



Radioactivation Work INL

October 2024

Changing the World's Energy Future

Teancum Earl Quist



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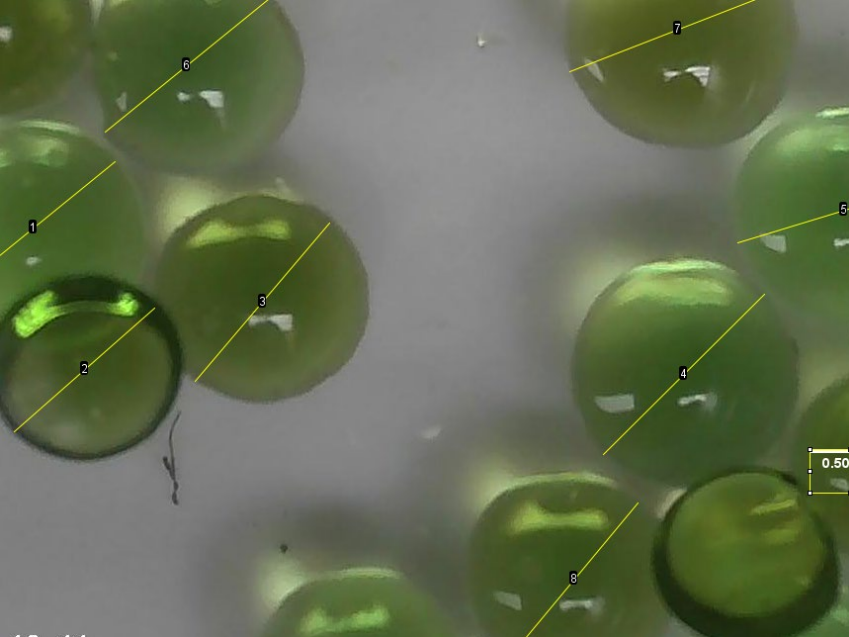
Teancum Earl Quist

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**Idaho National Laboratory
Idaho Falls, Idaho 83415**

<http://www.inl.gov>

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Teancum Quist
Postdoctoral Research Associate



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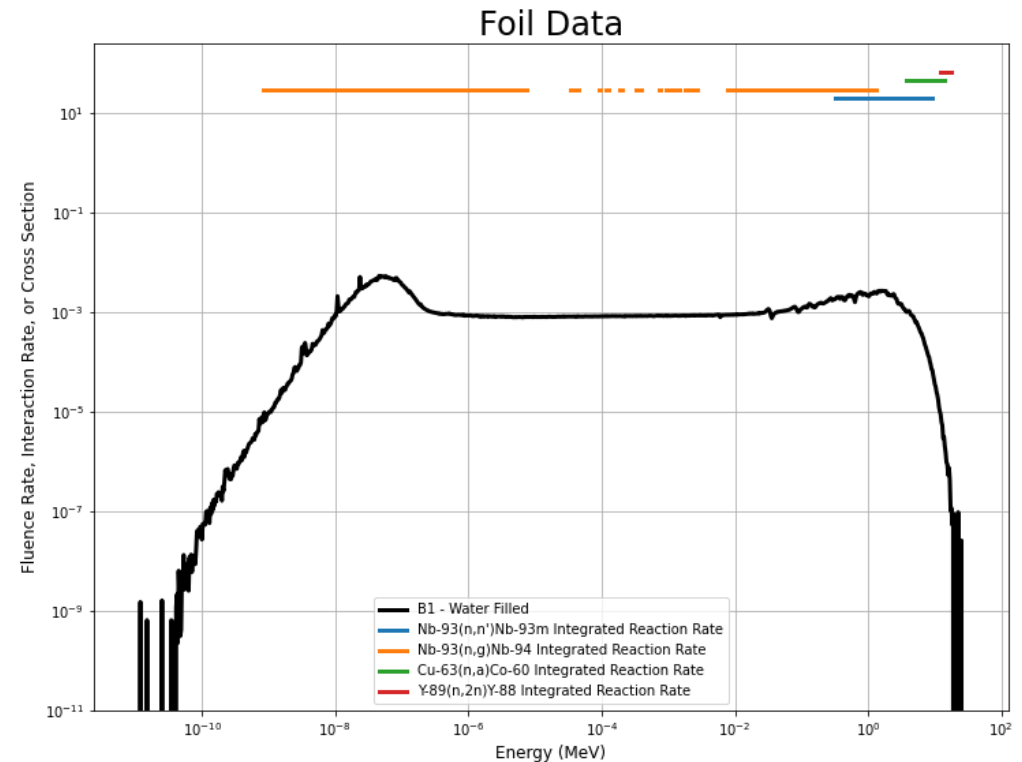
Radiochemistry and Nuclear Measurements

