

# Argonne Nuclear Data Program

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NE Division

Member of the US Nuclear Data Program

## Program Overview (FY12)

- Nuclear Data *Compilations & Evaluations* (60 %)**
  - ✓ nuclear structure & decay data compilations and evaluations for the International NSDD network (ENSDF); compilations for XUNDL
  - ✓ decay data evaluations for the DDEP collaboration & other horizontal evaluations (AME & NuBase)
- Principal organizer of the NS 2012 conference (30%)**
- Complementary ND *Research* Activities (10 %)**
  - ✓ basic and applied nuclear physics & astrophysics
- Effort & Funding: 1.0 FTE staff & 1.0 FTE post-doc (not USNDP) & 0.5 FTE undergraduate students (DePaul University)**

# Compilations & Evaluations

## ENSDF & XUNDL

- ✓ completed **A=110** (with G. Gurdal); published in NDS following the reviewers' comments
- ✓ work in progress: **188** (with S. Juutinen, Jyväskylä 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** (with J. Chen)
- ✓ **21** compilations for XUNDL: **PL B, JP G, NP A & NIM A**; numerous interactions with the authors; new undergraduate student for XUNDL compilations – W. Murray/J. Modica (De Paul Univ., Prof. S. Fischer); future opportunities to interact with students from UChicago and other local colleges

## Evaluations & Reviews for the DDEP collaboration

- ✓ completed 22 reviews
- ✓ presentation will be given this afternoon

- Contribution to AME and NuBase** – collaboration between CSNSM, IMP & IPN, GSI and ANL will be published by the end of the year in Chinese Physics C



# Nuclear Data Research Activities

- ❑ **Nuclear Structure studies using Gammasphere & FMA at ANL** - with M. Carpenter, S. Zhu & R.V.F. 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/UML) and P. Chowdhury (UML)



# Future (FY13) Plains

- ❑ **Continue XUNDL & ENSDF activities** – staff, post-doc (part time data evaluation) and student(s)
- ❑ **Contribute to a new IAEA-CRP project** - “Nuclear Data for Charged-particle Monitor Reactions and Medical Isotope Production”
- ❑ **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  $\text{LaBr}_3(\text{Ce})$  scintillation detectors
  - ✓ **GRETINA** at LBNL, MSU and ANL – nuclear structure & astrophysics
  - ✓ **FRIB, RIKEN & TRIUMF** – nuclear structure & astrophysics