Nancy E. Lane, B.S., M.D.

Clinical Interests

Dr. Lane is a translational scientist with expertise in musculoskeletal diseases of aging, including osteoporosis and osteoarthritis. Dr. Lane has also performed seminal translational studies in glucocorticad induced osteoporosis, and currently a novel inhibitor of nerve growth factor for painful knee osteoarthritis.

Research/Academic Interests

Dr. Lane is an internationally recognized scientist in the fields of both osteoporosis and osteoarthritis. Her translational research team has been instrumental in defining the role of glucocorticoids in bone fragility, including their effects on cell stress and vulnerable cell populations including osteocytes.

As a faculty member at UCSF, she pioneered a seminal clinical trial to demonstrate that daily injections of the hormone PTH could reverse glucocorticoid induced osteoporosis. After transitioning to UC Davis, she a developed a novel compound to direct stem cells to the bone to grow new bone and treat osteoporosis. In addition, she has uncovered novel genetic variations that predispose individuals to osteoarthritis, and has studied novel treatments for osteoarthritis.

Dr. Lane organized and directs an NIH-funded junior faculty grant writing workshop that has taught over 300 junior faculty in musculoskeletal medicine grant writing skills that has resulted in a 45% success rate in applicants receiving research grants (2006-present).

As a translational scientist, Dr. Lane has performed pre-clinical, clinical and epidemiological interdisciplinary studies in the field of osteoporosis, osteoarthritis, and women's health. Over the course of 25 years, has mentored over 30 trainees in interdisciplinary research related to musculoskeletal diseases, especially osteoporosis and osteoarthritis. She has co-developed a hybrid compound, LLP2A-Ale, that has shown to be effective in directing mesenchymal stem cells to the bone surface to augment bone formation in young and old rodents, fracture healing and osteonecrosis. She is currently the principal investigator of a California Institute of Regenerative Medicine (CIRM) grant to develop this hybrid compound for clinical use. This hybrid compound may also be applicable to a dental diseases including periodontal disease and to augment bone growth in dental implants.

Dr. Lane's experience in regenerative medicine, scaling up GMP material, performing preclinical toxicology studies in animal models, and writing a Pre-IND and working with the FDA are appropriate for this planning proposal. Dr. Lane has also performed a randomized double blind placebo controlled study using risedronate for the treatment of moderate to severe periodontal disease, and this experience will also be useful for this planning proposal.

As Site Director at UC Davis for a U24 (C-DOCTOR), Dr. Lane will lead the recruitment of potential ITP teams from UC Davis and will also ensure that the UC Davis Resource Directors are

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providing the necessary guidance and tools to the Interdisciplinary Translational Project (ITP) teams.

Dr. Lane has been recognized by the university, her medical residents, subspecialty fellows, and by her faculty peers as an outstanding mentor with the UC Davis Dean's Award for Scientific Mentoring (2008). Her research accomplishments have been recognized by the UC Davis School of Medicine Dean's Team Science Award (2012), the American College of Rhematology for the Oscar Gluck Memorial Lecture for outstanding work in Osteoporosis (2011), the Remodeling in Bone "RIB Award" by the International Society of Bone and Mineral Research (2012), her election as a Master of the American College of Physicians (2012) and David Trentham Lectureship and Women in Medicine Lectureship at Harvard Medical School (2013). She is also recipient of the Bone and Joint Decade Outstanding Achievement Award for developing a mentoring program in grant writing (2009).

Dr. Lane was president of the board of the United States Bone and Joint Decade (2006-2008), co-led the International Bone and Joint Decade Conference in Washington DC (2010), was elected and serves on the council of the American Society of Bone and Mineral Research (2010-2013), and the Orthopedic Research Society.

Dr. Lane is on the editorial boards of Nature Reviews Rheumatology, Rheumatology (Associate Editor), Seminars in Arthritis and Rheumatism (Associate Editor), co-editor Arthritis and Rheumatism (2005-2010), and Journal of Rheumatology. She was elected to the Association of American Physicians (2006) and the National Academy of Sciences Institute of Medicine (2013), has been named Best Doctors in America annually since 2004, and continues to have an active rheumatology practice.

