

**CURRICULUM VITAE**

**Susan Bukata, MD**

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**EDUCATION**

**Harvard University:** BA, 1991

**Columbia University College of Physicians and Surgeons:** MD, 1995

**University of Rochester** 6/95-6/96: Internship in General Surgery

**University of Rochester** 6/98-6/02: Orthopaedic Residency

**ADDITIONAL EDUCATION**

**University of Rochester** 6/96-6/98: Orthopaedic Research Fellowship (research integrated residency)  
-Directors Dr. Randy Rosier, Dr. Regis O'Keefe, Dr. Edward Puzas

**Memorial Sloan Kettering Cancer Center and Hospital for Special Surgery** (8/02-8/04): Orthopaedic Oncology and Metabolic Bone Disease Fellowship  
-Directors Dr. John Healey and Dr. Joseph Lane

**ABOS CERTIFICATIONS**

Board Certification: American Board of Orthopaedic Surgery (2006-present)  
Recertification in 2016 valid through 2026

**PROFESSIONAL EXPERIENCE**

**UCLA**

Santa Monica Hospital (4/1/12-present)  
Ronald Reagan Medical Center (4/1/12-present)

Associate Professor of Orthopaedics (4/1/12-present)

-Oncology and Metabolic Bone diseases

-Division Chief (7/13-12/15)

-Vice Chair of Clinical Operations Santa Monica (12/15-present)

Responsible for teaching to residents (weekly dedicated basic science sessions, mentoring), orthopaedic faculty (professional development, peer mentoring), University Faculty (professional development), medical students (clinical advising, mentoring, basic and clinical science lectures), and Nurse practitioners (basic science and clinical professional development)

**University of Rochester:**

Strong Memorial Hospital (9/04-2/12)

Highland Hospital (7/06-2/12)

Associate Professor of Orthopaedics (7/08-2/12)

-Specialist in Musculoskeletal Oncology/Metabolic Bone Diseases

-Clinical Director of Center for Bone Health (Osteoporosis and Metabolic Bone Diseases)

Associate Professor Musculoskeletal Research (7/08-2/12)

Assistant Professor of Orthopaedics (9/04-7/08)

Assistant Professor Musculoskeletal Research (9/04-7/08)

Member of Wilmot Cancer Center Faculty (9/04-2/12)

Director of Residency Program (7/07 – 7/08)

Associate Director Residency (9/04 -7/07, 7/08-12/08)

Responsible for teaching to residents (basic science sessions), medical students (clinical advising, mentoring, basic and clinical science lectures), and Nurse practitioners (basic science and clinical professional development)

**HONORS, AWARDS, AND LECTURESHIPS**

**National Honors, Awards, and Lectureships**

OREF Resident Research Grant, 1996

Zimmer OREF Career Development Grant 2006

AAOS Leadership Fellows Program 2012

**Local Honors and Awards**

Columbia University Alumni Association Bronze Medal 1995

Philip D. Wilson Award for Excellence in Research by a Fellow at the Hospital for Special Surgery 2004

Louis Goldstein Career Development Research Grant (University of Rochester) 2004

Rectman Lectureship (4/14/08): Philadelphia Orthopaedic Society

Oppenheimer Foundation grant for high risk pilot studies 2013

**Other Honors and Awards**

Co-PI on clinical trial for departmental CORT grant from NIH, 2006-2011.

LRP grant recipient, NIH, 2007-2008

**MEMBERSHIPS**

American Society of Bone and Mineral Research (“ASBMR”) 1999 – Present

Orthopaedic Research Society (“ORS”) - 1999 – Present

Orthopaedic Research Society, Women’s Leadership Forum Committee, Founding Member, 3/2004-present

US Bone and Joint Decade, Osteoporosis division – Steering Committee – 2005 – Present

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American Academy of Orthopaedic Surgeons (“AAOS”) – 2008-present  
International Geriatric Fracture Society (“IGFS”)-founding member 2012-present  
Musculoskeletal Tumor Society (“MSTS”)-2013-present  
Lamplighter Orthopaedic Society-2013-present  
American Orthopaedic Association (“AOA”)- 2014-present  
Interurban Orthopaedic Society-2014-present  
National Osteoporosis Foundation (‘NOF’)- 2015-present

Leadership positions:

**American Academy Orthopaedic Surgery**, Instructional Course lectures section Chair Tumor and Metabolic Bone Diseases (3/2016-present)  
**American Academy Orthopaedic Surgery**, Instructional Course lectures section Tumor and Metabolic Bone Diseases (3/2015-present)  
**American Academy Orthopaedic Surgery**, Political Action Committee (3/2013-3/2015)  
**American Academy Orthopaedic Surgery**, Women’s Health Issues Advisory Board (2009-2011)  
**American Board of Orthopaedic Surgery (“ABOS”)**: Written examination Field Task Force (11/10-present)  
**American Society of Bone and Mineral Research**: Professional Practice Committee (10/10-10/13)  
**American Society of Bone and Mineral Research and Center for Medical Technology Policy Task Force for CMS**, Orthopaedic Surgery Member Appointment (3/2017-present)  
**Columbia College of Physicians and Surgeons**: Co-chairperson Bard Hall Players (1992-1994)  
**Columbia College of Physicians and Surgeons**: Vice President P&S Club (1993-1994)  
**Columbia College of Physicians and Surgeons**: President of P&S Club (1994-1995)  
**International Geriatric Fracture Society**: Executive Board Member, Member at large (2014-present)  
**Musculoskeletal Transplant Foundation**: Scientific Advisory Board (2006-2011)  
**National Osteoporosis Foundation (‘NOF’)**: Executive Board member and scientific advisory board member (2015-present)  
**Orthopaedic Research Society**: nominating committee (2014)  
**Orthopaedic Research Society**, Women’s Leadership Forum Committee Chair (3/2016-present)  
**Orthopaedic Research Society**, Women’s Leadership Forum Committee, (3/2015-present)  
**UCLA**: Department Mentor for Medical students (6/12-present)  
**UCLA**: Clinical Practice Committee (12/12-present)  
**UCLA**: Cancer Committee (3/13-present)  
**UCLA**: Education Committee (7/13-present)  
**UCLA**: Clinical Chiefs Committee (7/13-present)  
**UCLA**: Department Mentor for residents (4/14-present)  
**UCLA**: UCLA Women in Science and Doctors of Medicine (WISDOM) executive committee-2013- (diversity and peer development for Health Sciences faculty and students)  
**UCLA**: Orthopaedic Clinic Committee (1/15-present)  
**UCLA**: Orthopaedic Chair Search Committee (7/15-4/17)  
**UCLA**: SMH Orthopaedic Surgical Utilization and Efficiency Committee (10/15-present)  
**UCLA**: Orthopaedic Quality Assurance Committee (as committee director) (2/16-present)  
**University of Rochester**: Resident representative to the Graduate Medical Education Committee (1996 - 2002)  
**University of Rochester**: Founder and Co-chair of Resident Council: (1998-2002)  
**University of Rochester**: Education Committee, department of Orthopaedics (9/04-12/11)  
**University of Rochester**: Monroe County Medical Society Task Force on Appropriate Care and Testing for Vitamin D Deficiency/Insufficiency (7/10-7/11): Local standards and quality of care  
**University of Rochester**: Six Sigma committee member for implementation of AHRQ measures for Orthopaedic surgery

