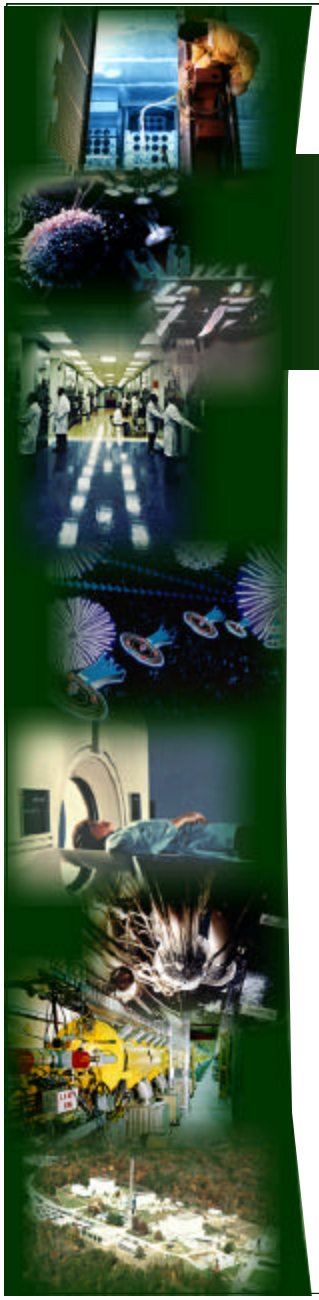


Isotopes for Life

Advanced Nuclear Medicine Initiative

Owen Lowe
Office of Isotopes for Medicine and Science
Office of Nuclear Energy,
Science and Technology

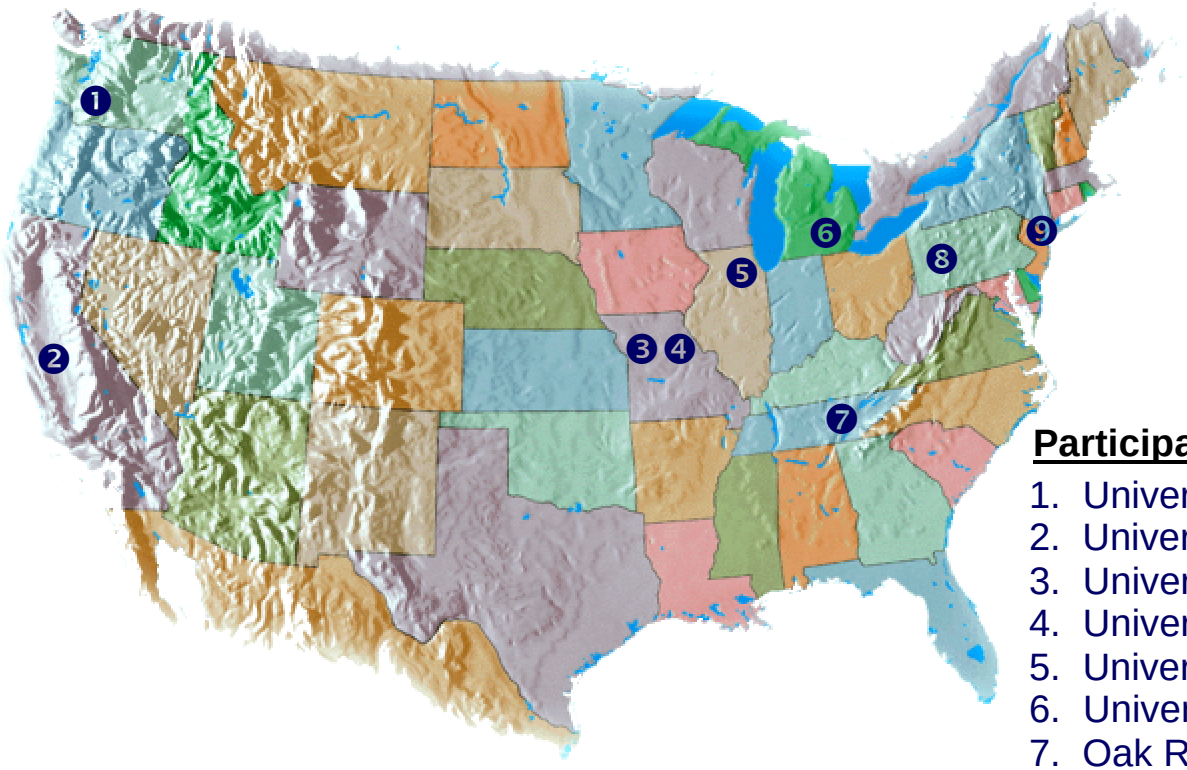
October 1, 2002

Advanced Nuclear Medicine Initiative

- **Sponsor nuclear medical science research using a peer-review selection process**
  - 9 three-year research grants awarded
- **Sponsor the training of individuals in nuclear medical science**
  - 5 three-year education grants awarded
- **Continue research and education programs to completion; however, no additional funds for new grants is in the FY 2003 budget**

