioProtoc.4035. eCollection 2021 Jun 5. PMID: 34250202
38. Hammerquist AM, Escorcía W, **Curran SP**. Maf1 regulates intracellular lipid homeostasis in response to DNA damage response activation. *Mol Biol Cell*. 2021 May 15;32(11):1086-1093. doi: 10.1091/mbc.E20-06-0378. Epub 2021 Mar 31. PMID: 33788576 PMCID: PMC8351542
37. Yen C-A and **Curran SP**. Incomplete proline catabolism drives premature sperm aging. *Aging Cell*. 2021 Feb;20(2):e13308. doi: 10.1111/accel.13308. Epub 2021 Jan 21. PMID: 33480139
36. Landis GN, Doherty DV, Yen C-A, Wang L, Fan Y, Wang I, Vroegop J, Wang T, Wu J, Patel P, Lee S, Abdelmesieh M, Shen J, Promislow DEL, **Curran SP**, Tower J. Metabolic Signatures of Life Span Regulated by Mating, Sex Peptide and Mifepristone/RU486 in Female *Drosophila melanogaster*. *J Gerontol A Biol Sci Med Sci*. 2021 Jan 18;76(2):195-204. doi: 10.1093/gerona/glaa164. PMID: 32648907 PMCID: PMC7812429
35. Hammerquist AM, **Curran SP**. Roles for the RNA polymerase III regulator MAFR-1 in regulating sperm quality in *Caenorhabditis elegans*. *Sci Rep*. 2020 Nov 9;10(1):19367. doi: 10.1038/s41598-020-76423-5. PMID: 33168938
34. Stuhr NL, **Curran SP**. Bacterial diets differentially alter lifespan and healthspan trajectories in *C. elegans*. *Commun Biol*. 2020 Nov 6;3(1):653. doi: 10.1038/s42003-020-01379-1. PMID: 33159120
33. Nhan JD, **Curran SP**. Metabolic Assessment of Lipid Abundance and Distribution. *Methods Mol Biol*. 2020; 2144:103-110. doi: 10.1007/978-1-0716-0592-9\_9. PMID: 32410028
32. Yen CA, **Curran SP**. Methods for Assessing Fertility in *C. elegans* from a Single Population. *Methods Mol Biol*. 2020; 2144:91-102. doi: 10.1007/978-1-0716-0592-9\_8. PMID: 32410027
31. Yen C-A, Ruter DL, Turner CD, Pang S, **Curran SP**. Loss of flavin adenine dinucleotide (FAD) impairs sperm function and male reproductive advantage in *C. elegans*. *Elife*. 2020 Feb 5;9. pii: e52899. doi: 10.7554/eLife.52899. PMID:32022684
30. Nhan JD, Turner CD, Anderson SM, Yen C-A, Dalton HM, Cheesman HK, Ruter DL, Naresh NU, Haynes CM, Soukas AA, Pukkila-Worley R, and **Curran SP**. Redirection of SKN-1 abates the negative metabolic outcomes of a perceived pathogen infection. *Proc Natl Acad Sci U S A*. 2019 Oct 29;116(44):22322-22330. doi: 10.1073/pnas.1909666116. Epub 2019 Oct 14. PMID: 31611372
29. Spatola BN, Lo JY, Wang B, **Curran SP**. Nuclear and cytoplasmic WDR-23 isoforms mediate differential effects on GEN-1 and SKN-1 substrates. *Sci Rep*. 2019 Aug 13;9(1):11783. doi: 10.1038/s41598-019-48286-y. PMID: 31409866
28. Haghani A, Dalton HM, Safi N, Shirmohammadi F, Sioutas C, Morgan TE, Finch CE, **Curran SP**. Air pollution alters *Caenorhabditis elegans* development and lifespan: responses to traffic-related nanoparticulate matter (nPM). *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*. 2019 Mar 4. pii: glz063. doi: 10.1093/gerona/glz063.

