SSBH 2021 Curriculum Vitae	
Name	**Daniel S. Perrien**
Organization	**Division of Endocrinology, Metabolism, and Lipids, Department of Medicine, Emory University, Atlanta, Georgia, USA**
Position & Title	**Associate Professor**
Educational background & Professional experience	
2019 – Present	Associate Professor of Medicine, Division of Endocrinology, Metabolism, and Lipids, Emory, University School of Medicine
2016-2019	Assistant Professor, Division of Clinical Pharmacology in the Department of Medicine, Vanderbilt Center for Bone Biology, and Vanderbilt University Institute of Imaging Sciences, Vanderbilt University Medical Center, Nashville, Tennessee
2009-2016	Research Instructor through Assistant Professor, Department of Orthopaedic Surgery and Rehabilitation, Vanderbilt Center for Bone Biology, and Vanderbilt University Institute of Imaging Sciences, Vanderbilt University Nashville, Tennessee
2006-2008	Scientist – Orthopaedics, Research and Development, BioMimetic Therapeutics, Inc., Franklin, Tennessee.
2002-2006	Ph.D. – Physiology and Biophysics, University of Arkansas for Medical Sciences (UAMS), Little Rock, Arkansas
Research Interests	

My lab currently focuses on 1) investigating the roles of innate immune cells in heterotopic ossification and fibrodysplasia ossificans progressiva, 2) regulation of bone metabolism by members of the TGFβ superfamily, and 3) development of novel microCT-based approaches for the analysis of bone, soft tissues, and synthetic materials. I have studied the roles of TGFβ/BMP-superfamily members, TNFα, and other inflammatory cytokines using numerous animal models of musculoskeletal diseases for >20 years. I began working with rodent models of bone formation, turnover, osteoporosis, and repair in 1999 and these continue to be areas of investigation in my lab. This work has largely focused on the roles of Inhibins, Activins, TGFβR3/Betaglycan, TNFα, and Alk2/Acvr1. In recent years, my research interests have grown to include heterotopic ossification and fibrodysplasia ossificans progressiva, where we study mechanisms of aberrant tissue repair and work to develop small molecule inhibitors of ALK2/ACVR1. This work also leverages my experience studying inflammation in fracture repair and distraction osteogenesis to determine critical interactions of inflammatory and BMP signaling pathways that drive endochondral heterotopic ossification, which largely resembles bone repair processes. We currently focus on the roles of macrophages and monocytes in promoting the survival and

chondrogenic differentiation of MSC-like fibroadipoprogenitors that reside in skeletal muscles.

Publications

1. Lyu H, Elkins CE, Pierce JL, Serezani CH, Perrien DS. MyD88 is Not Required for Muscle Injury-Induced Endochondral Heterotopic Ossification in a Mouse Model of Fibrodysplasia Ossificans Progressiva. *In Press* at Biomedicines.
2. Pan H, Fleming N, Hong CC, Mishina Y, Perrien DS. Methods for the reliable induction of heterotopic ossification in the conditional Alk2(Q207D) mouse. J Musculoskelet Neuronal Interact. 2020;20(1):149-59. PubMed PMID: 32131380.
3. de la Croix Ndong J, Stevens DM, Vignaux G, Uppuganti S, Perrien DS, Yang X, Nyman JS, Harth E, Elefteriou F. Combined MEK inhibition and BMP2 treatment promotes osteoblast differentiation and bone healing in Nf1Osx -/- mice. J Bone Miner Res. 2015;30(1):55-63. doi: 10.1002/jbmr.2316. PubMed PMID: 25043591; PMCID: PMC4280331.
4. de la Croix Ndong J, Makowski AJ, Uppuganti S, Vignaux G, Ono K, Perrien DS, Joubert S, Baglio SR, Granchi D, Stevenson DA, Rios JJ, Nyman JS, Elefteriou F. Asfotase-alpha improves bone growth, mineralization and strength in mouse models of neurofibromatosis type-1. Nat Med. 2014;20(8):904-10. Epub 2014/07/07. doi: 10.1038/nm.3583 [pii]. PubMed PMID: 24997609; PMCID: 4126855.
5. Perrien DS, Nicks KM, Liu L, Akel NS, Bacon AW, Skinner RA, Swain FL, Aronson J, Suva LJ, Gaddy D. Inhibin A enhances bone formation during distraction osteogenesis. J Orthop Res. 2012;30(2):288-95. Epub 2011/08/03. doi: 10.1002/jor.21501. PubMed PMID: 21809377.
6. Perrien DS, Akel NS, Edwards PK, Carver AA, Bendre MS, Swain FL, Skinner RA, Hogue WR, Nicks KM, Pierson TM, Suva LJ, Gaddy D. Inhibin A is an endocrine stimulator of bone mass and strength. Endocrinology. 2007;148(4):1654-65. Epub 2006/12/30. doi: en.2006-0848 [pii]
10.1210/en.2006-0848. PubMed PMID: 17194739.
7. Perrien DS, Achenbach SJ, Bledsoe SE, Walser B, Suva LJ, Khosla S, Gaddy D. Bone turnover across the menopause transition: correlations with inhibins and follicle-stimulating hormone. J Clin Endocrinol Metab. 2006;91(5):1848-54. Epub 2006/02/02. doi: jc.2005-2423 [pii] 10.1210/jc.2005-2423. PubMed PMID: 16449331.