

# Sean P. Curran

Associate Professor  
Associate Dean of Research

University of Southern California

Davis School of Gerontology  
3715 McClintock Avenue  
Los Angeles, CA 90089-0191  
Email: [spcurran@usc.edu](mailto:spcurran@usc.edu)

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## 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

- 2020 – Present USC-Buck Nathan Shock Center of Excellence - *Director*  
University of Southern California
- 2018 – Present Leonard Davis School of Gerontology – *Associate Dean of Research*  
USC Center for Lifespan Health – *Director*  
University of Southern California
- 2016 – Present University of Southern California – *Associate Professor*  
Leonard Davis School of Gerontology  
Dornsife College of Letters, Arts, and Sciences, Molecular and Comp Biology  
Keck School of Medicine, Norris Comprehensive Cancer Center
- 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**

2021 – 2023 NIA Intervention Testing Program (ITP)  
 “Examination of the effects of mifepristone on lifespan and healthspan in murine models”  
 Role: co-Project Leader (with John Tower)

2020 – 2025 NIA P30 AG068345 – TOTAL DIRECT COSTS: \$4,616,530  
 “The University of Southern California and Buck Institute Nathan Shock Center”  
 Role: MPI

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

2019 - 2024 NIA K07 AG060268 – TOTAL DIRECT COSTS: \$750,000  
 “Convergent approaches to lifespan health”  
 Role: PI

2019 – 2024 NIA RF1 AG063947 – TOTAL DIRECT COSTS: \$1,772,135  
 “Characterizing WDR23 in Alzheimer's disease pathology”  
 Role: PI

2019 – 2024 NIA R01 AG058610 – TOTAL DIRECT COSTS: \$1,056,930  
 “Age-dependent SKN-1/NRF cytoprotection at the cost of metabolic homeostasis”  
 Role: PI

**Pending Research Funding**

2022 – 2027 National Science Foundation – TOTAL COSTS: \$16,970,134  
 “HDR Institute: Knowledge-powered data science to decode the complexities of aging”  
 PI: Sean Curran

2022 – 2027 National Institutes of Health – National Institute on Aging – TOTAL COSTS: \$2,025,000  
 R25AG076400-01  
 “Gerontology Enriching MSTEM (GEMSTEM) to Enhance Diversity in Aging”  
 MPI: Sean Curran (contact), Jennifer Ailshire, John Walsh  
**IMPACT SCORE = 15 (scale: 10-perfect to 90-poor)**

2022 – 2027 *National Institutes of Health – National Institute on Aging – TOTAL COSTS: \$3,282,902*  
*R01AG077878-01*  
*“RNA editing mediates age-related responses to mitochondrial dysfunction”*  
*PI: Sean Curran*

**Completed Research Funding**

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)

44. Nhan JD, Stuhr NL, Reoyo D, **Curran SP**. Quantification of intracellular lipids in *C. elegans*. (Invited review – *Bio Protocol* – Under peer review). Preprint at *Bio-101*: [io-protocol. bio-protocol.org/prep1378](https://doi.org/10.21203/rs.3.rs-1378).

43. Villa O, Stuhr NL, Yen C-A, Crimmins EM, Arpawong TE, **Curran SP**. Genetic variation in ALDH4A1 predicts muscle health over the lifespan and across species. (Under review - Current Biology - D-21-01645). Preprint at Biorxiv: <https://www.biorxiv.org/content/10.1101/2021.09.08.459547v1>

