Stanford



Vidyani Suryadevara

Instructor, Genetics

Bio

BIO

Dr. Suryadevara is a Bioengineer by training and has a breadth of research experience and extensively collaborative research portfolio. Currently, her main research focus is gaining a deeper understanding of senescence biology in age-associated diseases like osteoarthritis, Alzheimer's disease and pulmonary fibrosis. She has worked extensively on developing new imaging techniques to non-invasively detect senescence.

Her global health research focus involves developing-region specific lifestyle interventions for healthy aging. She travels around the world to give scientific talks at various international conferences and is also a TEDx speaker. She mentors students across disciplines in their research pursuits and also teaches courses including 'Biology of Aging-Deciphering Senescence'

ACADEMIC APPOINTMENTS

- Instructor, Genetics
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Faculty Fellow, Stanford Center for Innovation in Global Health, (2022- present)

HONORS AND AWARDS

- ISS Research Seed Grant, International Skeletal Society (11/1/2023)
- Cohn Research Fellowship, Rush University Medical Center (04/20/2022)
- President’s Volunteer Service Award, The President of the United States (04/04/2018)
- Chancellor’s graduate research award, University of Illinois, Chicago (8/14/2017)
- Pre-doctoral education for clinical and translational scientists fellowship, University of Illinois, Chicago (06/20/2016)
- Provost Deiss Award for Biomedical Research, University of Illinois, Chicago (8/20/2015)
- ASBMR 2021 Young Investigator Award, American Society for Bone and Mineral Research (10/01/2021)
- Travel award at XIVth Congress of the International Society of Bone Morphometry., International Society of Bone Morphometry. (09/25/2019)
- ASBMR 2019 Young Investigator Travel Grant, American Society for Bone and Mineral Research. (09/18/2019)
- Alice L. Jee Young Investigator award, Orthopedic Research Society (07/26/2019)
- AFMR Midwestern Regional Scholar Award, American Federation for Biomedical Research (04/16/2018)
- ASIP Trainee Travel Award for Excellence in Neurodegenerative disease Research., Experimental Biology 2020 (04/04/2020)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Co-Chair, Comorbidity and multimorbidities in dementia working group, Alzheimer's Association (2023 - present)
- Editorial Board Member, Nature NPJ Dementia (2025 - present)
- Affiliate, Affiliate, Stanford Center for Human and Planetary Health (2025 - present)
- Guest Editor, Jove (2020 - present)

PROFESSIONAL EDUCATION

- PhD, University of Illinois, Chicago , Bioengineering (2018)

Research & Scholarship

RESEARCH INTERESTS

- Diversity and Identity
- Educational Policy
- Higher Education
- Leadership and Organization
- Professional Development
- Research Methods
- Science Education
- Technology and Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

A Bioengineer by training, she has a breadth of experiences across different scientific disciplines including pulmonary diseases, Alzheimer's disease, and musculoskeletal disorders, wherein her research projects involved unraveling signaling mechanism behind the disease in order to identify new therapeutic targets and developing imaging modalities for early diagnosis of the disease, thus eventually improving the quality of life in patients. Her current work has been centered around age-associated pathophysiologies like osteoarthritis and Alzheimer's Disease. Her research currently focuses on the clinical translation of a novel noninvasive multimodality imaging approach to detect senescence in osteoarthritis and Alzheimer's Disease and understand the senescence biology in these age-associated diseases.

She has led teams of renowned senescence scientists across the US to develop expert recommendations for biomarkers for senescence. She is also a faculty fellow in the Center for Innovation at Global Health, wherein her focus is to develop region-specific lifestyle interventions to prevent dementia.