Battelle Energy Alliance manages INL for the
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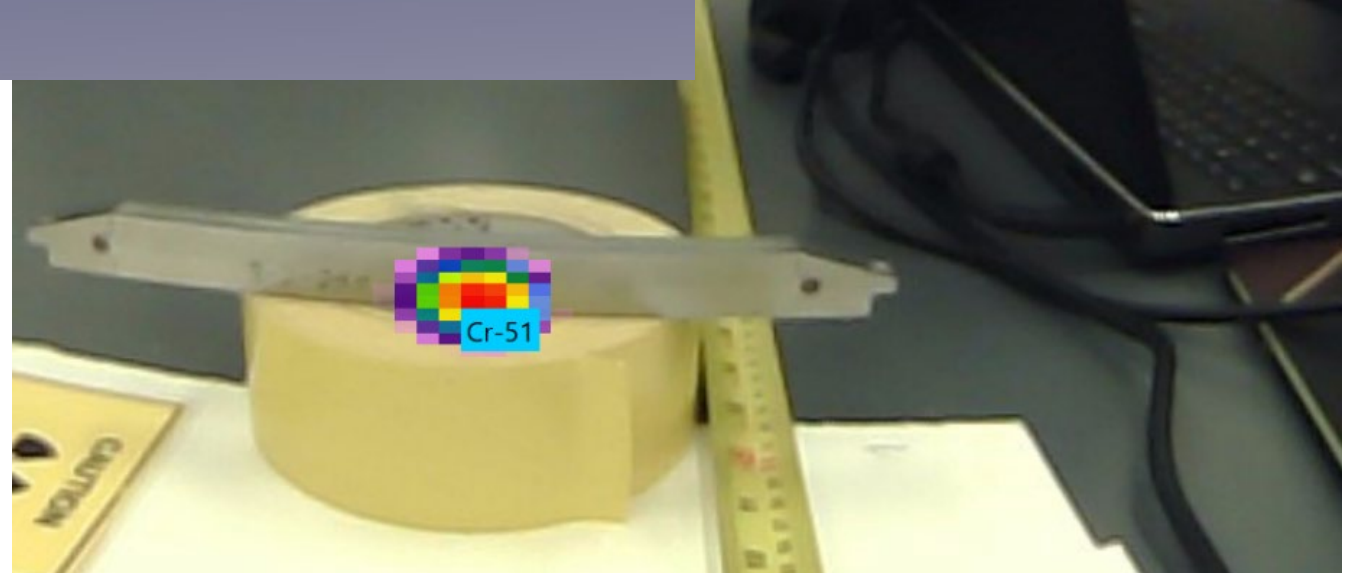
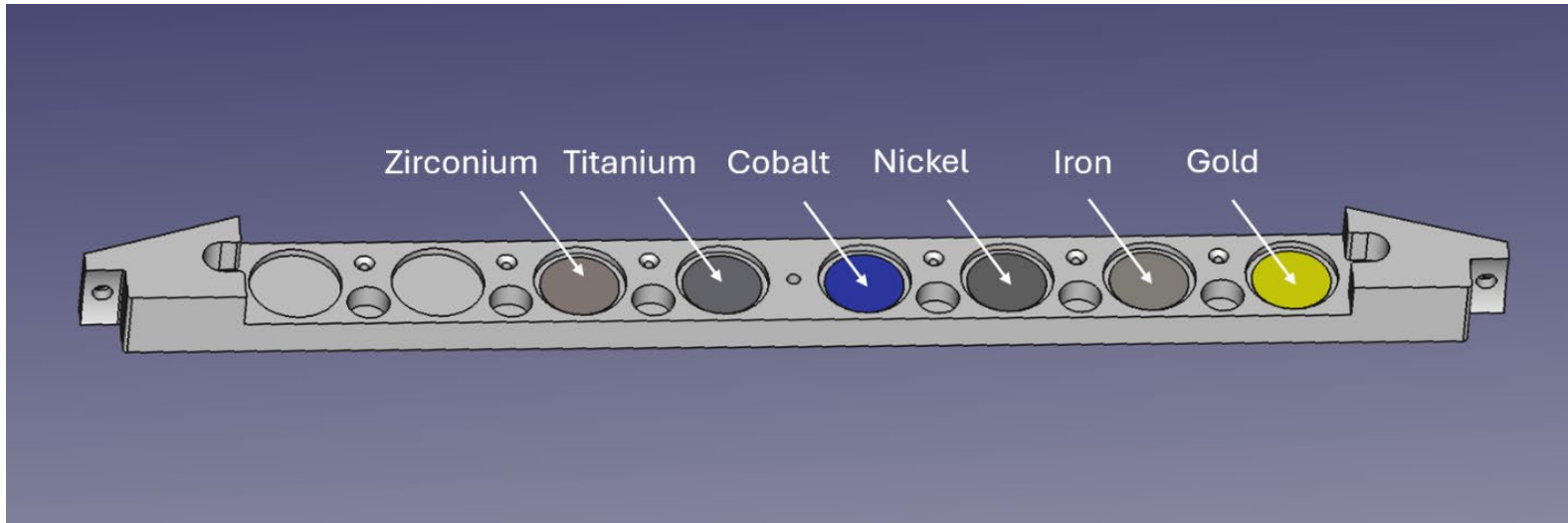


