Committee Membership Information

Project Title: Medical Isotope Production Without Highly Enriched Uranium

PIN: NRSB-O-06-01-A

Major Unit: Division on Earth and Life Studies

Sub Unit: Nuclear and Radiation Studies Board

RSO: Crowley, Kevin

Subject/Focus Area:

Committee Membership
Date Posted: 01/23/2007

Dr. Chris G. Whipple - (Chair)
ENVIRON

Chris G. Whipple, Ph.D., is a principal in ENVIRON International Corporation in Emeryville, California, which provides consulting services mainly to private industry. His professional interests are in risk assessment, and he has consulted widely in this field for private clients and government agencies. Dr. Whipple is a member of the National Academy of Engineering. He is currently a member of the National Research Council's Board on Environmental Studies and Toxicology (BEST), and previously served as chair of the Board on Radioactive Waste Management (BRWM). He has served on and chaired numerous National Research Council committees. Dr. Whipple recieved his B.S. in engineering science from Purdue University and his M.S. and Ph.D. in engineering science from the California of Technology.

Dr. Steven M. Larson - (Vice Chair)
Memorial Sloan-Kettering Cancer Center

Steven M. Larson, M.D., IOM, is attending physician, Department of Radiology, member, Memorial Sloan Kettering Cancer Center, and professor, Department of Radiology, Weill Cornell University Medical Center. Dr. Larson is chief of Nuclear Medicine Service, vice chairman for radiology research, and director of the Laurent and Alberta Gerschel Positron Emission Tomography Center, Department of Radiology Memorial Hospital. Dr. Larson is also laboratory head, Molecular Pharmacology and Chemistry Program, and co-director of the Ludwig Trust Center for Immunotherapy of Sloan Kettering Institute (SKI). Dr. Larson’s research focus is molecular imaging and targeted radiotherapy, particularly PET and radioantibody targeted therapy in oncology. He is a fellow of both the American College of Nuclear Physicians and the American College of Radiology. He is the author and co-author of more than 500 scholarly publications and has been awarded numerous honors including the Wylie medal of the USFDA, the Wagner Lecture Medal of the Society of Nuclear Medicine, the Hevesy Awards of both the European and the U.S. Society of Nuclear Medicine; Radiology Researcher of the year (2004) and the Pendergrass Awards of the Radiologic Society of North America. He is a Member of the Institute of Medicine of the National Academy of Sciences.

Dr. Cynthia Atkins-Duffin
Lawrence Livermore National Laboratory

Cynthia Atkins-Duffin, Ph.D., is an authority on the physical and chemical behavior of actinide and fission product elements. She is the deputy associate director and the Nuclear Systems Science and Engineering Program leader in the Energy and Environment Directorate at Lawrence Livermore National Laboratory. Previously she has served as the applied energy technologies program leader and the Yucca Mountain Program deputy program leader. In addition, she was deputy materials program leader in the Chemistry and Materials Science Directorate from 1999 to 2002, and deputy director of the Glenn T. Seaborg Institute for Transactinium Science from 1996 to 1999. Earlier she was principal investigator in the hydrology and radionuclide migration program within the nuclear weapons program. Dr. Atkins-Duffin's honors include the Chemistry and Materials Science Directorate Award, 2001; the Energy Directorate Award, 2000; and the American Institute of Chemists Award for Outstanding Undergraduate in Chemistry. She has authored or coauthored more than 40 refereed publications and given about 80 presentations. Dr. Atkins-Duffin received her Ph.D. in inorganic chemistry from Purdue University and her B.S. in chemistry from Worcester Polytechnic Institute.

RADM G. Brian Estes
Independent Consultant

G. Brian Estes, P.E., is a consulting engineer and retired rear admiral, U.S. Navy Civil Engineer Corps. He has extensive experience in construction management; project delivery methods, federal contracting practices, and DOE environmental management projects. He was a member of the National Research Council (NRC) Committee for Oversight and Assessment of Department of Energy Project Management, the Committee on Outsourcing of Design and Construction Management Services for Federal Facilities, and the Committee to Assess the Policies and Practices of the DOE to Design, Manage, and Procure Environmental Restoration, Waste Management, and Other Construction Projects, and has served on four other NRC committees, three of which dealt with the Department of Energy. He holds a B.S. in Civil Engineering from the University of Maine, an M.S. in Civil Engineering from the University of Illinois, and is a registered professional engineer in Illinois and Virginia.