**US Bone and Joint Decade Committee:** Project Committee member for Osteoporosis awareness and education (2005-present)

## **PUBLICATIONS**

### **Peer Reviewed Research Papers**

1. Pollice PF, Hsu, J. Hicks DG, **Bukata SV**, Rosier RN, Reynolds PR and O'Keefe, RJ. Interleukin-10 inhibits cytokine synthesis in monocytes stimulated by titanium particles: evidence of and anti-inflammatory regulatory pathway. *Journal of Orthopaedic Research* 1998; 16(6): 697-704.
2. Zhang X, **Bukata SV**, Healey JH, and Huvos AG. Epiphyseal Osteoblastoma of Tibia with Xanthomatous Stromal Reaction. *Annals of Diagnostic Pathology* 2003; 7(6): 360-364.
3. **Bukata, SV**, Gelinas JJ, Wei X, Rosier RN, Puzas, JE, Zhang, X, Schwarz, E, Song XR, Griswold DE, and O'Keefe, RJ PGE2 and IL-6 Production of Fibroblasts in Response to Titanium Wear Debris Particles is Mediated Through a Cox-2 Dependent Pathway. *Journal of Orthopaedic Research* 2004; Jan; 22(1): 6-12.
4. Nathan SS, Gorlick R, **Bukata S(V)**, Chou A, Morris CD, Boland PJ, Huvos AG, Meyers PA, Healey JH. Treatment algorithm for locally recurrent osteosarcoma based on local disease-free interval and the presence of lung metastases. *Cancer* 2006 Oct 1; 107(7): 1607-1616.
5. Shindle MK, Gardner MJ, Koob J, Bukata S(V), Cabin JA, Lane JM. Vertebral height restoration in osteoporotic compression fractures: kyphoplasty balloon tamp is superior to postural correction alone. *Osteoporos Int*, 2006; Dec 17(12): 1815-1819. Epub 2006 Sep 16.
6. Puzas JE, Houck J. **Bukata SV**. Accelerated fracture healing. *J. Am Acad Orthop Surg* 2006; 14-10 Suppl:S145-51.
7. Tsutsumi R, Hock C, Bechtold CD, Proulx ST, **Bukata SV**, Ito H, H AA, Nakamura T, O'Keefe, RJ, Schwarz, EM. Differential effects of biologic versus bisphosphonate inhibition of wear debris-induced osteolysis assessed by longitudinal micro-CT. *J. Orthop Res* 2008; Oct 26(10): 1340-1346. PMID: 18404739
8. O'Loughlin PF, Cunningham ME, **Bukata SV**, Tomin E, Poynton AR, Doty SB, Sama AA, Lane JM. Parathyroid hormone (1-34) augments spinal fusion, fusion mass volume, and fusion mass quality in a rabbit spinal fusion model. *Spine* 2009; Jan 15; 34(2): 121-130. PMID: 19112335
9. Darowish M, Rahman R, Li P, **Bukata SV**, Gelinas J, Huang W, Flick LM, Schwarz EM, O'Keefe RJ. Reduction of particle-induced osteolysis by interleukin-6 involves anti-inflammatory effect and inhibition of early osteoclast precursor differentiation. *Bone* 2009 Oct; 45(4): 661-668. Epub 2009 Jun 12.
10. Friedman SL, Menzier IB, **Bukata SV**, Mendelson DA, Kates SL. Dementia and hip fractures: Development of a pathogenic framework for understanding and studying risk. *Geriatric Orthopaedic Surgery & Rehabilitation* 2010; 1(2): 52-62.
11. **Bukata SV**, Puzas JE. Orthopaedic uses of teriparatide. *Curr Osteoporos Rep* 2010 Mar; 8(1): 28-33.

12. Rubery PT, **Bukata SV**. Teriparatide may accelerate healing in delayed unions of type III odontoid fractures: a report of 3 cases. *J Spinal Disord Tech* 2010; Apr 23(2): 151-155.
13. Jacobson JA, Yanoso Scholl L, Reynolds DG, Dadali T, Bradica G, **Bukata SV**, Puzas JE, Zuscik MJ, Rosier R, O'Keefe RJ, Schwarz E, Awad H. Teriparatide therapy and beta-tricalcium phosphate enhance scaffold reconstruction of mouse femoral defects. *Tissue Engineering (part A)* 2011; 17(3-4): 389-398. Epub 2010 Oct 29.
14. Houck J, Kneiss J, **Bukata SV**, Puzas JE. Analysis of vertical ground reaction force variables during a Sit to Stand task in participants recovering from a hip fracture. *Clin Biomech* 2011 Jun; 26(5): 470-6.
15. Takahata M, Awad HA, O'Keefe RJ, **Bukata SV**, Schwarz EM. Endogenous tissue engineering: PTH therapy for skeletal repair. *Cell Tissue Res* 2011 May 31 [Epub ahead of print]
16. Kates SL, **Bukata SV**, DiGiovanni BF, Friedman SL, et al. A guide to improving the care of patients with fragility fractures. *Geriatric Orthopaedic Surgery & Rehabilitation* 2011; 2(1): 5-37.
17. Sampson ER, Chen D, Schwarz EM, **Bukata SV**, O'Keefe RJ, Awad H, Puzas JE, Zuscik MJ, Rosier RN. Teriparatide as a chondro-regenerative therapy for injury-induced knee osteoarthritis. *Science Translational Medicine* 2011 Sept 21; 3(101): 101ra93.
18. **Bukata SV**. Systemic administration of pharmacological agents and bone repair. What can we expect. *Injury* 2011 Jun; 42(6): 605-8. Epub 2011 Apr 19.
19. **Bukata SV**, Kates SL, O'Keefe RJ. Short-term and long-term orthopaedic issues in patients with fragility fractures. *Clin Orthop Relat Res* 2011; Aug 469(8): 2225-2236. [Epub ahead of print 2011 Jan 29]
20. Kneiss JA, Houck JR, **Bukata SV**, Puzas JE. Influence of Upper Extremity Assistance on Lower Extremity Force Application Symmetry in Individuals Post-Hip Fracture During the Sit-to-Stand Task. *Journal of Orthopaedic & Sports Physical Therapy* 2012, May; 42(5): 474-481.
21. Friedman SM, Clark N, Nicholas JA, **Bukata SV**. Case Discussion: Hip fracture in a patient on hospice with dementia and anemia. *Geriatric Surgery & Rehabilitation*, 2013. Epub april 5
22. Tyler W, **Bukata S**, O'Keefe R: Atypical Femur Fractures. *Clin Geriatr Med* 2014, May; 30(2): 349-359. Epub 2014 Mar 4
23. Borrelli J Jr, Lane J, **Bukata S**, Egol KA, Takemoto R, Slobogean G, Morshed S. Atypical Femur Fractures. *J Orthop Trauma* 2014; 28: Suppl 1: S36-42
24. Mears SC, Kates SL, **Bukata SV**, et al. A Guide to Improving the Care of Patients with Fragility Fractures, ed 2. *Geriatric Orthopedic Surgery and Rehabilitation (GOS)* 2015, 6(2): 58-120.
25. Graves LL, **Bukata SV**, Aghazadehsanai N, Chang TI, Garrett NR, Friedlander AH. Patients Receiving Parenteral Bisphosphonates for Malignant Disease and Having Developed an Atypical Femoral Fracture Are at Risk of Concomitant Osteonecrosis of the Jaw: An Evidence-Based Review. *J Oral Maxillofac Surg*. 2016 Dec;74(12):2403-2408.

