Argonne Nuclear Data Program

Member of the US Nuclear Data Program

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NE Division

Program Overview (FY11)

❑ **Nuclear Data Compilations & Evaluations (90 %)**
- ✓ nuclear structure & decay data compilations and evaluations for the International NSDD network (ENSDF & XUNDL)
- ✓ decay data evaluations for the DDEP collaboration & other horizontal evaluations

❑ **Complementary ND Research Activities (10 %)**
- ✓ basic and applied nuclear physics & astrophysics

❑ **Effort & Funding: 1.0 FTE staff & 1.0 FTE post-doc (ARRA)**

U.S. DEPARTMENT OF **ENERGY**

Compilations & Evaluations

❑ **ENSDF & XUNDL**

  ✓ published **A=133** (with A. Radionov and Yu. Khazov) and **207** (with S. Lalkovski)

  ✓ completed **A=110** (with G. Gurdal); submitted to NNDC for review

  ✓ work in progress: **188** (with S. Juutinen, Jyvaskyla Univ. and D. Hartley, US Naval Academy – on sabbatical (cost effective)), **112** (with S. Lalkovski), **174** (with T. Kibedi, ANU and X. Huang, CNDC), **177** and **209**

  ✓ **43** compilations for XUNDL: PL B, JP G, NP A & NIM A; numerous interactions with the authors; new undergraduate student for XUNDL compilations – W. Murray (De Paul Univ., Prof. S. Fischer); future opportunities to interact with students from UChicago and other local colleges

❑ **Evaluations & Reviews for the DDEP collaboration**

  ✓ ^{209}**Tl and** ^{209,211}**Pb** completed

  ✓ DDEP coordinator - currently overseeing the review process for 20 nuclides

Nuclear Data Research Activities

❑ **Nuclear Structure studies using Gammasphere & FMA at ANL**
with M. Carpenter, S. Zhu & R. Janssens (ANL-PHY)

❑ **Decay studies of actinide nuclei and of nuclei relevant to Medical Isotopes applications**
with I. Ahmad & J. Greene (ANL-PHY) & T. Kibedi (ANU)

❑ **Contribution to two major ARRA projects using ATLAS & CARIBU**
with R. Pardo (ANL-PHY), G. Youinou, G. Palmiotti & M. Salvatores (INL)
with K. Lister (ANL-PHY) and P. Chowdhury (UML)

Future (FY12) Plains

❑ **Continue XUNDL & ENSDF activities** – a new post-doc (part time data evaluation) and student(s)

  ✓ **Issue** – Windows (Linux) free in CY12 - porting all ensdf programs to Mac OSX will be a priority – may affect productivity

❑ **Continue DDEP (and IAEA) related activities**

❑ **Continue evaluation and research activities** with emphasis on **nuclear structure physics and astrophysics, and their intersection with the applied nuclear physics:**

  ✓ **ATLAS/CARIBU** – nuclear structure and decay data, beta-delayed gammas & neutrons, fission yields; new LDRD grant (with M. Carpenter, S. Zhu & D. Seweryniak) – fast timing using $LaBr_3(Ce)$ scintillation detectors

  ✓ **GRETINA** at LBNL, MSU and ANL – nuclear structure & astrophysics

  ✓ **FRIB, RIKEN & TRIUMF** – nuclear structure & astrophysics

Argonne USNDP-funded Workforce (FY11)

Scientific Permanent staff: **1** head & **1.0** FTE

Scientific Temporary staff : **1** head & **0.1** FTE
Prof. D. Hartley, US Naval Academy – sabbatical 1 month supported by ANL/ 1 month supported by US Naval Academy

Scientific External collaborators (longer than 6 months): **MANY**, BUT **NONE** paid by USNDP (they all come with their own funding)

Technical/Support staff: **none**

Resigned/Retired: **none**