Mr. Milton Levenson
Independent Consultant

Milton Levenson, BChE, is nationally recognized for his ability to apply creative new insights to major engineering challenges in the nuclear industry and for his organizational and leadership skills. Currently an independent consultant, Mr. Levenson is a chemical engineer with 63 years of experience in nuclear energy and related fields. His technical experience includes work related to nuclear safety, fuel cycle, water reactors, advanced reactors, and remote control. His professional experience includes research and operations positions at the Oak Ridge National Laboratory, the Argonne National Laboratory, Electric Power Research Institute, and Bechtel, where he retired as vice president. He was elected to the National Academy of Engineering in 1976. Mr. Levenson is a fellow and past president of the American Nuclear Society, a fellow of the American Institute of Chemical Engineers, and a recipient of the American Institute of Chemical Engineers' Robert E. Wilson Award in Nuclear Chemical Engineering. He is the author of more than 150 publications and presentations and holds three U.S. patents. Mr. Levenson also is a member of the National Academies' Nuclear and Radiation Studies Board and has served on several National Research Council committees.

Dr. Irvin W. Osborne-Lee
Prairie View A&M University

Irvin Osborne-Lee, Ph.D., is an associate professor and head of the Department of Chemical Engineering at Prairie View A&M University. Previously, he spent 13 years in the Chemical Technology Division of Oak Ridge National Laboratory. His expertise is in developing disposition pathways and treatment methods for problematic wastes. He has authored or co-authored about 50 papers in this area. He is also committed to positively

impacting society through academic enterprise: educating and empowering students, motivating and inspiring faculty, and building key research programs. His honors and awards include the 2001 Appreciation Award of the National Society of Black Engineers and the Service to Society Award of the American Institute of Chemical Engineers (AIChE), in which he has held a number of positions. Dr. Osborne-Lee is a member of the AIChE, National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, Sigma Xi, and the National Council of Black Engineers and Scientists. He is currently a member of the Board of Directors for the Gulf Coast Waste Disposal Authority and was previously a Director of AIChE. He received his Ph.D., M.E., and B.S. degrees in chemical engineering from the University of Texas, Austin in 1985, 1983, and 1979, respectively.

Dr. Thomas J. Ruth
TRI-University Meson Facility (TRIUMF)

Thomas Ruth, PhD, is the director of the positron emission tomography (PET) program at the University of British Columbia. He is a leader in the production and application of radioisotopes for research in the physical and biological sciences. His efforts at establishing PET as a quantitative tool for in vivo biochemistry has been recognized by the Canadian Nuclear Medicine Society's highest award of meritorious status. He has served on a multitude of committees, including the Institute of Medicine's Committee on Medical Isotopes and currently serves on the National Research Council's Committee on the State of the Science in Nuclear Medicine. Dr. Ruth received his Ph.D. in nuclear spectroscopy from Clark University.
(NOTE: TRIUMF -- Tri-University Meson Facility is operated by a consortium of Canadian universities, under a contribution from the National Research Council of Canada. TRIUMF was originally operated by three universities: the University of British Columbia, Simon Fraser University and the University of Victoria. The University of Alberta, Carleton University, and the University of Toronto have since joined TRIUMF as member universities, and seven other Canadian universities are associate members.)

Dr. Raymond G. Wymer
Independent Consultant

Raymond Wymer, Ph.D., is former director of the Chemical Technology Division of Oak Ridge National Laboratory and is now a consultant for the laboratory, the U.S. Department of Energy, and its various contractors on all aspects of the nuclear fuel cycle and radioactive waste management. He has served on a United Nations Special Commission to Iraq and consulted with the U.S. Department of State on nuclear nonproliferation matters. Dr. Wymer is a specialist in radiochemical separations technology for radioactive waste management, nuclear fuel reprocessing, and uranium isotope separation by chemical exchange. He is a past member and is currently a consultant to the Advisory Committee on Nuclear Waste for the U.S. Nuclear Regulatory Commission. He is a fellow of the American Nuclear Society and the American Institute of Chemists. Dr. Wymer has been honored with the American Institute of Chemical Engineers' Robert E. Wilson Award in Nuclear Chemical Engineering and the American Nuclear Society's Special Award for Outstanding Work on the Nuclear Fuel Cycle. He received a B.A. from Memphis State University and an M.A. and Ph.D. from Vanderbilt University.