26. Motamedi K, Levine BD, **Bukata SV**, Genshaft S. Percutaneous Image-Guided Musculoskeletal Tumor Treatments. *AJR Am J Roentgenol*. 2016 Sep;207(3):517-25.
27. Silverman SL, Kupperman ES, **Bukata SV**; Members of IOF Fracture Working Group. Fracture healing: a consensus report from the International Osteoporosis Foundation Fracture Working Group. *Osteoporos Int*. 2016 Jul;27(7):2197-206.
28. Gelhorn HL, Tong S, McQuarrie K, Vernon C, Hanlon J, MacLaine G, Lenderking W, Ye X, Speck RM, Lackman RD, **Bukata SV**, Healey JH, Keedy VL, Anthony SP, Wagner AJ, Von Hoff DD, Singh AS, Becerra CR, Hsu HH, Lin PS, Tap WD. Patient-reported Symptoms of Tenosynovial Giant Cell Tumors. *Clin Ther*. 2016 Apr;38(4):778-93.
29. Kiyuna T, Murakami T, Tome Y, Igarashi K, Kawaguchi K, Russell T, Eckardt MA, Crompton J, Singh A, Bernthal N, **Bukata S**, Federman N, Kanaya F, Eilber FC, Hoffman RM. Labeling the Stroma of a Patient-Derived Orthotopic Xenograft (PDOX) Mouse Model of Undifferentiated Pleomorphic Soft-Tissue Sarcoma With Red Fluorescent Protein for Rapid Non-Invasive Imaging for Drug Screening. *J Cell Biochem*. 2016 Jun 30.
30. Lewiecki EM, Bilezikian JP, **Bukata SV**, Camacho P, Clarke BL, McClung MR, Miller PD, Shepherd J. Proceedings of the 2016 Santa Fe Bone Symposium: New Concepts in the Management of Osteoporosis and Metabolic Bone Diseases. *J Clin Densitom* 2017 Feb 6

#### **Non-Peer-Reviewed Articles**

1. **Bukata SV** and Rosier RN. Diagnosis and treatment of osteoporosis. *Current Opinion in Orthopaedics* 2000; 11:1-5.
2. **Bukata SV** and Healey JH. Osteoporosis: The Winds of Change. *Current Opinions in Orthopaedics* 2003; 14: 438-439.
3. **Bukata SV** and Healey JH. A Practical Guide to Bisphosphonates. *Current Opinion in Orthopaedics* 2004, 15: 367-377.
4. **Bukata SV** and Healey JH. Bone quality: The new buzz word in osteoporosis. *Current Opinion in Orthopaedics* 2005; Oct 16(5): 368-369.
5. **Bukata SV**, Behrend C, Switzer JA: The pregnant trauma victim. *AAOS Now*, July 2010.

#### **Book Chapters**

- 1) **Bukata SV** and Rosier RN: Bone Metabolism and Metabolic Bone Disease. *Orthopaedic Knowledge Update 7*, Koval K ed., 2002: 141-154.
- 2) **Bukata SV** and Rosier RN: Metabolic Bone Disease and Osteonecrosis. *Netter's Orthopedics*, Greene WB ed., 2005: 24-44.
- 3) **Bukata SV**, Bostrum M, Buckwalter JA and Lane JM. Aging. *Orthopaedic Knowledge Update 8*, Vaccaro A ed., 2005: 69-77.

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4) Rosier RN and **Bukata SV**: Sarcomas of Bone. Oncology: An evidence –based approach. Chang AE ed, 2006: 1025-1038.

5) **Bukata SV** and O’Keefe RJ: Orthopedic Complications of Osteoporosis. Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism (6<sup>th</sup> ed), Favus MJ ed., 2006, pg: 313-319.

6) **Bukata SV**: Metabolic Bone Diseases. Orthopaedic Surgery Essentials : Oncology and Basic Science, Damron T ed., 2006: 251-259.

7) **Bukata SV**: Benign Soft-Tissue Tumors: Other tumors. Orthopaedic Knowledge Update Musculoskeletal Tumors 2, Schwartz HS ed, 2007: 257-264.

8) Sanders JO, Armet K, **Bukata SV**: Spinal Deformity in Metabolic Diseases. The Growing Spine: Management of Spinal Disorders in Young Children, Akbanian BA, ed., 2011, pg: 163-176.

9) **Bukata SV**, Tyler WK: Metabolic Bone Diseases. Orthopaedic Basic Science, Einhorn T, ed., 2013, p353-364.

10) **Bukata SV**: Osteoporosis from the Orthopaedic Perspective. Chapter 69 in Osteoporosis, Marcus R, ed, (2013): 1641-1648..

11) Bluth, B, **Bukata SV**: Current advances in Orthopaedic Oncology. Current Advances in Orthopaedics, Austin MS and Klein GR, eds., 2014: 132-144.

12) **Bukata SV**, Stavrakis A, Friedman S: Osteoporosis. Musculoskeletal Trauma in the Elderly, Court-Brown C, ed, 2016 (in press)

13) Kupperman EK, **Bukata SV**: Fractures and healing on Antiresorptive Therapy. The Duration and Safety of Osteoporosis Treatment, Silverman S, ed , 2016 (in press)

#### **NATIONAL ABSTRACT PRESENTATIONS:**

1. **Bukata SV**, Hsu JC, Rosier RN, Puzas JE, and O’Keefe RJ: THP-1 Cells as a Transfectable Model for Titanium Induced Cytokine Release. ASBMR annual meeting, 1997. Abstract in JBMR 12(S1): S443.
2. Hsu JC, **Bukata SV**, Pollice PF, Puzas JE, Reynolds PR, Rosier RN, Hicks DG, Stroyer BF, and O’Keefe RJ: Paracrine Induction of Interleukin-10 in the Pathologic Periprosthetic Bone Resorption of Aseptic Loosening. ASBMR annual meeting, 1997. Abstract in JBMR 12(S1): S438.
3. **Bukata SV**, Hsu J, Puzas JE, Rosier RN, Reynolds P, and O’Keefe RJ: Characterization of a human monocyte cell line for the genetic analysis of cytokine expression in response to titanium wear debris. ORS annual meeting , 1998.
4. Hsu J, **Bukata SV**, Lewis GD, Hicks DG and O’Keefe RJ: Paracrine induction of IL-10 in periprosthetic osteolysis. ORS annual meeting, 1998.
5. **Bukata SV**, Grimm D, Schwarz E, Hicks D, Hsu J, Puzas JE, Rosier RN, and O’Keefe RJ: Hydroxyapatite particles induce monocyte production of TNF-alpha and bone resorption. ORS annual meeting, 1999.
6. **Bukata SV**, Gelinas JJ, Rosier RN, Puzas JE, Zhang XP, Schwarz E, and O’Keefe RJ: Cytokine production by fibroblasts in response to titanium wear debris particles is mediated through a cox-2 dependent pathway. ORS annual meeting , 2003.

