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WORK ADDRESS

Lawrence Berkeley National Laboratory
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RESEARCH EXPERIENCE

2010 – present	<i>Post-Doc</i>	University of California, Berkeley Lawrence Berkeley National Laboratory Materials Sciences Division: Fracture of Biomaterials Advisor: Prof. Dr. R.O. Ritchie
2009 – 2010	<i>Post-Doc</i>	University Medical Center Hamburg-Eppendorf Department of Osteology and Biomechanics Advisor: Prof. Dr. M. Amling
2006 – 2009	<i>Ph.D. Studies</i>	Charité - University Medicine Berlin Julius Wolff Institute Advisor: Prof. Dr. G.N. Duda Subject: Effects of Mineralization on Bone Quality Grade: summa cum laude (Dr. rer. medic.)
2006 – 2009	<i>Research Assistant</i>	University Medical Center Hamburg-Eppendorf Center for Biomechanics & Skeletal Biology Advisor: Prof. Dr. M. Amling

EDUCATION

2003 – 2005	<i>Postgraduate</i>	University Medical Center Hamburg-Eppendorf Institute of Bone Pathology Advisor: Prof. Dr. G. Delling
2002 – 2003	<i>Diploma Thesis</i>	Subject: Microanalytical Measurements in Periprosthetic Bone Tissue University Medical Center Hamburg-Eppendorf Institute of Bone Pathology Grade: A
1997 – 2003	<i>Academic Studies</i>	Hamburg University of Applied Sciences Natural Science: Biomedical Science and Engineering

PROFESSIONAL AFFILIATIONS

German Society of Osteology (DGO) American Society of Bone and Mineral Research (ASBMR)
German Society of Biomechanics (DGfB) Orthopaedic Research Society (ORS)
European Calcified Tissue Society (ECTS) International Society of Bone Morphometry Inc. (ISBM)

AWARDS & FELLOWSHIPS

2010 Research Fellowship, German Research Community (DFG)
2009 Young Investigator Award, International Society of Bone Morphometry (ISBM)
2009 Travel Grant Award, European Calcified Tissue Society (ECTS)
2009 Travel Grant Award, Young Investigator Osteologie Symposium (YIOSS)
2007 Travel Grant Award, European Calcified Tissue Society (ECTS)

PUBLICATIONS

Busse B, Djonic D, Milovanovic P, Hahn M, Püschel K, Ritchie RO, Djuric M, Amling M. Decrease in the osteocyte lacunar density accompanied by hypermineralized lacunar occlusion reveal failure and delay of remodeling in aged human bone. *Aging Cell*. 2010 Dec;9(6):1065-1075 (Journal cover)

Busse B, Jobke B, Hahn M, Priemel M, Niecke M, Seitz S, Zustin J, Semler J, Amling M. Effects of strontium ranelate administration on bisphosphonate-altered hydroxyapatite: Matrix incorporation of strontium is accompanied by changes in mineralization and microstructure. *Acta Biomater*. 2010 Dec;6(12):4513-21.

Schulze J, Seitz S, Saito H, Schneebauer M, Marshall RP, Baranowsky A, Busse B, Schilling AF, Friedrich FW, Albers J, Spiro AS, Zustin J, Streichert T, Ellwanger K, Niehrs C, Amling M, Baron R, Schinke T. Negative regulation of bone formation by the transmembrane Wnt antagonist Kremen-2. *PLoS One*. 2010 Apr 27;5(4)

Regelsberger J, Schmidt T, Busse B, Herzen J, Tsokos M, Amling M, Beckmann F. Synchrotron-microcomputed tomography studies of normal and pathological cranial sutures: further insight. *J Neurosurg Pediatr*. 2010 Mar;5(3):238-42

Busse B, Hahn M, Soltau M, Zustin J, Püschel K, Duda GN, Amling M. Increased calcium content and inhomogeneity of mineralization render bone toughness in osteoporosis: mineralization, morphology and biomechanics of human single trabeculae. *Bone*. 2009 Dec;45(6):1034-43 (Journal cover)

Seitz S, Schnabel C, Busse B, Schmidt HU, Beil FT, Friedrich RE, Schinke T, Mautner VF, Amling M. High bone turnover and accumulation of osteoid in patients with neurofibromatosis 1. *Osteoporos Int*. 2010 Jan;21(1):119-27

Busse B, Hahn M, Schinke T, Püschel K, Duda GN, Amling M. Reorganization of the femoral cortex due to age-, sex-, and endoprosthetic-related effects emphasized by osteonal dimensions and remodeling. *J Biomed Mater Res A*. 2010 Mar 15;92(4):1440-51

Busse B, Hahn M, Niecke M, Jobke B, Püschel K, Delling G, Katzer A. Allocation of nonbirefringent wear debris: darkfield illumination associated with PIXE microanalysis reveals cobalt deposition in mineralized bone matrix adjacent to CoCr implants. *J Biomed Mater Res A*. 2008 Nov;87(2):536-45

