Stephan Hoyer

Graduate Institution: University of California

Location: Berkeley, California

Graduate Discipline: Physics

Hometown: Portland, Oregon

Research Interests:

Most broadly, I am interested in applied theoretical physics. In particular, my dissertation research is focusing on applications of quantum information theory to energy transfer dynamics in photosynthesis. I am studying the implications of recently discovered long lasting quantum coherences between electronic excitations of bacterio-chlorophyll molecules used to collect and transfer energy in the initial stage of photosynthesis. These long lasting coherences have been identified experimentally, but it is not yet clear whether they would arise in physiological conditions or have biological significance. I have worked on quantum random walks and their applications to quantum computing.

About me:

I am a card-carrying physicist (American Physical Society member). I also consider myself one of an inaugural set of "quantum biologists" studying the relevance of quantum effects in biological systems.

I graduated from Swarthmore College in 2008 with a BA in physics with High Honors and Phi Beta Kappa. At Berkeley, I have been involved with the Compass Project, a graduate student run project to create a community for undergraduates and to increase the participation of underrepresented minorities in the physical sciences. We run a summer program (which I have taught for) and several year round programs. This spring, two years into my PhD, I also was offered the NSF GRFP and NDSEG fellowships, which I turned down to accept the DOE SCGF.

This summer I am an NSF East Asia and Pacific Summer Institutes Fellow. I am doing research at National Taiwan University in Taipei and eating fresh mango or lychee fruit everyday. I am quite pleased that the DOE SCGF will facilitate my pursuit of further international collaborations. My hobbies include hiking, international travel, and cooking and eating new types of food.

I currently intend to pursue a career as a research scientist, either in academia or at a national laboratory.