7. **Bukata SV**, Koob J, and Lane J: Gender Affects Presentation and Outcome in Osteoporosis and Myeloma Patients Who Undergo Kyphoplasty. ASBMR annual meeting , 2004.
8. **Bukata SV**, Koob J, Cabin J, Shindle M, and Lane J: Kyphoplasty restores more vertebral height than hyper-extension positioning maneuvers alone. ASBMR annual meeting , 2004.
9. **Bukata SV**, Koob J, Lane J: Gender Specific Differences in Pain and Function as Measured by the Oswestry Score in Patients with Myeloma or Osteoporosis who Undergo Kyphoplasty. AAOS Research Symposium: Influence of Sex Specificity and Gender on Musculoskeletal Health, 2004.
10. **Bukata SV**, Tomin E, Poynton A, Cunningham M, and Lane JM: PTH(1-34) Improves Spine Fusion Rate and Fusion Mass Volume. ORS annual meeting, 2005.
11. Shindle MK, Koob J, Cabin JA, Peterson M, and **Bukata SV**: Vertebral Height Restoration in Osteoporotic Compression Fractures- Kyphoplasty is Five-Fold Superior to Vertebroplasty Posture Correction. NOF annual meeting, 2005.
12. Lane JM, **Bukata SV**, Tomin E, Shore B, and Cunningham M: PTH (1-34) Stimulates Spine Fusion, NOF annual meeting, 2005.
13. **Bukata SV**, Tomin E, Poynton A, Cunningham M, Koobs J, and Lane JM: PTH Augmented Bone Healing in a Rabbit Spine Fusion Model, NASS ,2005.
14. O' Loughlin P, **Bukata SV**, Tomin E, Poynton A, Cunningham M, Doty S. Lane JM: PTH(1-34) Increases Bone, Cartilage, Osteoblasts and Osteoclasts in a Spinal Fusion Mass, ORS annual meeting, 2007.
15. Kaback, LA, Jiang Y, Naik A, Hock C, Schwarz EM, **Bukata SV**, O'Keefe RJ and Drissi H: Osterix Mediates Mesenchymal Progenitor Cell Differentiation into Osteoblasts Downstream of PTH During Bone Repair, ASBMR annual meeting, 2007.
16. Roehrig GJ, DiPaola CP, and **Bukata SV**: Vitamin D Insufficiency in the Adult, Low Energy Fracture Population. ASBMR annual meeting, 2007.
17. **Bukata SV**, Kaback L, Reynolds D, O'Keefe RJ, Rosier RN: 1-34 PTH at Physiologic Doses in Humans Shows Promise as a Helpful Adjuvant in Difficult to Heal Fractures: An Observational Cohort of 145 Patients. ORS annual meeting, 2009
18. Sudan M, Mendanha W, Chawla N, Sankhala K, Chawla S, **Bukata SV**: Long-term Safety of Denosumab Through Greater than 48 Doses in Giant Cell Tumor Patients. ASBMR annual meeting 2015. *Young investigator award winner*
19. Chawla N, **Bukata SV**, Sankhala K, Mendanha W, Narasimhan V, Menendez L, Bernthal N, Brien EW, Chua VS, Chawla SP: Sustained response of complex giant cell tumors with denosumab: Single center 8-year experience, ASCO annual meeting 2015.
20. Gelhorn H, Tong S, MacLaine G, Healey JH, **Bukata SV**, Keedy VL, Anthony SP, Wagner AJ, Von Hoff DD, Singh AS, Becerra C, Hanlon J, Lenderking W, Murray L, Hsu HH, Lin PS, Tap WD: Patient-reported outcome instruments meaningful and relevant for tenosynovial giant cell tumor (TGCT): A qualitative study. ASCO annual meeting 2015



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21. **Bukata SV**, Sudan M, Mendanha W, Chawla N, Sankhala K, Chawla S: Considerations for long-term maintenance treatment with denosumab for stable inoperable giant cell tumor: Making a case for spacing of doses after initial response. CTOS annual meeting 2015.

## **PRESENTATIONS**

**International** (the audience is an international audience)

- 3/2010: Instructional Course Lecture, AAOS annual meeting (New Orleans, LA)  
-“Own the Bone: osteoporosis care for the orthopaedic surgeon”
- 12/3/10-12/7/10: AO geriatric fracture course faculty (Davos, Switzerland)  
- “Management of metastatic disease to bone in the geriatric patient (Invited lecturer for first webinar for geriatric course)
- 1/13/2011: Orthopaedic Research Society Annual meeting  
-Spotlight speaker: “Bisphosphonate-the good, bad, and ugly in fractures”
- 1/15/2011: Orthopaedic Research Society Annual Meeting (ORS Women’s Leadership sponsored workshop)  
-Symposium organizer and moderator: “Atypical subtrochanteric femoral shaft fractures: the what, why, and where do we go now”.
- 2/2011: Instructional Course Lecture, AAOS annual meeting (New Orleans, LA)  
-“Own the Bone: osteoporosis care for the orthopaedic surgeon”
- 2/5/2012: Session moderator “Aging”, ORS annual meeting (San Francisco, CA)
- 2/6/2012: ORS Clinical Research Symposium invited speaker: “Atypical fractures: Lessons learned”. ORS annual meeting (San Francisco, CA)
- 10/3/12: OTA Annual Meeting (Minneapolis, MN): “Atypical fractures: Lessons learned”
- 10/12/12: American Society of Bone and Mineral Research Annual Meeting (Minneapolis, MN) - Symposium organizer and moderator “Fracture Healing”
- 10/17/12: International Geriatric Fracture Society Inaugural Meeting (San Diego, CA): “Atypical Femur Fractures”
- 03/15/14: OTA specialty day at the AAOS annual meeting (New Orleans, LA): “Osteoporosis and the Osteoporosis Treatment Gap”
- 03/15/14: ORS annual meeting, basic science course: “Metabolic Bone diseases”
- 3/28/2015: OTA specialty day at the AAOS annual meeting (Las Vegas, NV): “Measuring Outcomes in Hip Fracture Care”
- 3/29/2015: ORS annual meeting, basic science course: “Metabolic Bone diseases”
- 3/3/2016: AAOS annual meeting, Instructional Course Lecture Faculty, Orlando, FL  
“Management of Metastatic Disease: a case roundtable discussion”
- 3/5/2016: ORS Basic Science course, Orlando, FL  
“Basic Science of Metabolic Bone Diseases”  
Moderator Session 3: Bone Biology, Cancer, Infection, and Genetic Diseases
- 3/ 8/2016: ORS Featured Symposium (Organizer, director, moderator)  
“Vitamin D: Beyond the bone”
- 9/19/2016: ASBMR annual meeting featured “Meet the Professor”, Atlanta, GA  
“Skeletal Regeneration and Fracture Repair”
- 3/16/17: AAOS annual meeting(San Diego, CA): “Fast Five—biologics and fracture healing”
- 3/18/17: OTA specialty day at the AAOS annual meeting (San Diego, CA): “How to calculate the cost of care for hip fractures”

4/15/17

3/19/17: ORS annual meeting (San Diego, CA), Featured Symposium (Organizer, director, moderator): “Osteoarthritis: from the bench to the bedside and back”

**National** (the audience is a national audience)

4/20/2006: AO North America geriatric fracture course (inaugural course)

-“Osteoporosis care for the fragility fracture patient”

2/12/2010: Spanish Orthopaedic Association (Madrid, Spain)

-“Use of teriparatide in fracture healing: clinical evidence?”

