

## Postdoctoral Fellowship Award

### Dr. Laura Anne Jacox, *University of North Carolina, Chapel Hill*

Proposal: Roles of Autophagy in Orthodontic Tooth Movement

Dr. Laura Jacox D.M.D., Ph.D. is a native of Chicago, Illinois, who moved to Boston to study biology and earth science at M.I.T. While a student there, she discovered her love of research and dentistry, through the mentorship of two dual-trained faculty members. Dr. Jacox hopped across the Charles river for her dental and graduate training at Harvard University, exploring craniofacial development in the lab of Professor Hazel Sive, before moving to Chapel Hill to study orthodontics with Drs. Ching-Chang Ko and William Proffit at the University of North Carolina.



Dr. Jacox is pursuing a project exploring the roles of autophagy in orthodontic tooth movement. Autophagy is an intracellular pathway that recycles old proteins and protects cells from excessive inflammation. Preliminary data suggest autophagy is activated following orthodontic tooth loading and regulates force-induced inflammation and bone turnover. By identifying novel regulatory mechanisms, we enrich our understanding of oral biology, with hope for better targets to treat disease of excess inflammation such as periodontitis and apical root resorption. Pharmacological modulation of autophagy holds great promise in orthodontics for accelerating tooth movement or reversibly halting it for anchorage or retention.

The American Association of Orthodontics Foundation's Postdoctoral Fellowship Award (PFA) is critical for the continuation of this project, by funding new experiments, staff assistance and research presentations. This support is seed funding for Dr. Jacox's independent research program at UNC, providing a financial bridge from postdoc to faculty. Data will form the basis of future publications, AAO research presentations, and NIH grant proposals, to enrich our scientific knowledge and to further career development of Dr. Jacox. She is excited to dive in and explore how autophagy participates in orthodontic tooth movement.