Abstract: In complex dynamics, the study of orbits of complex numbers under a polynomial or rational function is of great importance. On the other hand, less is known about the interaction between orbits of distinct maps. However, Ghioca, Tucker and Zieve proved the remarkable fact that if two polynomials have orbits with infinite intersection, then they must have a common iterate. In this talk I will discuss an extension of this result, classifying all pairs of polynomials having orbits satisfying infinitely many multiplicative dependence relations. Interestingly, the main tools used are number-theoretic in nature, namely bounds on solutions to superelliptic equations over number fields, together with a specialisation argument. I will also talk about a statistical analogue of an extension of this problem to several polynomials.

Note: Special Time. Talk will be on Zoom, contact Paul Fili for the link.