CURRICULUM VITAE

STAVROS C. MANOLAGAS, M.D., PH.D.

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CITIZENSHIP:
USA

FAMILY STATUS:
Married to Karin Manolagas - 4 children

DATE OF BIRTH:
March 9, 1945

EDUCATION:

09/1963 - 09/1969	M.D., University of Athens Medical School, Athens, Greece
07/1974 - 07/1979	Ph.D., University of Manchester, England

POSITIONS:

04/1970 - 04/1972	Army Service as an Infantry Doctor
06/1972 - 06/1973	General Practitioner, Greece (obligatory service)
07/1973 - 07/1974	House Officer (Intern) in Medicine, General State Hospital, Athens, Greece
07/1974 - 07/1976	Senior House Officer (Resident) in Medicine (Endocrinology), Stepping Hill Hospital, Stockport, England
07/1976 - 08/1977	Research Fellow, Honorary Senior House Officer at the Department of Medicine/Endocrinology, Manchester Royal Infirmary, University of Manchester, England
12/1977 - 11/1979	Research Fellow, Honorary Registrar at the Department of Medicine/Endocrinology, Hope Hospital, University of Manchester, England
07/1979 - 07/1980	Research Associate at the Department of Medicine, Division of Endocrinology, University of California, San Diego
1981-1987	Assistant Professor of Medicine in Residence, Department of Medicine, Division of Endocrinology, University of California, San Diego
1985-Present	Staff Physician, Veterans Administration
1987-1988	Associate Professor of Medicine in Residence, Department of Medicine, Division of Endocrinology and Metabolism University of California, San Diego
1988-1993	Professor of Medicine, Indiana University School of Medicine, Indianapolis; Chief, Section of Endocrinology and Metabolism, VAMC, Indianapolis, Indiana
1994-Present	Professor of Medicine and Director, Division of Endocrinology and Metabolism, University of Arkansas for Medical Sciences and the UAMS Osteoporosis and Metabolic Bone Diseases Center, Little Rock, Arkansas. Chief of Section, Endocrinology and Metabolism, Central Arkansas Veterans Healthcare System

1995-1998	Associate Director of the Geriatric Research, Education, and Clinical Center (GRECC) of the McClellan VA Medical Center, Little Rock, Arkansas
1999-Present	Founded Anabonix Inc., a biotechnology company engaged in the development and commercialization of anabolic drugs for osteoporosis. After successful completion of venture capital financing by Healthcare Ventures VII, L.P., MPM Bioventures, and Oxford Bioscience Partners IV L.P. in November 2003 the company moved to Boston, MA and was renamed NuVios Inc., and in January 2006, the company was again renamed as Radius Health Inc. Co-founders of Radius Health Inc. are John A. Katzenellenbogen, Swanlund Professor of Chemistry at the University of Illinois; Michael Rosenblatt, Dean of Tufts Medical School, former George R. Minot Professor of Medicine, at Harvard Medical School; and, John Potts Jr., Distinguished Jackson Professor of Clinical Medicine at HMC and Director of Research at Massachusetts General Hospital, former Chairman of the Department of Medicine and Physician Chief at HMC. Currenlty, Dr. Manolagas serves as a member of the the scientific advisory board.
2006-Present	Vice Chair for Research, Department of Internal Medicine, University of Arkansas for Medical Sciences
2006-Present	the Thomas E. Andreoli, M.D., MACP Clinical Scholar Chair in Internal Medicine, College of Medicine, University of Arknasas for Medical Sciences.
2013-Present	Distinguished Professor of Medicine, University of Arkansas for Medical Sciences

PATENTS AND PENDING APPLICATIONS:

- Cytoreceptor assay – U.S. Patent #4,375,459 - 1983
- Increasing bone strength with selected bisphosphonates – U.S. Patent #6,416,737 - 2002
- Bone anabolic compounds and methods thereof – U.S. Patent Application No. 10/165,380
- In vitro and in vivo models for screening compounds to prevent glucocorticoid-induced bone destruction – U.S. Patent Application Serial No. 09/413,958
- Methods of screening for apoptosis-controlling agents for bone anabolic therapies and uses thereof – U.S. Patent Application Serial No. 09/413,785
- Methods and compositions for increasing bone mass – U.S. Patent Application Serial No. 09/414,091
- Methods of dissociating nongenotropic from transcriptional activity of steroid receptors – U.S. Patent Application Serial No. 09/880,710
- Methods of identifying glucocorticoids without the detrimental side effects of bone loss – U.S. Patent Application Serial No. 11/236,042

MEDICAL LICENSURE: (*active)
California, Indiana, & Arkansas*

LISTED IN BEST DOCTORS IN AMERICA
2004-2017

HONORS AND AWARDS:

Wellcome Fellowship Research Award – 1976; Alexander Onassis Foundation Award – 1980; Induction to the Association of American Physicians – 1996; The 1999 AlliedSignal Award for Research on Aging (1st out of 52 competing applicants) – 1999; The American Society of Bone and Mineral Research (ASBMR) Louis V. Avioli Founders Award for fundamental contributions to bone and mineral basic research – 2000; UAMS Dean's Distinguished Faculty Lecturer of the Year Award – 2000-2001; Board Member of the International Society of Bone and Mineral Research – 2003-2007; Red Sash Teaching Award from the Senior Medical Class – 1996,2005,2009; Endowment of The Thomas E. Andreoli, M.D., MACP Clinical Scholar Chair in Internal Medicine – 2006; Doctor Honoris Causa, National and Kapodistrian University of Athens – 2007; The Greg Mundy Lecturer - First Asia Pacific Bone and Mineral Research Meeting and the Australian and New Zealand Bone and Mineral Society 22nd Annual Scientific Meeting – 2012; Distinguished Professor of Medicine, University of Arkansas for Medical Sciences – 2013; the International Bone and Mineral Society (IBMS) D. Harold Copp Award for outstanding achievements in basic research in the fields of bone and mineral metabolism that have led to significant changes in understanding of physiology or disease – 2013; the UAMS College of Medicine Dean's Excellence in Research Award – 2016; Pioneers in Endocrinology lecture, Rutgers University – 2016; the William S. Middleton Award of the Department of Vetereans Affairs (VA) for achieving international acclaim for research accomplishments in areas of prime importance to VA's research mission – 2016. The Louis V. Avioli plenary ASBMR lecture – 2017.

EDITORIAL BOARDS:
Endocrinology; Journal of Bone and Mineral Research; Bone; Calcified Tissue International; Journal of Bone and Mineral Metabolism (Official publication of the Japanese Society for Bone and Mineral Research); *Hormones* (International Journal of Endocrinology and Metabolism of the Hellenic Endocrine Society); *Endocrine*

PEER REVIEW PANELS:
Member of the Research Advisory Group B, Department of Veterans Affairs, 1989-1995. Chairman, NIA Program Project Review Committees, 2003, 2013. Ad Hoc Member of several NIH Study Sections and special emphasis panels (Pathology, Orthopedic and Musculoskeletal, General Medicine B, Special Emphasis Panel/Osteoporosis, Special Emphasis Panel/Scientific Review Group 2014/01 ZDK1 GRB-J, Cancer Center Support Grants). Ad Hoc Reviewer for the VA Merit Review Board, NSF, the National Osteoporosis Foundation, U.S. Army, MRC Canada, MRC United Kingdom, Wellcome Foundation, INSERM, the Israel Science Foundation, the Swiss National Science Foundation. Member of the Research Foundation Flanders Expert Panel Neuroscience, Clinical Neurology, Psychiatry, Musculoskeletal Research, Rheumatology, Orthopedics and Dermatology, Fonds Wetenschappelijk Onderzoek (Belgium).

SCIENTIFIC COMMITTEES:
Board of Directors for the International Bone and Mineral Society (IBMS); Ad Hoc Member, Board of Scientific Counselors, National Institute on Aging. Member of: Advocacy Committee of the American Society for Bone and Mineral Research (1998 – 2001); Organizing Committee of the International Workshops on Vitamin D 1985-1995; Scientific Committee for the International Workshops on Cell Biology of Bone and Cartilage in Health and Disease (Davos, Switzerland 1990 - present); Scientific Committee Workshop on Osteobiology (Italy 1989 - present); Scientific Program Committee of the American Society for Bone and Mineral Research (ASBMR); Scientific Organizing Committee of the National Osteoporosis Foundation/European Foundation for Osteoporosis (NOF/EFFO) for the World Congress **2000** on Osteoporosis; Scientific Program Committee of the International Osteoporosis Foundation for the 2005 International Congress on Glucocorticoid-Induced Osteoporosis;

PROFESSIONAL SOCIETIES:
Association of American Physicians (AAP)
Association of Subspecialty Professors (ASP)
Endocrine Society
American Society for Bone and Mineral Research (ASBMR)

American Association for the Advancement of Science (AAAS)
International Bone and Mineral Society (IBMS)
Glucocorticoid Induces Osteoporosis Skeletal Endocrinology Group (GIOSEG): International Advisory Board

INSTITUTIONAL COMMITTEES:
Chairman, Promotions and Tenure Committee, Department of Medicine 1995-1998
Member, UAMS Research Council 1996-1999
Member, UAMS Blue Ribbon Task Force on Basic Science Graduate Programs
Member, Patent and Copyright Committee
Member, Department of Internal Medicine Executive Committee 2006-present
Member, College of Medicine Promotion and Tenure Committee 2007-2011
Chair, Dean's Lectureships and Alumni Awards Committee 2014-present
Member, UAMS Research Council 2015-present

RESEARCH SUPPORT

Funding Agency	Grant Title	Direct Costs	Indirect Costs	Total Costs	Start Date	End Date
NIH / R01 AM29779	Interactions of $1,25(OH)_2D_3$ on Osteoblast-like Cells	-	-	-	08/01/1982	07/31/1986
NIH / 1R01 AI21761	Dihydroxy Vitamin D_3 and Cellular Immunity	-	-	-	12/01/1984	11/30/1987
NIH / 2R01 AI21761	1,25 Dihydroxy Vitamin D_3 and Cellular Immunity	-	-	-	12/01/1988	11/31/1991
Sandoz Pharmaceuticals	The Efficacy and Safety of Salmon Calcitonin Nasal Spray in the Tretment of Osteoporosis	-	-	-	1989	1992
1 VA Merit Review	Vitamin D, the Hematolymphopoeitic System and Osteoclastogenesis	-	-	-	04/01/1986	03/31/1991
2 VA Merit Review	The Role of Vitamin D in Osteoclastogenesis and Osteoblastogenesis	500,000	-	500,000	04/01/1991	03/31/1996
NIH / R01 AR41313	Hormonal Control of Cytokines in Bone and Stromal Cells	884,655	409,874	1,294,529	09/01/1991	08/31/1996
Ligand Pharmaceuticals, Inc.	Stromal Cell Regulation of Biological Processes by Steroid Hormones	598,000	149,500	747,500	01/01/1994	09/30/1997
NIH / R01 AR42355	Estrogens and Osteo-clastogenesis in Humans	736,948	248,008	984,956	03/01/1994	02/29/2000
Genetics Institute, Inc.	The Role of IL-11 in Bone Remodeling	117,500	23,500	141,000	07/10/1995	07/09/1997
INCSTAR Corporation	Cytokines and Their Receptors as Markers of Bone Metabolism	50,000	12,500	62,500	02/01/1996	02/01/1998
3 VA Merit Review	The Role of Vitamin D in Osteoclastogenesis and Osteoblastogenesis	601,700	-	601,700	04/01/1996	09/30/2002

