



# Genome Sciences Seminar

Wednesday, 11.8.23 | 3:30 | Foege Auditorium

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## Dr. Laura Landweber

Professor and Vice-Chair of Biochemistry and Molecular Biophysics, Columbia University

<https://www.biochem.cuimc.columbia.edu/research/research-labs/landweber-lab>

## “Natural Genome Editing in the Ciliate *Oxytricha*”

Our lab studies novel genetic systems in microbial eukaryotes, bringing a strongly mechanistic approach to understanding genome evolution and diversity. Our research has shown that the surprisingly sophisticated variations on DNA and RNA processing in microbial eukaryotes create an imaginative playground for genome architecture and genetic systems. Some of their pathways erode the notions of a gene (e.g. scrambled genes and RNA editing) and even Mendelian inheritance, reminding us that a genome sequence can be a far cry from knowledge of its products. Genome-wide DNA rearrangements occur in diverse organisms, and contribute to many human diseases, including cancer, but their extreme exaggeration in ciliates, particularly *Oxytricha*, makes it an ideal model system to study the role of RNA in epigenetic control of genome remodeling. Our laboratory is currently focused on understanding the mechanism and evolutionary origin of this remarkable phenomenon in *Oxytricha* of RNA-guided, widespread genome editing during development.

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Questions? Contact Brian Giebel at [bgiebel@uw.edu](mailto:bgiebel@uw.edu) or visit the Seminar website at <http://www.gs.washington.edu/news/seminars.htm>

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