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Short communication

The legacy of William Morgan: The PNNL years

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1. Commentary

1.1. Early years

My friendship with William F. (Bill) Morgan started in the late 1970s. I was working as a technical representative at the Atomic Energy Commission in Washington D.C. and was involved in a review of Sheldon Wolff's laboratory at University of California, San Francisco. Bill had just joined the Wolff group as a post-doctoral fellow; he was working on radiation-induced chromosome aberrations in humans. Our review team gave the laboratory very good marks, but when the funding decisions were announced, it was marked for closure – the mysterious workings of the government. In later years, Bill was always quick to remind me that I had helped to shut down his research program! However, Bill was a very productive scientist right from the start and his research moved him quickly along the path to success.

1.2. Scientific direction

Bill and I continued to have close interactions. When the DOE Low Dose Research Program was formed, we served together on a committee providing input into the Biological and Environmental Research Advisory Committee (BERAC) Report Program plan for Biological Effects of Low Dose and Dose Rate Radiation. Leading radiation biology scientists were chosen to form a subcommittee of the BERAC charged with developing a set of recommendations for

the new DOE Low Dose Radiation Research Program. The members of the subcommittee were:

- Robert Ullrich, Chair, Department of Radiation Oncology, University of Texas Medical Branch, Galveston, TX (Chair);
- Antone L. Brooks, Washington State University-Tri-Cities, Richland, WA;
- David Brenner, Columbia University, Center for Radiological Research, New York, NY;
- Richard J. Bull, Pacific Northwest National Laboratory, Richland, WA;
- Eric J. Hall, Radiation Oncology Center for Radiological Research, Columbia University, New York, NY;
- William F. Morgan, Professor of Radiation Oncology, University of California, San Francisco, San Francisco, CA;
- Julian Preston, Chemical Industry Institute of Toxicology, Research Triangle Park, NC;
- James Flynn, Decision Research, Eugene, OR;
- Henry N. Wagner, Jr. Director, Division of Radiation Health Science, Johns Hopkins Medical School, Baltimore, MD;
- Susan S. Wallace, Chair, Department of Microbiology and Molecular Genetics Director, Markey Center for Molecular Genetics, University of Vermont, Burlington, VT;
- Dr. Gayle E. Woloschak, Center for Mechanistic Biology and Biotechnology, Argonne National Laboratory, Argonne, IL.

The subcommittee prepared a report for the Office of Biological and Environmental Research, providing background information that DOE used to write the first call for proposals and indicating the directions which the program should take. This exercise was critical in providing a good start to this important program. Bill was a key

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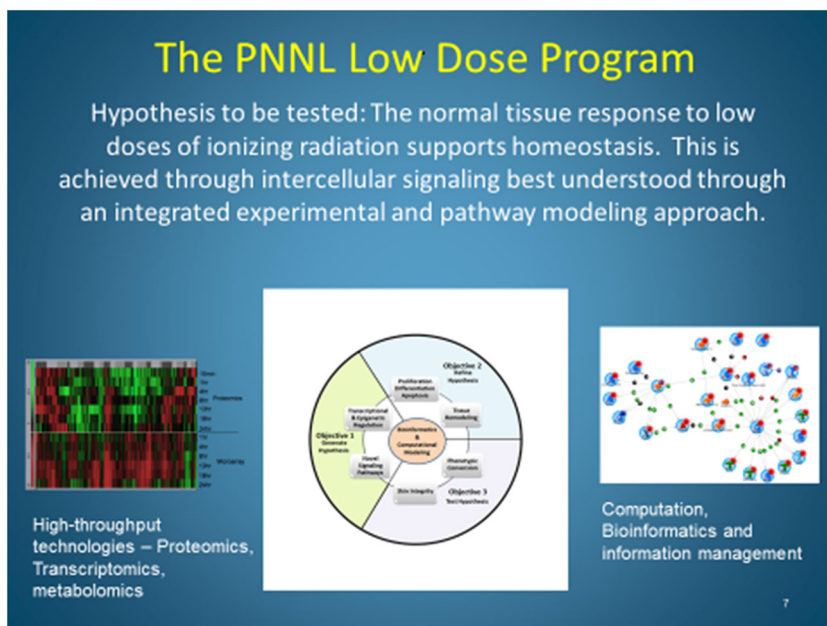


Fig. 1. Outline of the Low Dose Radiation research program at the Pacific Northwest National laboratory with the methods, objectives and Hypothesis tested.

member of this subcommittee and his colleagues regarded him as one of the giants in the field.

Bill served on many review panels to evaluate proposals for research funding, for DOE, Environmental Protection Agency (EPA), National Institute of Environmental Health Sciences (NIEHS), National Aeronautics and Space Administration (NASA), and other agencies. Bill had important influence on funding decisions; when he talked, everyone listened, and opinions about the value of a proposal often changed – for the better or the worse.

Bill and I were the co-chairs of a National Commission on Radiation Protection (NCRP) committee, funded by NASA, to evaluate radiation effects on astronauts. The title of the resulting report was “Potential Impact of Individual Genetic Susceptibility and Previous

Radiation Exposure on Radiation Risk for Astronauts”. This committee tackled a question of great significance to the manned space program. If an astronaut had previous radiation exposure from any source (e.g., medicine, high elevation aviation, environmental exposure) and could expect to receive additional exposure on a space mission which would put them above the regulatory limit, they could not go on the mission.

One case, in particular, brought this issue to NASA’s attention. An astronaut had received cancer radiation therapy; this dose plus the anticipated space-flight dose would put him over the allowed limit. NASA was considering removing this astronaut from the planned mission – after he had invested years of his life in preparation. This case prompted many interesting discussions by the committee. An

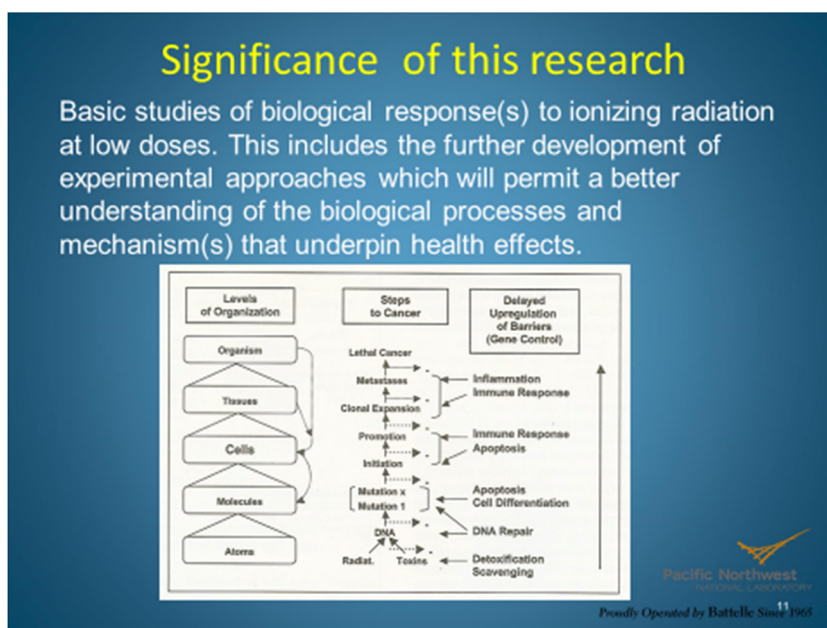


Fig. 2. This figure outlines the significance of the research being conducted and suggests ways to extrapolate and connect different levels of biological organization in a systems approach to risk evaluation.

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