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### **Hurricane Science**

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Hurricanes provide beautiful examples of many of the key physical processes important in geophysical systems. They are rare natural examples of nearly perfect Carnot heat engines with an interesting wrinkle: They recycle much of their waste heat into the front end of the engine, thereby achieving greater wind speeds than would otherwise be possible. They are driven by surface enthalpy fluxes made possible by the thermodynamic disequilibrium between the earth's surface and atmosphere, a characteristic of radiative equilibrium in the presence of greenhouse gases. Their evolution, structure, and intensity all depend on turbulence near the ocean surface and in the outflow layer of the storm, high up in the atmosphere. In the course of this banquet, I will briefly describe these and other interesting aspects of hurricane physics, and also describe the role these storms have played in human history.