Accepted & Published

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, Hajdich 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*. 2021 Nov 24:1-21. doi: 10.1007/s11357-021-00487-y. Online ahead of print. PMID: 34820764
41. Duangjan C, **Curran SP**. Oolonghomobisflavans from *Camellia sinensis* increase *Caenorhabditis elegans* lifespan and healthspan. *Geroscience*. 2021 Oct 12. doi:10.1007/s11357-021-00462-7. Online ahead of print. 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
- \* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 5% in Developmental Biology**
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  
\* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 2% in Cell Biology**
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  
\* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 5% in Cell Biology**
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
- Tenure Dossier Submitted-----
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.  
\* "Genetic Target May Prevent Weight Gain on High Sugar Diet", Lisa Winter, October 7, 2014. <http://www.iflscience.com/health-and-medicine/genetic-target-may-prevent-weight-gain-high-sugar-diet>  
\* "These Mutant Worms Hide the Secret to Gorging on Sugar Without Getting Fat" Jason Koebler, October 8, 2014 <http://motherboard.vice.com/read/the-genetic-researcher-working-on-letting-us-gorge-on-sugar-without-getting-fat>
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  
\* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 2% in Developmental Biology**  
\* Preview in Cell Metabolism 2014 Jan 14; "Genetic Adaptation to Diet Preserves Longevity, Walhout A.J.M.  
\* Featured in US News & World Reports, "What mutant worms can teach us about diets", Shannon Firth, Jan 28, 2014. <http://www.usnews.com/news/articles/2014/01/28/what-mutant-worms-can-teach-us-about-diets>  
\* Featured in Fox News, "Your diet may not fit your genes, scientists say", John R. Quain February 12, 2014. <http://www.foxnews.com/science/2014/02/17/your-diet-may-not-fit-your-genes/>  
\* Featured in *The Scientist* "Longevity Diet" Rina Shaikh-Lesko, June 1<sup>st</sup>, 2014 <http://www.the-scientist.com/?articles.view/articleNo/40056/title/Longevity-Diet/>
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.  
\* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 2% in Developmental Biology**
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.

-----Start at USC 2010-----

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  
\* **Selected Faculty of 1000 Recommended**  
\* **Rated Top 5% in Developmental Biology**

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  
**\* Selected Faculty of 1000 Recommended**  
**\* Rated Top 1% in Cell Biology**
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  
**\* Selected Faculty of 1000 Recommended**  
**\* Rated Top 2% in Cell Biology**
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)  
 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:**

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 Committee, Associate 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 USC Undergraduate Research Symposium for Creative and Scholarly Work, Lead Judge (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:**

2021 BISC/GERO440,



**Course Development:** Curriculum for Undergraduate Minor in GeroScience Research, GERO300, GERO 301

2020 BISC/GERO440 (Course coordinator), GERO 614L (4 sections), GERO 790 (5 sections), BISC502b

2019 BISC/GERO440, GERO592, GERO614L (2 sections), GERO790 (2 sections), BISC502b

2018 BISC/GERO440, BISC502b

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>
Jacqueline Gonzalez <sup>2</sup>	USC	Undergrad Researcher	2016-2019
		Technician	2019-present
Christian Turner	UC Riverside	PhD student	2017-present (F31 fellowship Y2)
Nicole Stuhr	SUNY	PhD student	2018-present
Oswaldo Villa	University of Arizona	PhD student	2019-present
Meri Isayan	USC	Undergrad Researcher	2019-present
Chatrawee Duangjan, PhD	Chulalongkorn University	Post-doctoral Fellow	2020-present
Matthew Donahue	UCLA	Research Technician	2020-present
Bennett Van Camp	University of Arizona	PhD Student	2021-present
David Reoyo	CSULB	Technician	2021-present
Ronald Irwin	USC	Sr. Research Scientist	2021-present
Kylo Mallari	USC	Undergrad Researcher	2021-present

<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	2014-2016	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

Jahzhseed 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 Escorcia, 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-doctoral research
Oscar Li <sup>2</sup>	USC	Undergrad Researcher	2016-2021	Medical School
James Nhan	UC Santa Barbara	PhD student	2017-2021	Post-doctoral research
Aline Wu	USC	Undergrad Researcher	2020-2021	
Hannah Lee	USC	Undergrad Researcher	2020-2021	

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

**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/Iliciocco 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”