Funding Agency	Grant Title	Direct Costs	Indirect Costs	Total Costs	Start Date	End Date
NIH / 1P01 AG13918	Molecular and Cellular Mechanisms of Osteoporosis	3,355,849	1,332,843	4,688,692	08/27/1996	05/31/2001
*Allied Signal Award for Research on Aging	Development of Novel Pharmacotherapies for Postmenopausal and Senile Osteoporosis	200,000	-	200,000	09/27/1999	08/31/2001
VA Research Enhancement Award Program (REAP)	Pathogenesis and Prevention of Bone Loss	1,354,265	-	1,354,265	10/01/1999	03/31/2005
NIH / 2P01 AG13918	Molecular and Cellular Mechanisms of Osteoporosis	6,195,842	2,723,732	8,919,574	06/05/2001	05/31/2006
BioXell	Vitamin D Analogs in a Murine Model of Secondary Hyperparathyroidism	115,670	28,918	144,588	03/01/2002	02/28/2003
4 VA Merit Review	Estrogen, Androgen, Aging & Bone Loss in Males	681,100	-	681,100	10/01/2002	09/30/2007
Nuvios	Sponsored Research Agreement	200,000	84,000	284,000	01/01/2004	12/31/2004
Nuvios	Nuvios Testing Agreement	297,756	44,663	342,419	02/01/2004	01/31/2005
NIH / RO1 AR051187	Osteoblast Commitment and Differentiation by ANGELS	704,000	295,680	999,680	02/01/2005	01/31/2009
NIH / 3P01 AG13918	Molecular and Cellular Mechanisms of Osteoporosis	5,756,525	2,330,121	8,086,646	06/01/2006	05/31/2011
5 VA Merit Review	Estrogen, Androgen, Aging & Bone Loss in Males	513,000		513,000	01/01/2008	12/31/2011
6 VA Merit Review	Estrogen, Androgen, Aging & Bone Loss in Males	649,900		649,900	01/01/2012	12/31/2015
NIH / 4P01 AG13918	Molecular and Cellular Mechanisms of Osteoporosis	5,298,370	2,515,842	7,814,212	05/01/2012	04/30/2017
7 VA Merit Review	Androgens, Estrogens, & Bone Loss in Males	650,000		650,000	01/01/2017	12/31/2021
Middleton Award		50,000		50,000	01/01/2017	12/31/2020

ARTICLES [CITATIONS: 35,644; H-INDEX: 92 (ADVANCED GOOGLE SCHOLAR; APRIL 2017)]

1. **Manolagas SC**, Anderson DC. Detection of high-affinity glucocorticoid binding in rat bone. ***J Endocrinol*** 76(2):379-380; **1978**.

2. **Manolagas SC**, Anderson DC, Lumb GA. Glucocorticoids regulate the concentration of 1,25-dihydroxycholecalciferol receptors in bone. ***Nature***; 277(5694):314-315; **1979**.

3. **Manolagas SC**, Anderson DC, Lindsay R. Adrenal steroids and the development of osteoporosis in oophorectomised women. ***Lancet***; 2(8143):597-600; **1979**.

4. **Manolagas SC**, Lumb GA, Anderson DC. Evidence that glucocorticoids regulate the concentration of 1,25-dihydroxycholecalciferol receptors in bone cytosol [proceedings]. ***J Endocrinol***; 81(2):151P; **1979**.

5. **Manolagas SC**, Taylor CM, Anderson DC. Highly specific binding of 1,25-dihydroxycholecalciferol in bone cytosol. ***J Endocrinol***; 80(1):35-39; **1979**.

6. Haussler MR, **Manolagas SC**, Deftos LJ. Glucocorticoid receptor in clonal osteosarcoma cell lines: a novel system for investigating bone active hormones. ***Biochem Biophys Res Commun***; 94(1):373-380; **1980**.

7. Haussler MR, **Manolagas SC**, Deftos LJ. Evidence for a 1,25-dihydroxyvitamin D3 receptor-like macromolecule in rat pituitary. ***J Biol Chem***; 255(11):5007-5010; **1980**.

8. **Manolagas SC**, Haussler MR, Deftos LJ. 1,25-Dihydroxyvitamin D3 receptor-like macromolecule in rat osteogenic sarcoma cell lines. ***J Biol Chem***; 255(10):4414-4417; **1980**.

9. **Manolagas SC**, Deftos LJ. Studies of the internalization of vitamin D3 metabolites by cultured osteogenic sarcoma cells and their application to a non-chromatographic cytoreceptor assay for 1,25-dihydroxyvitamin D3. ***Biochem Biophys Res Commun***; 95(2):596-602; **1980**.

10. **Manolagas SC**, Deftos LJ. Cytoreceptor assay for 1,25-dihydroxyvitamin D3: a novel radiometric method based on binding of the hormone to intracellular receptors in vitro. ***Lancet***; 2(8191):401-402; **1980**.

11. **Manolagas SC**, Haussler MR, Deftos LJ. 1,25-dihydroxyvitamin D3 receptors in cancer. ***Lancet***; 1(8172):828; **1980**.

12. Haussler MR, Pike JW, Chandler JS, **Manolagas SC**, Deftos LJ. Molecular action of 1,25-dihydroxyvitamin D3: new cultured cell models. ***Ann N Y Acad Sci***; 372:502-517; **1981**.

13. **Manolagas SC**, Deftos LJ. Comparison of 1,25-, 25-, and 24,25-hydroxylated vitamin D3 binding in fetal rat calvariae and osteogenic sarcoma cells. ***Calcif Tissue Int***; 33(6):655-661; **1981**.

14. **Manolagas SC**, Burton DW, Deftos LJ. 1,25-Dihydroxyvitamin D3 stimulates the alkaline phosphatase activity of osteoblast-like cells. ***J Biol Chem***; 256(14):7115-7117; **1981**.

15. Haussler MR, **Manolagas SC**, Deftos LJ. Receptor for 1,25-dihydroxyvitamin D3 in GH3 pituitary cells. ***J Steroid Biochem***; 16(1):15-19; **1982**.

16. Cheung AK, **Manolagas SC**, Catherwood BD, Mosely CA, Jr., Mitas JA, Blantz RC, Deftos LJ. Determinants of serum 1,25(OH)2D levels in renal disease. ***Kidney Int***; 24(1):104-109; **1983**.

17. **Manolagas SC**, Spiess YH, Burton DW, Deftos LJ. Mechanism of action of 1,25-dihydroxyvitamin D3-induced stimulation of alkaline phosphatase in cultured osteoblast-like cells. ***Mol Cell Endocrinol***; 33(1):27-36; **1983**.

18. **Manolagas SC**, Culler FL, Howard JE, Brickman AS, Deftos LJ. The cytoreceptor assay for 1,25-dihydroxyvitamin D and its application to clinical studies. ***J Clin Endocrinol Metab***; 56(4):751-760; **1983**.

19. **Manolagas SC**, Reitz R, Horst R, Haddad J, Deftos LJ. Multicentre comparison of 1,25-dihydroxycholecalciferol measurements in human serum. ***Lancet***; 1(8317):191-192; **1983**.

20. Mulkins MA, **Manolagas SC**, Deftos LJ, Sussman HH. 1,25-Dihydroxyvitamin D3 increases bone alkaline phosphatase isoenzyme levels in human osteogenic sarcoma cells. ***J Biol Chem***; 258(10):6219-6225; **1983**.

21. Provvedini DM, Tsoukas CD, Deftos LJ, **Manolagas SC**. 1,25-dihydroxyvitamin D3 receptors in human leukocytes. ***Science***; 221(4616):1181-1183; **1983**.

22. **Manolagas SC**, Deftos LJ. The vitamin D endocrine system and the hematolymphopoietic tissue. ***Ann Intern Med***; 100(1):144-146; **1984**.

23. **Manolagas SC**, Abare J, Deftos LJ. Glucocorticoids increase the 1,25(OH)2D3 receptor concentration in rat osteogenic sarcoma cells. ***Calcif Tissue Int***; 36(2):153-157; **1984**.

24. Provvedini DM, Deftos LJ, **Manolagas SC**. 1,25-Dihydroxyvitamin D3 receptors in a subset of mitotically active lymphocytes from rat thymus. ***Biochem Biophys Res Commun***; 121(1):277-283; **1984**.

25. Stern N, Lee DB, Silis V, Beck FW, Deftos L, **Manolagas SC**, Sowers JR. Effects of high calcium intake on blood pressure and calcium metabolism in young SHR. ***Hypertension***; 6(5):639-646; **1984**.

26. Tsoukas CD, Provvedini DM, **Manolagas SC**. 1,25-dihydroxyvitamin D3: a novel immunoregulatory hormone. ***Science***; 224(4656):1438-1440; **1984**.

27. **Manolagas SC**, Provvedini DM, Tsoukas CD. Interactions of 1,25-dihydroxyvitamin D3 and the immune system. ***Mol Cell Endocrinol***; 43(2-3):113-122; **1985**.

28. **Manolagas SC**, Deftos LJ. No diurnal variations in calcitonin and vitamin D2. ***N Engl J Med***; 312(2):122-123; **1985**.

29. Werntz DA, Catherwood BD, Deftos LJ, **Manolagas SC**. Activation of the 1,25-dihydroxyvitamin D3 receptor in cultured rat osteogenic sarcoma cells. ***J Recept Res***; 5(2-3):147-154; **1985**.

30. Woodhouse NJY, **Manolagas SC**, Bashir R, Zuheir M, Kawi AL, Deftos LS. 1,25-dihydroxycholecalciferol and 25-hydroxycholecalciferol in epileptic patients taking anticonvulsants. ***The King Faisal Specialist Hospital Medical Journal***; 5(1):27-31; **1985**.

31. Levy JR, Murray E, **Manolagas S**, Olefsky JM. Demonstration of insulin receptors and modulation of alkaline phosphatase activity by insulin in rat osteoblastic cells. ***Endocrinology***; 119(4):1786-1792; **1986**.

32. **Manolagas SC**, Provvedini DM, Murray EJ, Tsoukas CD, Deftos LJ. The antiproliferative effect of calcitriol on human peripheral blood mononuclear cells. ***J Clin Endocrinol Metab***; 63(2):394-400; **1986**.

33. **Manolagas SC**. Cytoreceptor assay for 1,25-dihydroxyvitamin D. ***Methods Enzymol***; 123:190-198; **1986**.

34. **Manolagas SC**, Werntz DA, Tsoukas CD, Provvedini DM, Vaughan JH. 1,25-Dihydroxyvitamin D3 receptors in lymphocytes from patients with rheumatoid arthritis. ***J Lab Clin Med***; 108(6):596-600; **1986**.