27. Dalton HM, **Curran SP**. Hypodermal responses to protein synthesis inhibition induce systemic developmental arrest and AMPK-dependent survival in *Caenorhabditis elegans*. *PLoS Genet*. 2018 Jul 18;14(7):e1007520. doi: 10.1371/journal.pgen.1007520. eCollection 2018 Jul. PMID: 30020921
26. Escorcía W, Rueter DL, Nhan J, **Curran SP**. Quantification and evaluation of tissue distribution of lipids in *Caenorhabditis elegans* by Nile red and Oil red O staining. *J Vis Exp*. 2018 Mar 5;(133). doi: 10.3791/57352.PMID: 29553519
25. Webster CM, Pino EC, Carr CE, Wu L, Zhou B, Cedillo L, Kacergis MC, **Curran SP**, Soukas AA. Genome-wide RNAi Screen for Fat Regulatory Genes in *C. elegans* Identifies a Proteostasis-AMPK Axis Critical for Starvation Survival. *Cell Rep*. 2017 Jul 18;20(3):627-640. doi: 10.1016/j.celrep.2017.06.068. PMID: 28723566
24. Lo JY, Spatola BN, **Curran SP**. WDR23 regulates NRF2 independently of KEAP1. *PLoS Genet*. 2017 Apr 28;13(4):e1006762. doi: 10.1371/journal.pgen.1006762. eCollection 2017 Apr. PMID: 28453520
23. Pradhan A, Hammerquist AM, Khanna A, **Curran SP**. The C-box domain regulates MAF1 activity and stability. *J Mol Biol*. 2017 Jan 20;429(2):192-207. doi: 10.1016/j.jmb.2016.12.012. Epub 2016 Dec 13. PMID:27986570
22. Lynn DA and **Curran SP**. Integration of metabolic signals. *C. elegans* aging. Edited by Anders Olsen and Matthew Gill. 2016 Dec 7 Springer Publishing Company.
21. Yen CA, **Curran SP**. Gene-diet interactions and aging in *C. elegans*. *Exp Gerontol*. 2016 Feb 26. pii: S0531-5565(16)30053-5. doi: 10.1016/j.exger.2016.02.012.
20. Lynn DA, Dalton HM, Sowa JN, Wang MC, Soukas AA, **Curran SP**. Omega-3 and -6 fatty acids allocate somatic and germline lipids to ensure fitness during nutrient and oxidative stress in *Caenorhabditis elegans*. *Proc Natl Acad Sci U S A*. 2015 Dec 15;112(50):15378-83. doi: 10.1073/pnas.1514012112. Epub 2015 Nov 30. PMCID: PMC4687584
19. Khanna A, Pradhan A and **Curran SP**. Emerging Roles for Maf1 beyond the Regulation of RNA Polymerase III Activity. *J Mol Biol*. 2015 Aug 14;427(16):2577-85. doi: 10.1016/j.jmb.2015.06.022. Epub 2015 Jul 11. PMID: 26173035
18. Lynn DA and **Curran SP**. The SKN-1 hunger games: May the odds be ever in your favor. *Worm*. 2015 Aug 24;4(3):e1078959. doi: 10.1080/21624054.2015.1078959. eCollection 2015 Jul-Sep. PMID: 26430571
17. Khanna A, Johnson D, **Curran SP**. Conserved roles for Maf1 in the regulation of reproduction and lipid homeostasis. *Cell Reports*. 2014 Dec 24 10.1016/j.celrep.2014.11.035
16. Pang S\*, Lynn D\*, Lo JY, Paek J, **Curran SP**. SKN-1/Nrf2 couples proline catabolism with lipid metabolism during nutrient deprivation. *Nature Communications*. 2014 Oct 6;5:5048.
15. **Curran SP**. Essential Genes and Lifespan. Annual Review of Gerontology and Geriatrics, Volume 34, 2014 Mar 20: Genetics, edited by Dr. Richard Sprott. Springer Publishing Company. ISBN-13: 9780826199652
14. Pang S and **Curran SP**. Adaptive capacity to bacterial diet modulates aging in *C. elegans*. *Cell Metab*. 2014 Jan 14; 19(1):221-31
13. Tacutu R\*, Shore DE\*, Budovsky A, de Magalhaes JP, Ruvkun G, Fraifeld VE, and Curran SP. Prediction of *C. elegans* longevity genes by human and worm longevity networks *PLoS One*. 2012;7(10):e48282. doi: 10.1371/journal.pone.0048282.

