Creating a C++ Package to Build and Solve Electron Population Evolution Equations of Rubidium and its Isotopes in the Context of Laser-Atom Interactions.[1] DANIEL KEYLON, Union University, BRETT DEPAOLA, Kansas State University — In Atomic, Molecular, and Optical Physics, researchers often study light-matter interactions. Lasers are used to probe the energy structure of atoms to determine relative electron populations. However, experiments can be time consuming to set up with parameters that are difficult to vary during runtime. The goal of this project is to build a software package to autonomously build and solve the theoretical equations that predict population evolution. This software can be used to quickly test different experimental setups and identify experimental parameters that could produce interesting results. The initial version of this program focuses on solving the population evolutions of Rubidium and Rubidium isotopes.

Daniel Keylon
Union Univ

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