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How optimal inhomogeneity produces high temperature superconductivity EDUARDO FRADKIN, Department of Physics, University of Illinois at Urbana-Champaign, STEVEN KIVELSON, Department of Physics, Stanford University — The role of Coulomb frustrated phase separation in doped Mott insulators, and especially the consequences of the resulting local electronic structures on the "mechanism" of high temperature superconductivity will be discussed. The resulting perspective on superconductivity in the cuprates, and on the more general theoretical issue of what sorts of systems can support high temperature superconductivity is discussed as are some of the general, qualitative aspects of the experimental lore which should constrain any theory of the mechanism. Finally, it is show how they are accounted for within the context of the present theory. Reference: S. A. Kivelson and E. Fradkin, "How optimal inhomogeneity produces high temperature superconductivity," cond-mat/0507459, to appear as a chapter in "Treatise of High Temperature Superconductivity" by J. Robert Schrieffer and J. Brooks, to be published (Springer, 2006)

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