35. Morel PA, **Manolagas SC**, Provvedini DM, Wegmann DR, Chiller JM. Interferon-gamma-induced IA expression in WEHI-3 cells is enhanced by the presence of 1,25-dihydroxyvitamin D3. ***J Immunol***; 136(6):2181-2186; **1986**.

36. Muse KN, **Manolagas SC**, Deftos LJ, Alexander N, Yen SS. Calcium-regulating hormones across the menstrual cycle. ***J Clin Endocrinol Metab***; 62(6):1313-1316; **1986**.

37. Provvedini DM, Tsoukas CD, Deftos LJ, **Manolagas SC**. 1 alpha,25-Dihydroxyvitamin D3-binding macromolecules in human B lymphocytes: effects on immunoglobulin production. ***J Immunol***; 136(8):2734-2740; **1986**.

38. Provvedini DM, Deftos LJ, **Manolagas SC**. 1,25-Dihydroxyvitamin D3 promotes in vitro morphologic and enzymatic changes in normal human monocytes consistent with their differentiation into macrophages. ***Bone***; 7(1):23-28; **1986**.

39. Spiess YH, Price PA, Deftos JL, **Manolagas SC**. Phenotype-associated changes in the effects of 1,25-dihydroxyvitamin D3 on alkaline phosphatase and bone GLA-protein of rat osteoblastic cells. ***Endocrinology***; 118(4):1340-1346; **1986**.

40. Weisman MH, Orth RW, Catherwood BD, **Manolagas SC**, Deftos LJ. Measures of bone loss in rheumatoid arthritis. ***Arch Intern Med***; 146(4):701-704; **1986**.

41. **Manolagas SC**. 1,25-Dihydroxyvitamin D3, the c-myc oncogene, and cell regulation. ***Lancet***; 2(8559):639; **1987**.

42. **Manolagas SC**. Vitamin D and its revelance to cancer. ***Anticancer Res***; 7(4A):625-638; **1987**.

43. **Manolagas SC**, Provvedini DM, Murray EJ, Murray SS, Tsonis PA, Spandidos DA. Association between the expression of the c-myc oncogene mRNA and the expression of the receptor protein for 1,25-dihydroxyvitamin D3. ***Proc Natl Acad Sci U S A***; 84(3):856-860; **1987**.

44. Murray E, Provvedini D, Curran D, Catherwood B, Sussman H, **Manolagas S**. Characterization of a human osteoblastic osteosarcoma cell line (SAOS-2) with high bone alkaline phosphatase activity. ***J Bone Miner Res***; 2(3):231-238; **1987**.

45. Provvedini DM, Rulot CM, Sobol RE, Tsoukas CD, **Manolagas SC**. 1 alpha,25-Dihydroxyvitamin D3 receptors in human thymic and tonsillar lymphocytes. ***J Bone Miner Res***; 2(3):239-247; **1987**.

46. **Manolagas SC**, Hustmyer FG, Yu XP. 1,25-Dihydroxyvitamin D3 and the immune system. ***Proc Soc Exp Biol Med***; 191(3):238-245; **1989**.

47. Provvedini DM, **Manolagas SC**. 1 Alpha,25-dihydroxyvitamin D3 receptor distribution and effects in subpopulations of normal human T lymphocytes. ***J Clin Endocrinol Metab***; 68(4):774-779; **1989**.

48. Provvedini DM, Sakagami Y, **Manolagas SC**. Distinct target cells and effects of 1 alpha, 25-dihydroxyvitamin D3 and glucocorticoids in the rat thymus gland. ***Endocrinology***; 124(3):1532-1538; **1989**.

49. Tsoukas CD, Watry D, Escobar SS, Provvedini DM, Dinarello CA, Hustmyer FG, **Manolagas SC**. Inhibition of interleukin-1 production by 1,25-dihydroxyvitamin D3. ***J Clin Endocrinol Metab***; 69(1):127-133; **1989**.

50. **Manolagas SC**, Hustmyer FG, Yu XP. Immunomodulating properties of 1,25-dihydroxyvitamin D3. ***Kidney Int Suppl***; 29:S9-16; **1990**.

51. Murray EJ, Murray SS, **Manolagas SC**. Two-dimensional gel autoradiographic analyses of the effects of 1,25-dihydroxycholecalciferol on protein synthesis in clonal rat osteosarcoma cells. ***Endocrinology***; 126(5):2679-2692; **1990**.

52. Terkeltaub R, Firestein GS, Kornbluth RS, Martin J, Curran D, **Manolagas S**. The effects of gamma-interferon on human peripheral blood monocyte/macrophage-mediated bone particle degradation. ***Bone Miner***; 8(2):131-143; **1990**.

53. Nahreini TS, Litz-Jackson S, Burgess GS, Helvering LM, **Manolagas SC**, Boswell HS. Interleukin-3 dependent mitogenesis in murine cells involves a predominant non-protein kinase C (pKC) dependent pathway for c-myc transcription. Role of a myc expression vector in rescuing pKC dependent mitogenesis. ***Leukemia***; 5(12):1099-1109; **1991**.

54. Yoder MC, **Manolagas SC**. Vitamin D and its role in immune function. ***Clinics in Applied Nutrition***; 1:35-44; **1991**.

55. Yu XP, Hustmyer FG, Garvey WT, **Manolagas SC**. Demonstration of a 1,25-dihydroxyvitamin D3-responsive protein in human lymphocytes: immunologic crossreactivity and inverse regulation with the vitamin D receptor. ***Proc Natl Acad Sci U S A***; 88(19):8347-8351; **1991**.

56. Yu XP, Mocharla H, Hustmyer FG, **Manolagas SC**. Vitamin D receptor expression in human lymphocytes. Signal requirements and characterization by western blots and DNA sequencing. ***J Biol Chem***; 266(12):7588-7595; **1991**.

57. Girasole G, Jilka RL, Passeri G, Boswell S, Boder G, Williams DC, **Manolagas SC**. 17 beta-estradiol inhibits interleukin-6 production by bone marrow-derived stromal cells and osteoblasts in vitro: a potential mechanism for the antiosteoporotic effect of estrogens. ***J Clin Invest***; 89(3):883-891; **1992**.

58. Hustmyer FG, Girasole G, **Manolagas SC**. Signal-dependent pleiotropic regulation of lymphocyte proliferation and cytokine production by 1,25-dihydroxyvitamin D3: potent modulation of the hormonal effects by phorbol esters. ***Immunology***; 77(4):520-526; **1992**.

59. Jilka RL, Hangoc G, Girasole G, Passeri G, Williams DC, Abrams JS, Boyce B, Broxmeyer H, **Manolagas SC**. Increased osteoclast development after estrogen loss: mediation by interleukin-6. ***Science***; 257(5066):88-91; **1992**.

60. **Manolagas SC**, Jilka RL. Cytokines, hematopoiesis, osteoclastogenesis, and estrogens. ***Calcif Tissue Int***; 50(3):199-202; **1992**.

61. Bellido T, Girasole G, Passeri G, Yu XP, Mocharla H, Jilka RL, Notides A, **Manolagas SC**. Demonstration of estrogen and vitamin D receptors in bone marrow-derived stromal cells: up-regulation of the estrogen receptor by 1,25-dihydroxyvitamin-D3. ***Endocrinology***; 133(2):553-562; **1993**.

62. Hustmyer FG, Walker E, Yu XP, Girasole G, Sakagami Y, Peacock M, **Manolagas SC**. Cytokine production and surface antigen expression by peripheral blood mononuclear cells in postmenopausal osteoporosis. ***J Bone Miner Res***; 8(1):51-59; **1993**.

63. **Manolagas SC**, Hustmyer FG, Girasole G, Yu XP. Cytokine production and surfaxe antigen expression by peripheral blood mononuclear cells in postmenopausal osteoporosis (reply letter to the editor). ***J Bone Miner Res***; 8:777-778; **1993**.

64. **Manolagas SC**, Jilka RL, Girasole G, Passeri G, Bellido T. Estrogen, cytokines, and the control of osteoclast formation and bone resorption in vitro and in vivo. ***Osteoporos Int***; 3 Suppl 1:114-116; **1993**.

65. Passeri G, Girasole G, Jilka RL, **Manolagas SC**. Increased interleukin-6 production by murine bone marrow and bone cells after estrogen withdrawal. ***Endocrinology***; 133(2):822-828; **1993**.

66. Sakagami Y, Girasole G, Yu XP, Boswell HS, **Manolagas SC**. Stimulation of interleukin-6 production by either calcitonin gene-related peptide or parathyroid hormone in two phenotypically distinct bone marrow-derived murine stromal cell lines. ***J Bone Miner Res***; 8(7):811-816; **1993**.

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491. Kim HN, Han L, Iyer S, Warren A, **Manolagas SC**, Almeida M. The NAD+ Precursor Nicotinamide Roboside Reverses the Age-dependent Decline of NAD+ and Osteoprogenitor Differentiation. ***J Bone Miner Res*** 31(Suppl 1):1021, **2017.**

492. Kim HN, Iyer S, Chang J, Han L, Warren A, **Manolagas SC**, Jilka RL, O'Brien CA, Zhou D, Almeida M. The Senolytic ABT263 Eliminates Senescent Osteoprogenitors in Old Mice. ***J Bone Miner Res*** 31(Suppl 1):1027, **2017**.

493. Wang L, Fujiwara T, Fang B, Aykin-burns N, Zhang Z, Li X, Jennings M, **Manolagas SC**, Zhou J, Zhao H. Deletion of the transferrin receptor 1 gene in murine osteoclasts attenuates mitochondria metabolism and cytoskeletal organization and increases trabecular bone mass. ***J Bone Miner Res*** 31(Suppl 1):SA0197, **2017**.

494. Kim HN, Han L, Warren A, **Manolagas SC**, Almeida M, Jilka RL. Estrogens decrease osteoclastogenesis in vitro by stimulating Bak\Bax-dependent apoptosis of early progenitors. ***J Bone Miner Res*** 31(Suppl 1):SA0101, **2017**.

495. Wang L, Fujiwara T, Fang B, Aykin-burns N, Zhang Z, Li X, **Manolagas SC**, Jennings M, Zhou J, Zhao H. Increasing intracellular iron by Ferroportin deletion in murine myeloid precursors stimulates mitochondria metabolism and osteoclastogenesis and decreases trabecular bone mass. ***J Bone Miner Res*** 31(Suppl 1):SU0193, **2017**.

496. Ambrogini A, Palmieri M, Han L, Berryhill S, Que X, Tsimikas S, **Manolagas SC**, Witztum J, Jilka RL. Innate IgM natural antibodies against oxidized phospholipids decline with age in mice: a putative contributor to the declining bone formation and a novel target for bone anabolic therapy. ***J Bone Miner Res*** 31(Suppl 1):MO0497, **2017**.

497. Kim HN, Iyer S, Han L, Zhao H, O'Brien CA, Jilka RL, Almeida M, **Manolagas SC**, Tessier P. The Calcium binding protein S100A8 is a likely gene target of the direct anti-resorptive effects of ERα signaling on cancellous bone. ***J Bone Miner Res*** 31(Suppl 1): SU0094, **2017**.

