【Abstract of 2008 Grant – in – Aid for Scientific Research on Innovative Areas
(Research in a proposed research area)】

Title of project	Research on the Emergence of Hierarchical Structure of Matter by Bridging Particle, Nuclear and Astrophysics in Computational Science
Head Investigator Name	Sinya Aoki
Abstract of Research Project **Term of Project: 2008–2012**	The purpose of this project is to construct a new research area in which researchers in particle physics, nuclear physics and astrophysics work coherently to investigate the hierarchical structure of matter from quarks and nuclei in microscopic scales to supernova explosions and nucleosynthesis in macroscopic scales from the point of view of computational science with high performance supercomputers. This is the first attempt to obtain unified understanding of problems which have been investigated separately in each field. This project gives a prototype model of interdisciplinary research collaborations in modern science to investigate phenomena extended over the wide range of scales.