

## SSBH 2021 Curriculum Vitae

<b>Name</b>	<b>Mary L. Bouxsein</b>
<b>Organization</b>	<b>Dept. of Orthopedic Surgery, Harvard Medical School</b>
<b>Position &amp; Title</b>	<b>Professor</b>
<b>Educational background &amp; Professional experience</b>	
06/1987	University of Illinois, Champaign-Urbana, IL, General Engineering, BS
06/1987	University of Illinois, Champaign-Urbana, IL, Economics, BA
05/1989	Stanford University, Palo Alto, CA, Mechanical Engineering, MS
08/1992	Stanford University, Palo Alto, CA, Mechanical Engineering, PhD
07/1995	Beth Israel Hospital / Harvard Medical School, Boston, Orthopedic Biomechanics, Postdoctoral
2018-	Professor, Dept of Orthopedic Surgery, Harvard Medical School, Boston
2019-	Research Scientist, United States Army Institute of Environmental Medicine, Natick MA
2020-	Director, Graduate Student Division, Center for Faculty Development, Massachusetts General Hosp
<b>Research Interests</b>	

Dr. Bouxsein focuses on understanding skeletal fragility from a biomechanics viewpoint, using both animal models and clinical studies. In addition to a long-standing interest in fragility fractures, she studies bone stress injuries in athletes & military populations, and the impact of long-duration spaceflight on musculoskeletal health. She is also passionate about the use of non-invasive imaging to understand skeletal fragility; and seeks to validate bone mineral density as a surrogate endpoint for fractures in future trials of new osteoporosis therapies.

### Publications

1. **Bouxsein ML**, Eastell R, Lui LY, Wu LA, de Papp AE, Grauer A, Marin F, Cauley JA, Bauer DC, Black DM, Project FBQ. Change in Bone Density and Reduction in Fracture Risk: A Meta-Regression of Published Trials. *J Bone Miner Res.* 2019;34(4):632-42. doi: 10.1002/jbmr.3641. PubMed PMID: 30674078
2. Black DM, Bauer DC, Vittinghoff E, Lui L-Y, Grauer A, Marin F, Khosla S, de Papp A, Mitlak B, Cauley JA, McCulloch CE, Eastell R, **Bouxsein ML** for the FNIH Bone Quality Project. Treatment-related changes in bone mineral density as a surrogate biomarker for fracture risk reduction: Analysis of individual patient data from multiple randomized clinical trials. *Lancet Diabetes & Endocrinology*, 2020 Aug 8(8): 672-682. PMID:32707115
3. Whittier DE, Boyd SK, Burghardt AJ, Paccou J, Ghasem-Zadeh A, Chapurlat R, Engelke K, **Bouxsein ML**. Guidelines for the assessment of bone density and microarchitecture in vivo using high-resolution peripheral quantitative computed tomography. *Osteoporos Int.* 2020 Sep;31(9):1607-1627. doi: 10.1007/s00198-020-05438-5. PMID: 32458029.
4. Ko FC, Mortreux M, Riveros D, Nagy JA, Rutkove SB, **Bouxsein ML**. Dose-dependent skeletal deficits due to varied reductions in mechanical loading in rats. *NPJ Microgravity* 2020 May 18; 6:15. doi: 10.1038/s41526-020-0105-0. PMID: 32435691
5. Popp KL, Ackerman KE, Rudolph SE, Johannesdottir F, Hughes JM, Tenforde AS, Bredella MA, Xu C, Unnikrishnan G, Reifman J, Bouxsein ML. Changes in volumetric bone mineral density

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over 12 months after a tibial bone stress injury diagnosis: Implications for return to sports and military duty. *Am J Sports Med*, Dec 2020

6. Burkhart K, Allaire B, Anderson DE, Lee D, Keaveny TM, **Bouxsein ML**. Effects of long-duration spaceflight on vertebral strength and risk of spine fracture. *J Bone Min Res* 2020;35(2):269-276. doi: 10.1002/jbmr.3881. PubMed PMID: 31670861.
  7. Johannesdottir F, Allaire B, Kopperdahl DL, Keaveny TM, Sigurdsson S, Bredella MA, Anderson DE, Samelson EJ, Kiel DP, Gudnason VG, **Bouxsein ML**. Bone density and strength from thoracic and lumbar CT scans both predict incident vertebral fractures independently of fracture location. *Osteoporosis Int*. 2021 32: 261-9, PMID: 32748310.
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