498. Iyer S, Vyas K, Deloose A, Palmieri M, Kim HN, Piemontese M, Almeida M, O'Brien CA, **Manolagas SC**, Jilka RL. The unfolded protein response plays an important role in osteoblastogenesis and its aberrations adversely affect skeletal homeostasis. ***J Bone Miner Res*** 31(Suppl 1):MO0530, **2017**.

GRAND ROUNDS, INVITED LECTURES, AND VISITING PROFESSORSHIPS:

1. Medical Grand Rounds: "The Vitamin D Endocrine System in **1981**." University of California-San Diego, San Diego, CA. **1981**.

2. International Conference on Calcium Regulating Hormones, "1,25$(OH)_2D_3$ Receptors in Cells of the Immune System." Kobe, Japan. October 22-24, **1983**.

3. Post-graduate Assembly of the American Endocrine Society. "The Endocrinology of Vitamin D." San Diego, CA. **1984**.

4. 6th International Workshop on Vitamin D. "Role of 1,25-dihydroxivitamin D_3 in the Immune System." Merano, Italy. March 17-22, **1985**.

5. NIH Symposium: Nutritional Diseases, Research Directions in Comparative Pathology. "The Role of 1,25$(OH)_2D_3$ in Immunoregulation." Bethesda, MD. November, **1985**.

6. Wise and Helen Burroughs Lectureship of the Nutritional Sciences Council. "Vitamin D and the Immune System." Iowa State University, Ames, IA. February 19, 1986.

7. Seminar: Institute Pasteur Helenique. "Vitamin D and its Relevance to Cancer." Athens, Greece. September 15, **1986**.

8. 2nd International Workshop on Cells and Cytokines in Bone and Cartilage. Round Table: "Identification and Function of Other Normal and Malignant Cell Types Relevant to Bone." Davos, Switzerland. April 9-12, **1988**.

9. International Congress on the Senile Skeleton, Movement, and Selfsufficiency. "Vitamin D: Immune System Interactions and their Relevance to Bone." University of Parma, Parma, Italy. April 14-16, **1988**.

10. 7th International Workshop on Vitamin D. "Immunoregulatory Properties of 1,25$(OH)_2D_3$: Cellular Requirements and Mechanisms." Rancho Mirage, CA. April 24-29, **1988**.

11. FASEB Symposium: Annual Meeting of the Society for Experimental Biology and Medicine. "The Possible Role of 1,25$(OH)_2D_3$ in Lymphocyte Function." Las Vegas, NV. May 3, 1988.

12. Seminar: Department of Oral Biology, School of Dentistry. "Vitamin D Immune System Interactions and their Relevance to Bone." State University of New York at Buffalo. Buffalo, NY. July 15, **1988**.

13. UCLA Symposium: Vitamins and Cancer Prevention. "Vitamin D, Oncogene Expression, and Cell Growth Regulation." Los Angeles, CA. March 2, **1989**.

14. Symposium: Vitamin D Update. "Vitamin D and the Immune System." Rutherford, CA. September 28, **1989**.

15. Seminar: Cytokine Regulation by Calciotropic Hormones and Its Relevance to Bone. University of Washington-St. Louis, Division of Endocrinology and Metabolism, St. Louis, MO. March 16, **1990**.

16. Seminar: "Cytokines and Bone Metabolism." University of Leiden, Holland. April 2, **1990**.

17. Seminar: "Cytokines and the Mechanism of Action of Calciotropic Hormones." University of Manchester, England. October 12, **1990**.

18. "Calciotropic Hormones and Cytokine Secretion and Function." The Catholic University of Leuven, Belgium. October 22, **1990**.

19. Midwest Connective Tissue Workshop. "Cytokine Regulation by Calciotropic Hormones: Relevance to Bone Remodeling." Chicago, IL. November 17, **1990**.

20. Honorary Speaker: 18th Congress of the Helenic Endocrine Society. "Calciotropic Hormones, Cytokines, Immune System, and Bone." Thessalonica, Greece. April 26-27, **1991**.

21. Seminar: Eli Lilly Research Laboratories. "The Endocrine System, Cytokines and Bone Cell Biology." Indianapolis, IN. May 15, **1991**.

22. 8th International Workshop on Vitamin D. "The Immunoregulating Properties of Vitamin D: Receptors and Mechanisms of Biologic Action." Paris, France. July 5-10, **1991**.

23. Gordon Research Conference on the Cellular and Molecular Biology of Bones and Teeth. "Estrogens and Bone Cell Regulation." Meriden, NH. July 8-12, **1991**.

24. International Conference on Osteoporosis. "Estrogens, Cytokines, and the Control of Osteoclast Formation and Bone Resorption In Vitro and In Vivo." Kobe, Japan. November 5-7, **1991**.

25. Seminar: Merck Sharp & Dohme Research Laboratories. "Cytokines, Bone Metabolism, and Osteoporosis." Philadelphia, PA. December 30, **1991**.

26. Seminar: "Cytokines and the Biology of Bone." University of Parma, Italy. April 20, **1992**.

27. The XIth International Conference on Calcium Regulating Hormones: Workshop on Osteoporosis. "Estrogens, Cytokines, and the Pathophysiology of Osteoporosis." Florence, Italy. April 23-24, **1992**.

28. Seminar: Schering AG, "Vitamin D, the Hematolymphopoietic Tissue, and Bone." Berlin, Germany. August 28, **1992**.

29. Ninth International Congress of Endocrinology. "Estrogens, Cytokines, and the Pathophysiology of Osteoporosis." Nice, France. August 30-September 5, **1992**.

30. Seminar: "Calciotropic Hormones, the Hematolymphopoietic System, and Bone." University of South Carolina, Charleston, SC. September 14, **1992**.

31. Seminar: Glaxo, Inc., "Calciotropic Hormones, the Hematolymphopoietic System, and Bone." Research Triangle Park, NC. September 15, **1992**.

32. Preclinical Symposium: Cytokines and Bone Metabolism Workshop at the 14th Annual Meeting of the American Society for Bone and Mineral Research, "IL—6, Estrogens and Osteoporosis--In Vivo Studies." Minneapolis, MN. October 1, **1992**.

33. Erasmus Autumn School of Immunology and Endocrinology: Erasmus University Medical School (Erasmus Summer Program Endocrinology/Immunology), "Calciotropic Hormones, the Hematolymphopoietic Tissue and Osteoclastogenesis." Rotterdam, Holland. October 5-16, **1992**.

34. Symposium on Stromal Cell Biology: Pfizer Pharmaceuticals, "Calciotropic Hormones, Bone Marrow, and Bone Remodeling." Mystic, CT. November 30, **1992**.

35. Seminar: "Calciotropic Hormones, the Immune System, and Bone Pathophysiology." University of Alabama-Birmingham, Birmingham, AL. January 25, **1993**.

36. Western Association of Physicians, West Coast Endocrine Club. "Calciotropic Hormones, the Hematolymphopoietic Tissue, and Bone." Carmel, CA. February 18, **1993**.

37. Seminar: Southern California Bone Club. "Calciotropic Hormones, the Hematolymphopoietic Tissue, and Bone." Anaheim, CA. March 8, **1993**.

38. American Association for Cancer Research, Special Conference: Mechanisms of Action of Retinoids, Vitamin D, and Steroid Hormones. "Calciotropic Steroids, the Hematolymphopoietic System, and Bone." Banff, Alberta, Canada. March 15-20, **1993**.

39. Workshop on Sex Steroids and Bone. "Sex Steroids and Cytokines in Bone Metabolism." Berlin, Germany. April 30-May 1, **1993**.

40. Dermatology 2000 Vienna. "Vitamin D and the Immune System." Vienna, Austria. May 18-21, 1993.

41. Grand Rounds. "Calciotropic hormones, the hematolymphopoietic tissue, and bone." University of Arkansas for Medical Sciences, Little Rock, AR. July 22, **1993**.

42. Keynote Speaker: 11th Annual Meeting of Japanese Society for Bone and Mineral Research. "Estrogens and Bone." Yokohama, Japan. August 1, **1993**.

43. Keynote Speaker: 7th Bone Forum. "Experimental Aspects of Osteoporosis." Osaka and Tokyo, Japan. September 3-4, **1993**.

44. Mini-symposium on Cytokines and Bone: 15th Annual Meeting of the American Society for Bone and Mineral Research. "Hormonal regulation of interleukin-6 production in bone and its role in osteoclastogenesis." Tampa, Florida. September 18-22, **1993**.

45. 2nd Workshop on Osteobiology. "Calciotropic hormones, the hematolymphopoietic tissue, and bone." Parma, Italy. October 1-4, **1993**.

46. Meikai University School of Dentistry, Department of Oral Anatomy. "Sex hormones, cytokines, and the pathophysiology of osteoporosis." Tokyo, Japan. October 7, **1993**.

47. Special Seminar: Fuji Institute of Education and Training. "Interleukin-11: A new cytokine critical for osteoclast development." Mt. Fuji, Japan. October 8, **1993**.

48. Honorary Speaker: 6th Bone Cell Biology Meeting. Mt. Fuji, Japan. October 9-10, **1993**.

49. Teijin Institute for Biomedical Research. "The role of vitamin D in immune cell regulation and osteoclast development." Tokyo, Japan. October 12, **1993**.

50. Kyoto University, Chest Disease Research Institute and Research Institute of Senescence Biology. "The cellular, biochemical, and molecular basis of postmenopausal and senescence associated osteoporosis." Kyoto, Japan. October 14, **1993**.

51. Showa University School of Dentistry, Department of Biochemistry. "Role of IL-6 and gp130 in estrogen deficiency." Tokyo, Japan. October 15, **1993**.

52. Joint Meeting of the 8th International Lymphokine Workshop and the 4th International Workshop on Cytokines. "Sex Hormones, Cytokines, and the Pathophysiology of Osteoporosis." Osaka, Japan. October 17-21, **1993**.

53. Endocrine Grand Rounds: Brigham and Women's Hospital, Harvard University. "Cellular, Biochemical, and Molecular Basis of the Postmenopausal and Senescence Associated Osteopenias: Novel Insights." Boston, Massachusetts. February 23, **1994**.

54. Special Seminar: "The cellular, biochemical, and molecular basis of the postmenopausal and senescence associated osteopenias: novel insights." Department of Pharmacology, University of California, San Diego. February 24, **1994**.

55. NIH/NIDR Workshop on Human Models of Skeletal Aging. "Bone marrow, clastic, and blastic cell systems. Quo Vadis?" Washington, D.C. March 2, **1994**.

56. Fifth Workshop on Cells and Cytokines in Bone and Cartilage. Davos, Switzerland. April 11-13, **1994**.

57. Special Seminar: University of Padova, Italy. April 15, **1994**

58. Honorary Symposium Speaker: Six International Conference on Immunopharmacology. Prague, Czech Republic. May 29-June 2, 1994.

59. Ninth Workshop on Vitamin D. Orlando, Florida. May 29-June 2, **1994**.

60. Bone Biology Seminar Series. Women's Health Research Institute. Wyeth-Ayerst Research, Radnor, Pennsylvania. June 14-15, **1994**.

61. Guest Speaker: Inter-Institute Group Lecture Series. National Institutes of Health. Bethesda, Maryland. July 13, **1994**.

