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Abstract for an Invited Paper
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Stranger than Fiction: Adventures in the QCD Wonderland

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The Relativistic Heavy Ion Collider (RHIC) has initiated a new era in the scientific exploration of strongly interacting matter. Constructed to produce and investigate the quark-gluon plasma, the RHIC experiments have revealed a wealth of amazing phenomena: the ability of partonic matter to almost instantly thermalize, its tendency to flow nearly without friction, and its ability to quench energetic jets almost to extinction. Theoretical efforts to understand these properties have helped achieve breakthroughs in computational science, revealed close relationships between the quark-gluon plasma and black holes, established a new calculable limit of QCD, and resolved decades old questions of relativistic fluid dynamics. After reviewing these developments, the lecture will provide an outlook to future opportunities within theory and experiment aimed at quantifying the conceptual insights made during the past decade.