12. Paek J, Lo JY, Narasimhan SD, Nguyen TN, Glover-Cutter K, Robida-Stubbs S, Suzuki T, Yamamoto M, Blackwell TK, Curran SP. Mitochondrial SKN-1/Nrf Mediates a Conserved Starvation Response. *Cell Metab.* 2012 Oct 3;16(4):526-37.
11. Pang S, Curran SP. 2012. Longevity and the long arm of epigenetics: acquired parental marks influence lifespan across several generations. *Bioessays.* 2012 Aug;34(8):652-4. doi: 10.1002/bies.201200046. Epub 2012 Jun 4.
10. Curran SP, Wu X, Riedel CG, Ruvkun G. A soma-to-germline transformation in long-lived *Caenorhabditis elegans* mutants. *Nature.* 2009 Jun 25;459(7250):1079-84. doi: 10.1038/nature08106. Epub 2009 Jun 7. PMID:19506556
9. Curran SP, Ruvkun G. Lifespan regulation by evolutionarily conserved genes essential for viability. *PLoS Genet.* 2007 Apr 6;3(4):e56. Epub 2007 Feb 27. PMID: 17411345
8. Likić VA, Perry A, Hulett J, Derby M, Traven A, Waller RF, Keeling PJ, Koehler CM, Curran SP, Gooley PR, Lithgow T. Patterns that define the four domains conserved in known and novel isoforms of the protein import receptor Tom20. *J Mol Biol.* 2005 Mar 18;347(1):81-93. Epub 2005 Jan 28. PMID:15733919
7. Curran SP, Leverich EP, Koehler CM, Larsen PL. Defective mitochondrial protein translocation precludes normal *Caenorhabditis elegans* development. *J Biol Chem.* 2004 Dec 24;279(52):54655-62. Epub 2004 Oct 13. PMID: 15485840
6. Curran SP, Leuenberger D, Leverich EP, Hwang DK, Beverly KN, Koehler CM. The role of Hot13p and redox chemistry in the mitochondrial TIM22 import pathway. *J Biol Chem.* 2004 Oct 15;279(42):43744-51. Epub 2004 Aug 4. PMID: 15294910
5. Leuenberger D, Curran SP, Wong D, Koehler CM. The role of Tim9p in the assembly of the TIM22 import complexes. *Traffic.* 2003 Mar;4(3):144-52. PMID: 12656987
4. Curran SP, Leuenberger D, Schmidt E, Koehler CM. The role of the Tim8p-Tim13p complex in a conserved import pathway for mitochondrial polytopic inner membrane proteins. *J Cell Biol.* 2002 Sep 16;158(6):1017-27. Epub 2002 Sep 9. PMID:12221072
3. Roesch K, Curran SP, Tranebjaerg L, Koehler CM. Human deafness dystonia syndrome is caused by a defect in assembly of the DDP1/TIMM8a-TIMM13 complex. *Hum Mol Genet.* 2002 Mar 1;11(5):477-86. PMID:11875042
2. Curran SP, Leuenberger D, Oppliger W, Koehler CM. The Tim9p-Tim10p complex binds to the transmembrane domains of the ADP/ATP carrier. *EMBO J.* 2002 Mar 1;21(5):942-53. PMID:11867522
1. Murphy MP, Leuenberger D, Curran SP, Oppliger W, Koehler CM. The essential function of the small Tim proteins in the TIM22 import pathway does not depend on formation of the soluble 70-kilodalton complex. *Mol Cell Biol.* 2001 Sep;21(18):6132-8. PMID: 11509656