62. Special Seminar: Regeneron Pharmaceuticals, Inc. Tarrytown, New York. July 21, **1994**.

63. Aging and Musculoskeletal Decline Workshop. National Institute on Aging Biology of Aging Program. "Cytokines and bone." Santa Barbara, California. August 14-17, **1994**.

64. Non-reproductive Actions of Sex Steroids. Ciba Foundation. "Sex steroids, cytokines, and the bone marrow: new concepts on the pathogenesis of osteoporosis." London, England. August 30-September 9, **1994**.

65. First Argentine Congress. Argentine Society for Osteoporosis. "Bone marrow, cytokines, and the pathophysiology of osteoporosis." Buenos Aires, Argentina. November 5-9, **1994**.

66. New York Academy of Sciences. Osteoporosis and Bone Biology Minisymposium. New York, New York. November 22, **1994**.

67. The XIIth International Conference on Calcium Regulating Hormones. Melbourne, Australia. February 14-20, **1995**.

68. Symposium on Steroids and Bone. Hyatt Coolum Resort, Queensland, Australia. February 19-23, **1995**.

69. Grand Rounds: Department of Obstetrics and Gynecology, Case Western Reserve University. Cleveland, Ohio. March 1, **1995**.

70. Grand Rounds: Department of Physiology, University of Texas Health Science Center at San Antonio, San Antonio, Texas. March 6, **1995**.

71. 15th Japan MEDAC. "Bone marrow, cytokines, and the pathophysiology of osteoporosis." Tokyo, Japan. March 17-18, **1995**.

72. Special Seminar: Ligand Pharmaceuticals, Inc. San Diego, California. April 4, **1995**.

73. Endocrinology Grand Rounds: Massachusetts General, Harvard University, "Cellular, Biochemical and Molecular Mechanisms of Post-Menopausal and Senescence Associated Osteoporosis." Boston, Massachusetts. April 18, **1995**.

74. National Institute of Diabetes and Digestive and Kidney Diseases Workshop on Anabolic Hormones in Bone: Basic Research and Therapeutic Potential. "Bone marrow, cytokines, and bone remodeling." Bethesda, Maryland. May 1-2, **1995**.

75. Grand Rounds: Department of Obstetrics and Gynecology, University of Arkansas for Medical Sciences. Little Rock, Arkansas. May 10, **1995**.

76. III Workshop on Osteobiology. "Cellular, biochemical and molecular basis of postmenopausal and senile osteoporosis: roles of IL-6 and gp130." Mattinata, Italy. July 1-4, **1995**.

77. Gordon Research Conference: Teeth and Bones. "Osteoclast differentiation and regulation." Meriden, New Hampshire. July 2-7, **1995**.

78. NIH/Tulane University Sponsored Workshop: Tulane Cancer Center Oncology Update. New Orleans, Louisiana. October 6-8, **1995**.

79. NIH Clinical Staff Conference: Interleukin-6: An Endocrine Cytokine with Many Potential Pathophysiologic Roles in Humans. Bethesda, Maryland. December 26-27, **1995**.

80. Sixth Workshop on Cells and Cytokines in Bones and Cartilage. Davos, Switzerland. January 7-10, **1996**.

81. 18th Annual Family Practice Intensive Review Course. University of Arkansas for Medical Sciences. Little Rock, Arkansas. May 31, **1996**.

82. First International Conference on Immunology and Aging. NIH. Bethesda, Maryland. June 16-19, **1996**.

83. Deaconess Research Institute Workshop on Osteoporosis: Interrelationship with Osteoarthritis. Billings, Montana. August 25-30, **1996**.

84. Seminar, Department of Cell Biology. Case Western Reserve University. "The Role of gp130 Cytokines on Osteoclast and Osteoblast Development." Cleveland, Ohio. September 16, **1996**.

85. 15th Annual Symposium on Geriatrics and Gerontology. St. Louis, Missouri. September 24-26, **1996**.

86. 3rd International Congress of the International Society for Neuroimmunomodulation. NIH. Bethesda, Maryland. November 13-15, **1996**.

87. 49th Annual Scientific Meeting, The Gerontological Society of America, GSA GRECC Symposia. Washington, DC. November 17-21, **1996**.

88. 4th Congress of Hellenic Society for the Study of Bone Metabolism. Athens, Greece. December 12-14, **1996**.

89. St. Louis Endocrine Club meeting. "An Update on the Pathogenesis and Treatment of Osteoporosis" Clayton, Missouri. April 8, **1997**.

90. International Business Communications' Emerging Therapies for Osteoporosis. "The Role of IL-6 Type Cytokines and their Receptors in Skeletal Physiology and the Pathophysiology of Osteoporosis" Boston, Massachusetts. April 28-29, **1997.**

91. Visiting Professor: Bowman Gray School of Medicine - Winston-Salem, North Carolina. April 30- May 2, **1997**.

92. Keynote Speaker: 9th Balcan Congress of Endocrinology and 24th Panhellenic Congress of Endo/Meta. - Thessalonica, Greece. May 7-11, **1997**.

93. Second International Conference on Steroids and Bone. "Cytokines and their receptors: clinical application in estrogen deficiency" Sienna, Italy. May 15-17, **1997**.

94. IV Workshop on Osteobiology. "Birth and Death of Osteoblasts: Basic Regulatory Mechanisms and Implications for Osteoporosis." Salsomaggiore (Parma), Italy. June 20-23, **1997**.

95. Fourth Geriatric Educational Retreat. "Osteoporosis" Whistler, British Columbia. August 5-10, **1997**.

96. 19th Annual Meeting - Annual Society for Bone and Mineral Research. Cincinnati, Ohio. September 10-14, **1997**.

97. Grand Rounds. "Estrogen Replacement Therapy." University of Arkansas for Medical Sciences, Little Rock, AR. September 18, **1997**.

98. Grand Rounds. "Regulation of the Birth and Death of Bone Cells by Steroid Hormones: New Aspects of their Mechanism of Action on Bone." Washington University. St. Louis, Missouri. September 18-19, **1997**.

99. 6th Symposium of the Spanish Society of Bone Investigations and Mineral Metabolism. "Local factors and bone metabolism" Granada, Spain. October 8-11, **1997**.

100. Guest Speaker - Arkansas Chapter of the American College of Radiology. University of Arkansas for Medical Sciences. Little Rock, AR. October 18-19, **1997**.

101. The XIV Pan American Congress of Endocrinology. "Cytokines and Bone" Cancun, Mexico. November 2-7, **1997**.

102. Visiting Faculty of the Division of Endocrinology and Metabolism, Mayo Clinic. Rochester, Minnesota. November 30-December 3, **1997**.

103. Keystone Symposia on Molecular and Cellular Biology. "Birth and Death of Bone Cells: Implications for Skeletal Remodeling." Copper Mountain, Colorado. January 10-15, **1998.**

104. AMGEN, Inc. "Regulation of the Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications for Osteoporosis." Thousand Oaks, CA. January 15-17, **1998.**

105. Seventh Workshop on Cell Biology of Bone and Cartilage in Health and Disease. Davos, Switzerland. March 14-17, **1998.**

106. Wyeth Pharm. Advisory Board Meeting – "Assessing the Role of Selective Estrogen Receptor Modulators in Postmenopausal Health." Philadelphia, PA. March 20, **1998.**

107. Seminar: "Regulation of the Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications for Osteoporosis." Northwestern University, Chicago, IL. April 1-2, **1998.**

108. Guest Speaker: IV European Congress of Endocrinology. "Cellular and Molecular Mechanisms of Involutional Osteoporosis." Seville, Spain. May 9-13, **1998.**

109. Wyeth Pharm. Frontiers in Estrogen Action. Westin Rio Grande, Puerto Rico. May 18-19, **1998.**

110. Guest Speaker: 20th Annual Family Practice Intensive Review Course. "Osteoporosis: The disease and Its Management – A **1998** Update. Little Rock, AR. June 4, **1998.**

111. Seminar: "Birth and Death of Bone Cells: Determinants of Bone Mass and Targets for Anabolic Therapies." Lilly Research Laboratories, Indianapolis, IN. July 7-8, **1998.**

112. Guest Speaker: International Symposium on Biology of Menopause. "Cellular and Molecular Mechanisms of Postmenopausal Osteoporosis." Newport Beach, CA. September 10-13, **1998.**

113. Seminar: "Regulation of the Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications for Osteoporosis." Washington University, St. Louis, MO. September 17-18, **1998.**

114. Seminar: "Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications of Osteoporosis." Baylor University, Houston, TX. September 24, **1998.**

115. Seminar: "Cytokines and Bones." The University of Texas MD Anderson Cancer Center, Houston, TX. September 25, **1998.**

116. Guest Speaker: "Estrogens, Cytokines and the Pathophysiology of Osteoporosis." Graylyn Conference on Women's Health, Winston-Salem, NC. October 14-16, **1998.**

117. Guest Speaker: "A New Choice for the Prevention of Post Menopausal Osteoporosis." Area Health Education Center – Northeast, Jonesboro, AR. October 20, **1998.**

118. Guest Speaker: "Prevention & Treatment of Postmenopausal Osteoporosis." Kansas Association of Osteopathic Medicine, Topeka, KS. October 24, **1998.**

119. Guest Speaker: "Birth and Death of Bone Cells: Critical Determinants of Bone Mass and Targets of New and Old Pharmacotherapies." 11th International Workshop on Calcified Tissues, Eilat, Israel. February 7-12, **1999.**

120. Guest Speaker: "Birth and Death of Bone Cells: Critical Determinants of Bone Mass and Targets of New and Old Pharmacotherapies." Merck Research Laboratories, West Point, PA. March, 1, **1999.**

121. Guest Speaker: "Cellular and Molecular and Genetic Mechanisms of Senescence Associated Osteoporosis." Keystone Symposia on Molecular and Cellular Biology, Tahoe City, CA. March 15-20, **1999**.

122. Guest Speaker: "Paracrine, Autocrine and Intracellular Signals for the Birth and Death of Bone Cells: Critical Determinants of Bone Mass and Novel Targets for Anabolic Therapies." University of California at Irvine. March 22, **1999**.

123. Guest Speaker: "Postmenopausal, Senile- and Glucocorticoid-Induced Osteoporosis: New Developments in the Pathogenesis and Treatment." Medical Grand Rounds, Veterans Administration Medical Center, Long Beach, CA. February 23, **1999**.

124. Guest Speaker: "Regulation of the Birth and Death of Bone Cells by Estrogen: Molecular Mechanisms and Implications for the Pathogenesis of Postmenopausal Osteoporosis." Frontiers in Estrogen Action, Dana Point, CA. April 7-8, **1999**.

125. Guest Speaker: "Cellular and Molecular Mechanisms of Postmenopausal, Glucocorticoid-Induced and Senile Osteoporosis." Endocrine Society Congress, Drakensberg, South Africa. April 17-22, **1999**.

126. Guest Speaker: "Birth and Death of Bone Cells: Critical Determinants of Bone Mass and Novel Targets for Anabolic Bone Therapies" Endocrine Society Congress, Drakensberg, South Africa. April 17-22, **1999**.

127. Symposium Chairman: "The Endocrine, Paracrine & Autocrine Regulation of the Bone Marrow Environment." The Endocrine Society's 81st Annual Meeting. San Diego, CA. June 12-15, **1999**.

