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Northampton, MA 01063. *Springer fibers and webs.*

This talk describes the combinatorics and representation theory related to a family of subvarieties of the flag variety called *Springer fibers*. Recall that the flag variety is the collection of nested vector subspaces  $V_1 \subseteq V_2 \subseteq \cdots \subseteq V_{n-1} \subseteq \mathbb{C}^n$  of a fixed complex vector space. The Springer fiber of a linear operator  $X$  consists of those flags that are fixed by  $X$  in the sense that  $XV_i \subseteq V_i$  for all  $i$ . Springer fibers are well-known as 1) the fundamental example of a geometric representation (their cohomology carries an action of the symmetric group  $S_n$ ) and 2) a family of varieties whose geometry is encoded by subtle combinatorics (they inherit and refine some of the permutation statistics of Schubert varieties in the flag variety). In addition, many geometric characteristics of Springer fibers can be encoded by *webs*, a kind of planar graph that encodes quantum representations of  $\mathfrak{sl}_t$ . We give a quick overview of the geometric structure of Springer fibers and then describe their connection to webs in more detail, including both recent results and open questions. (Received January 22, 2020)