

Alice Ohlson



Graduate Institution: Yale University

Location: New Haven, Connecticut

Graduate Discipline: Nuclear/Particle Physics

Hometown: Falls Church, Virginia

Research Interests:

My research is in relativistic heavy ion physics, which is a subfield at the boundary between nuclear physics and particle physics. I work on the STAR experiment at the Relativistic Heavy Ion Collider (RHIC) which is located at Brookhaven National Laboratory. The Yale heavy ion group also works on the ALICE experiment at the Large Hadron Collider (LHC), so in the future I may join that collaboration as well.

In heavy ion collisions such as those at RHIC, the energy density is high enough that quarks and gluons are no longer confined into hadrons, instead forming a state of matter known as the quark-gluon plasma (QGP). In the early stages of heavy ion collisions, high-momentum quarks and gluons can be produced via hard scatterings. They then travel through the QGP before fragmenting into “jets” of hadrons. In my research I study jets in order to learn how the original hard-scattered quarks and gluons traverse the QGP, which gives insight into the properties of the QGP and the strong nuclear interaction.

Before working in nuclear/particle physics, I did research in laser optics. I worked at the Free-Electron Laser facility at Jefferson Lab for two summers and at the Laser Interferometer Gravitational-Wave Observatory (LIGO) in Livingston, Louisiana, for one summer. During my junior and senior years as an undergraduate at MIT I did data analysis of neutron-deuteron collisions (few-body nuclear physics), spending the intervening summer at the Los Alamos Neutron Science Center where the experiment was performed. Beyond nuclear/particle physics, I think that biophysics is fascinating, particularly the applications of statistical physics to problems in biology.

About Me:

In addition to physics, I love linguistics and languages. I speak American Sign Language and some French, and I minored in linguistics at MIT. I also enjoy music and puzzles, and I read voraciously.



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