128. Guest Speaker: "Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications for the Pathogenesis and Treatment of Postmenopausal Osteoporosis." Treating Osteoporosis as we Approach the New Millennium. Vancouver, Canada. August 13-15, **1999**.

129. Invited Speaker: "Birth and Death of Bone Cells: Critical Determinants of Bone Mass." XI Endocrine Congress of the Argentine Society of Endocrinology. Buenos Aires, Argentina. September 6-9, **1999**.

130. Invited Speaker: "Cellular and Molecular Mechanisms of Postmenopausal, Senile- and Glucocorticoid-Induced Osteoporosis." XI Endocrine Congress of the Argentine Society of Endocrinology. Buenos Aires, Argentina. September 6-9, **1999**.

131. Invited Speaker: National Advisory Council on Aging. Bethesda, MD. September 23, **1999**.

132. Invited Speaker: "Birth and Death of Bone Cells: Basic Regulatory Mechanisms and Implications for the Pathogenesis and Treatment of Postmenopausal Osteoporosis." The Wellcome Trust Foundation Symposium, "Osteoporosis as a Failure of Bone's Adaptation to functional Load Bearing". Northampton, England October 27-29, **1999**.

133. National Space Biomedical Research Institute – Bone Loss Team Workshop. Houston, TX. November 16-17, **1999**.

134. Invited Speaker: "Of Birth, Death & Angels: A New Perspective on the Pathogenesis and Treatment of Osteoporosis". Medical Grand Rounds, University of California at San Diego, San Diego, CA. December 8, **1999**.

135. Invited Speaker: "Key Regulatory Molecules and Signalling Pathways Controlling the Birth and Death of Bone Cells". Endocrinology Grand Rounds, University of California at San Diego, San Diego, CA. December 8, **1999**.

136. Invited Speaker: "Bone Strength and Bone Mass: A Lot More Than Meets the Eye or a DEXA BMD". San Diego Bone Club Dinner Seminar. San Diego, CA. December 8, **1999**.

137. Invited Speaker: "Of Birth, Death and ANGELS: A Perspective on the Pathogenesis and Management of Osteoporosis for the Third Millennium". University of Tennessee, Memphis, TN. February 28-29, **2000**.

138. Invited Speaker: "Bone Involvement in Cancer – New Insights into Pathogenesis". University of Arkansas for Medical Sciences – "Updates in Hematological Malignancies". March 18, **2000**.

139. Scientific Committee: Eighth Workshop on Cell Biology of Bone and Cartilage in Health and Disease. Davos Switzerland. April 1-4, **2000**.

140. Invited Speaker: "Of Birth, Death and Angels: A Turn of the Millennium Perspective on the Pathogenesis and Treatment of Osteoporosis". Medical Grand Rounds, University of Virginia, Charlottesville, VA. April 10-11, **2000**.

141. Invited Speaker: "Genotropic and Non-Genotropic Effects of Estrogen on Bone". 4th Annual Frontiers in Estrogen Action. West Palm Beach, FL. April 16-18, **2000**.

142. Invited Speaker: "Aging, Sex Steroids and Osteoporosis: A 2000 Update". 11th International Conference on the Biochemistry of Exercise. Little Rock, AR. June 7, **2000**.

143. Invited Speaker: "Sex Non-Specific Signaling Through the Estrogen or Androgen Receptors in Bone: A New Explanation for an Old Paradox." Kousteni, S. P., Bellido, T. and Manolagas, S.C. World Congress on Osteoporosis. Chicago, IL. June 15-18, **2000**.

144. Invited Speaker: "Sex Non-Specific Signaling Through the Estrogen or Androgen Receptors on Bone: A New Explanation for an Old Paradox". 14th Annual Symposium on the Long Term Effects of Estrogen Deprivation", Telluride, CO. July 9-12, **2000**.

145. Invited Speaker: "Androgen, Estrogen and Aging: What's New about the Old Male Skeleton". Working Group on Aging and the Human Skeleton – 22nd Annual Meeting of the American Society for Bone and Mineral Research. Toronto, Canada. September 22-26, **2000**.

146. Invited Speaker: "Genotropic and Non-Genotropic Actions of Sex Steroids on Bone". Signal Transduction Colloquium, Department of Pharmacology and Cancer Biology – Duke University Medical Center. Durham, NC. October 25, **2000**.

147. Keynote Lecture: "Bone Remodeling in Health and Disease". 3rd International Conference – "Recent Developments on the Diagnosis and Therapy of Endocrine and Metabolic Problems in Thalassaemia". Athens, Greece. November 10-12, **2000**.

148. Keynote Speaker: "Bone Cell Birth and Death – Implications for the Pathogenesis and Treatment of Skeletal Disorders", The Judith and George Goldman Symposium on Innovative Research in Multiple Myeloma. Amelia Island, FL. January 19-21, **2001**.

149. Invited Speaker: "Effect of Bisphosphonates on Osteoblasts", Canadian Bone Metabolism Board Meeting. Orlando, FL. January 12-14, **2001**.

150. Invited Speaker: "Sex Steroids and Their Receptors in Skeletal Development, Growth and Homeostasis: From Mice to Humans and Vice Versa", Symposium/Workshop on Biochemical, Genetic, and Molecular Biological Mechanisms of Skeletal Development. Research Triangle Park, NC. April 9-10/**2001**.

151. Invited Speaker: "Of Birth, Death, and Angels: Newer Perspectives on the Pathogenesis and Management of Steroid-Induced Osteoporosis", 2nd International Congress GIO **2001** Glucocorticoid Induced Osteoporosis. Mantova, Italy. April 19-21, **2001**.

152. Invited Speaker: "Estrogen Signaling in Bone", Second International Meeting Rapid Response to Steroid Hormones. Denver, Colorado. June 16-18, **2001**.

153. Invited Speaker: "Of Birth and Death: A Different Perspective on the Pathogenesis and Treatment of Steroid-induced Osteoporosis", FASEB Summer Research Conference Program "Steroids and Bone". Whitefish, Montana. Juene 23-28, **2001**.

154. Invited Speaker: "Apoptosis: A Target of Old and New Drugs for Osteoporosis" Metabolic Bone Disease Society of Colorado. Denver, CO, September 27, **2001**

155. Invited Speaker: "Of Birth, Death and Angels". Medical Grand Rounds, Baylor University Medical Center, Houston, TX. October 4, **2001**.

156. Invited Speaker: "Apoptosis in Skeletal Health and Disease". State of the Art Lecture – 23nd Annual Meeting of the American Society for Bone and Mineral Research. Phoenix, Arizona. October 12-16, **2001**.

157. Invited Speaker. "Aging Bone". Musculoskeletal Biology Workshop, National Institute on Aging. Bethesda, Maryland. October 24, **2001**.

158. Invited Speaker. "Mechanism(s) of steroid-induced bone loss". Fourth Annual Basic Research Conference, American College of Rheumatology. San Francisco, CA. November 10-11, **2001**.

159. Invited Speaker. "Activation of non-genotropic estrogen-like signaling: a novel approach to bone anabolism". Annual Interim Meeting of the Association of Osteobiology. Bethesda, MD. December 7, **2001**.

160. Invited Speaker. "Activators of nongenotropic estrogen-like signaling: a novel approach to HRT". AACR Special Conference in Cancer Research "Apoptosis and Cancer". Waikola, Hawaii. February 13-17, **2002.**

161. Invited Speaker. "Activators of nongenotropic estrogen-like signaling: a novel approach to HRT". ObGyn Grand Rounds, University of Oklahoma, Oklahoma City, OK. March 5, **2002**.

162. Ninth Workshop on Cell Biology of Bone and Cartilage in Health and Disease. Davos, Switzerland. March 16-19, **2002.**

163. Invited Speaker. "Steroid-induced osteoporosis". Memphis Rheumatism Society Dinner. Memphis, TN March 26, **2002.**

164. Invited Speaker. "Pathogenesis and treatment of osteoporosis: a 2002 update" Medical Grand Rounds, University of Tennessee, Memphis, TN. March 27, **2002.**

165. Featured Speaker. "Activation of nongenotropic estrogen-like signaling: a novel approach to bone anabolism and gender-natural HRT". Yale Core Center for Musculoskeletal Disorders Research Day. New Haven, CT. April 4, **2002.**

166. Guest Speaker. "Activators of nongenotropic estrogen-like signaling (ANGELS): a novel approach to bone anabolism and gender-nautral sex steroid replacement therapy". University of Southern California Institute for Genetic Medicine 6th Annual Symposum. Pasadena, CA. May 1, **2002**.

167. Invited Speaker. "Activators of nongenotropic estrogen-like signaling (ANGELS): Leads for improved HRT." 10th World Congress on the Menopause. Berlin, Germany. June 10 –14, **2002**.

168. Invited Speaker. "Activation of nongenotropic estrogen-like signaling (ANGELS): a novel approach to bone anabolism and gener neutral therapy of osteoporosis". European Bone and Tooth Society Annual Meeting. Cardiff, UK. June 24-26, **2002**.

169. Invited Speaker. "Activation of nongenotropic estrogen-like signaling (ANGELS): a novel approach to bone anabolism and gender neutral therapy of osteoporosis" Pathology Research Seminar. University of Alabama at Birmingham. Birmingham, AL. January 16, **2003**.

170. Invited Speaker. "Of birth, death and ANGELS: novel insights into the pathophysiology and treatment of bone loss". Bone Disease and Cancer Meeting. Thessaloniki, Greece. February 20-23, **2003**.

171. Invited Speaker. ""Of birth, death and ANGELS: novel insights into the pathogenesis and treatment of osteoporosis". Hospital for Special Surgery. New York, NY. March 10, **2003**

172. Invited Speaker. ""Of birth, death and ANGELS: novel insights into the pathogenesis and treatment of osteoporosis". Endocrinology Grand Rounds, Columbia University. New York, NY. March 10, **2003**.

173. Invited Speaker. "Postmenopausal hormone replacement therapy: what went wrong and how to fix it." Research Conference. University of Pittsburgh, Pittsburgh, PA. March 13, **2003**.

174. Invited Speaker. "Of birth, death and ANGELS: novel insights into the pathogenesis and treatment of osteoporosis" Rheumatology Grand Rounds, Vanderbilt University. Nashville, TN. March 20, **2003**.

175. Invited Speaker. "Sex Hormones and Apoptosis" 2nd International Conference on Osteoporosis in Men, Genoa, Italy. April 01-06, **2003**

176. Invited Speaker. "Dissociation of skeletal from reproductive effects of sex steroids by activation of nongenotropic signals" AFMR/ASBMR joint symposium at FASEB 7, 2003, San Diego, CA. April 13, **2003**.

177. Invited Speaker. "Of birth, death and ANGELS: novel insights into the pathogenesis and treatment of osteoporosis" Endocrinology Grand Rounds, Vanderbilt University. Nashville, TN. May 13, **2003**.

178. Invited Speaker "Sex steroids and bone health: the basic science." NIH - The Menstrual Cycle and Bone Health. Bethesda, MD. May 22, **2003**.