## **Professional Activities**

### **Advisory panels**

NIH Cellular Mechanisms of Aging and Development (CMAD) Study Section (standing member 2020-present)  
 NIH Special Emphasis Panel Study Section (2017, 2018, 2022)  
 National Science Foundation GRFP review panel (2017, 2020)  
 National Science Foundation grant review (*ad hoc*, 2015)  
 American Federation of Aging Research, National Scientific Advisory Council (NSAC) (2015, 2016, 2017)  
 Executive Board – Gerontological Society of America (GSA) Biology Section (2014-present)

Executive Board – California Council on Gerontology & Geriatrics (CCGG) (2014-2017)  
NIH, Xenobiotic and Nutrient Disposition and Action (XNDA) Study Section (2015, 2016)  
NIH, Cellular Mechanisms of Aging and Development (CMAD) Study Section (2015)  
Grant Review Netherlands Organization for Scientific Research (NWO)  
Grant Review Israel Science Foundation – Life Sciences and Medicine  
Grant Review Diabetes UK - United Kingdom

### **Editorial Boards**

Frontiers in Genetics, Associate Editor (2021 – present)  
Free Radical Biology and Medicine, Editor (2020 – present)  
GeroScience, Associate Editor (2019 – present)  
PLoS One, Academic Editor (2016 – present)  
Nutrition and Healthy Aging, Associate Editor (2015 – present)  
Experimental Gerontology (Section Editor 2017 – present)  
PLoS Genetics, handling editor (ad hoc 2016)  
eLife, handling editor (*ad hoc* 2017, 2018)

### **Professional Memberships**

Gerontological Society of America (GSA) (member 2010 – present, Fellow 2017)  
American Society of Cell Biology (ASCB) (2002 – present)  
Genetics Society of America (GSA) (2002 – present)  
American Society of Biochemistry and Molecular Biology (ASBMB) (2004 – present)  
American Heart Association

### **Academic Service and Administration:**

2023 – Present USC University Committee of Academic Review (UCAR)  
2022 – Present USC University Academic Planning Committee (member)  
2017, 2018, 2020, 2022(x2) USC Davis School of Gerontology Faculty Search Committee (chair)  
Successful recruitment of (Benayoun, Sanabria, Hill, Cortes)  
2020 – Present USC Conflict of Interest in Research Committee (CIRC), Chair - University Park Campus  
2020 – Present USC Committee for Research Integrity  
2020 – Present USC COVID-19 Response Research Restart, Coordinator, School of Gerontology  
2019 – Present USC Leonard Davis School Personnel Committee, Chair  
2019 – Present USC Office of Research – Research Council, Leonard Davis School Representative  
2018 – Present USC Leonard Davis School Diversity Committee  
2016 – Present Leonard Davis School of Gerontology, Dean's Executive Committee  
2016 – Present USC Davis School Academic Advancement Forum, Chair  
2014 – Present USC Davis School of Gerontology Biology of Aging Ph.D. Program, Executive Director  
2012 – Present USC Davis School of Gerontology Undergraduate Curriculum Committee  
2016 – 2017 USC Committee on Faculty Environment and Employment  
2016 – 2017 USC Center for Work and Family Life  
2013 – 2018 USC Leonard Davis School Faculty Council, Chair (2017-2018)  
2012 – 2018 USC Academic Senate, Senator  
  
2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023 USC Undergraduate Research Symposium for Creative and Scholarly Work, Section Lead  
(biological sciences section)  
  
2013, 2014, 2015 Dornsife College of Letters, Arts and Sciences Admissions Trustee Scholarship Selection  
2013 Scientific Organizer, USC Gerontology WHIA Symposium  
2012 – 2014 USC CMB Training grant executive committee 5T32GM067587-10

### **Professional Service:**

2020 – Present NIH Cellular Mechanisms of Aging and Development (CMAD) Study Section, standing member