Reactor Metrology

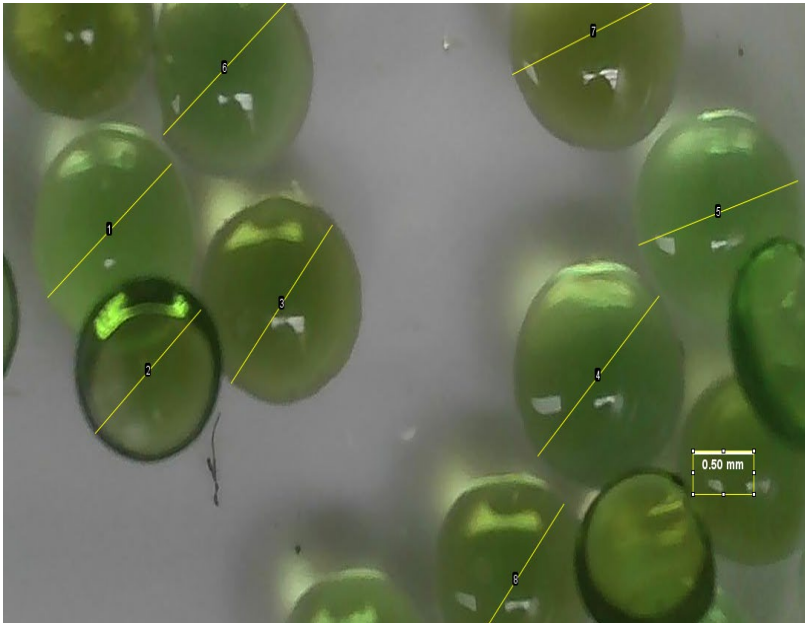
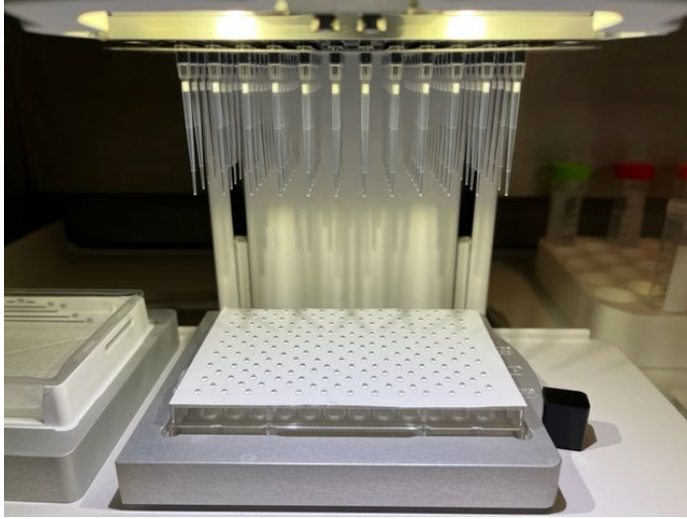
- Many reactor types with different
 - Coolants/Moderators
 - Fuel types
 - Operating Temperatures
 - Irradiation times