Title Distinguished Professor of Medicine

Specialty Internal Medicine, Rheumatology, Allergy and Clinical Immunology, Geriatric Medicine

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Division General Medicine
Rheumatology, Allergy and Clinical Immunology

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UCDAVIS HEALTH

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Education
M.D., UC San Francisco School of Medicine, San Francisco, California, 1980
B.S., UC Davis, Davis, California, 1976

Residency
Mount Zion Hospital and Medical Center, San Francisco, California, 1980-83

Fellowships
Palo Alto Veterans Administration Hospital and Stanford University Medical Center, Stanford, California, 1983-85

Board Certifications
American Board of Internal Medicine, 1983
American Board of Internal Medicine, Rheumatology, 1986

Professional Memberships
American Association of Physicians
American College of Rheumatology
American Society of Bone and Mineral Research
National Academy of Medicine (NAM)
Osteoarthritis and Cartilage Research Society International

Select Recent Publications

Zeng C, Lane NE, Englund M, Xie D, Chen H, Zhang Y, Wang H, Lei G. In-hospital mortality after hip arthroplasty in China: analysis of a large national database. The Bone and Joint Journal. 2019 Oct.

Shikany JM, Demmer RT, Johnson AJ, Fino NF, Meyer K, Ensrud KE, Lane NE, Orwoll ES, Kado DM, Zmuda JM, Langsetmo L; Osteoporotic Fractures in Men (MrOS) Research Group. Association of dietary patterns with the gut microbiota in older, community-dwelling men. The American Journal of Clinical Nutrition. 2019 Oct 1.

Leder B, Zapalowski C, Hu MY, Hattersley G, Lane NE, Singer AJ, Dore RK. Fracture and Bone Mineral Density Response by Baseline Risk in Patients Treated with Abaloparatide Followed by Alendronate: Results from the Phase 3 ACTIVExtend Trial. J Bone Miner Res. 2019 Aug 14.

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Joseph GB, McCulloch CE, Nevitt MC, Neumann J, Lynch JA, Lane NE, Link TM. Associations between Vitamin C and D Intake and Cartilage Composition and Knee Joint Morphology over 4 years: Data from the Osteoarthritis Initiative. Arthritis Care Res (Hoboken). 2019 Jul 8.

Foreman SC, Neumann J, Joseph GB, Nevitt MC, McCulloch CE, Lane NE, Link TM. Longitudinal MRI structural findings observed in accelerated knee osteoarthritis: data from the Osteoarthritis Initiative. Skeletal Radiology. 2019 Jun 17.

O'Keefe RJ, Tuan RS, Lane NE, Barry F, Bunnell BA, Colnot C, Drake MT, Drissi H, Fortier LA, Guldberg RE, Little DG, Marshall MF, Mao JJ, Nakamura N, Robey PG, Rosen V, Rowe DW, Schwarz EM. American Society for Bone and Mineral Research-Orthopaedic Research Society Joint Task Force Report on Cell-Based Therapies. Journal of Bone and Mineral Research. 2019 June 13.

Watt F, Baluwet MB, Karkhoury A, Jacobs H, Smuders R, Lane NE. Tropomyosin-related Kinase A (TrkA) Inhibition for the Treatment of Painful Knee Osteoarthritis: Results from a Randomized Controlled Phase 2a Trial Osteoarthritis and Cartilage. 2019 May 29.

Lane NE, Stukel TA, Boyd CM, Wodchis WP. Long-Term Care Residents' Geriatric Syndromes at Admission and Disablement Over Time: An Observational Cohort Study. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2019 May 16.

Langsetmo L, Kats AM, Cawthon PM, Cauley JA, Vo TN, Taylor BC, Stefanick ML, Lane NE, Stone KL, Orwoll ES, Schousboe JT, Ensrud KE; Osteoporotic Fractures in Men (MrOS) Study Group. The Association Between Objectively Measured Physical Activity and Subsequent Health Care Utilization in Older Men. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2019 May 16.

Lane NE, Nyman JS, Uppuganti S, Chaudhari AJ, Aguirre JI, Shidara K, Liu XP, Yao W, Kimmel DB. Inhibition of vascular endothelial growth factor in young adult mice causes low bone blood

flow and bone strength with no effect on bone mass in trabecular regions. Bone Rep. 2019 May 11; 10:100210.