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Ursula H Martin* (ursula.martin@cs.ox.ac.uk). *The social machine of mathematics.*

How does mathematics come about? Formal proof is only part of the story, and in this paper I present the results of highly interdisciplinary work, using philosophy, social science and history alongside computer science research in artificial intelligence, argumentation theory and verification, to show the scope for new techniques to support concept formation and argument finding, while highlighting the roles that risk, doubt, error, explanation and group knowledge play in the human production and use of mathematics. (Received September 16, 2017)