2013 – Present Gerontological Society Annual Meeting, scientific program abstract reviewer, Biological Sciences section  
 2018 – 2020 GSA (Genetics) Child Care Support at Conferences Committee  
 2016 – 2020 GSA (Gero) Fellowship Committee (BS section rep)  
 2015 – 2018 GSA (Gero) Mentoring Committee (BS section rep)  
 2017 – 2018 Session chair, GSA Biological Science section  
 2015 – 2017 Board Member (2015-2017 term), California Council on Gerontology and Geriatrics  
 2014 Scientific Organizer, International *C. elegans* topics meeting: Aging, Metabolism, Stress, and Pathogenesis

**Teaching and Mentoring Experience:**

2023 GERO 300, GERO 599, GERO 614L, GERO 790  
 2022 BISC/GERO440, GERO 614L, GERO 790  
 2021 BISC/GERO440,  
**Course Development:** Curriculum for Undergraduate Minor in GeroScience Research, GERO300, GERO 301  
 2020 BISC/GERO440 (Course coordinator), GERO 614L, GERO 790, BISC502b  
 2019 BISC/GERO440, GERO592, GERO614L, GERO790, BISC502b  
 2018 BISC/GERO440, BISC502b, BIOC599  
 2017 BISC/GERO440, BISC502b  
 2016 BISC/GERO440, BISC502b, Freshman Colloquium Series  
 2015 BISC/GERO440, BISC490, Freshman Colloquium Series  
 2014 BISC/GERO440, BISC544, GERO602, BISC490  
 2013 BISC/GERO440, BISC502a, BISC490, Freshman Colloquium Series  
 2012 BISC/GERO440, BISC502a, BISC461, BISC490, Freshman Colloquium Series  
 2011 GERO510, BISC502b, BISC490, Freshman Colloquium Series  
 2011 – 2013 Founder and Mentor of USC iGEM team (Undergraduate research team)  
 2007 – 2010 Mentor graduate student David E. Shore, Harvard Medical School, BBS program, Boston, MA.  
 2007 Mentor visiting student Rachel Davidowitz from Cornell University, Ithaca, NY  
 2005 – 2008 Faculty, Marine Biological Laboratory, Woods Hole, MA Ellison Foundation, Molecular Biology of Aging Course  
 2002, 2003 CARE/NIH Summer Enrichment program, University of California, Los Angeles  
 1999 – 2000 Teaching Assistant, Department of Chemistry and Biochemistry, University of California, Los Angeles  
 1998 Teaching Assistant, School of Public Health, University of California, Los Angeles

**Trainees Supervised**

<u>Current Trainees</u>	<u>Previous Institution</u>	<u>Position in Curran Lab</u>	<u>Years Supervised</u>
Chatrawee Duangjan, PhD	Chulalongkorn University	Post-doctoral Fellow	2020-present (AFAR Fellowship)
Bennett Van Camp	University of Arizona	PhD Student	2021-present
Carmen Ramos	CalState Long Beach	PhD Student	2022-present
Brandy Weathers	California State Polytechnic University	PhD Student	2022-present
Tripti Nair, PhD	National Institute of Immunology in India	Post-doctoral Fellow	2022-present
Vandita Gorla	USC	GEMSTEM-Undergrad	2022-present
Lani Morales	USC	GEMSTEM-Undergrad	2022-present
Marisa Gaglio	USC	GEMSTEM-Undergrad	2022-present

Muiz Muqri	USC	GEMSTEM-Undergrad	2022-present
Zacki Muqri	USC	GEMSTEM-Undergrad	2022-present
Sierra Ledgerwood	UCLA	Lab Technician	2022-present
Jiahui Liu, PhD	USC	Post-doctoral Fellow	2023-present
Chris Turner, PhD	USC	Post-doctoral Fellow	2023-present (T32 trainee)