Teaching

COURSES

2024-25

- Aging: The Biology of Senescence: BIOS 423 (Aut)
- Biology of Aging: Deciphering Senescence: RAD 24Q (Win)

Publications

PUBLICATIONS

- **Corrigendum to "Association of micronutrient levels with dementia risk in adults in Telangana, India: a cross-sectional study (2023-2024)" [The Lancet Regional Health-Southeast Asia Volume 50, July 2026, 100794].** *The Lancet regional health. Southeast Asia*

Vepakomma, V., Ramanujam, K., Angadi, K. K., Tattari, S., Mangialasche, F., Kivipelto, M., Suryadevara, V., Reddy, G. B.
2026; 52: 100813

- **Enhanced GlioblastomaTargeting and Penetration: ExtracellularMatrix Remodeling by Collagenase-Functionalized Ferumoxytol Nanoparticles** *NANO LETTERS*
  Wang, J., Annio, G., Duwa, R., Suryadevara, V., Chang, E., Daldrup-Link, H.
  2026
- **Senotypes define the diverse landscape of senescent cells.** *Nature aging*
  Schafer, M. J., Basisty, N., Hertzel, A. V., Rindone, A. N., Elisseeff, J. H., Suryadevara, V., Aliferis, C., Robbins, P. D., Niedernhofer, L. J., Miller, K. N., Adams, P. D., Menon, V., Phatnani, et al
  2026
- **Association of micronutrient levels with dementia risk in adults in Telangana, India: a cross-sectional study (2023-2024)** *LANCET REGIONAL HEALTH - SOUTHEAST ASIA*
  Vepakomma, V., Ramanujam, K., Angadi, K. K., Tattari, S., Mangialasche, F., Kivipelto, M., Suryadevara, V., Reddy, B.
  2026; 50: 100794
- **Charting human cellular senescence in aging and disease.** *Cell*
  Suryadevara, V., Farzad, N., Yang, M., Xu, K., Tsankov, A., Thompson, R. C., Sloan, N., Phatnani, H., Olinger, B., Mares, J. A., Lund, A. N., Li, D., Gorospe, et al
  2026; 189 (12): 3501-3505
- **Plasma proteomics reveals divergent sex-specific senescence and bone biology signatures across neurodegenerative diseases.** *bioRxiv : the preprint server for biology*
  Kaipa, S., Zhai, T., Meka, S. R., Moran-Losada, P., He, Z., Channappa, D., Se-Hwee Oh, H., Rutledge, J., Zeineh, M., Agudelo, A., Nair, R., Wilson, E. N., Bandela, et al
  2026
- **Multimorbidity research in dementia: it's time to shift to a person-centred approach.** *Frontiers in dementia*
  Swain, S., Kantilal, K., Suryadevara, V., Stirland, L. E.
  2026; 5: 1791795
- **FTIR imaging identifies alterations in lung tissue structure and biochemical composition in human idiopathic pulmonary fibrosis.** *Scientific reports*
  Miller, L. M., Kipshidze, G., Meka, S. R., Molina, I., Feghali-Bostwic, C., Bandela, M., Natarajan, V., Suryadevara, V.
  2026
- **Correction: Dual-enzyme activated theranostic nanoparticles for image-guided glioblastoma therapy.** *Scientific reports*
  Varniab, Z. S., Chang, E., Wang, J., Duwa, R., Suryadevara, V., Wu, W., Kumar, M., Liang, T., Khatoon, Z., Morais, G. R., Falconer, R., Shi, Y., Tikhomirov, et al
  2026; 16 (1): 4475
- **The Population Neuroscience-Dementia Syndemics Framework to better understand global sex and gender-based risk in low- and middle-income countries.** *Nature aging*
  Shaaban, C. E., Suryadevara, V., Hill, A. V., Milani, S. A., Agarwal, P., Aggarwal, N. T., Akinyemi, R. O., Alladi, S., Brown, M. J., Caldwell, J. Z., Caramelli, P., DuBose, L., Ellajosyula, et al
  2026; 6 (1): 38-55
- **Beyond Structure: The Interplay of Bone and Brain During Alzheimer's Disease.** *Comprehensive Physiology*
  Pinnamaneni, A., Akkiraju, A., Park, H. I., Ch V, R. S., Ayalasomayajula, V., Bandela, M., Kaipa, S., Khosla, S., Zeineh, M., Suryadevara, V.
  2025; 15 (6): e70075
- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Kaipa, S., Meka, S. R., Nair, R. V., Channappa, D., Oh, H. S., Moran-Losada, P., Rutledge, J. E., Mormino, E., Zeineh, M., Wyss-Coray, T., Henderson, V., Suryadevara, V.
  2025; 21 Suppl 2: e104186
- **Public Health.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Suryadevara, V., Vepakomma, V., Pulivarthi, B., Angadi, K. K., Mangialasche, F., Kivipelto, M., Reddy G, B.
  2025; 21 Suppl 6 (Suppl 6): e100057

