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Rosina Campbell (rc2283@stu.armstrong.edu) and **Duc Van Huynh**
(duc.huynh@armstrong.edu). *Constructing irreducible polynomials over finite field.*

Let p be a rational prime and let D be a negative discriminant. By the Chebotarev Density Theorem, the Hilbert class polynomial $H_D(X)$ has a high probability of being irreducible over \mathbb{F}_p when the class group $\text{Cl}(D)$ is cyclic. For each integer n , we will combine this idea with isogeny volcanoes to describe an algorithm to construct irreducible polynomials over \mathbb{F}_p of degree at least n . (Received September 26, 2017)