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Gauge Theory and 2D Physics: A Review SPENCER TAMAGNI, COSTAS EFTHIMIOU, University of Central Florida — We provide a review of the interrelations between gauge theories in three and four dimensions with two-dimensional systems. In particular, we focus on Chern-Simons theory in three dimensions and theories with N=2 supersymmetry in four dimensions. Our emphasis is on how two-dimensional conformal field theory on Riemann surfaces provides a unified way of thinking about these sets of topics and elegantly encodes exact properties of the strongly coupled theories such as dualities.

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