Busse B, Niecke M, Püschel K, Delling G, Katzer A, Hahn M. Polyethylene abrasion: cause or consequence of an endoprosthesis loosening? Investigations of firm and loosened hip implants. *Z Orthop Unfall*. 2007 Jul-Aug;145(4):452-60

Busse B, Jobke B, Werner M, Fürst M, Rüter W, Delling G. Fluorosis--a forgotten entity. Case report of a woman with coxarthrosis and newly diagnosed fluorosis. *Pathologe*. 2006 Feb;27(1):73-9 (Journal cover)

ABSTRACTS & PRESENTATIONS

2010

Busse B, Djonic D, Milovanovic P, Hahn M, Püschel K, Ritchie RO, Djuric M, Amling M. Decrease in the Osteocyte Lacunae Density Accompanied by Hypermineralized Lacunar Occlusion Reveal Failure and Delay of Remodeling in Aged Human Bone. *ASBMR 2010 Annual Meeting Abstract Book*. MO0278:S440

Regelsberger J, Schmidt T, Busse B, Herzen J, Tsokos M, Amling M, Beckmann F. Synchrotron-microtomographic studies of normal and pathological cranial sutures – a further insight. 61st Annual Meeting of the German Society of Neurosurgery (DGNC). *German Medical Science GMS Publishing House; 2010*. DOI: 10.3205/10dgnc166

Seto J, Schinke T, Gupta HS, Krauss S, Dunlop JWC, Kerschnitzki M, Masic A, Zaslansky P, Boesecke P, Catala-Lehnen P, Busse B, Schäfer C, Fratzl P, Jähnen-Dechent W. Accelerated growth plate mineralization and foreshortened proximal limb bones in mice lacking Fetuin-A/ α 2-HS Glycoprotein. International Conference on the Chemistry and Biology of Mineralized Tissues 2010. Scottsdale, Arizona, USA.

Djonic D, Milovanovic P, Busse B, Hahn M, Püschel K, Amling M. Number and Distribution of Osteocyte Lacunae in the Cortex of Human Femoral Bone: Age, Sex and Inter-site Differences. *XXI International Symposium on Morphological Sciences Abstract Book*:S48

2009

Busse B. Knochenqualitätsanalyse: Morphologie, Biomechanik und Mineralisation humaner Trabekel. 5. Interdisziplinäres Forum: Knochen und Muskeln – Neue Welten 20. - 21.11.2009, Berlin. (*invited presentation*)

Rupprecht M, Münch C, Barvencik F, Busse B, Rueger JM, Amling M. β -Tricalciumphosphat in der Stabilisierung von Tibiakopffrakturen – klinische Langzeitergebnisse bei 52 Patienten sowie histologische und rasterelektronenmikroskopische Subgruppenanalyse. *German Medical Science GMS Publishing House; 2009*. DocWI64-745, DOI: 10.3205/09dkou558

Novo de Oliveira A, Busse B, Spiro AS, Amling M, Rueger JM, Lehmann W. Biomechanische Analyse der Verankerungsstabilität unterschiedlicher kanülierter Pedikelschrauben an standardisierten Polyurethanblöcken. *German Medical Science GMS Publishing House; 2009*. DocEF19-270, DOI: 10.3205/09dkou082, URN: urn:nbn:de:0183-09dkou0822

von Domarus C, Busse B, Priemel M, Kessler S, Klante TO, Meier S, Proksch N, Schlie J, Pastor F, Netter C, Streichert T, Püschel K, Amling M. Histomorphometric osteoid indices in 1886 iliac crest biopsies and bone mineral density distribution correlated to 25-hydroxy-vitamin d. *J Bone Miner Res*. 24 (Suppl 1):A09003138

Busse B, Soltau M, Hahn M, Zustin J, Püschel K, Duda GN, Amling M. Increased Calcium Content and Inhomogeneity of Mineralization Render Trabecular Toughness in Osteoporosis Beyond Resorption Lacunae and Microcracks. *XIth Congress of the International Society of Bone Morphometry Abstract Book*. OC01: S28

Busse B, Soltau M, Hahn M, Zustin J, Püschel K, Duda GN, Amling M. Biomechanische Festigkeitsprüfung, Morphologie- und Mineralisationsanalyse an isolierten Trabekeln aus humanen Wirbelkörpern. *Osteologie*. 2009;(Suppl. 1):S30

Busse B, Jobke B, Seitz S, Hahn M, Zustin J, Duda GN, Semler J, Amling M. The Degree of Superimposed Antiresorptive Effects on Bone Quality: Analyses of Histomorphometric Indices and Mineral Composition in Face of the T-score on 15 Paired Iliac Crest Biopsies Underlying Long-Term Bisphosphonate Treatment. *Bone*. 2009, Jun, 44(Suppl. 2):426

Busse B, Soltau M, Hahn M, Zustin J, Püschel K, Duda GN, Amling M. Increased Calcium Content and Inhomogeneity of Mineralization Render Bone Toughness in Osteoporosis: A Study Focusing on the Mineralization, Morphology and Biomechanics of Human Single Trabeculae. *Transactions Vol. 34, 55th ORS Annual Meeting*, Las Vegas, NV, 2009: 0653

