Abstract: We say a polynomial is dynamically irreducible if all of its iterates are irreducible. If a polynomial $f$ is dynamically irreducible then the absolute Galois group can be viewed as acting transitively as an automorphism on the preimage tree for 0 under $f$. There are a number of existing results regarding dynamical irreducibility of polynomials over finite fields, including necessary and sufficient conditions on quadratic polynomials (Boston—Jones) and certain cubic polynomials (Gomez-Perez et al.). We build on these results for certain higher degree families of polynomials. This is ongoing joint work with Tori Day, Rebecca Leland, Jamie Juul, Cigole Thomas, and Bianca Thompson stemming from a project that began at the RNT4 workshop in 2023.