ADVANCED NUCLEAR MEDICINE INITIATIVE

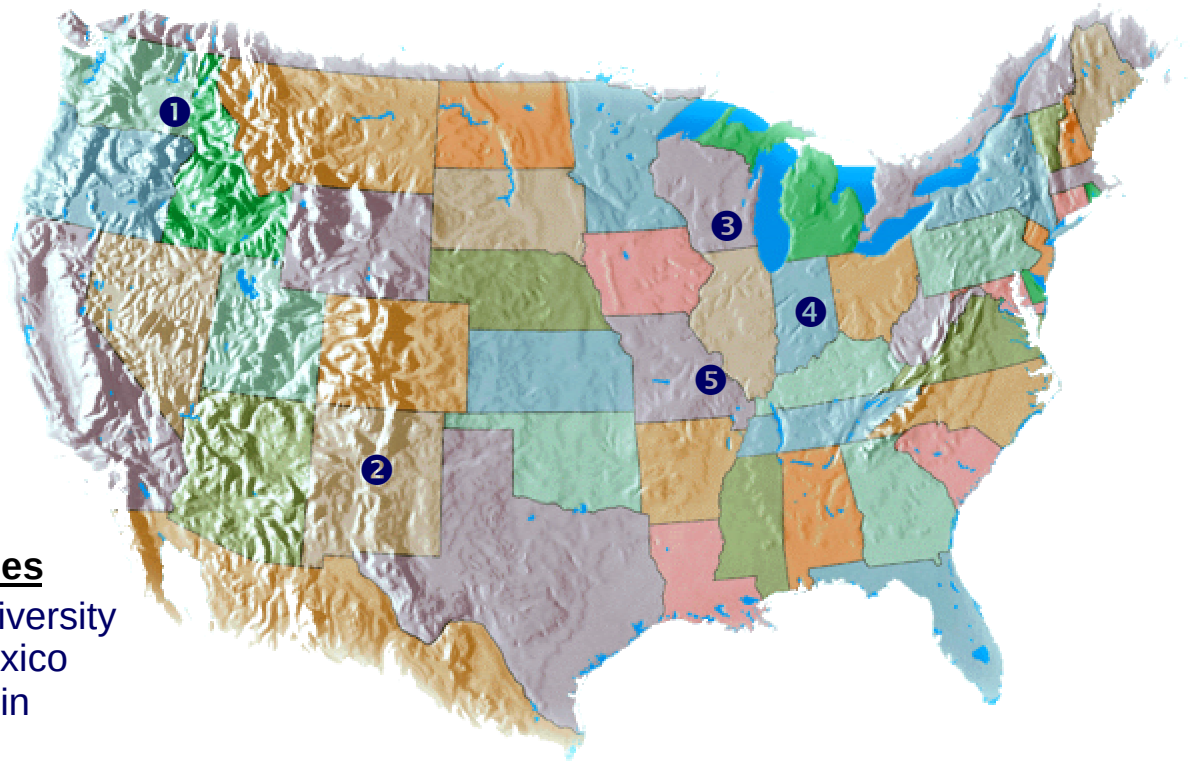
Research & Development Projects



Participating Organizations

1. University of Washington
2. University of California, Davis
3. University of Missouri
4. University of Missouri
5. University of Chicago
6. University of Michigan
7. Oak Ridge National Laboratory
8. Westinghouse Electric Company
9. Garden State Cancer Center

ADVANCED NUCLEAR MEDICINE INITIATIVE
Education Programs



Participating Universities

1. Washington State University
2. University of New Mexico
3. University of Wisconsin
4. Purdue University
5. Washington University

Advanced Nuclear Medicine Initiative

Research Awards

- **The Curators of the University of Missouri**
  - Development of Production Methods for Carrier-Free Lanthanides for Radiotherapy
  - In Vivo Selection of Novel Prostate Tumor-Avid Fab
- **Garden State Cancer Center**
  - Bi-Specific Antibody for Cancer Therapy
  - Briefed at Stakeholder Meeting in Toronto (June 2001)
- **Oak Ridge National Laboratory**
  - Improved Generators for Clinical Use of Bi-213
  - Briefed at the Financial and Business Meeting (February 28, 2002)
- **The Regents of the University of Michigan**
  - Development of Radioactive Nanocomposites to Treat Tumors Microvasculature
  - Paper accepted for publication in Ogge Chemical/Chemistry Today
  - Two papers submitted to SNM (June 2002)
- **University of California-Davis**
  - A Modular Tumor Targeting System to Deliver Pretargeted Alpha and Beta Radioisotope Therapy
  - Briefed DOE in Toronto (June 2001)

Advanced Nuclear Medicine Initiative
Research Awards (cont.)