- **Deep learning for accurate tumour volume measurement and prediction of therapy response in paediatric osteosarcoma.** *European radiology*
  von Krüchten, R., Barrow, M., Adams, L., Singh, S. B., Varniab, Z. S., Suryadevara, V., Ghimire, P., Pribnow, A., Qi, J., Applin, D., Lokesha, Y. U., Nernekli, K., Daldrup-Link, et al
  2025

- **Apparent diffusion coefficient can assist in differentiating between benign and malignant primary bone tumors in pediatric patients.** *Skeletal radiology*
  Lokesha, Y. U., Singh, S. B., von Krüchten, R., Varniab, Z. S., Kumar, M., Suryadevara, V., Sarrami, A. H., Liang, T., Wong, J., Pribnow, A., Daldrup-Link, H. E.
  2025

- **Sex differences and the role of estrogens in the immunological underpinnings of Alzheimer's disease.** *Alzheimer's & dementia (New York, N. Y.)*
  Price, B. R., Walker, K. A., Eissman, J. M., Suryadevara, V., Sime, L. N., Hohman, T. J., Gordon, M. N.
  2025; 11 (3): e70139

- **Multimorbidity in dementia: Current perspectives and future challenges.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Stirland, L. E., Choate, R., Zanwar, P. P., Zhang, P., Watermeyer, T. J., Valletta, M., Torso, M., Tamburin, S., Saeed, U., Ridgway, G. R., Moukaled, S., Lusk, J. B., Loi, et al
  2025; 21 (8): e70546

- **What would it take to prove that a chronic infection is a causal agent in Alzheimer's disease?** *Trends in neurosciences*
  Brutkiewicz, R. R., Cao, W., Morgan, D., Reis, R. S., Suryadevara, V., Willette, A. A., Willette, S. A., Wyatt-Johnson, S. K., Duggan, M. R.
  2025

- **Multinational Attitudes Toward AI in Health Care and Diagnostics Among Hospital Patients.** *JAMA network open*
  Busch, F., Hoffmann, L., Xu, L., Zhang, L. J., Hu, B., García-Juárez, I., Toapanta-Yanchapaxi, L. N., Gorelik, N., Gorelik, V., Rodriguez-Granillo, G. A., Ferrarotti, C., Cuong, N. N., Thi, et al
  2025; 8 (6): e2514452

- **MRI detection of senescent cells in porcine knee joints with a β-galactosidase responsive Gd-chelate.** *Npj imaging*
  Nernekli, K., Mangarova, D. B., Suryadevara, V., Hajipour, M., Tang, J. H., Wang, J., Liang, T., Harris, M., Ueyama, T., Lyons, J. K., Moseley, M. E., Roudi, R., Pisani, et al
  2025; 3 (1): 18

- **Dual-enzyme activated theranostic nanoparticles for image-guided glioblastoma therapy.** *Scientific reports*
  Shokri Varniab, Z., Chang, E., Wang, J., Duwa, R., Suryadevara, V., Wu, W., Kumar, M., Liang, T., Khatoon, Z., Morais, G. R., Falconer, R., Shi, Y., Tikhomirov, et al
  2025; 15 (1): 13540

- **Analysis and interpretation of inflammatory fluid markers in Alzheimer's disease: a roadmap for standardization.** *Journal of neuroinflammation*
  Bettcher, B. M., de Oliveira, F. F., Willette, A. A., Michalowska, M. M., Machado, L. S., Rajbanshi, B., Borelli, W. V., Tansey, M. G., Rocha, A., Suryadevara, V., Hu, W. T.
  2025; 22 (1): 105

- **IDENTIFICATION OF SENESCENCE IN HUMAN OSTEOARTHRITIS TALUS JOINTS USING NOVEL IMAGING APPROACHES**
  von Kruechten, R., Wrobel, S., Derycz, V., Lerner, C., Dreisbach, A. M., Meade, T., Oji, D., Singh, S., Varniab, Z., Tang, J., Gerencser, A., Suryadevara, V.
  ELSEVIER SCI LTD.2025

