Tracking the Synthesis Paths of P-Process Nuclei\textsuperscript{1} STEPHANIE BOEHRINGER, Adrian College, JINA COLLABORATION\textsuperscript{2} — The p-process nuclei are proton-rich nuclei heavier than iron are an astrophysical abnormality because of the enigmatic nature of their synthesis. It is possible to trace the production of the p-process nuclei as a path that starts from thirty-five different p-nuclei to their seed nuclei composed of lighter isotopes. Data from NSCL’s nuclear reaction network of a Type II Supernova explosion with a temperature shock front that passes through multiple zones of the O/Ne layer was used to make calculations on the change in abundance of seed nuclei. The flow rates involving p-nuclei were calculated accurately enough to continue calculations on the paths taken by seed nuclei.

\textsuperscript{1}NSF Research Experience for Undergraduates
\textsuperscript{2}Using the network codes and reaclib network provided by the JINA collaboration