Dr. Anthony E. Boardman
University of British Columbia

Anthony Boardman, Ph.D., is Van Dusen Professor of Business Administration in the Strategy and Business Economics Division at the University of British Columbia. His research interests include analysis of the effects of ownership on performance, privatization, public-private partnerships, cost-benefit and cost-effectiveness analysis, and strategic management in for-profit and nonprofit organizations. He is co-author of a textbook, Cost-Benefit Analysis: Concepts and Practice. Dr. Boardman has extensive industry and consulting experience with a wide range of organizations in the private and public sectors. He has been a member of the Pharmacoeconomic Initiative of British Columbia (1995 – 2001) and is

currently serving a second, five-year term as a member of the Patented Medicine Prices Review Board in Canada. Prior to taking up his position at UBC he taught at the Wharton School, University of Pennsylvania. Dr. Boardman studied for his undergraduate degree at the University of Kent at Canterbury in England and obtained his Ph.D. from Carnegie-Mellon University in Pittsburgh.

Mr. D. Jeffrey Bostock
Lockheed Martin Energy Systems [Retired]

Jeff Bostock, M.S., retired from Lockheed Martin Energy Systems, Inc., as vice-president for engineering and construction with responsibility for all engineering activities within the Oak Ridge nuclear complex. He has extensive experience managing projects as a DOE contractor. He has also served as vice-president of defense and manufacturing and manager of the Oak Ridge Y-12 plant, a nuclear weapons fabrication and manufacturing facility. His career at Y-12 included engineering and managerial positions in all of the various manufacturing, assembly, security, and program management organizations. He also served as manager of the Paducah Gaseous Diffusion Plant. He was a member of the committees that produced the National Research Council (NRC) reports Proliferation Concerns: Assessing U.S. Efforts to Help Contain Nuclear and Other Dangerous Materials and Technologies in the Former Soviet Union and Protecting Nuclear Weapons Material in Russia. Mr. Bostock has also served as a panel member for the annual NRC assessment of the National Institute of Standards and Technology Measurement and Standards Laboratories. He was also a member of the NRC Committee on Oversight and Assessment of Department of Energy Project Management between 2000 and 2005. Mr. Bostock has a B.S. in industrial engineering from Pennsylvania State University and a M.S. in industrial management from the University of Tennessee. He is a graduate of the Pittsburgh Management Program for Executives.

Dr. Eugene J. Peterson
Los Alamos National Laboratory

Gene Peterson, Ph.D., did his postdoctoral work in Chemistry and Materials Sciences at the Los Alamos National Laboratory in the area of thermo-chemical water splitting for hydrogen production. He joined the Argonne National Laboratory in 1978 performing research in the area of actinide chemistry and in 1979 joined the Los Alamos National Laboratory where he is currently the Chemistry Division leader. Chemistry Division is a multi-program capability organization that consists of 320 chemical professionals with a budget of approximately $100 M. At the Los Alamos National Laboratory, Gene has specialized in medical isotope production and applications R&D. He has successfully managed large multidisciplinary programs in these areas at Los Alamos for more than 15 years. This involves the technical management of the Laboratory's isotope production efforts and the associated R&D, the business management of the isotope distribution and marketing, and the responsibility for the adequate funding for these programs. Notable program successes during his tenure include the construction of a new $23.5 M 100 MeV Isotope Production Facility at the Los Alamos Neutron Science Center (LANSCE) for the production of accelerator isotopes, and the lease by the Department of Energy of the laboratory's cryogenic distillation columns for the separation and purification of isotopes of carbon, nitrogen, and oxygen to the private sector. This latter accomplishment was of particular interest to the National Institutes of Health because it greatly enhanced the availability of these isotopes for NIH supported research. Throughout his years of service at the Los Alamos National Laboratory, Gene has worked on many unique projects and has more than 60 peer reviewed publications in areas involving coordination chemistry, lanthanide and actinide chemistry, synthetic chemistry, inorganic geochemistry, environmental chemistry, materials processing, analytical chemistry, nuclear and radiochemistry, and biomedical research. He is currently participating in the development of the Center for Isotopes in Medicine within the Advanced Studies Institute, which is a joint collaboration among the University of California, the Los Alamos National Laboratory, and the New Mexico State Universities, including UNM. Radiopharmaceutical research and development focused on isotopes

produced at LANSCE will be a major thrust area of this center within the Advanced Studies Institute. Dr. Peterson received his B.S. degree from the Illinois Benedictine College in Lisle, Illinois in 1971 and his Ph.D. in Inorganic Chemistry from the Arizona State University in 1976.

