1099-13-365   **Alex Fink** (`a.fink@qmul.ac.uk`), **Jenna Rajchgot*** (`rajchgot@umich.edu`) and **Seth Sullivant** (`smsulli2@ncsu.edu`). *Frobenius splitting, matrix Schubert varieties, and Gaussian graphical models.*

In probability theory, one can ask the question of whether or not two random variables are independent of one another, or, more generally, conditionally independent of one another given a third. In the specific case of the multivariate Gaussian distribution, statements about conditional independence of sets of coordinates are equivalent to statements about ranks of submatrices of symmetric matrices. Consequently, questions about conditional independence can be studied using commutative algebra.

In this talk, I'll explain how to solve a couple of these statistical questions by constructing certain Frobenius splittings and realizing some of the compatibly split subvarieties as equivalent to conditional independence statements.

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