9/29-10/1/2010: AO North America geriatric fracture course (invited faculty)

-“Management of pathologic fracture”

-“Care of metabolic bone disease for the geriatrician”

-“Vitamin D issues for bone health”

-“Case examples: quandaries in the care of the fragility fracture patient” (6 sessions)

10/5/2010: North American Spine Society Annual Meeting Precourse on Biologics

-“Anabolic agents and pathways of interest for bone healing”

12/9-12/10/2010: Societal burden of fragility fracture and fracture risk meeting (Washington, DC)

-invited representative of Bone and Joint Decade to public policy formation meeting

2/19/2011: AAOS/COA public forum on musculoskeletal health (San Diego, CA)

-invited lecturer for “Current treatments for osteoporosis”

4/29-4/30/2011: AAOS Fragility Fracture Course

-Invited Faculty (4 lectures)

-“Fundamentals of osteoporosis care for the orthopaedic surgeon”

-“Setting up osteoporosis care for the orthopaedic patient”

-“Pain management in the fragility fracture patient”

-“Pain management in the patient with metastatic disease to bone”

5/14/2011: American Geriatric Society annual meeting (Washington, DC)

-“Clinical issues with Vitamin D” (Invited Symposium lecturer and panelist)

6/25/2011: AOA annual meeting (Boston, MA)

-“Fracture healing with osteoporosis medications”

5/19/2012: AAOS Fragility Fracture Course (Philadelphia, PA)

-Invited Faculty (3 lectures)

-“Fundamentals of osteoporosis care”

-“Setting up osteoporosis care for the orthopaedic patient”

-“Pain management in the fragility and pathologic fracture patient”

-Course moderator

6/7/2014: AAOS Fragility Fracture Course (New York, NY)

- “Treatment – Calcium, Vitamin D and Drugs”

-“Post Fracture Liaison Service”

5/20/2015: National Osteoporosis Foundation, Interdisciplinary Symposium on Osteoporosis, plenary session

-“Improving Patient Outcomes Across the Care Continuum with Geriatric Fracture and FLS Programs”

6/27/2015: AOA annual meeting, special symposium, AOA/ NAON: Own the bone

-“Medication management in osteoporosis: the drugs and the supplements”

**Regional** (the audience is a regional audience)

10/04: New Hampshire Musculoskeletal Institute annual symposium, “Osteoporosis for the Orthopaedic Surgeon”

10/04: New Hampshire Musculoskeletal Institute annual symposium, “The Use of Biologics in Bone Healing”

4/15/17

4/3-4/6/2008: Upstate Basic Science Course (course co-director):

- “Metabolic bone diseases: osteoporosis”
- “Metabolic bone diseases: beyond osteoporosis”
- “Metastatic disease to bone”
- “Management of pathologic fractures”
- “Genetic diseases of bone”

4/14/08: Philadelphia Orthopaedic Society, Rectman Lecture, “Biologics and the future of fracture healing: are we there yet?”

7/24/08: Western Orthopaedic Association, annual meeting, “Osteoporosis for the Orthopaedic Surgeon”

11/13/08: American College of Physicians, NY chapter annual meeting

- “Osteoporosis: the scourge of the 21<sup>st</sup> century”

5/16/09: California Orthopaedic Association annual meeting, “Treatment of Osteoporosis by the Orthopaedic Surgeon”

5/17/09: California Orthopaedic Association community outreach symposium, “Osteoporosis fundamentals”

11/09: Rheumatology Society of Puerto Rico annual meeting (San Juan, PR)

- “Medical treatments for fracture healing: now and on the horizon”

3/2010: Upstate Basic Science Course (course co-director)

- “Metabolic bone diseases: osteoporosis”
- “Metabolic bone diseases: beyond osteoporosis”
- “Genetic and developmental diseases of bone”

9/14/2010: Clinical Challenges in Women’s Health (Regional Review CME course, sponsor University of Rochester), “Current state of the art for osteoporosis care”

11/13/2010: Western NY Orthotics and Prosthetics annual CME course (Rochester, NY)

- “Amputations for cancer”

10/2011: McGill University Symposium on Bone Regeneration, Montreal, Canada

- “Anabolic agents for bone”

10/2013: Nuts and Bolts of Orthopaedics (Drexel University annual course for orthopaedic surgeons), Naples, FL, Keynote lecturer

- “Osteoporosis for the Orthopaedic Surgeon”
- “Diagnosis and Management of Metastatic Disease to Bone by the Orthopaedic Surgeon”

1/26/2014: Sacropevic Study Group (Harvard, Mayo, MSKCC, St Margaret’s Toronto, UCLA), (New York, NY)

- “Bone active medications in the management of sacral fractures and lesions”

4/25/2015: California Orthopaedic Association, annual meeting

- “Fragility fracture programs for the orthopaedic surgeon”

7/30/2015: Western Orthopaedic Association, annual meeting, Symposium Speaker

- “She blinded me with science: metabolic bone disease”

4/16/2016: AAOS fragility fracture/fracture liaison course, Chicago, IL

- “Establishing a fracture liaison service: pearls and pitfalls”
- /treatments”

5/13-14/2016: NOF/ISO annual conference, Miami, FL

- “Improving Patient Outcomes Across the Care Continuum with Geriatric Fracture and FLS Programs”
- “Building a Fracture Liaison Service: Practical Advice to starting and growing”

6/ 23/2016: AOA Leadership Conference, featured Lecturer, Own the Bone Symposium

- “Osteoporosis treatments: The supplements and the meds”

8/1/2016: National Medical Association Annual Convention and Scientific Assembly, Los Angeles, CA

- “The science of osteoporosis and bone fragility diseases”

8/4-5/ 2016: Featured faculty lecturer, Santa Fe Bone Symposium

- “Fracture healing and osteoporosis medications”

4/15/17

“Crisis in the treatment of osteoporosis after fragility fracture: using Fracture Liaison Services”

“Ask the expert”

10/29/ 2016: Lamplighter’s Orthopaedic Society Annual Meeting, San Diego, CA

“Emerging treatments for Osteoarthritis: Chondroregeneration and Chondroprotection with PTH and PTHrP”

**Local** (the audience is local audience)

1/6/00: Visiting Professor Grand Rounds, Department of Orthopaedics, University of Utah

-“Macrophage Response to Hydroxyapatite Wear Debris 1/26/2012: Basic science curriculum, Orthopaedics, University of Rochester

-“Malignant Bone tumors”

3/3/00: Grand Rounds, Department of Orthopaedics, University of Rochester

-“Current Concepts in Osteoporosis”

5/10/02: Schwartz Memorial Symposium lecture, Department of Orthopaedics, University of Rochester

- “Cox 2 Modulation of Fibroblast Response to Titanium Wear Debris”

- “Current Concepts in Osteoporosis for the OB/GYN”.

2/05: Process of Disease, 4<sup>th</sup> year medical school month long course, University of Rochester

-section director (meeting 3 times weekly)

12/11/05: Grand Rounds Department of OB/GYN, University of Rochester

- “Current Concepts in Osteoporosis for the OB/GYN”.