Dr. Richard C. Reba
MedStar Georgetown University Hospital

Richard Reba, M.D., is professor of radiology and medicine at Georgetown University. He is board certified in internal medicine and nuclear medicine. Dr. Reba's research interests have been in the area of drug development, particularly in the application of SPECT and PET radiopharmaceuticals for the diagnosis and treatment of human disease. He is a past-president of the Society of Nuclear Medicine and has served on two National Research Council committees. Dr. Reba earned his M.D. from the University of Maryland.

Dr. Iain G. Ritchie
International Atomic Energy Agency [Retired]

Iain Ritchie, Ph.D., recently retired from IAEA where he spent the final 13 years of his career highlighted by a distinguished service award and appointment by the Director General as crosscutting coordinator for research reactors. This responsibility for coordinating all of the Agency’s activities on research reactors included liaison with Reduced Enrichment for Research and Test Reactors (RERTR) and the Global Threat Reduction Initiative. Prior to joining the Agency, Dr. Ritchie had a career as a research scientist spanning more than 25 years at the Whiteshell Nuclear Laboratories of Atomic Energy of Canada Limited. Among the highlights of this period was the management of a proton accelerator, direction of a group carrying out radiation damage experiments, and the appointment as Adjunct Professor of Physics at the University of Manitoba. He is an expert in the field of defects in metals and has authored more than 200 technical papers and reports. In 1992 he received the Canadian Institute of Mining Metallurgy Award for Materials Engineering and in 1993 an R&D 100 Award for development of an innovative ultrasonic technique. Dr. Ritchie earned his B.S. in physics and Ph. D. in metals physics from the University of Wales in the United Kingdom.

Dr. Jasmina Vujic
University of California, Berkeley

Jasmina Vujic, Ph.D., is professor and chair in the Department of Nuclear Engineering at the University of California at Berkeley (UCB). She is also a Director of an interdepartmental cutting-edge computing facility that provides computing services for advanced research and teaching to the College of Engineering departments at UCB. Before joining the Berkeley faculty, she worked at Argonne National Laboratory. Dr. Vujic is an internationally recognized expert in the advanced method development for nuclear reactor analysis and design, as well as for medical applications of radiation. Her fields of specialization also include radiation detection and measurement, nuclear reactor physics, neutron and photon transport, radiation protections, and engineering aspects of medical imaging and cancer therapy.

Her general geometry collision probability code GTRAN2 has been licensed to General Electric and Toshiba. Also, the GTRAN2 code was chosen by the U.S. Department of Energy in 1991 as the computational methodology for assembly design of the MHTGR core for tritium production. Dr. Vujic and a colleague developed a program in bionuclear and radiological physics for students in the bioengineering program. She has worked on diverse problems ranging from reactor core design to analysis of the neutronic behavior of fissile materials in geologic repositories, to modeling radiation transport for medical diagnostics in boron neutron capture therapy and for nuclear medicine imaging. She is holder of one U.S. patent and author over 200 technical publications, including over 60 papers published in leading archival journals, and several awarded papers. She has been consulting for General Electric, Transware, VeriTainer, Aerotest Operations, and other companies. Dr. Vujic received Prytanean Faculty Award and several other awards including an American Nuclear Society best paper and best program awards

and the 1991 Argonne National Laboratory Annual Exceptional Performance Award. She earned her B.Sc. in electrical and nuclear engineering and a M.Sc. in engineering physics from the University of Belgrade, and a M.Sc. and her Ph.D. in nuclear science from the University of Michigan.

Comment on Provisional Committee Appointments

Viewers may communicate with the National Academies at any time over the project's duration. In addition, formal comments on the provisional appointments to a committee of the National Academies are solicited during the 20-calendar day period following the posting of the membership and, as described below, these comments will be considered before committee membership is finalized. We welcome your comments (Use the Feedback link below).

Please note that the appointments made to this committee are provisional, and changes may be made. No appointment shall be considered final until we have evaluated relevant information bearing on the committee's composition and balance. This information will include the confidential written disclosures to The National Academies by each member-designate concerning potential sources of bias and conflict of interest pertaining to his or her service on the committee; information from discussion of the committee's composition and balance that is conducted in closed session at its first meeting and again whenever its membership changes; and any public comments that we have received on the membership during the 20-calendar day formal public comment period. If additional members are appointed to this committee, an additional 20-calendar day formal public comment period will be allowed. It is through this process that we determine whether the committee contains the requisite expertise to address its task and whether the points of views of individual members are adequately balanced such that the committee as a whole can address its charge objectively.

Feedback

You have until February 12 to provide comments during the formal comment period.