<u>Alumni</u>	<u>Previous Institution</u>	<u>Position in Curran Lab</u>	<u>Years Supervised</u>	<u>Subsequent Position</u>
Jennifer Paek	MIT	Post-Baccalaureate	2010-2012	Medical School
Nolan Sardesai	USC	Undergrad Researcher	2010 - 2012	Industry, SBO
Ellen Park <sup>4</sup>	USC	Undergrad Researcher	2010-2013	Pharmacy School
Tara Sardesai	USC	Undergrad Researcher	2010-2013	Medical School
Akshat Khanna	VIT University	PhD student	2011-2015	Research scientist
Tammy Nguyen	UC Davis	Masters student	2011-2013	Medical School
Percy Genyk <sup>4</sup>	USC	Post-Baccalaureate	2011-2013	Medical School
Kevin Le <sup>4</sup>	USC	Undergrad Researcher	2011	
Alexa Hudnut <sup>4</sup>	USC	Undergrad Researcher	2011	Graduate School
Indira Bhavsar <sup>4</sup>	USC	Undergrad Researcher	2011	Medical School
Dongzhu Wu	USC	Post Baccalaureate	2011	Graduate School
Eric Siryj <sup>4</sup>	USC	Undergrad Researcher	2012	Industry
Rebecca Gao <sup>4</sup>	USC	Undergrad Researcher	2012	Medical School
Rachel Kohan <sup>4</sup>	USC	Undergrad Researcher	2012	
Luke Quinto <sup>4</sup>	USC	Undergrad Researcher	2012	
Megan Bernstein <sup>2,3,5</sup>	USC	Undergrad Researcher	2012-2014	Medical student
Stephan Genyk <sup>5</sup>	USC	Undergrad Researcher	2012-2014	Industry
Shanshan Pang	Sichuan University	Post-doctoral fellow	2012-2014	Assistant Professor
Elaine Roh <sup>5</sup>	USC	Undergrad Researcher	2012-2014	Medical student
Nathan Nguyen	USC	Undergrad Researcher	2014-2015	Dental student
Jeremy Dietrich	USC	Undergrad Researcher	2013-2015	Industry
Jacqueline Lo <sup>1</sup>	UC Berkeley	PhD student	2011-2016	Post-doctoral research
Dana Lynn <sup>1,2</sup>	UIL Urbana- Champaign	PhD student	2012-2016	Post-doctoral research
Alvin Tran	USC	Masters	2015-2016	Medical School

Meagan He <sup>3</sup>	USC	Undergrad Researcher	2014-present	Graduate School
Maximilian Cabaj <sup>4</sup>	USC	Undergrad Researcher	2015-2016	Research Scientist, UCLA
Ajay Pradhan	Orebro University	Post-doctoral fellow	2015-2016	Assistant Professor
Jorden Favors	Howard University	Summer UG Fellow	2017	Graduate School
Deborah Adu	Howard University	Summer UG Fellow	2018	Continue UG
Elizabeth Ekpe	Howard University	Summer UG Fellow	2018	Continue UG
Shyam Hassan <sup>2</sup>	USC	Undergrad Researcher	2016-2018	Medical School
Maxwell Sandstrom	Macalester College	Post-bac researcher	2017-2018	EMT
Hans Dalton <sup>1</sup>	USC	PhD student	2012-2018	Post-doctoral research
Jahzheed Hancock	Howard University	Summer UG Fellow	2019	Continue UG
Sonia Frick	UC Davis	Summer UG Fellow	2019	Continue UG
Brett Spatola <sup>1,2</sup>	U Missouri	PhD student	2015-2019	RTPC faculty
Wilber Escorcía, PhD	USC	Post-doctoral fellow	2017-2019	Assistant Professor (TT)
Caitlin Climer	USC	Undergrad Researcher	2017-2019	Professional School
Chia-An Yen	UC San Diego	PhD student	2015-2020	Research Assoc. R&D - Thermo
Amy Hammerquist <sup>2</sup>	Linfield College	PhD student	2016-2021	Post-doc on hold to be caregiver
Oscar Li <sup>2</sup>	USC	Undergrad Researcher	2016-2021	Medical School
James Nhan	UC Santa Barbara	PhD student	2017-2021	Post-doctoral research
Jacqueline Gonzalez <sup>2</sup>	USC	Undergrad Researcher	2016-2019	Post-bac education
Meri Isayan	USC	Technician	2019-present	
Meri Isayan	USC	Undergrad Researcher	2019-2020	Graduate School
Aline Wu	USC	Undergrad Researcher	2020-2021	Continue UG
Matthew Donahue	UCLA	Research Technician	2020-2021	Industry
Aline Wu	USC	Undergrad Researcher	2020-2021	Continue UG
Hannah Lee	USC	Undergrad Researcher	2020-2021	Continue UG
Osvaldo Villa	University of Arizona	Masters student	2019-2022	Industry
Christian Turner	UC Riverside	PhD student	2017-2023	Postdoctoral research NIA F31 trainee
Ronald Irwin, PhD	USC	Sr. Research Scientist	2021-present	Industry
Nicole Stuhr	SUNY	PhD student	2018-present (F31 fellowship Y1)	Post-doctoral research
Nate Ackerman	USC	GEMSTEM-Undergrad	2022-2023	Continue UG