2/06: Process of Disease, 4<sup>th</sup> year medical school month long course, University of Rochester

-section director (meeting 3 times weekly)

3/6/06: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester

-“Anatomy of the joint”

3/8/06: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester

-“Fractures and fracture healing”

3/15/06: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester

-“Musculoskeletal Neoplasms”

3/16/06: Always Better: Community education for Better Health (University of Rochester)

-“Osteoporosis: what you need to know”

4/27/06: US Bone and Joint Decade (Webster, NY)

-“Fit to a T”

5/4/06: US Bone and Joint Decade (Pittsford, NY)

-“Fit to a T”

5/11/06: US Bone and Joint Decade (Rochester, NY)

-“Fit to a T”

5/18/06: US Bone and Joint Decade (Chil, NY)

-“Fit to a T”

5/23/06: University of Rochester Community Outreach (Chatterbox Club, Rochester, NY)

-“Osteoporosis and You: not a destiny of aging”

5/25/06: US Bone and Joint Decade (Penfield, NY)

-“Fit to a T”

9/6/06: Grand Rounds Jamestown WCA hospital, Jamestown, NY

- “Osteoporosis care for fracture patients”

9/7/06: Basic science curriculum, Orthopaedics, University of Rochester

4/15/17

- “Orthopaedic Pharmacology”
- 9/14/06: Basic science curriculum, Orthopaedics, University of Rochester
  - “Benign Bone Tumors”
- 9/21/06: Basic science curriculum, Orthopaedics, University of Rochester
  - “Aging”
- 10/11/06: Grand Rounds Mercy Catholic hospital, Buffalo, NY
  - “Spots in the bones: when do you need orthopaedics”
- 11/9/06: US Bone and Joint Decade (University of Rochester River Campus Administrative Group)
  - “Fit to a T”
- 1/11/07: Grand Rounds Department of OB/GYN, University of Rochester
  - “Bone Health Issues For OB/GYN”
- 1/23/07: Grand Rounds Department of Medicine, University of Rochester
  - “Osteoporosis beyond the DXA scan: secondary causes”
- 2/07: Process of Disease, 4<sup>th</sup> year medical school month long course, University of Rochester
  - section director (meeting 3 times weekly)
- 2/21/07: US Bone and Joint Decade (University of Rochester Medical Administrative Group)
  - “Fit to a T”
- 3/05/07: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester
  - “Anatomy and Physiology of Cartilage”
- 8/17/07: Speaking of Women’s Health (Rochester, NY)
  - “Osteoporosis”
- 11/27/07: Leukemia and Lymphoma Society of Western NY (Rochester, NY)
  - “Living with the bone problems of myeloma”
- 4/2/08: Breast Cancer Coalition of Western NY, annual symposium(Rochester, NY)
  - “Issues with metastatic disease: maintaining function and quality of life”
- 4/15/08: Visiting Professor Grand Rounds, Albert Einstein, Philadelphia, PA
  - “Osteoporosis for the Orthopaedic Surgeon”
- 9/19/08: Speaking of Women’s Health (Rochester, NY)
  - “Osteoporosis”
- 10/30/08: Grand Rounds, University of Buffalo (Buffalo, NY)
  - “Bone fragility issues with fracture patients”
- 2/5/09: Rheumatology Round Table for Western NY
  - “Vitamin D and Autoimmune diseases: the current state of knowledge”
- 2/09: Process of Disease, 4<sup>th</sup> year medical school month long course, University of Rochester
  - section director (meeting 3 times weekly)
- 4/3/09: Breast Cancer Coalition of Western NY, annual symposium (Rochester, NY)
  - “Living with metastatic disease”
- 6/09: Basic science curriculum, Orthopaedics, University of Rochester
  - “Cartilage tumors”
- 6/09: 11/08: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester
  - “Anatomy and Physiology of Cartilage”
- 8/09: Basic science curriculum, Orthopaedics, University of Rochester
  - “Metastatic Disease”
- 10/09: Basic science curriculum, Orthopaedics, University of Rochester
  - “Oncology review for the OITE”
- 11/16/09: Grand Rounds, Hospital for Special Surgery, New York, NY
  - “Fracture healing and teriparatide”
- 2/10: Process of Disease, 4<sup>th</sup> year medical school month long course, University of Rochester
  - section director (meeting 3 times weekly)
- 7/2010: Midlevel provider development series, Orthopaedics, University of Rochester
  - “Fundamentals of musculoskeletal tumors”
- 7/20/2010: Hand/Upper Extremity Service of Orthopaedics, University of Rochester

4/15/17

- “Tumors of the hand and upper extremity”
- 10/10: Basic science curriculum, Orthopaedics, University of Rochester
  - “Oncology review for the OITE”
- 11/4/2010: Grand Rounds, University of Buffalo, Buffalo, NY
  - “Atypical femoral fractures”
  - “Metabolic Bone Disease for the orthopaedic surgeon”
- 11/15/2010: Human Physiology, 2<sup>nd</sup> year medical school curriculum, University of Rochester
  - “Basic physiology of bone”
  - “Diseases of bone metabolism”
- 11/19/2010: Wilmot Cancer Center Grand Rounds (University of Rochester)
  - “Controversies in metabolic Bone disease for the cancer patient”
- 1/6/2011: Physical Medicine and Rehabilitation, University of Rochester
  - Resident education series lecture “Essentials of osteoporosis care”
- 1/28/2011: Endocrine Department Education series (fellows and faculty)
  - “Essentials of osteoporosis care”
- 2/4/2011: Endocrine Department Education series (fellows and faculty)
  - “DXA and FRAX: using data to make treatment choices”
- 3/10/2011: Grand Rounds University of California at Los Angeles
  - Teriparatide use in the orthopaedic patient
- 3/18/2011: Endocrine Department Education series (fellows and faculty)
  - “BMD measurement and fracture risk: contributions of bone quality components”
- 3/22/2011: Gilda’s Club (Rochester, NY)
  - Presentation to myeloma support group on optimizing musculoskeletal health and function for the myeloma patient
- 4/1/2011: Endocrine Department Education series (fellows and faculty)
  - “New and future therapeutic options for osteoporosis”
- 4/17/2011: Gates Presbyterian Church (Gates, NY)
  - “Osteoporosis and fragility fractures: considerations for patients and care givers”
- 5/10/2011: Grand Rounds at Highland Hospital (all departments) (Rochester, NY)
  - “Current controversies in osteoporosis treatment”
- 6/21/2011: Hand/Upper Extremity Service of Orthopaedics, University of Rochester
  - “Tumors of the hand and upper extremity”
- 10/6/11: Grand Rounds, Penn State University Medical Center, Hershey, PA
  - “System adjuvants for fracture healing”, Department of Orthopaedics
- 10/12/11: Grand Rounds/guest professor rounds, Lahey Clinic, Burlington, MA,
  - “Osteoporosis Treatments: How do you choose and what does it do to my fracture healing?”, Department Orthopaedics and Department of Medicine
- 10/11: Basic science curriculum, Orthopaedics, University of Rochester
  - “Oncology review for the OITE”
- 1/17/2012: Hand/Upper Extremity Service of Orthopaedics, University of Rochester
  - “Tumors of the hand and upper extremity”
- 1/19/12: Grand Rounds/guest professor rounds, University of Maryland, Baltimore, MD
  - “Metabolic Bone Diseases for the Orthopaedic Surgeon”, Department of Orthopaedics
- 9/18/12: Grand Rounds/guest professor rounds, University of Texas Medical Branch at Galveston.
  - “Osteoporosis for the orthopaedic surgeon”
  - “Atypical femur fractures”
- 5/2013: Grand Rounds, Spine Center, Cedars Sinai Hospital
  - “Osteoporosis medications in spine surgery: healing and fracture prevention”
- 5/2013: Grand Rounds/ Guest Professor Rounds, JPS hospital, University of Texas, Fort Worth
  - “Osteoporosis for Orthopaedics”
- 2/20/2015: Grand Rounds, St Francis Hospital, Tulsa, OK
  - “Osteoporosis and the fragility fracture patient: The role of orthopaedics”