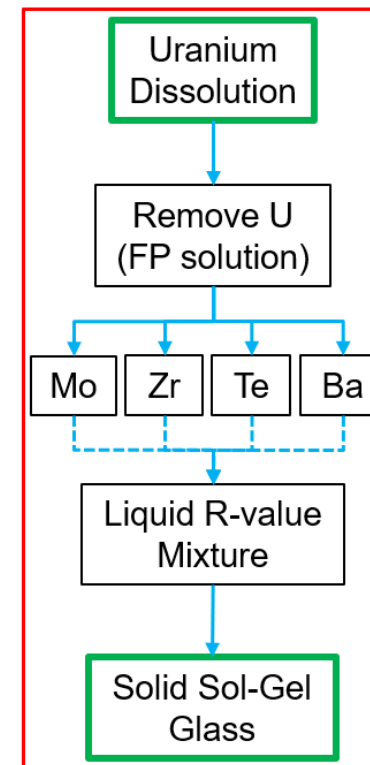
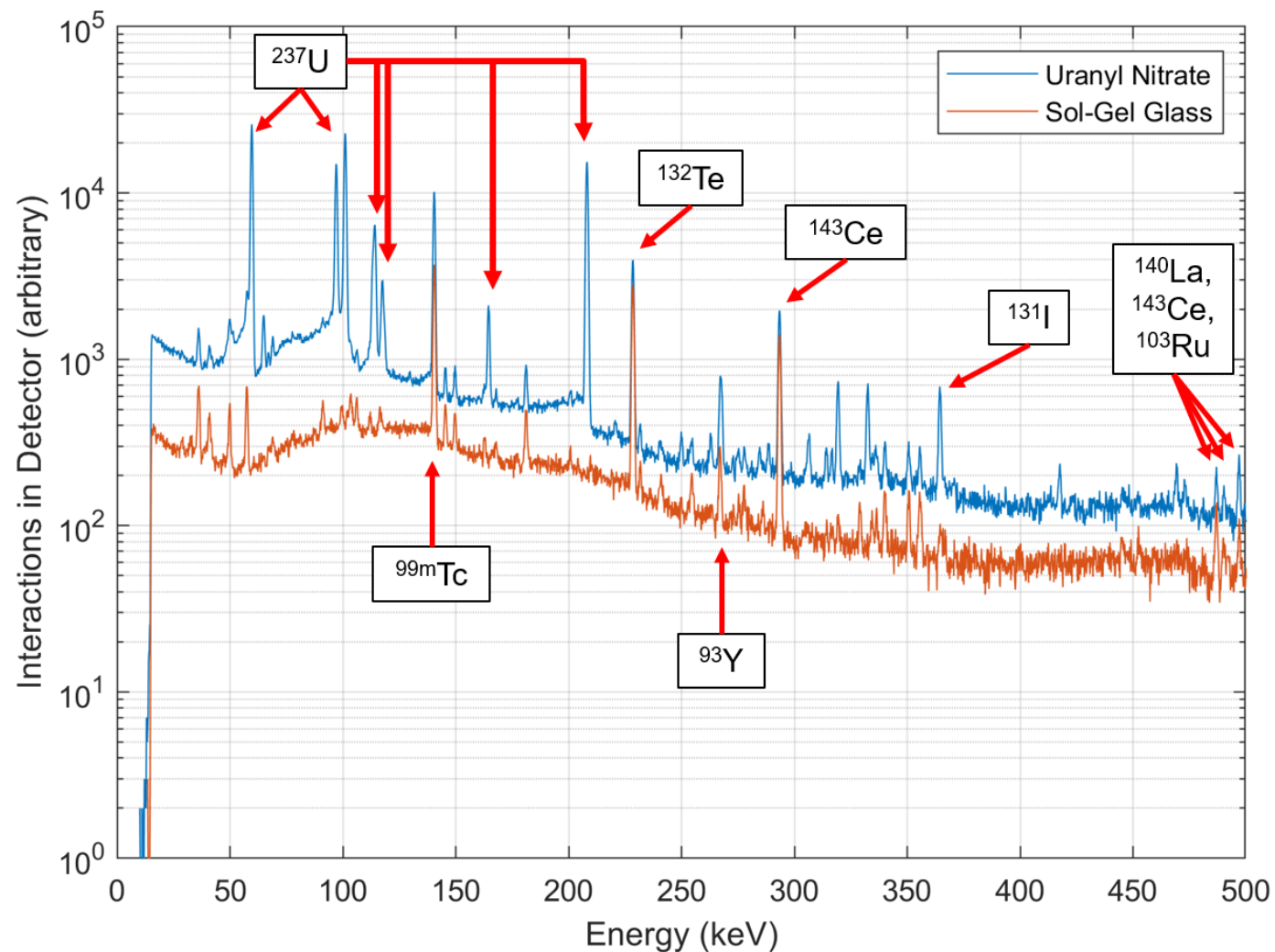
Free Field Characterization – Iron Impurities



