# Mentoring in Nuclear Information Technology (MINIT) Initiative

Michael Smith
Chair, USNDP Astrophysics Task Force
Leader, Nuclear Astrophysics Research & Nuclear Data Project
Physics Division, Oak Ridge National Laboratory
Oak Ridge, TN USA

Richard Meyer
RAME', Inc.
Teaticket, MA USA

# Overview

- Evaluation manpower crisis in the US Nuclear Data Program (USNDP)

- No current long-term solutions proposed to reverse negative manpower trends

- Propose a limited term program to change USNDP evaluator demographics featuring

    - uniformly train young postdocs at USNDP Headquarters

    - mentoring with senior evaluators, couple with research work

    - conversion to staff positions after 3 years

- Cost of program is reasonable - consistent with plans to continue evaluation activities

- MINIT could serve as a model for international programs

# Requirements to Solve Evaluation Manpower Crisis

- **First: Commit** to continuing evaluation activities to meet data needs of research community

- **This requires**
  - Modest growth (at least) in evaluation funding

  - Archiving & transferring expertise of aging evaluators

  - Develop viable program to attract, train, & retain young scientists - and one that can be **successfully sold** to the funding agency

- **We propose a new initiative in Mentoring in Nuclear Information Technology (MINIT) to form a pipeline of young scientists into evaluation work**

# MINIT - A New Approach

- **Train** a new breed of young scientists as evaluators
  - Versed both in nuclear science and information technology

  - Comfortable around Java and $J^\pi$ , HTML and Hamiltonians

  - Mentored by experienced evaluators & involved in basic research

- **Retain** them in data evaluation activities
  - Connect them with research activities

  - Offer stability of staff positions after mentoring period - at a USNDP Site with active research in subfield of interest

# Approach

- Bring in 2 new postdoc appointees for 3-year terms each year

- First year: train with experienced evaluators at NNDC

- Second & Third years: on assignment at a USNDP Site
  - Mentoring by senior evaluators - knowledge transfer
  - Concurrently involved in research - for quality & vitality(recommended by external review panels)

- Promotion to research staff at a USNDP Site for the best appointees at end of third year