4/15/17

9/11/2014: Tucson Orthopaedic Update, keynote speaker

-“Osteoporosis care for the PCP”

12/1/2015: Grand Rounds, Endocrine department, Cedars Sinai Hospital, Los Angeles, CA

-“Osteoporosis care in the challenging patient: Gastric bypass, HIV, and cancer”

3/17/2016: Grand Rounds, University of Rochester Orthopaedics

“Treatment of Giant Cell Tumors”

6/ 11/2016: Women of color breast cancer survivors support group, Inglewood, CA

“Musculoskeletal care and breast cancer: feeling good and staying active”

9/9/2016: Rothman Institute at Thomas Jefferson, Orthopaedics Journal Club, Philadelphia, PA

“Building a Fracture Liaison Service”

**UCLA or Affiliated Institution**

3/10/2011: Grand Rounds University of California at Los Angeles

-Teriparatide use in the orthopaedic patient

5/1/2012: UCLA Nurse Practitioner clinical training

-Osteoporosis for the practitioner

8/15/2012: Applied Anatomy College, summer dinner

-applying in orthopaedic surgery

8/27/2012: Anatomy Prosections: hip and pelvis, Orthopaedic Surgery residents

8/29/2012: Anatomy: hip and pelvis, Orthopaedic Surgery residents

12/12/2012: Orthopaedic Resident fundamentals course: Malignant Bone Tumors

3/6/2012: Orthopaedic Resident fundamentals course: Osteoporosis

4/2/2013: UCLA Nurse Practitioner clinical training

-Osteoporosis for the practitioner

4/20/2013: UCLA Cerebral Palsy Care Update

-Osteoporosis and the cerebral palsy patient

8/5/2014: Applied Anatomy College, summer dinner

-applying in orthopaedic surgery

10/1/2014: Mock interviews for Medical students applying in orthopaedic surgery

10/2/2013: UCLA Harbor Orthopaedic Grand Rounds

-Osteoporosis for the Orthopaedic Surgeon

11/5/2014: UCLA Harbor Orthopaedic Grand Rounds

-Management of metastatic disease

11/21/2014: PGY 1 bioskills: The hip

12/19/2014: PGY 1 bioskills: The hip

1/23/2015: PGY 1 bioskills: The hip

6/6/2015: UCLA Osteoporosis Symposium

-Gastric Bypass and Bone

6/6/2015: UCLA Osteoporosis Symposium

-Geriatric Fracture Treatment

8/19/2015: Applied Anatomy College, summer dinner

-applying in orthopaedic surgery

8/27/2015: PGY 1 bioskills: The hip

10/14/2015: OITE Core review: bone biology and basic science

10/21/2015: OITE Core review: biomechanics and bone diseases

10/21/2015: Mock interviews for Medical students applying in orthopaedic surgery

5/10/ 2016: UCLA Nurse Practitioner clinical training

-Osteoporosis for the practitioner

6/5-7/ 2016: Host ASEAN Fellows for the AOA, UCLA, Santa Monica Medical Center

7/ 6/2016: UCLA Resident Core Curriculum

4/15/17

“ Osteoporosis and metabolic bone diseases”

10/26/2016: UCLA Resident Core Curriculum

“Basic Science OITE review”

4/5/2017: UCLA Endocrine Grand Rounds: translational science

-“Fracture healing with osteoporosis medications”

4/11/2017: UCLA Nurse Practitioner clinical training

-Osteoporosis for the practitioner

## **GRANTS AND FUNDING**

### **1. OREF Resident Research Grant (1/96-12/96)**

Title: Characterization of the TNF alpha promoter in response to wear debris

Amount: \$50,000

Role: PI

The purpose of this grant is to evaluate the molecular pathways stimulated by titanium wear debris particles produced by total joint replacements that result in monocyte production of TNF-a and subsequent stimulation of osteoclast recruitment and development. THP-1 monocyte cultures were used to determine pathways involved and region of the TNF-a promoter activated by wear debris exposure.

### **2. Louis Goldstein Career Development Research Grant (2005)**

Title: The role of teriparatide and bisphosphonates in fracture healing

Amount: \$10,000

Role: PI

The purpose of this grant is to assess the role teriparatide or bisphosphonate treatment has on fracture healing of an aged mouse. Callus formation, callus maturation, and remodeling will all be analyzed in a time course analysis. Histology and biomechanical testing parameters will determine differences created by exposure to the drugs compared to placebo exposed aged mice. Pilot data used for safety analysis for NIH CORT project 3 clinical trial.

### **3. OREF Career Development Grant – (7/1/06-12/31/07)**

Title: “Radiographic analysis of the healing response to PTH 1-34 in difficult to heal fractures”

Amount: \$50,000

Role: PI

The purpose of this grant is to evaluate sequential CT scans of fracture sites for patients receiving PTH 1-34 (teriparatide) to determine the effect of this treatment on radiographically evident callus formation, bone formation and connectivity. This study will determine whether CT scans can be used as a validated endpoint in the evaluation of the effects biologics have on fracture healing. The primary focus of the grant is on pelvic ring fractures and vertebral fractures, although long bone fractures will also be analyzed.

### **4. Public Health Service, NIAMS, NIH LRP grant (loan repayment grant) (1/08-12/08)**

Role: Principle Investigator recipient

Amount (\$50,000 plus taxes)



4/15/17

Loan repayment grant for clinician scientists actively engaged in research and funded by the NIH. Loan payments made to federal student loans from medical school.

**5. Public Health Service, NIAMS, P50 AR054041 (Rosier RN)**

8/15/06-7/31/11 (approx directs \$5,000,000/approx indirects \$2,460,000 spread over 5 projects)

“Translating molecular signal pathways to orthopaedic trauma care”

The program will investigate at a basic molecular level, in animal models, and in human clinical studies, the role of two critical interacting signal pathways, TGF-beta/BMP and PTH/PTHrP, in bone and joint trauma. Basic and clinical investigations will study the role of these pathways in: (1) development of osteoarthritis following meniscal injury in animal models and humans; (2) effects on fracture healing and therapeutic enhancement in aging; and (3) stimulation of allograft revitalization for segmental bone loss.

