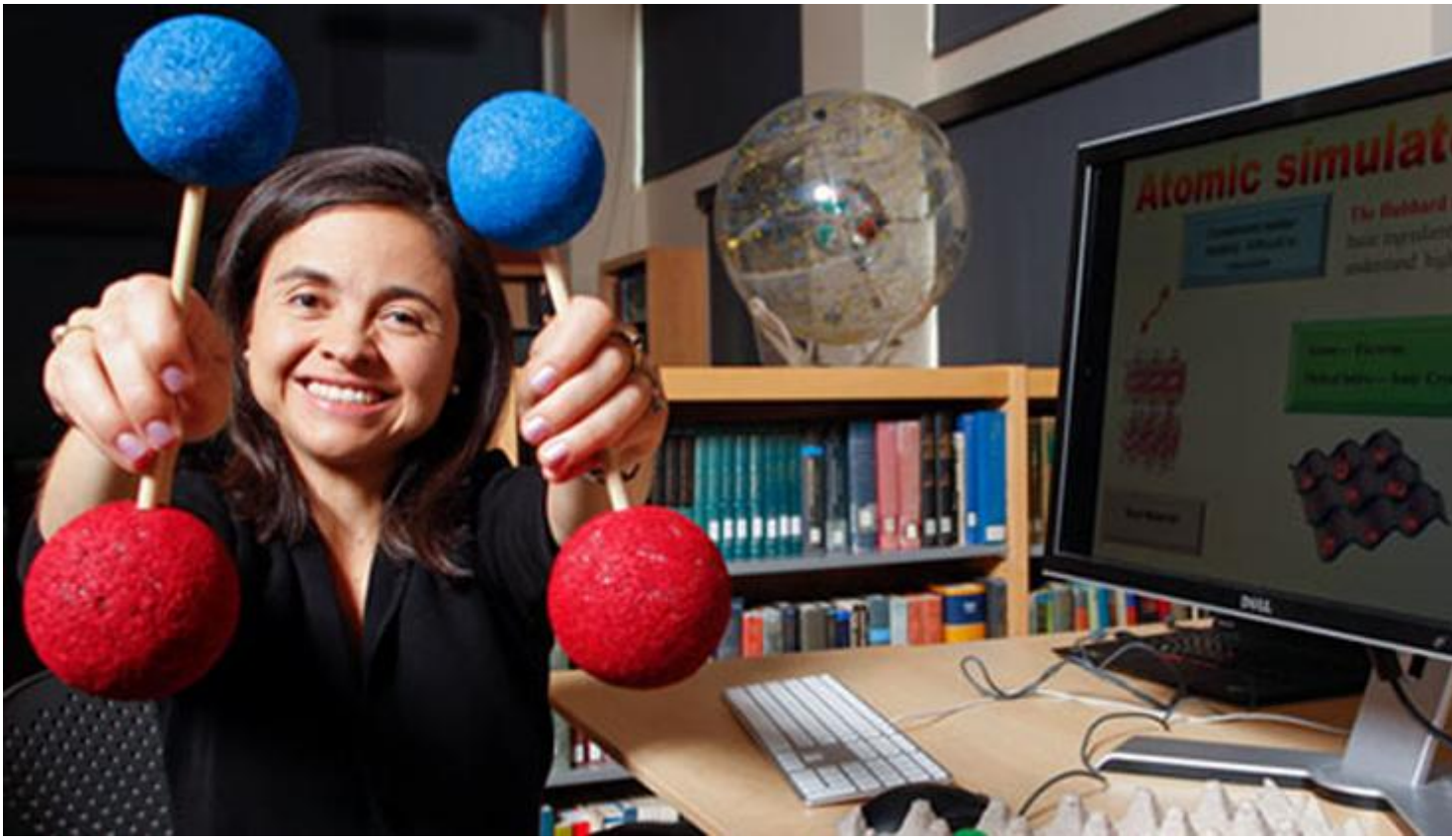
CU-Boulder's Ana Maria Rey chosen MacArthur Fellow [1]

February 21, 2014



Ana Maria Rey has received a 2014 MacArthur Fellowship, or ?Genius Grant.? She is the third JILA Fellow to win a genius grant, joining Deborah Jin (2003) and Margaret Murnane (2000). The MacArthur Fellowship includes a $625,000 unrestricted grant. Rey was cited for being an ?atomic Physicist advancing our ability to simulate, manipulate, and control novel states of matter through fundamental conceptual research on ultra-cold atoms.?

Rey works across the disciplines of atomic, molecule, optical, and condensed-matter physics. Her aim is to use mathematical models to describe the complex behavior of nature. Her research on ultracold optical-lattice systems is contributing to advances in quantum simulation and quantum information. This work is expected to help experimentalists achieve large-scale quantum entanglement between atoms in the laboratory.

Rey is well known in the physics community for her collaborations within JILA and with researchers across the country and in Europe. With her insights, experimentalists are investigating the simulation, manipulation, and control of novel states of matter such as

quantum magnets, superfluids, and insulators. At JILA, Rey is working with experimentalist Jun Ye on the development of a strontium-lattice optical atomic clock and two quantum simulators: the Sr-lattice clock and a second that uses ultracold polar molecules.

Rey is widely respected as a mentor for young scientists. She leads a group of graduate students and postdocs that is unusually large and productive. A recent graduate student, Michael Foss-Feig, won the 2013 Best Thesis Prize from the American Physical Society Division of AMO Physics. Ana Maria won the same Thesis Prize herself in 2005 as a University of Maryland graduate student mentored by Charles Clark of the National Institute of Standards and Technology (NIST).

Rey received a B.S. (1999) from the Universidad de los Andes in Bogotá and a Ph.D. (2004) from the University of Maryland. She was a postdoctoral researcher (2004?2005) with NIST and a postdoctoral fellow (2005?2008) at the Institute for Theoretical Atomic, Molecular and Optical Physics at the Harvard-Smithsonian Center for Astrophysics, prior to joining the University of Colorado at Boulder, where she is currently a fellow at JILA and a research assistant professor in the Department of Physics. Rey?s salary and her research program are fully supported by NIST and her external grants.

(Photo John D. and Catherine T. MacArthur Foundation)

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