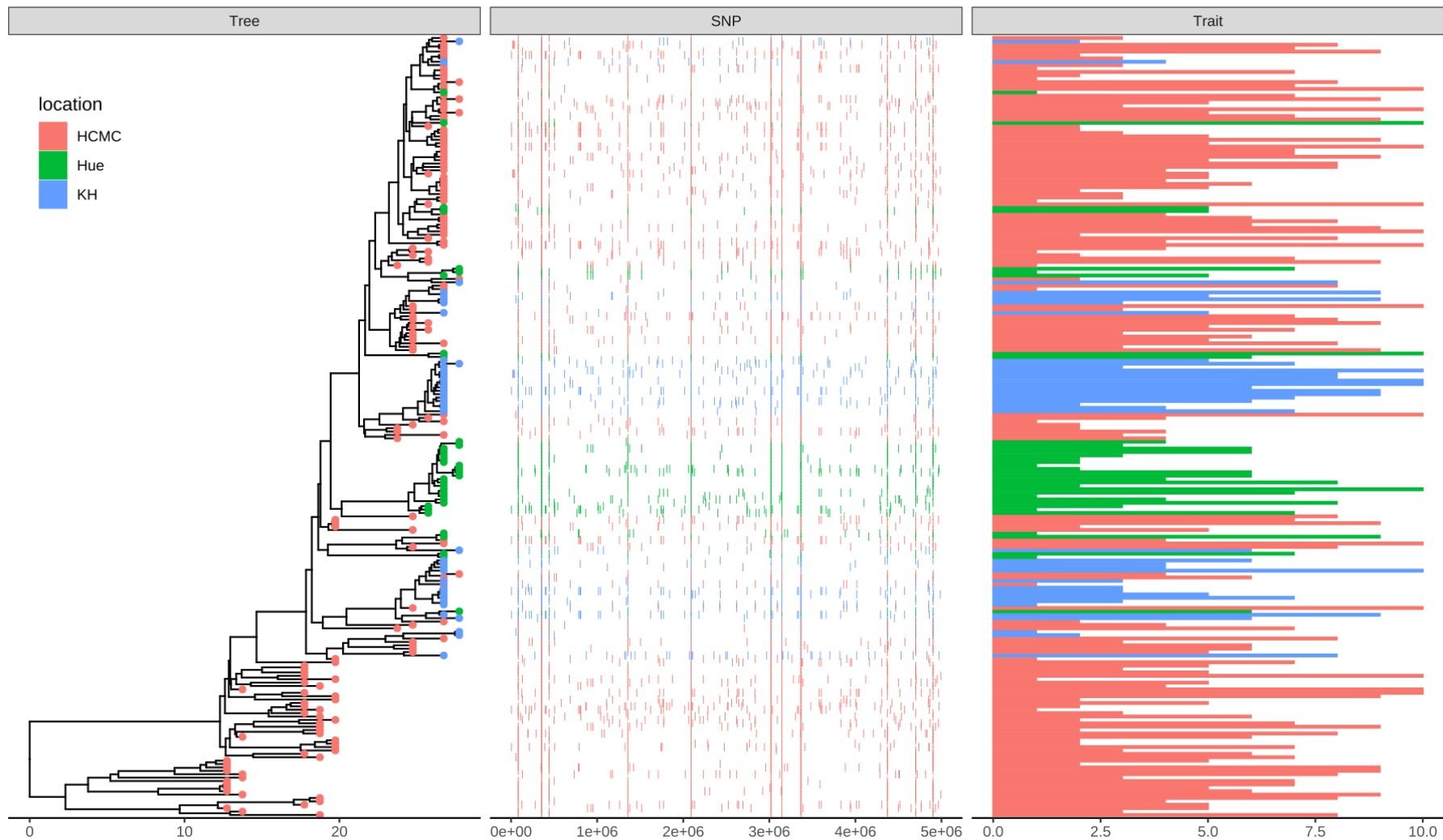


CM 515: Data Visualization Module II



Dan Sloan

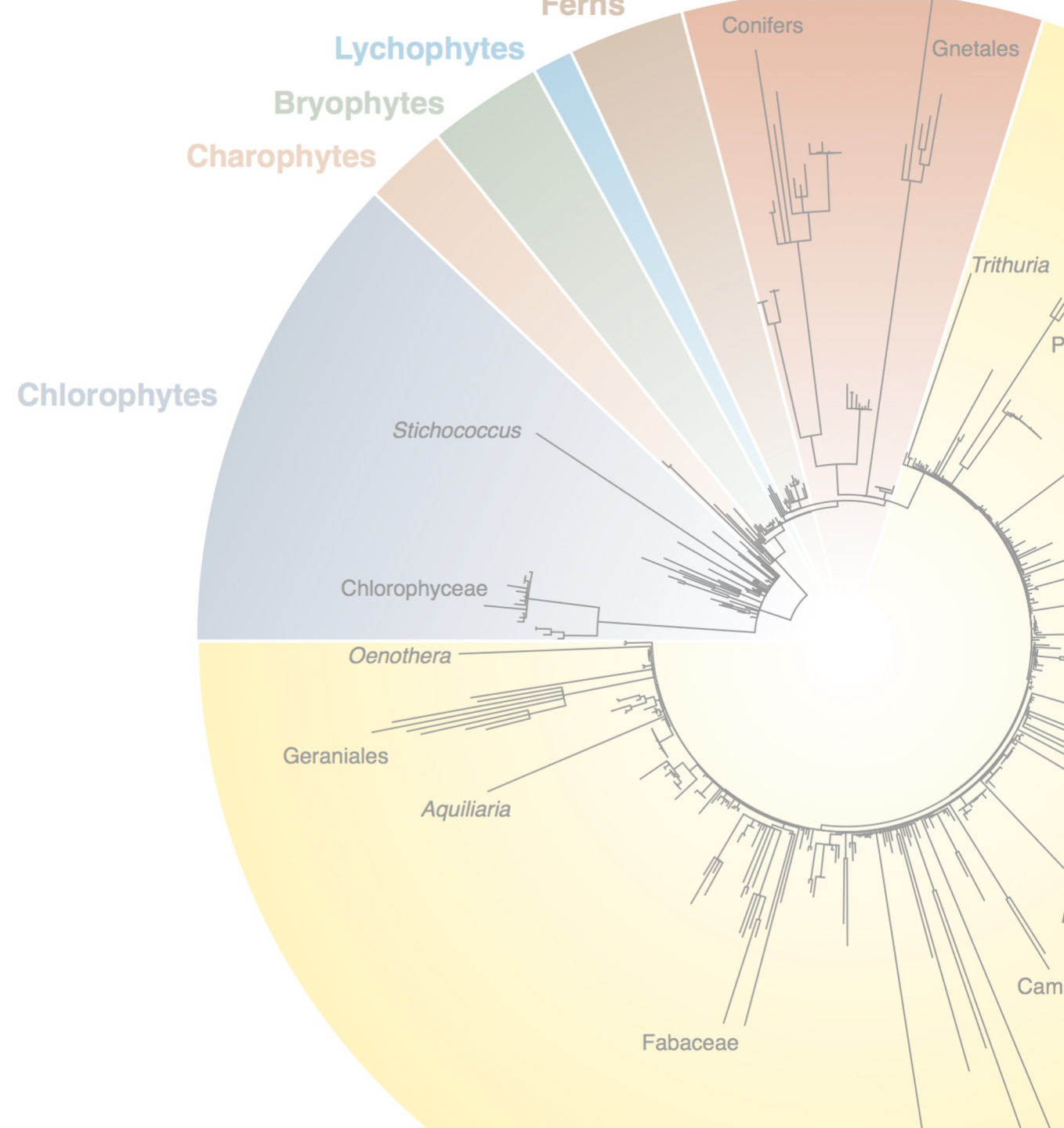
Department of Biology

dan.sloan@colostate.edu

Image Source: Guangchuang Yu <https://yulab-smu.top/treedata-book/chapter7.html>

Tree-Like Data Structures in Biology

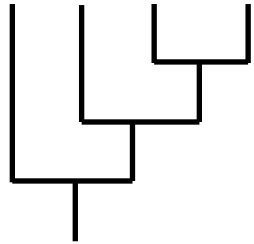
- The tree of life and species relationships
- Gene family evolution
- Hierarchical clustering of gene expression patterns, ecological/microbiome communities, etc.



