

Bone is the tissue most frequently recovered archaeologically and is the material most commonly studied by biological anthropologists, who are interested in how skeletons change shape during growth and across evolutionary time. This volume brings together a range of contemporary studies of bone growth and development to highlight how cross-disciplinary research and new methods can enhance our anthropological understanding of skeletal variation. The novel use of imaging techniques from developmental biology, advanced sequencing methods from genetics, and perspectives from evolutionary developmental biology improve our ability to understand the bases of modern human and primate variation. Animal models can also be used to provide a broad biological perspective to the systematic study of humans. This volume is a testament to the drive of anthropologists to understand biological and evolutionary processes that underlie changes in bone morphology and illustrates the continued value of incorporating multiple perspectives within anthropological inquiry.

Christopher J. Percival is a postdoctoral researcher at the University of Calgary. His research focuses on the basis for variation in skull form, in particular focusing on quantifying the role that interactions between tissues play in defining craniofacial morphology.

Joan T. Richtsmeier is Distinguished Professor of Anthropology at Pennsylvania State University. Her research looks to understand the complex genetic and developmental basis of variation in head shape in development, disease, and evolution.

Cover illustration: Two-channel, three-dimensional Optical Projection Tomography (OPT) image of bone and cartilage of a wildtype mouse embryo (embryonic day 16.5, resolution 17 microns) visualized in Avizo 9.1.1 (FEI, part of Thermo Fisher Scientific, Hillsboro, OR). Bone was labelled with Alizarin Red and imaged with a Texas red filter; cartilage labelled with Alcian Blue and imaged with a GP3 filter. Labelling of bone and cartilage, OPT scanning and reconstruction was performed at the Centre for Genomic Regulation, Barcelona, Spain by Alexandre Robert-Moreno in the lab of James Sharpe. Generation and preparation of the specimen, and 3D rendering of the image was performed at the Pennsylvania State University, University Park, PA, USA by Susan M. Motch Perrine in the lab of Joan Richtsmeier.

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