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**Gregory F Lawler\*** ([jose@math.duke.edu](mailto:jose@math.duke.edu)), Dept. of Mathematics, Box 90320, Duke University, Durham, NC 27708-0320. *Universality, Conformal Invariance, and the Dimension of the Brownian Frontier.*

This talk will discuss recent work with Oded Schramm and Wendelin Werner calculating (rigorously) the exact values of the intersection exponents for planar Brownian motion. As a corollary the exact Hausdorff dimension of exceptional sets of Brownian motion is derived: the dimension of the frontier or outer boundary is  $4/3$  (this establishes a conjecture of Mandelbrot), the dimension of the set of cut points is  $3/4$  (a conjecture of Duplantier and Kwon), and the dimension of the set of pioneer points is  $7/4$ . Conformal invariance and universality are essential components of the proof as well as a new process, Stochastic Loewner Evolution, introduced recently by Schramm. (Received October 03, 2000)