Sol Gel – Surrogate Nuclear Fallout

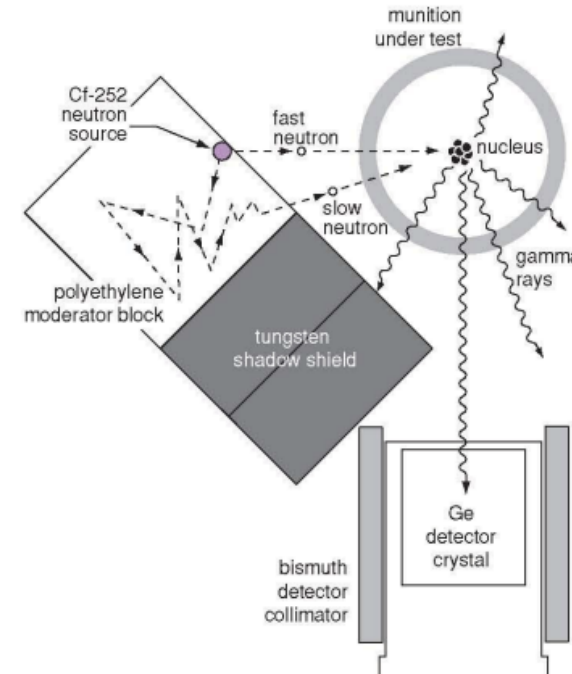
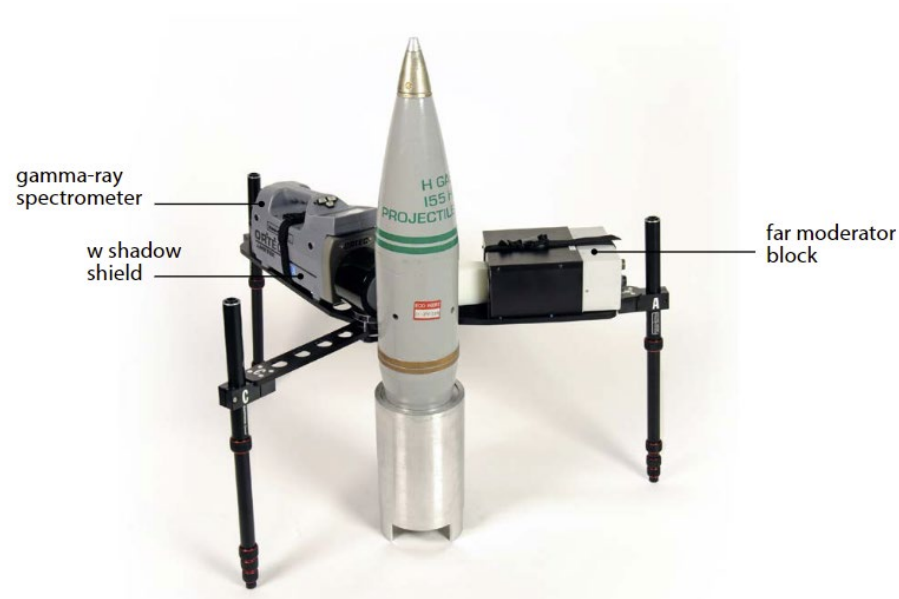