- **The University of Chicago**
  - The Application of Microdosimetry to Analyze and Predict Cell Survival Following Alpha-Particle Irradiation
  - Briefed during visit (May 2001)
- **University of Washington**
  - Evaluation of Reagents for Rapid and Stable Labeling of Biomolecules with Astatine-211
  - Briefed at Stakeholders Meeting in Toronto (June 2001)
- **Westinghouse Electric Company LLC**
  - Separation of Medically Useful Alpha-Emitting Isotopes Using Nonchemical Recoil Ion Methods
  - Copies of Annual Report distributed to program personnel

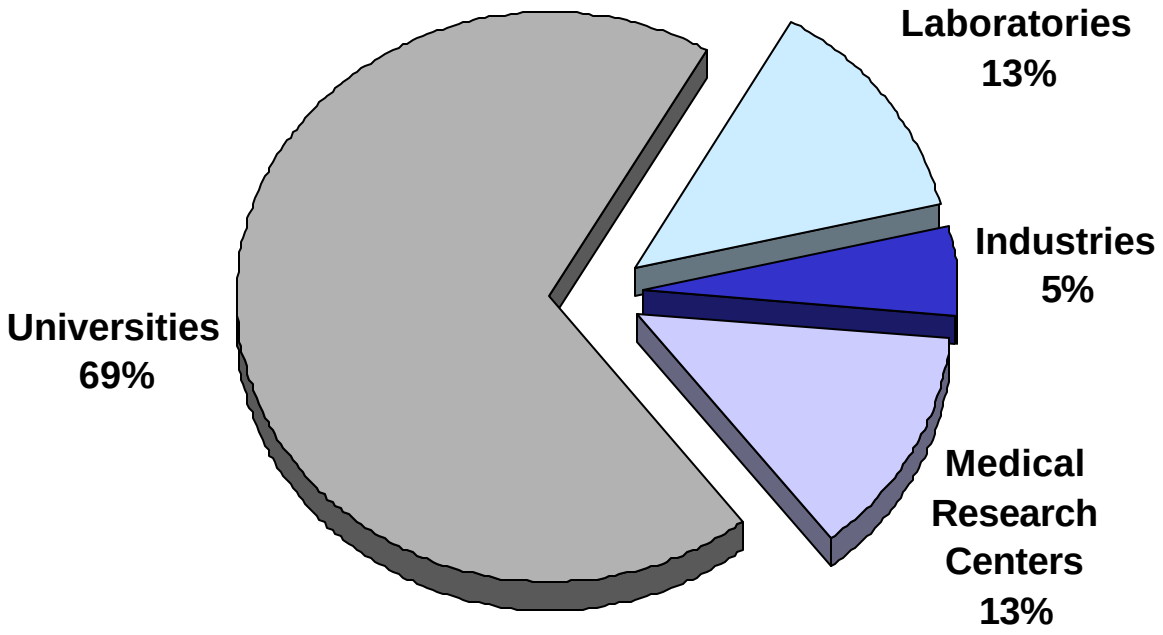
Advanced Nuclear Medicine Initiative
Education Awards

- **Board of Regents of the University of Wisconsin System**
  - The University of Wisconsin Training Program for MS-Level PET Medical Physicists
- **Purdue University**
  - Purdue University Nuclear Pharmacy Educational Program
- **University of New Mexico Health Sciences**
  - Nuclear Pharmacy Graduate Education
- **Washington State University**
  - Establishment of a Nuclear Pharmacy Graduate Certificate Program at WSU Tri-Cities
- **Washington University**
  - Graduate Research in Nuclear Medicine at Washington University

Advanced Nuclear Medicine Initiative

Research Grants

ANMI FY 2000 Award Funding Profile



Funds Available: Approximately $2.0 million

ANMI
Results

- **Published 5 articles in professional journals**

Examples:

Proclinical Development of Anti-MUC-1 scFv for Targeted Radioisotope Therapy; Winthrop, M.D., S.J. DeNardo, G.R. Mirick, L.A. Kroger, K.R. Lamborn, C. Venclovas, M.E. Colvin, and G.L. DeNardo; Submitted to Clinical Cancer Research

Dendrimer Nanocomposites in Medicine; L. Balogh, A. Bielinska, J.D. Eichman, R. Valluzzi, I. Lee, J.R. Baker, T.E. Lawrence, and M.K. Khan; Chimica Oggi/Today, Vol. 20, No. 5 (May 2002)

ANMI
Results

- **Presented 12 papers at scientific meetings**

Examples:

Separation of the Alpha-emitting Radioisotopes Actinium-225 and Bismuth-213 from Thorium-229 Using Alpha Recoil Methods; F.H. Ruddy, A.R. Dulloo, J.G. Seidel, and B. Petrovic; Westinghouse Electric Company, LLC; presented at the Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, Bologna, Italy, June 11, 2002

Biodistributions of Stereptavidini/CC49 scFv$_4$-Pretargeted ^{149}Pm-, ^{166}Ho- and ^{177}Lu-Dota-Biotin in Tumor Bearing Mice; J. Zhang, N.K. Owen, C.S. Cutler, M.F. Embree, F. Jia, D. Mazuru, A.D. Lewis, J. Schultz, L.J. Theodore, A.R. Ketring, S.S. Jurisson, D.B. Axworthy, and M.R. Lewis, University of Missouri, Columbia, MO, Harry S. Truman Memorial Veterans' Hospital, Columbia, MO, and NeoRx Corporation, Seattle, WA; presented at the 49th Annual Society of Nuclear Medicine Meeting in Los Angeles, CA, June 2002