Newick Tree Format

- Standard parentheses/comma-based format for summarizing tree branching patterns

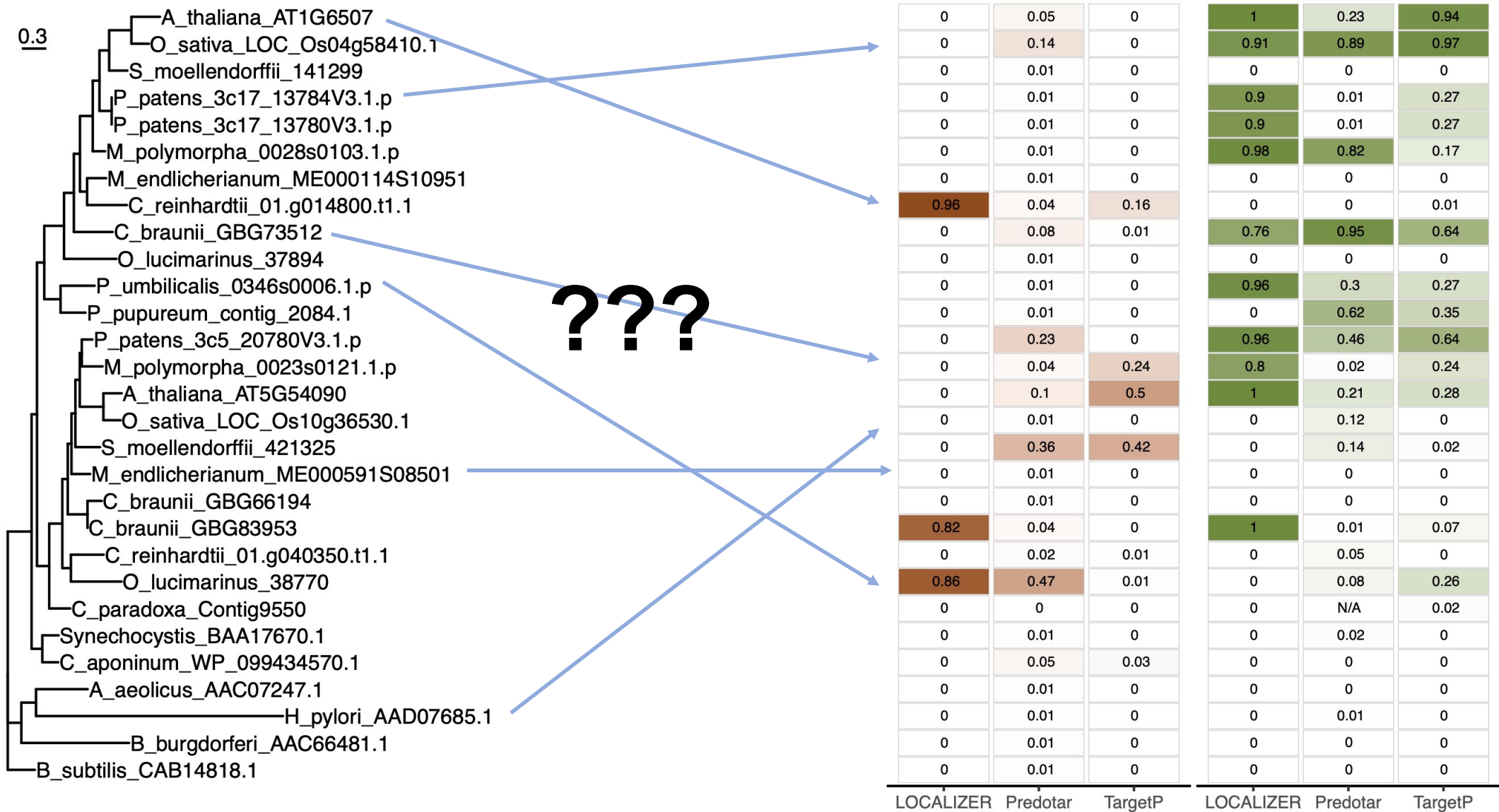
(A, (B, (C, D)));



- Numerical values and annotations can be added to record features such as branch lengths, statistical (e.g., bootstrap) support, node/branch labels, and other features.



Linking Trees and Data Plots



Exercise and Assignment

<https://dbsloan.github.io/CM515/SP24/ggtree/>