- **PLASMA PROTEOMICS REVEALS CHANGES IN OSTEOARTHRITIS-RELATED PROTEINS DURING ALZHEIMER'S DISEASE.**
  Kaipa, S., Meka, S., Suryadevara, V.
  ELSEVIER SCI LTD.2025

- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Chintamanibatla, R. R., Mehta, P., Kamarthi, S., Suryadevara, V.
  2024; 20 Suppl 2: e093518

- **Developing Topics.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*

Suryadevara, V., Valiya, A. K., Krehbiel, C. J., Karra, S., Kluppel, M., Miller, L., Monte, W. S.
2024; 20 Suppl 8: e095656

- **Gender-related alterations in bone observed in PSEN11 L166P knock-in mice, which are linked to a decrease in osteoclast activity and number**
  Suryadevara, V., Krehbial, C., Hong, J., Chester, K. P., Kambrath, A., Kluppel, M., Karra, S., Willis, M. S., Bruzzaniti, A.
  OXFORD UNIV PRESS.2024: 96

- **SenNet recommendations for detecting senescent cells in different tissues.** *Nature reviews. Molecular cell biology*
  Suryadevara, V., Hudgins, A. D., Rajesh, A., Pappalardo, A., Karpova, A., Dey, A. K., Hertzel, A., Agudelo, A., Rocha, A., Soygur, B., Schilling, B., Carver, C. M., Aguayo-Mazzucato, et al
  2024

- **Detecting High-Dose Methotrexate-Induced Brain Changes in Pediatric and Young Adult Cancer Survivors Using [18F]FDG PET/MRI: A Pilot Study.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Baratto, L., Singh, S. B., Williams, S. E., Spunt, S. L., Rosenberg, J., Adams, L., Suryadevara, V., Iv, M., Daldrup-Link, H.
  2024

- **Musculoskeletal imaging of senescence.** *Skeletal radiology*
  Daldrup-Link, H. E., Suryadevara, V., Tanyildizi, Y., Nernekli, K., Tang, J. H., Meade, T. J.
  2024

- **Doxorubicin induced senescence in the knee, a new mouse model to study degenerative arthritis**
  Suryadevara, V., Hajipour, M., Martin, A., Habte, F., Malik, N., Chang, E., Mangarova, D., Nernekli, K., Baratto, L., Adams, L. C., Cotton, J., Pichler, B., Beziere, et al
  OXFORD UNIV PRESS.2023: 409

- **Spatial mapping of cellular senescence: emerging challenges and opportunities.** *Nature aging*
  Gurkar, A. U., Gerencser, A. A., Mora, A. L., Nelson, A. C., Zhang, A. R., Lagnado, A. B., Enninful, A., Benz, C., Furman, D., Beaulieu, D., Jurk, D., Thompson, E. L., Wu, et al
  2023

- **Thwarting Alzheimer's Disease through Healthy Lifestyle Habits: Hope for the Future.** *Neurology international*
  Govindugari, V. L., Golla, S., Reddy, S. D., Chunduri, A., Nunna, L. S., Madasu, J., Shamshabad, V., Bandela, M., Suryadevara, V.
  2023; 15 (1): 162-187

- **MegaPro, a clinically translatable nanoparticle for in vivo tracking of stem cell implants in pig cartilage defects.** *Theranostics*
  Suryadevara, V., Hajipour, M. J., Adams, L. C., Aissaoui, N. M., Rashidi, A., Kiru, L., Theruvath, A. J., Huang, C., Maruyama, M., Tsubosaka, M., Lyons, J. K., Wu, W. E., Roudi, et al
  2023; 13 (8): 2710-2720

- **NIH SenNet Consortium to map senescent cells throughout the human lifespan to understand physiological health** *NATURE AGING*
  Lee, P. J., Benz, C. C., Blood, P., Boerner, K., Campisi, J., Chen, F., Daldrup-Link, H., De Jager, P., Ding, L., Duncan, F. E., Eickelberg, O., Fan, R., Finkel, et al
  2022; 2 (12): 1090-1100