LLNL Center report

USNDP annual meeting 2025

Andre Sieverding

Nuclear Data and Theory Group

Personnel summary

- 0.2 FTE
  - Andre Sieverding (0.15 FTE)
  - Ian Thompson (0.05 FTE)
  - Coordinate LLNL nuclear data efforts with CSEWG
- 0.7 FTE Nuclear structure evaluator traineeship
  - Kay Colos McCubbin (0.1 FTE)
  - Anthony Ramirez (0.3 FTE)
  - Vincent Cheung (0.3 FTE)

Andre Sieverding

Ian J. Thompson (Contractor via Northwind)

Caleb Mattoon (no direct funding through USNDP)
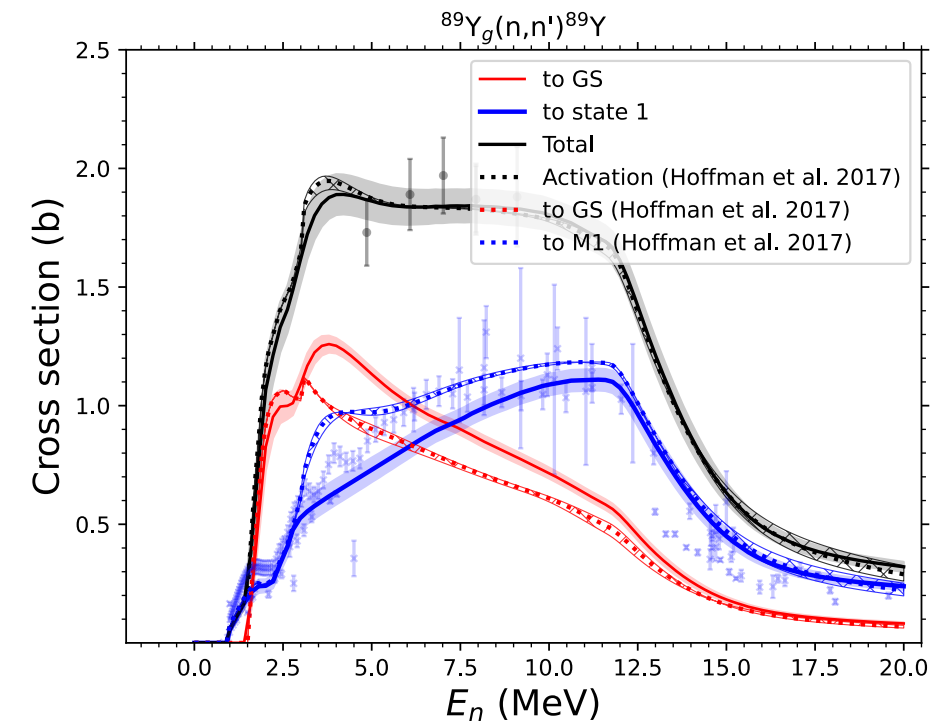
Kay Kolos (PI)

Vincent Cheung (trainee)

Anthony Ramirez (trainee)

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Activity with direct USNDP funding

- National Coordination
  - Coordinate Nuclear Data Efforts with USNDP/CSEWG
    - Attend USNDP/CSEWG meetings
    - Organize session on activation library for Nuclear Data Week 2025
    - Organize session on activation/inventory library for WANDA 2026
- Provide LLNL evaluations for ENDF
  - Report on actinide evaluations for CSEWG
  - Perform evaluations of activation cross sections for Y and Zr isotopes
- Code development/maintenance
  - Updates and fixes for Rflow (I.J. Thompson)
  - Verify, Validate R-matrix evaluations (I.J. Thompson)

$^{89}Y_g(n,n')^{89}Y$

LLNL-TR-2011750
DOI:https://doi.org/10.2172/2997578

Nuclear Structure Evaluators Traineeship at LLNL

Kay Kolos (PI)
FTE=0.1

Vincent Cheung (trainee)
FTE=0.3

Anthony Ramirez (trainee)
FTE=0.3

XUNDL Compilations
- Extract and vet experimental data from publications
- Use tools and codes for data extraction and conversion
  - 44 publications compiled

ENSDF Evaluations
- Evaluate reaction and decay datasets
- Evaluate Adopted Levels and Gammas
  - 3 A=133 isotopes evaluated
  - Working on A=134 mass chain

A=134	$_{64}$Gd	$_{63}$Eu	$_{62}$Sm	$_{61}$Pm	$_{60}$Nd	$_{59}$Pr	$_{58}$Ce	$_{57}$La	$_{56}$Ba	$_{55}$Cs	$_{54}$Xe	$_{53}$I	$_{52}$Te	$_{51}$Sb	$_{50}$Sn	$_{49}$In	$_{48}$Cd	
Adopted	🟩	🟩	🟧	🟧	🟧	🟧	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟩	🟩	completed
Reaction	🟩	🟩	🟩	🟩	🟩	🟩	🟧	🟧	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟩	🟩	in progress
Decay	🟩	🟩	🟩	🟩	🟧	🟧	🟧	🟧	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟩	🟩	to be started

FY25 Metrics

NSR Compilations	0
EXFOR Compilations	0
XUNDL Compilations	44
ENSDF Evaluations submitted	0
ENDF Evaluations	
Disseminations (in thousands)	0
Articles	0
Reports	1
Invited Talks	0

Future plans:
- Continue to communicate LLNL sponsored reaction evaluations to USNDP and CSEWG
- Contribute to the development of an ENDF activation library
- Transition trainees to full ENSDF evaluators

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