This dissertation studied how principals allow leadership to emerge in high performing, high poverty schools (HP2S) in Missouri. Complexity science, self-organization, and emergence are keys to understanding how leadership can impact student performance in low-performing schools. A Trend Model Delphi implementing lead-user strategy yielded mixed data revealing the leadership practices of 6 expert principals in Missouri HP2S. Results indicated the Domains and Stages of Emergence can be a useful framework for categorizing interactions in HP2S. The domains of Identity, Information, and Relationships overlap to open a novel space for stages to function and allow punctuated renewal. The stages of Networking, Commitment to a Community of Practice, and Strengthening and Diversifying Connections help explain the emergence of a complex system capable of multi-dimensional learning across multiple dimensions of time and in an infinite number of spaces including the space for novelty for the emergence of leadership and innovative practice. Out of 9 intersections of domain and stage, 3 produce emergent properties: 3rd order change, Critical Praxis, High-capacity building. In short, leadership is something that is shared with and emerges from many diverse agents interacting with the principal during processes designed to achieve HP2S. Findings present principals with order parameters they can feed into a low-performing school to facilitate transition to high performing. Other areas for further study include replication across geographically and demographically diverse areas of the state, nation, and globe to fully develop a model of emergent leadership as well as high-quality professional development opportunities.