Role: Bukata Clinical PI for Project 3 (co-investigators JE Puzas, and J Houck)

**Project 3 (co-investigator/research and clinical, PI for this clinical trial):**

Amount for project 3(over 5 years): Directs \$994,722 / Indirects \$489,953

Double blinded randomized clinical trial evaluating patients with low energy pelvic fractures (fragility fractures) placed onto treatment with either teriparatide or placebo for 16 weeks. Pain levels, functional performance in Sit-to-stand activity, xrays, CT scan quantitation of healing and bone formation, and metabolic bone disease parameters (DXA, turnover markers, Vitamin D) analyzed.

-Clinical principle investigator responsible for all recruitment, consenting of subjects, clinical assessment/care, patient safety management, IRB application and renewal updates, and interpretation/analysis of all laboratory, radiographic, and functional parameters for all patients.

-Responsible for IND filing and maintenance of filing with the FDA for teriparatide as a potential treatment to accelerate fracture healing

**6. Oppenheimer Program Grant**

4/2013-4/2016 (\$30,000)

“Parathyroid Hormone Use to Improve Care of Painful Osteoporotic Vertebral Compression Fractures: A Pilot Study”

Role: PI

Pilot clinical trial to assess the potential of a systemic biologic agent to assist stability and pain control in acute osteoporotic compression fractures. Two to one randomization of acute compression fracture patients to parathyroid hormone vs standard osteoporosis medication and treatment. Functional endpoints, radiographic endpoints, and pain endpoints all obtained as required by FDA standards for fracture healing investigation.

**Non-Peer Reviewed Research Grants:**

**UCLA:**

“Risk factors for Atypical Femur Fracture: revisiting the California Kaiser population for more detailed testing”

- PI in collaboration with Dennis Black (UCSF), Rick Dell (Kaiser) and Ben Levine (UCLA) to look at patient specific factors including labs, xrays, medical/family/social histories in patients who suffered an atypical femur fracture
- funding through Dennis Black (UCSF) as Principle Investigator
- opportunity for whole exome sequencing for AFF patients with some candidate genes already identified
- goal to develop some patient specific guidelines to help identify high risk patient before treatment with anti-resorptive agents for osteoporosis

-“Expert opinion on the risk and role of osteoporosis medications and fracture healing issues: RAND analysis of expert assessment of the current available clinical data”

- PI with Stuart Silverman (UCLA Rheumatology) as co-collaborator
- Phase 1 completed and published with the support of the International Osteoporosis Foundation with a multinational, multispecialty group of experts
- Phase 2 in process using same RAND analysis of expert opinion response with one group of Spine surgeons and a second group of Orthopaedic Trauma specialists

-“Biology of Nonunions: RNA analysis of nonunion fracture callus compared with normal fracture healing callus” (Eric Farrell co-collaborator for Olive View, Sarah Dry co-collaborator for specimen processing)

- partnership with Amgen to look at the tissue biology of fracture nonunion tissues and the potential pathways to prevent or reverse development of a fracture nonunion. Ultimate goal is to identify patients at risk for nonunion so that biologic intervention can be employed to prevent this progression when fracture healing delay first identified. Protocol developed: Evaluation of nonunion fracture site tissue with matched controls with normal fracture healing, but malalignment that requires surgical intervention.
- contracting in process
- Budget support to UCLA from Amgen (\$100,000)

-Chondroprotection and chondroregeneration (Michael Zuscik (University of Rochester), co-PI collaborator)

- Use of PTH/PTHrP analogs including teriparatide and abaloparatide for chondroprotection and chondroregeneration in osteoarthritis
- animal models completed with teriparatide
- \$2.8 million** funded clinical trial for teriparatide plus donation of medication and placebo from Eli Lilly, enrollment start in April 2017
- co-PI in design of trial
- date review and safety monitoring
- principle in data analysis and trial results writing team

**-Principle investigator for Site**

- AMG 785 in Tibial Diaphyseal Fractures Status Post Intramedullary Nailing (sponsor Amgen)
- Principle investigator for University of Rochester participation in clinical trial of anti-sclerostin antibody and the role it may play in accelerating fracture healing in adults. Responsible for oversight of all patients and clinical coordinator activities, enrollment, and safety guidelines.
- Enrolled and completed 5 patients (first center in US to enroll, and in the top 25% of US sites for enrolling patients)

**-Principle investigator for Site**

- KAVIAR trial (sponsor Medtronic/Kyphon)

4/15/17

-Participant in a multicenter, randomized trial evaluating multiple endpoints for patients undergoing either vertebroplasty or kyphoplasty for osteoporotic compression fractures to determine long term functional differences and economic differences between the procedures. Responsible for initial patient evaluation for all enrolled subjects from the University of Rochester, and 2 year follow-up data collection. Study completed July 2011.

**-Research protocol development/subinvestigator for Site**

AMG 785 in hip fracture healing status post open reduction and internal fixation (sponsor Amgen)

-participant in the final protocol development for multicenter, multinational randomized double blinded trial to evaluate the potential role of anti-sclerostin antibody and the role it may play in accelerating fracture healing in adults. Responsible for protocol development and primary/secondary/exploratory endpoint choices. Subinvestigator for University of Rochester enrolling patients and serving as PI during maternity leave for site PI. Recused self as site PI to avoid conflict of interest because of role in protocol development.

**MISCELLANEOUS**

**Patent:** Inventors Rosier, Zuscik, Sampson, Bukata, Puzas and Awad,

Patent regarding technology UR 6-1753 “Protecting and Repairing Cartilage and Musculoskeletal Soft Tissues with Parathyroid Hormone and its derivatives”. The patent issued on 11/24/2015 under patent#9,192,653.

**COURSES**

**Course director:**

3/2010: Upstate Basic Science Course (co-director)-3 day symposium

4/2008: Upstate Basic Science Course (co-director)-4 day symposium

6/2015: UCLA Osteoporosis Symposium (co-director)-1 day symposium

**Selected Media:**

-ABC News with Charlie Gibson 4/09: Medicine on the edge: Using teriparatide to assist fracture healing in older adults (focused story on my research)

-Los Angeles Times, London Daily Mirror(4/09): Using teriparatide to assist fracture healing in older adults. Articles based upon our research cohort presented at the 2009 ORS annual meeting with quotations.

-ABC News Online 5/3/07: Quotations about the approval and use of Reclast in the treatment and prevention of osteoporosis.

-USA Today 7/3/06: Quotation on orthopaedic recognition of need for osteoporosis follow-up for fracture patients

-NBC Nightly News/Today Show 2/06: Expert Commentary on use of calcium and osteoporosis

-WXXI public radio on 1370 Connections 9/14/05: Speaking of Women’s Health: Bones.

-Second Opinion (PBS) 8/2004, Osteoporosis expert for panel on osteoporosis

-Multiple media appearances in local news and newspapers, web based media including web based health media (2004-present)

**Volunteer:**

Junior Girl Scouts: Culver City 2013-present

-troop event coordinator, leadership training for girls

St. Timothy’s Church: Los Angeles 2013, 2014

4/15/17

-Religious education, community coffee hour support staff

Big Brother/ Big Sister: Rochester NY 1998-2000, big sister volunteer

Peer and Patient Awards:

Castle Connolly America's Top Doctors (2009,2012 - 2015)

Castle Connolly America's Top Doctors for Cancer (2009, 2014-2016)

Patients' Choice Award (2008 - 2009, 2013)