



MASTER SUMMER TRAINING PROPOSAL
Academic Year 2025/2026

TITLE: Experimental studies of nuclear reactions to understand astrophysical processes.

ADVISOR: Artemis Spyrou

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UNIVERSITY/RESEARCH CENTER of the TRAINING:
Michigan State University; Facility for Rare Isotope Beams (FRIB);
International Research Laboratory NPA.

LEVEL

Expected level of student: Master.

DURATION

Max. 4 months, including max 3 months at FRIB.

TOPIC

Nuclear astrophysics, experiment.

ABSTRACT

My group works in the field of Nuclear Astrophysics. We focus on measuring nuclear physics properties that drive astrophysical processes. We collaborate with astronomers and astrophysicists to identify important nuclear reactions that affect the evolution/explosion of stars and the production of elements. Based on this input we design and run experiments to study these nuclear reactions. A student working in my group can choose one of our existing projects such as detector testing/development (if available), analysis of existing data, and/or theoretical calculations that relate to these nucleosynthesis processes. Programming experience is desired but not required. Through this project students will gain understanding of astrophysical processes and how they connect to nuclear experiments, gamma ray spectroscopy, nuclear reactions and beta-decays.

Please note that this spring-summer training does not imply a continuation for a PhD.

More information is available on the website <https://npa.in2p3.fr/summer-training-program/>