Krause M, Breer S, Busse B, Hahn M, Morlock MM, Zustin J, Amling M. Cement-Bone Interface Analysis of 118 Failure Cases after Hip Resurfacing Arthroplasty: Interface Demineralization is Significantly Correlated to Time in Situ, Cement Penetration and Sex. *Transactions Vol. 34, 55th ORS Annual Meeting*, Las Vegas, NV, 2009: 0203

Busse B, Jobke B, Priemel M, Hahn M, Zustin J, Semler J, Amling M. Therapieeffekte von Strontiumranelat nach Langzeitgabe von Bisphosphonaten: Histomorphometrie & EDX/ μ XRF-Analysen an 15 gepaarten Beckenkamm-Biopsien. *Osteologie*. 2009;(Suppl. 1):S27

Schulze J, Seitz S, Schneebauer M, Marshall RP, Baranowsky A, Busse B, Friedrich F, Albers J, Amling M, Schinke T. Die Osteoblasten-spezifische Über-Expression des Wnt-Antagonisten Kremen-2 in transgenen Mäusen resultiert in einer schweren Osteoporose. *Osteologie*. 2009;(Suppl. 1):S29

Seitz S, Schnabel C, Schmidt HU, Busse B, Friedrich RE, Schinke T, Mautner VF, Amling M. Erhöhter Knochenumbau und Osteomalazie in Patienten mit Neurofibromatose Typ 1. *Osteologie*. 2009;(Suppl. 1):S52

2008

Katzer A, Hahn M, Niecke M, Jobke B, Puschel K, Delling G, Busse B. Cobalt Deposition in Mineralized Bone Matrix Subsequent to Hip Joint Replacement with CoCr Implants. 10th International Symposium on Metal Ions in Biology and Medicine. Bastia, France. May 19-22, 2008.

Katzer A, Busse B, Niecke M, Jobke B, Hahn M. Detektion von Metallpartikeln in periprotetischem Gewebe durch Kombination von Dunkelfeldmikroskopie und protoneninduzierter Emission charakteristischer Röntgenstrahlung (PIXE). *German Medical Science GMS Publishing House*; 2008. Doc08DGCH8781

2007

Busse B, Priemel M, Jobke B, Hahn M, Zustin J, Semler J, Amling M. Effects of Strontium Ranelate Therapy after Long Term Bisphosphonate Treatment. Histomorphometric and μ XRF/EDX Analysis of Paired Iliac Crest Bone Biopsies in 15 Patients. *J Bone Miner Res*. 2007; 22 (Suppl. 1):484-485

Al-Samir K, Busse B, Hahn M, Pressmar S, Schaudig U. Detection of Osteogenesis in Explanted Synthetic Hydroxyapatite-Silicone Orbital Implants Using the Grinding Technique for Two and Three-Dimensional Preparation of Undecalcified Specimens. *Invest. Ophthalmol. Vis. Sci*. 2007 48:E-3459.

Busse B, Hahn M. Altersabhängige Veränderungen in der Femurkortikalis: Eine quantitative Strukturanalyse der Osteone. *Osteologie*. 2007 Feb;16 (Suppl. 1):80

Busse B, Hahn M, Niecke M, Jobke B, Püschel K, Katzer A. Heavy metal deposition in periprosthetic mineralized bone tissue: Investigation of hip arthroplasty wear debris degradation under darkfield illumination with proton induced x-ray emission. *Calcif Tissue Int*. 2007, 80 (Suppl. 1):61-62

2006

Busse B, Katzer A, Niecke M, Püschel K, Delling G, Hahn M. Investigation of Material Wear in Joint Implants: Proposals for a New Method: Preliminary Results. National Institute for Occupational Safety and Health, *4th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis Abstract Book*:S112

Busse B. Quantitative Elementanalytik im Knochen-Implantatinterface. Behörde für Wissenschaft und Gesundheit (BWG) Hamburg. *Innovative Medizin- und Biotechnologie in Hamburg 2006 Abstract Book*:S43

Jobke B, Busse B, Delling G, Minne HW - Histologische Veränderungen des endostalen Umbaus unter Teriparatid- und Strontiumranelat-Therapie. *Osteologie*. 2006 Mar;15 (Suppl. 1):28

Busse B, Niecke M, Delling G, Hahn M. Mikroanalytischer Nachweis metallischer Implantatbestandteile im periprothetischen Knochengewebe nach Hüftgelenkersatz. *German Medical Science GMS Publishing House*, 2006. Doc P.2.3.2.1-157592.

Busse B, Niecke M, Delling G, Hahn M. Mikroanalytischer Nachweis von Legierungsbestandteilen im implantatnahen Knochengewebe nach Hüftgelenkersatz. XXVIII. Münchner Symposion für experimentelle Orthopädie (24.-25.02.06).

2005

Busse B, Hahn M. Verschleißanalyse von Endoprothesen. Nano Technology Systems Carl Zeiss SMT - Enabling the Nano-Age World 01.-02.06.05 (*invited presentation*).