

X-RAY MICROTOMOGRAPHY OF NEONATAL MOUSE BONE

S.R. Stock^{1,*}, K. Igarashi^{2,**} and P.H. Stern²

¹School of Materials Sci. & Eng., Georgia Inst. of Technology, Atlanta, GA, USA

²Dept. of Molecular Pharmacology & Biological Chemistry, Northwestern Univ.
Medical School, Chicago, IL, USA

*On leave at Inst. for Bioengineering & Nanoscience in Advanced Medicine,
Northwestern Univ., Chicago, IL, USA

**Presently at Dept. of Orthodontics, Tohoku Univ. School of Dentistry, Sendai, JAPAN

X-ray microtomography, a high resolution variant of medical “CT”, quantifies three-dimensional microstructures efficiently and noninvasively, and the use of this x-ray imaging modality in medical and materials studies has greatly expanded with the commercial availability of instruments. Microtomography-based results are presented for neonatal mouse bone response to loading and to insulin-like growth factor (IGF-I), and the focus is on microarchitectural variables’ contributions to bone “quality.”