179. Invited Speaker "Postmenopausal hormone replacement therapy: what went wrong and how to fix it". 4th Annual: The Great Plains States Society for Molecular Biology and Genetics. Omaha, NB June 3, **2003**.

180. Invited Speaker "Of birth, death and ANGELS: novel insights into the pathogenesis and treatment of osteoporosis" Annual Meeting of the Canadian Federation of Biological Sciences. Ottawa, ON Canada. June 14, **2003**.

181. Invited Speaker "Nongenotropic Signaling of Sex Steroids in Bone Biology" Symposium on Bone Biology: New Concepts and Future Directions. Northwestern University Feinberg School of Medicine. Chicago, IL. July 18, **2003**.

182. Invited Speaker "Of birth, death and ANGELS: new perspectives on the pathogenesis and treatment of osteoporosis" 6th International Symposium on PTH and PTHrP (PPP-6). Montreal, Quebec, Canada. July 22, **2003**.

183. Invited Speaker "Dissociation of skeletal from reproductive effects of sex steroids by activation of nongenotropic signals" Gordon Research Conference on Mechanisms Of Hormone Action. Meridien, NH. July 30, **2003**.

184. Invited Speaker: "ANGELS: Rational design of novel Drugs for Bone Anabolism and HRT" Riggs Symposium. Rochester, MN. September 17, **2003**.

185. Invited Speaker: "Osteoclast/Osteoblast Lifespan and the Role of Apoptosis in Bone Biology" Canadian Diabetes Association Professional Conference. Ottawa, ON, Canada. October 18, **2003**.

186. Invited Speaker: "Dissociation of Skeletal from Reproductive Actions of Sex Steroids by Activation of Kinase-Mediated Gene Transcription" Endocrine Scholar Lecture, University of Connecticut. Farmington, CT. November 11, **2003**.

187. Invited Speaker: "Kinase-mediated transcription activators of nongenotropic estrogen-like signaling (ANGELS), and osteoporosis: A different perspective on the HRT dilemma." Andreoli Festschrift, UAMS January 20, **2004**.

188. Invited Speaker: "Dissociation of Skeletal from Reproductive Actions of Sex Steroids by Activation of Kinase-Mediated Gene Transcription" Endocrinology Grand Rounds, Univeristy of Texas Southwestern. Dallas, TX. January 27, **2004**.

189. Invited Spekaer "Birth and Death of Bone Cells in the Pathogenesis and Treatment of Osteoporosis: A **2004** Update" Bone Group, University of Texas Southwestern. Dallas, TX. January 28, **2004**.

190. Memorial Dionyssios Ikkos lecture at the 31st Greek Endocrine Society Meeting, Athens, Greece March **2004** "Activators of non-genotropic estrogen like signaling (ANGELS): paradigm of a novel class of pharmacotherapeutic ligands for steroid hormone receptors." Athens, Greece March 18, **2004.**

191. Invited Speaker: "Dissociation of skeletal from reproductive effects of sex steroids by activation of nongenotropic signals: novel insights into bone anabolism and a safer HRT" 5th International Symposium on Women's Health and Menopause, Florence, Italy. April 23, **2004**.

192. Invited Speaker: "Of Birth, Death, and ANGELS: a **2004** update of the pathophysiology and treatment of Osteoporosis" 12th Annual Panhellenic EEMMO Congress, Limnos, Greece. April 30, **2004**.

193. Invited Speaker: "Activtors of Non-Genotropic Estrogen-Like Signaling (ANGELS): A Novel Route to Bone Anabolism" American Society for Bone and Mineral Research (ASBMR) Advances in Skeletal Anabolic Agents and the Treatment of Osteoprosis, Bethesda, MD. May 24, **2004.**

194. Invited Discussion Leader: "Biology of Perimenopause: Impact on Health and Aging Workshop" NIA/Office of Research on Women's Health, Bethesda, MD. May 27, **2004**.

195. Invited Speaker: "Sex Steroids, Apoptosis, ANGELS, and Bone Anabolism" Michael Parfitt Festschrift, Seattle, WA. September 29, **2004**.

196. Invited Speaker: "Mechanisms of Endocrine Action in Bone" 12th Annual International Congress of Endocrinology, Lisbon, Portugal. September 01, **2004**.

197. Invited Speaker: "Pathogenesis of Fractures in Glucocorticoid Osteoporosis" Satellite Symposium: *Treatment and Prevention of Osteoprosis: An Opportunity Missed?* 2004 Annual Scientific Meeting of the American College of Rheumatology, San Antonio, TX. October 19, **2004.**

198. Invited Speaker: "Charting Signaling Cascades to Bone Cell Commitment, Differentiation and Survival with Small Molecules" Boston III Meeting, Boston, MA. April 6, **2005**.

199. Invited Speaker: "Molecular Mechanisms of Sex Steroids" 3rd International Conference on Osteoporosis in Men, Genoa, Italy. May 20, **2005**.

200. Invited Speaker: Opening Plenary Lecture "Cellular and Molecular Mechanisms of Steroid Hormone Action on Bone: Decreased Defense against Reactive Oxygen Species as A Common Pathogenetic Mechanism of the Effects of Aging and Estrogen Deficiency" International Congress on Glucocorticoid-Induced Osteoporosis (GISGO), Trieste and Gorizo, Italy. October 5, **2005**.

201. Invited Speaker: the Aurelio Rapado Memorial Lecture of the Spanish Society of Bone and Mineral Research (SEIOMM) Congress "A Revisionist View of Osteoporosis: From Estrogen-centric to Multifactorial" Madrid, Spain. November 9, **2005**.

202. Invited Speaker: "From Estrogen-centric to Multifactorial: a Revisionist View of Osteoporosis" Washington DC Bone Club, Washington DC. February 7, **2006**.

203. Invited Speaker: "From Estrogen-centric to Multi-factorial: a Revisionist View of Osteoporosis" Massachusetts General Hospital Endocrine Grand Rounds, Boston, Massachusetts April 25, **2006**.

204. Invited Speaker: "Decreased Defense Against Reactive Oxygen Species: a Common Pathogenetic Mechanism of the Effects of Aging and Estrogen Deficiency on Bone" 2006 FASEB Summer Research Conference; Mechanisms of Action of Steroid Hormones: Integration of Membrane- and Nucleus-initiated Effects, Tucson, Arizona. June 2, **2006**.

205. Invited Speaker: "From Estrogen-centric to Multifactorial: a revisionist view of involutional osteoporosis with a role for endogenous hypercortisolemia" 2006 3rd International Conference, *New Perspectives: bone involvement in arthritis*, Venice, Italy. October 20, **2006**.

206. Invited Speaker: "From Estrogen-centric to Multifactorial: a Revisionist View of Osteoporosis" 2007 Conference at the Institute of Molecular Medicine and Genetics at the Medical College of Georgia, Augusta, Georgia. February 22, **2007**.

207. Invited Speaker: "From Estrogen-centric to Multifactorial: a revisionist view of osteoporosis" 2007 Kansas City Bone and Tooth Seminar Series, Kansas City, Missoui. March 19, **2007**.

208. Invited Speaker: "From Estrogen-centric to Multifactrioal: a Revisionist View of Osteoporsis for the 21st Centry" Department of Endocrinology, University of Tennessee, Memphis, Tennesse, 07/24/**2007**.

209. Invited Speaker: "Gone with the Wnts: aging and disease of bone, lipid, and glucose metabolism" Memphis Endocrine Society, Memphis, Tennessee. July 24, **2007**.

210. Medical Grand Rounds: "The parathyroid hormone paradox: a cause of bone loss and treatment of osteoporosis" Internal Medicine Grand Rounds, Department of Internal Medicine, University of Tennessee, Memphis, Tennessee. July 25, **2007**.

211. Key Note Speaker: "Pathogenesis of GIOP" 3rd Annual Meeting of the Working Group on Osteoporosis and Rheumatic Diseases, Ancillary Program to the American Bone and Mineral Society 29th Annual Meeting, Honolulu, Hawaii. September 17, **2007**.

212. Invited Speaker: "From Estrogen-centric to Multifactorial: a Revisionist View of Involutional Osteoporosis" International Congress on Glucocroticoid-induced Osteoporosis (GIO **2007**), Naples, Italy. October 12, **2007**.

213. Invited Speaker: "Gone with the Wnts: aging and disease of bone, lipid, and glucose metabolism" Bone and Mineral Symposium (BMMS), Tokyo, Japan. January 31, **2008**.

214. Invited Speaker. "From Estorgen-centric to Multifactorial: a Revisionist View of involutional Osteoporosis" 6th Annual Meeting of Japan Conference on Bone & Joint Diseases, Tokyo, Japan. February 02, **2008**.

215. Invited Speaker: "Role of oxidative stress in bone health and disease" International Bone and Mineral Society Bone Biology and Therapeutics Symposium, Davos, Switzerland. March 10, **2008**.

216. Invited Speaker: "From Estrogen-Centric to Multifactorial: A Revisionist View of Osteoporosis" Department of Molecular Sciences Seminar Series, University of Tennessee at Memphis, Memphis, TN. March 24, **2008**.

217. Guest Speaker: "Role of Oxidative Stress in Bone Health and Disease" Amgen Pharmaceuticals, Westlake, California. April 18, **2008**.

218. Invited Speaker. "The Role of Osteocytes for the Bone Strength" 16th Annual Meeting of the Hellenic Society for the Study of the Bone Metabolism, Kos, Greece. June 7, **2008**.

219. Meet-the-Professor. "Apoptosis of Bone Cells" American Society for Bone and Mineral Research (ASBMR), Montreal, Canada. September 14, **2008**.

220. Invited Speaker. "Mechanism of Age-Dependent Decline of Bone Mass and Strength: Attenuation of Wnt/β-catenin Signaling by Reactive Oxygen Species (ROS)" Osteomen, 4th International Conference on Osteoporosis in Men, Santa Margherita, Italy. November 7, **2008**.

221. Invited Speaker. "Glucocorticoids, PTH and Bone: Newer Insights into Their Molecular and Cellular Effects and Their Implications for the Pathogenesis and Treatment of Osteoporosis" Glucocorticoid Induced Osteoporosis (GIOP) Regional European Medical Meeting, Dublin, Ireland. November 8, **2008**.

222. Medical Grand Rounds. "Of Termites, Archeozoans. Longevity and Metabolic Diseases" Department of Internal Medicine Seminar Series, Indiana University-Purdue University Indianapolis, Indianapolis, IN, January 9, **2009**.

223. Invited Speaker and Symposium Chair. "New Insights into the Pathophysiology of Osteoporosis and the Effectiveness of Intermittent PTH Administration for Its Treatment" Nycomed satellite symposium "Foundation, flexibility and freedom: optimising osteoporosis treatment using PTH" at the European Congress on Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ECCEO), Athens, Greece, March 20, **2009**.

224. Invited Speaker. "Vitamin D Deficiency" Arkansas Department of Health, Public Health Grand Rounds, Little Rock, Arkansas, April 9, **2009**.

225. Invited Speaker. "The Vitamin D Endocrine System and its Global Implications for Health and Disease" University of Arkansas for Medical Sciences, Internal Medicine Grand Rounds, Little Rock, Arkansas. April 12, **2009**.