Gamma-ray Spectrometry – Sol Gel

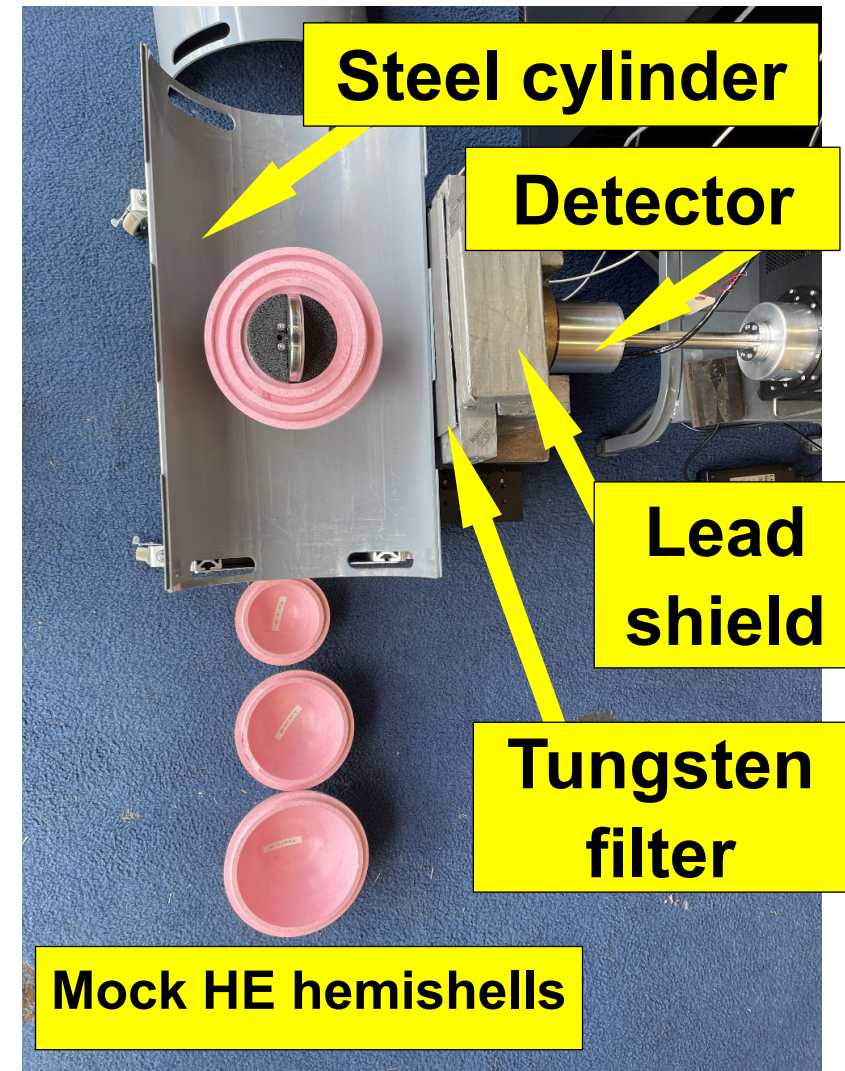


Portable Isotopic Neutron Spectroscopy System

- Identify nerve agents, high explosives, other chemicals



Passive High Explosive Neutron Inspection (PHENIX)



What do I want to get out of this training?

- Knowledge of NAA fundamentals I might be missing
 - Learning from the best
- Processes for standardization for future analysis
- Familiarization with K0 code
- New friends/colleagues



Idaho National Laboratory

Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy. INL is the nation's center for nuclear energy research and development, and also performs research in each of DOE's strategic goal areas: energy, national security, science and the environment.