Alexander Hollaender’s Postwar Vision for Biology: Oak Ridge and Beyond

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Abstract. Experimental radiobiology represented a long-standing priority for the U.S. Atomic Energy Commission (AEC), but organizational issues initially impeded the laboratory progress of this government-funded work: who would direct such interdisciplinary investigations and how? And should the AEC support basic research or only mission-oriented projects? Alexander Hollaender’s vision for biology in the post-war world guided AEC initiatives at Oak Ridge, where he created and presided over the Division of Biology for nearly two decades (1947–1966). Hollaender’s scheme, at once entrepreneurial and system-oriented, made good use of the unique resources provided by the AEC and by Oak Ridge’s national laboratory setting, while at the same time it restructured wartime research practices to better reflect biologists’ own priorities. Because Hollaender offered many academic experimental biologists a way of envisioning military-related patronage as integral – rather than antithetical – to their professional identities, his work provides an important lens through which to examine the early post-war intellectual and institutional development of radiobiology.

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News of world-class experimental biology at the America’s national laboratories is now commonplace. By the early 1980s at the Lawrence Berkeley Lab Mina Bissell had completed her award-winning work...
on extra-cellular matrix proteins, which regulate normal and malignant breast cell functions. Perhaps most notably, in 1986 the Department of Energy was the first federal agency to announce and to fund the research initiative that ultimately became the mammoth Human Genome Project (completed in 2003). Yet this state of affairs was far from a foregone conclusion in 1946, when management of the national laboratories at Oak Ridge and Los Alamos shifted from General Leslie Groves and the Manhattan Project Army Corps of Engineers to David Lilienthal and the newly created civilian Atomic Energy Commission [AEC], alongside private contractors like Union Carbide.¹ “The question,” former Oak Ridge director Alvin Weinberg posed, in a poignant reflection on his institution’s post-war history, was “not ‘Is survival your mission?’ but ‘Have you accomplished great things that transcend the obvious, and ever-present, issue of survival?’” The preliminary answer, it would seem, is that while Oak Ridge was historically most famous for its uranium, it survived – and now thrives – by accomplishing great things in the biological sciences. While its Graphite Reactor shifted its focus to radioisotope production (then in 1968 was decommissioned), Y-12’s chemical separation building is now home to tens of thousands of inbred mice, the study of which is said (according to a sign posted in the Visitor’s Overlook) to represent “the rosetta stone” of human genetics and disease.²

From the beginning radiobiological research was an AEC priority – health physics research for nuclear workers, for example, was embraced from the time of the Manhattan Project as a necessary practical investment in order to run its facilities appropriately.³ But after the war, laboratory progress in radiobiology was hampered by important structural questions: would the new work be secret and


² On Oak Ridge radioisotopes, see Creager, this issue; on Oak Ridge “Mega-mouse” project, see Rader, 2004, Chapter 6. Information on and quotes from the Visitor Overlook display obtained from author’s site visit, November 1995; Alvin Weinberg, “Foreword” to Johnson and Schaffer, 1994, p. x. The other main post-war research area in which Oak Ridge became well known was reactor technology, and today that program’s legacy survives as ORNL work on renewable energy and environmental studies (conservation and radioactive waste clean-up).