226. Invited Speaker. "Role of Oxidative Stress in Bone Health and Disease" for the Translational Symposium – Bone – Bone Endocrinology at the 11th European Congress of Endocrinology (ECE), Istanbul, Turkey. April 28, **2009**.

227. Invited Speaker. "Emerging Signaling Pathways in Bone Symposium" for the Endocrine Society Annual Meeting, Washington, D.C., June 11, **2009**.

228. Invited Speaker. "Of Termites, Archeozoans, Longevity and Metabolic Diseases" for University of Tennessee Medical Center, Medical Grand Rounds, Memphis, Tennessee. June 24, **2009**.

229. Invited Speaker. "Wnt/β-catenin Pathways in Diseases of Bone and Glucose Metabolism" for Joint meeting of the American Pediatric Endocrine Society and the European Society for Pediatric Endocrinology (LWPES/ESPE), New York, New York. September 09, **2009**.

230. Session Co-Chair. "State-of-the-Art: A Roadmap to the Fountain of a Youthful Bone" for American Society for Bone and Mineral Research's 31st Annual Meeting, Denver, Colorado. September 13, **2009**.

231. Invited Speaker. "The emerging role of reactive oxygen species in bone physiology and pathophysiology" for the 6th International Congress, Glucocorticoid Induced Osteoporosis, Siena, Italy. October 8, **2009**.

232. Invited Speaker. "A Revisionist Perspective on the Effect of Aging on Bone" for the San Antonio Nathan Shock Aging Center Conference on Aging, Bandera, Texas. October 17, **2009**.

233. Invited Speaker. "The vitamin D endocrine system and its implications for health and disease." University of Arkansas for Medical Sciences, Cancer Institute Forum, Little Rock, Arkansas. December 7, **2009**.

234. Invited Speaker. "Of termites, archeozoans, aging, and metabolic diseases." Katholieke Universiteit of Leuven, Biomed Distinguished Lecturer Program, Leuven, Belgium.February 10, **2010**.

235. Invited Speaker. "Cellular and molecular actions of PTH" for Parathyroids **2010**: From pathophysiology to the clinical uses of PTH, Pisa, Italy. February 12, **2010**.

236. Session Co-Chair. "Theraputic use of Teriparatide and PTH 1-84" for Parathyroids 2010: From pathophysiology to the clinical uses of PTH, Pisa, Italy. February 13, **2010**.

237. Invited Speaker. "Use of PTH in GIO" for Parathyroids **2010**: From pathophysiology to the clinical uses of PTH, Pisa, Italy. February 13, **2010**.

238. Invited Speaker. "From estrogen-centric to aging and oxidative stress: a revisionist perspective of the pathogenesis of osteoporosis." Australian Rheumatoid Association 51st Annual Scientific Meeting, Melbourne, Australia. May 23, **2010**.

239. Invited Speaker. "Glucocorticoids, angiogenesis, vascularity, hydration, and bone strength." Australian Rheumatoid Association 51st Annual Scientific Meeting, Melbourne, Australia. May 24, **2010**.

240. Invited Speaker. "Hormones, redox balance, and skeletal homeostasis: an unforeseen entanglement." St. Vincent Institute, Melbourne, Australia. May 25, **2010**.

241. Invited speaker. "From estrogen-centric to aging and oxidative stress: a **2010** perspective of osteoporosis". Chicago city wide bone club. June 8, **2010.**

242. Invited Speaker. "Oxidative stress, the aging bone." European NeuroEndocrine Association, Liege, Belgium. September 22, **2010**.

243. Invited Speaker. "What old means to bone: oxidative stress and other pathogenetic mechanisms." Osteomen **2010**, Genoa, Italy. September 23, **2010**.

244. Invited Speaker. "Matching treatments with disease mechanisms for an aging population." Symposium-Treating Osteoporosis in the 21st Century, ASBMR **2010**, Toronto, Canada. October 15, **2010**.

245. Invited Speaker. "Aging and Bone." The Korean Society of Bone Metabolism 22nd Autumn Scientific Meeting, Seoul, South Korea. November 13, **2010**.

246. Invited Speaker. "A 21st Century perspective of osteoporosis." MEND Clinical Conference, Detroit, Michigan. December 16, **2010**.

247. Invited Speaker. "Role of Oxidative Stress in Age-Related Bone Loss." ASBMR Forum on Aging and Skeletal Health Meeting, Bethesda Maryland, March 21-23, **2011**.

248. Invited Speaker. "A 21st Century perspective of osteoporosis." 38th Pan-Hellenic Congress of Endocrinology and Metabolism Meeting, Thessaloniki Greece, April 6-9, **2011**.

249. Invited Speaker. "From estrogen-centric to aging and oxidative stress: a revised perspective of the pathogenesis of osteoporosis." ESCI Annual Scientific Meeting, Heraklion Greece, April 12-16, **2011**.

250. Invited Speaker. "Bone and oxidative stress." 4th Skeletal Endocrinology Meeting, Brescia Italy, April 15, **2011**. Invited Speaker. "A 21st Century perspective of osteoporosis." 38th Pan-Hellenic Congress of Endocrinology and Metabolism Meeting, Thessaloniki Greece. April 6, **2011**.

251. Invited Speaker. "From estrogen-centric to aging and oxidative stress: a revised perspective of the pathogenesis of osteoporosis." European Society of Clinical Investigation Annual Scientific Meeting, Heraklion Greece. April 12, **2011**.

252. Invited Speaker. "Bone and oxidative stress." 4th Skeletal Endocrinology Meeting, Brescia Italy. April 15, **2011.**

253. Invited speaker. "Of termites, archeozoans, and osteoporosis." Endocrine grand rounds, Massachusetts General Hospital, Harvard University, Boston. May 3, **2011.**

254. Invited speaker. "Of termites, archeozoans, and osteoporosis." Grand rounds, Maine Medical Center, Portland. May 5, **2011**.

255. Invited Speaker. "Oxidative stress, FoxOs, mesenchymal progenitor fate, and involutional osteoporosis." International Symposium of Mesemchymal Stem Cells, Chengdu, China. October 10-12, **2011.**

256. Invited Speaker. "Glucocorticoids and oxidative stress." 7th International Congress: Glucocorticoid Induced Osteoporois, Padua, Italy. October 27-29, **2011**.

257. Invited Speaker. "From Estrogen-centric to Aging and Oxidative Stress: A 2012 update of the pathogenesis of osteoporosis." Southern States Chapter of the American Association of Clinical Endocrinologists Annual Meeting, New Orleans, LA. March 2-4, **2012**.

258. Invited Speaker. "What old means to bone." Washington Bone Club, Washington, DC. April 19, **2012**.

259. Keynote Speaker. "What old means to bone." First Asia Pacific Bone and Mineral Research Meeting and the Australian and New Zealand Bone and Mineral Society 22nd Annual Scientific Meeting, Perth, Australia. September 3, **2012**.

260. Keynote Speaker. "Choreography from the tomb: The role of osteocytes in bone remodeling." First Asia Pacific Bone and Mineral Research Meeting and the Australian and New Zealand Bone and Mineral Society 22nd Annual Scientific Meeting, Perth, Australia. September 4, **2012**.

261. The Greg Mundy Lecturer. "Sex steroids and cortical verus trabecular bone accrual and maintenance: a tale of two cities." First Asia Pacific Bone and Mineral Research Meeting and the Australian and New Zealand Bone and Mineral Society 22nd Annual Scientific Meeting, Perth, Australia. September 5, **2012**.

262. Invited Speaker. "Molecular basis of the aging skeleton." 5th Skeletal Endocrinology Meeting, Brescia, Italy. September 20-21, **2012**.

263. Invited Speaker. "The role of osteocytes in bone remodeling." 8th National Congress: Gruppo Italiano di Studio sulle Malattie Metaboliche dell'Osso, Rome, Italy. October 5, **2012**.

264. Invited Speaker. "Cellular and molecular mechanisms of osteoporosis: a 2012 update." Center for Musculoskeletal Research, Johns Hopkins University, Baltimore, MD. December 20, **2012**.

265. Invited Speaker. "Cellular and molecular mechanisms of osteoporosis: a 2013 update." Jane Russell Wilhelmi Endowed Lectureship in Endocrinology, Emory University, Atlanta, GA. February 11, **2013**.

266. Invited Speaker. "For whom the bell tolls: a 'who will fracture and why' detective story." Cancer Institute Grand Rounds, University of Arkansas for Medical Sciences, Little Rock, AR. May 1, **2013**.

267. Invited Speaker. "For whom the bell tolls: a 'who will fracture and why' detective story." Endocrinology Grand Rounds, University of North Carolina, Chapel Hill, NC. November 7, **2013**.

268. Invited Speaker. "For Whom the Bell tolls: the critical role of osteocytes in physiologic and pathologic bone remodeling." Special Seminar, Baylor College of Dentristy, Texas A&M Health Science Center, Dallas, TX. February 26, **2014**.

269. Invited Speaker. "For whom the bell tolls: the critical role of osteocytes in physiologic and pathologic bone remodeling." 1st Clinical Bone Network Forum: Pfizer, Tokyo, Japan. March 9, **2014**.

270. Invited Speaker. "Sex steroids and cortical versus trabecular bone accrual and maintenance: a tale of two cities." Special Lecture, Pfizer Headquarters, Tokyo, Japan. March 10, **2014**.

271. Invited Speaker. "What old means to bone: a 2014 update of the cellular and molecular mechanisms of osteoporosis." Special Lecture, University of Tokyo, Tokyo, Japan. March 10, **2014**.

272. Invited Speaker. "For whom the bell tolls: The Critical Role of Osteocytes in Physiologic & Pathologic Bone Remodeling." Special Seminar, The University of Texas Health Science Center at San Antonio, San Antonio, TX. June 6, **2014**.

273. Invited Speaker. **"**The Effects of Androgens on Cancellous Bone Require Androgen Receptor Signaling in Osteoblasts, but not Osteoclasts; and in Cortical Bone Require Neither." 2015 Endocrine Society Annual Meeting, San Diego, CA March 5, **2015**.

274. Invited Speaker. "For whom the bell tolls: the quest for who will fracture and why." Internal Medicine Grand Rounds, University of California at San Diego. May 13, **2015**.

275. Invited Speaker. "What Old Means to Bone." Endocrinology Grand Rounds, University of California at San Diego. May 13, **2015**.

276. Invited Speaker. "Scientific Integrity – Enhancing the Reproducibility of Results in Preclinical Studies." Symposium- Perspective from the Research Community, ASBMR 2015, Seattle, Washington. October 11, **2015**.

277. Invited Speaker. "The quest of estrogen target genes in bone: a 2016 update." Bones & Teeth Gordon Research Conference, Galveston, TX. February 15, **2016**.

278. Invited Speaker. "The role of sex steroids in skeletal health and disease." 9th Annual Pioneers in Endocrinology Workshop, Rutgers University, New Brunswick, NJ. September 13, **2016**.

279. Louis V. Avioli plenary 2017 ASBMR lecture. "Cellular and molecular mechanisms of osteoporosis: how far we have come how much further we need to go." ASBMR 2017, Denver, Colorado. September, **2017**.