# Manpower
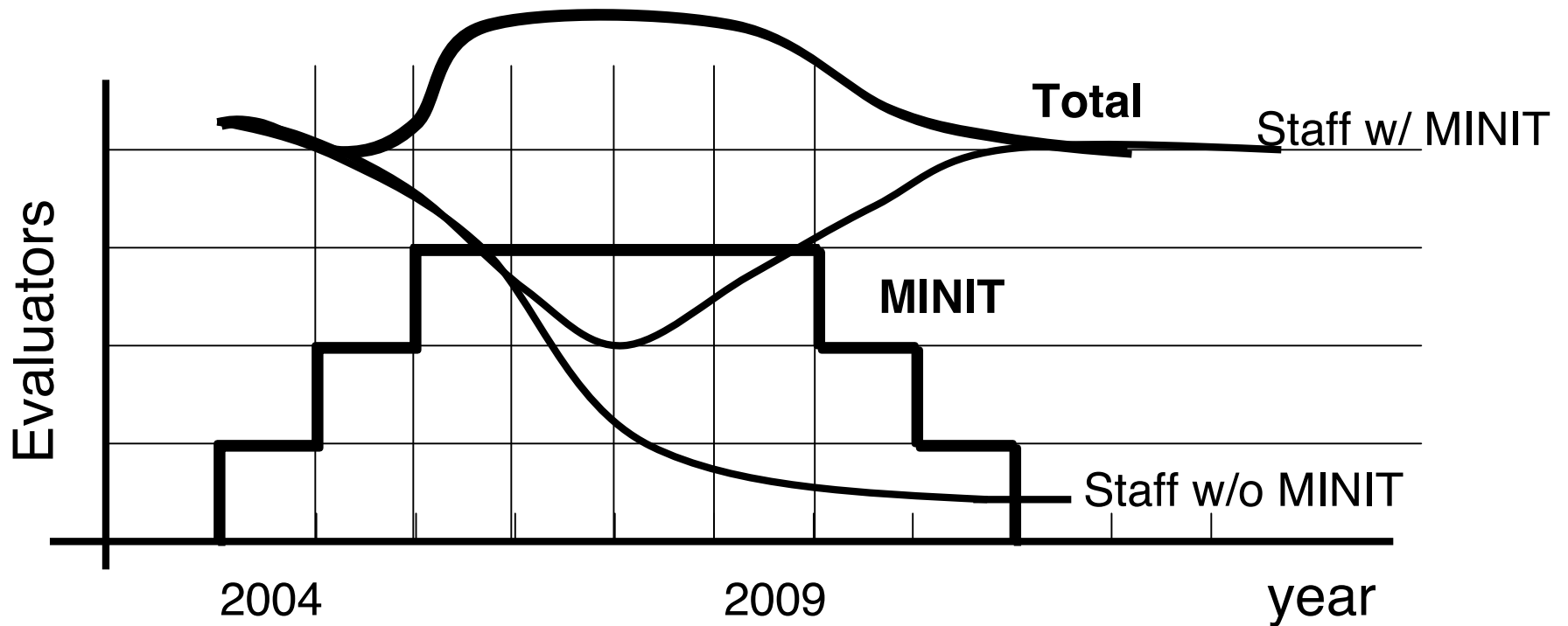


- MINIT will enable USNDP evaluation manpower to stabilize

- small increase in total evaluation manpower for a few years to enable training with senior evaluators

# Logistics

- NNDC provides oversight for MINIT program
  – Host new appointees
  – Coordinate senior appointees & eventual placement as staff

- Finite program lifetime of ~ 6 years as required to change demographics of evaluation manpower

- Second- & third-year trainees are appropriately distributed to USNDP Sites, embedded within research programs

# Costs

- MINIT **ramps up** over 3 years with 2 new postdocs/year

    - First year: two postdoc appointees - 160 K$

    - Second year: four total appointees - 320 K$

    - Third year levels out to six total appointees - 480 K$

    - Funds for program decreases after trainees move into staff positions vacated by retirements

- Investment in MINIT
    – Salary for appointees during training period
    – Subsequent commitment to **staff appointments** at USNDP Sites after completion of training

# Investment in MINIT

- Reasonable cost: total USNDP funding ramps up by 0.5 M$ over three years as MINIT is fully phased in

- Cost of subsequent Staff commitments is also reasonable -  given that
  - evaluation activities are going to be continued
  - majority of evaluators will "completely" retire in next decade

- As MINIT program successfully terminates & younger scientists are brought into program, funding increase of 0.5 M$ will be needed to cover cover increased activities of **revitalized data program**

# Advantages

- This is a **proactive mechanism** to bring young scientists into the data program, train them, and retain the best as staff

- Instituting one such mechanism - MINIT - for the entire USNDP ensures
  - Quality control of hires
  - Guaranteed training by NNDC experts
  - Enhanced role of USNDP across all sites
  - Appropriate placement of resources - where most needed
  - Avoid dependence on hiring schemes at various labs

# Advantages

- Transfers vital evaluation knowledge to new generation

- Contributes to **long term health of nuclear science**

- Help prepare nuclear research community for **advanced facilities** - RIA, GSI, Eurisol, RIKEN RIBF …

- **Cost-effectively** obtain new evaluators, as well as some new evaluations

- Appointees who do *not* transition to staff
  - sufficiently trained to do future support work (e.g., evaluations) for the USNDP
  - knowledge of evaluation work will likely benefit their research & USNDP future activities

# Summary

- **Evaluation manpower crisis** in the US Nuclear Data Program

- MINIT is a mechanism to **attract** young scientists into data activities and **retain** them

- Numerous advantages to **uniformly training appointees, coupling them to research work, & hiring them as staff**

- Program cost is reasonable and **consistent** with plans to continue evaluation activities in the US

- MINIT could serve as a **model** for international programs