1. NIH Fellowship (F31) or NSF graduate student fellowship 2. Provost Fellowship 3. Rose Hills Fellowship 4. URAP fellowship 5. Undergraduate Research Symposium Winner

### **Selected Invited Oral Presentations**

**2023** Trinity College Dublin and TILDA, Dublin, Ireland. “Genetic variation in mitochondrial proline catabolism predicts health over the lifespan and across species”

Proteostasis consortium seminar series. “WDR-23 gets some SKN in the game of the proteostasis network”

Gerontological Society of America. “Mind the Gap: Education and training across the “gero-verse”

**2022** Drexel College of Medicine Department of Biochemistry and Molecular Biology, Philadelphia, PA, “Genetic variation in mitochondrial proline catabolism predicts health over the lifespan and across species

*C. elegans* Metabolism, Aging, Pathogenesis, Stress, and Small RNAs Meeting in Madison, WI “New diet-gene pairs get some SKN in the game”

Aegean 6th Int'l Conference on Model Hosts “New diet-gene pairs get some SKN in innate immunity”

Alzheimer’s Disease and Related Dementias Workshop. “*The Genetics of AD and How We Can Use It*”

**2021** Science of Alzheimer’s Disease and Related Dementias for Social Scientists. “*The Genetics of AD and How We Can Use It*”

2021 American Aging Association (AGE) Annual Hybrid Meeting. “Multidimensional Models of Aging”

**2020** Gerontological Society of America (GSA), “*Diet-based strategies, informed by genetics, to improve healthspan*”

The Allied Genetics Conference (TAGC), Genetics Society of America (Converted to online presentation due to COVID-19). “*Age-related loss of flavin adenine dinucleotide (FAD) impairs sperm function and male reproductive advantage in C. elegans*”

Aging Science Talks: Science for the Community (Science in Isolation Global online platform). “*Transcriptional redirection as a strategy to improve healthspan*”

