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Tristan Phillips* (tp7924@ship.edu), Department of Mathematics, Shippensburg University, Shippensburg, PA 17257. *Galois Groups and Integral Basis for some Lucas Polynomial Sequences*. Preliminary report.

In 1892 Hilbert used his famous irreducibility theorem to prove the existence of irreducible polynomials of each degree n with Galois group S_n . Later Schur made this explicit by showing that the Laguerre polynomials were all irreducible and had Galois group S_n . Since Schur many other families of irreducible polynomials with certain Galois groups have been discovered. As an additional layer, we will consider families of irreducible polynomials which are minimal polynomials for monogenic number fields, that is, number fields which have a power basis for their ring of integers. In this talk we pay special attention to polynomial sequences defined by linear recurrences; these polynomials are called Lucas polynomial sequences. Among other things, we show that the irreducible Fibonacci polynomials have Galois group $\mathbb{Z}_2 \times \mathbb{Z}_{\frac{p-1}{2}}$ and are minimal polynomials for monogenic number fields. (Received September 26, 2017)