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**Galen Dorpalen-Barry, Cyrus Hettle, David Livingston, Jeremy Martin, George Nasr, Julianne Vega\*** ([julianne.vega@uky.edu](mailto:julianne.vega@uky.edu)) and **Hays Whitlatch**. *A positivity phenomenon in Elser's Gaussian-cluster percolation model.*

Veit Elser proposed a random graph percolation model in which physical dimension appears as a parameter. From this model, numerical graph invariants  $els_k(G)$ , called Elser numbers, naturally arise and Viet Elser conjectured that  $els_k(G) \geq 0$  for all graph  $G$  and integers  $k \geq 2$ . In this talk we will interpret the Elser numbers as Euler characteristics of nucleus (simplicial) complexes and prove Elser's conjecture. (Received September 09, 2019)