**2019** American Aging Association Meeting, San Francisco, CA.

Korean Society of Cell and Molecular Biology Annual Meeting, Seoul, Korea

**2018** American Aging Association Meeting, Philadelphia, PA.

Gerontological Society of America (GSA) Meeting, Boston, MA

MGH Symposium, Massachusetts General Hospital, Boston, MA

- 2017** American Aging Association Meeting, Brooklyn NY.  
Barshop Bandera Conference on Aging, Bandera, TX  
World Congress - International Association of Gerontology and Geriatrics (IAGG) Meeting, San Francisco, CA
- 2016** OddPol Meeting, Ann Arbor Michigan - MAF1 activity and stability is regulated by the conserved C-box region  
*C. elegans* meeting on Aging Stress Pathogenesis and small RNAs - Lipid reallocation drives tradeoffs between reproduction and survival  
GSA – The Allied Genetics Conference (TAGC) - Omega-3 and -6 fatty acids allocate somatic and germline lipids to ensure fitness during nutrient and oxidative stress in *Caenorhabditis elegans*.  
Buck Institute - Lessons from the worm: novel insights for the Nrf2 cytoprotection pathways
- 2015** Baylor College of Medicine - Diet and stress induced resource reallocation impacts survival and reproduction in *C. elegans*  
Gerontological Society of America National Meeting, Orlando FL – Omega fatty acid regulate resource reallocation during stress.  
Duke Center for Aging – Ewald Busse Award Recipient Lecture  
Cold Spring Harbor Asia – Molecular Biology of Aging – WDR23 is an ancient regulator of mammalian cytoprotection  
Davis School of Gerontology – What’s Hot in Aging Symposium  
Davis School of Gerontology Colloquium Lecture - “Dietary adaptation, stress and aging: does your diet fit your genes?”  
University of Alabama – Birmingham. “Dietary adaptation, stress and aging: does your diet fit your genes?”  
Barshop Center on Aging Research and The University of Texas Health Sciences Center, San Antonio. “Dietary adaptation, stress and aging: does your diet fit your genes?”
- 2014** Gerontological Society of America National Meeting, Washington D.C. - 2014 Nathan Shock New Investigator Scientific Luncheon, “Dietary Adaptation and Aging: Does Your Diet Fit Your Genes?”  
2014 USC Buck Symposium on the Biology of Aging, Novato, CA. “Dietary adaptation, stress and aging: Does your diet fit your genes?”  
NIA sponsored talk at 2014 *C. elegans* Topics Meeting, “Adaptive capacity to bacterial diet modulates aging in *C. elegans*”.

*C. elegans* Topics Meeting: Aging, Metabolism, stress, pathogenesis and small RNAs. "Adaptive capacity to bacterial diet modulates aging in *C. elegans*"

Keystone Symposium – Aging – Pushing the limits of cellular quality control

- 2013** Gerontological Society of America National Meeting, New Orleans, LA, Chair, Metabolic Aging Session
- Gerontological Society of America National Meeting, New Orleans, LA, "Novel roles for mitochondrial SKN-1/Nrf in metabolic homeostasis"
- University of Washington, Seattle. "Novel Roles for mitochondrial SKN-1/Nrf in metabolic homeostasis"
- University of Texas Health Science Center. "Surprising roles for SKN-1/Nrf in metabolic homeostasis"
- Gordon Conference – Biology of Aging, Barga/Ilciocco Italy. "SKN-1/Nrf modulates steady state lipids and maintains metabolic homeostasis"
- 2012** 2<sup>nd</sup> International Conference – Genetics of Aging and Longevity – Moscow, Russia "A conserved starvation response mediated by non-canonical SKN-1/Nrf2 signaling"
- 2011** Cold Spring Harbor Asia – Inaugural Meeting on Development – Suzhou, China, "A conserved starvation response mediated by non-canonical SKN-1/Nrf2 signaling"
- Gerontological Society of America National Meeting, Boston, MA "A conserved starvation response mediated by non-canonical SKN-1/Nrf2 signaling"
- 2010** *C. elegans* "Topics" Meeting, covering Aging, Metabolism, Pathogenesis, Stress, and Small RNAs "A germline character of somatic cells in *C. elegans* longevity mutants"
- 2009** 17<sup>th</sup> International *C. elegans* Conference, "A soma-to-germline transformation in long-lived *Caenorhabditis elegans* mutants"
- 2008** Cold Spring Harbor, Molecular Genetics of Aging "A soma-to-germline transformation phenotype in endocrine signaling mutants"
- 2007** Buck Institute Symposium on Nutrient Signaling and Aging, "Soma-to-germline transformation as a mechanisms of lifespan extension"
- 16th International *C. elegans* Conference, Plenary Speaker, "Lifespan regulation by evolutionarily conserved genes essential for viability"
- 2004** American Society for Biochemistry and Molecular Biology Annual Meeting, "How defective mitochondrial biogenesis leads to developmental defects in *Caenorhabditis elegans*"
- 2001** EuroConference on Structural and Mechanistic Aspects of Protein Translocation, "Characterization of the Tiny Tims - "Molecular Chaperones of the IMS?"

3rd Cell Biology Symposium of the MDC on Protein Transport and Stability "Characterization of small Tim proteins in the mitochondria of yeast and mammals"