

## Seminar 2018

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**Claus Wilke**

Department Chair, Professor  
Department of Integrative Biology

University of Texas at Austin

### Structural and Functional Constraints on Protein Evolution

Proteins evolve under constraints determined by their structural and functional properties. These constraints are visible in co-variation among sites and in increase sequence conservation at sites in the protein core, near active sites in enzymes, or at sites involved in protein-protein interfaces. I will discuss first the relative importance of these structural and functional constraints on sequence conservation. Then, I will discuss how co-variation among sites can be used to infer a protein's contact matrix, and how the accuracy of the inference depends critically on the definition of a medium-residue contact. Finally, I will discuss how, in the context of duplicated genes, selective constraints can percolate through protein-protein interaction networks, such that a duplicated gene imposes significant selection pressure on its non-duplicated partner.

**Friday, October 19, 2018**

**2:30 PM**

**Laufer Center Lecture Hall 101**

*Host: Ken Dill*

*Refreshments following the lecture  
Laufer Hub 110*