

Evolution of the UT–Oak Ridge partnership described in new book (part 2)

(As published in The Oak Ridger's Historically Speaking column the week of September 30, 2024)

This is the second in Carolyn Krause's series of three articles based on a recent Friends of ORNL talk by Lee Riedinger on a 2024 book he coauthored with Al Ekkebus, Ray Smith and William Bugg - *Critical Connections: The University of Tennessee and Oak Ridge from the Dawn of the Atomic Age to the Present*. This article also draws from the book, a product of a five-year effort by the coauthors.

In 1940, the University of Tennessee in Knoxville had no doctoral programs. In response to a request by Martin Whitaker, director of Clinton Laboratories, when World War II ended, UT started teaching graduate courses in physics onsite at the lab. By the spring quarter of 1946, UT's Oak Ridge Resident Graduate Program has started, marking the beginning of the official UT-Oak Ridge partnership.

Graduate courses in chemistry, chemical engineering, mathematics and physics were taught to Oak Ridge contractor employees and Army personnel. In the 1950s, UT offered Ph.D. courses and degrees in chemistry, physics and chemical engineering to researchers at Oak Ridge National Laboratory, helping it to improve its workforce and retain its quality personnel. UT faculty taught the classes in Oak Ridge, where UT faculty were given access to radioisotopes for their research." In 1951 there were 29 UT faculty working as consultants at one of the three plants in Oak Ridge," Riedinger said.

Another connection between Oak Ridge and UT was their responses to the nationwide push for desegregation, as researched by Al Ekkebus. On May 17, 1954, the U.S. Supreme Court ruled unanimously in *Brown v. Board of Education of Topeka, Kans.*, that segregation in public schools was unconstitutional.

In 1952 UT accepted only a few Black students for the law school or to do other graduate work, but the university was not ready to admit Black undergraduate students. On Sept. 3, 1954, President Eisenhower barred racial discrimination by private contractors receiving government funds; on Dec. 31, 1954, UT President Brehm learned that Eisenhower's executive order would apply to UT when it renewed its contracts with AEC.

Even though the Tennessee Supreme Court ruled in October 1956 that all state laws that codified segregation were invalid, Riedinger said that the UT administration still refused to admit Black undergraduate students.

In 1960, Knoxville native Theotis Robinson applied to UT as an undergraduate; he was denied admission because he was black. He and his parents met with President Andy Holt and threatened a lawsuit. On Nov. 18, 1960, the UT Board of Trustees ruled against racial discrimination in its admission policies. On Jan. 3, 1961, Robinson and two other Black students were able to register as accepted undergraduate students.

The Atomic Energy Commission, which funded three plants in Oak Ridge, announced in January 1955 that in September, Oak Ridge High School and Robertsville Junior High School would allow Black students for the first time; 85 Black students, known as the Scarboro 85 because they previously had received their elementary school education in Scarboro's school for Black children, desegregated both Oak Ridge schools.

In the 1960s the Kennedy administration exerted pressure to end racial discrimination in cities that have federally funded facilities. So, in 1963, Bob McNeese, mayor of Oak Ridge and ORNL chemist, formed a Human Relations Committee chaired by Rev. James Spicer, pastor of Chapel on the Hill, as researched by Ray Smith.

The committee learned that Davis Brothers Cafeteria in Oak Ridge and throughout the South was a major symbol of discrimination. Spicer and McNeese flew to Davis Brothers corporate offices in Atlanta. The Davis brothers refused to implement the Oak Ridgers' recommendation that all their restaurants be integrated.

On the flight home, Spicer told his story to Emerson Glazer, son of Guilford Glazer, who had built the Oak Ridge Shopping Center, which opened in 1955. Two days later, Gene Joyce, a renowned lawyer in Oak Ridge who represented the Glazer Corporation and had heard Spicer's story from Emerson Glazer, called in Spicer and suggested that he offer a deal to the

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Davis brothers, who leased space in the Glazer-owned shopping center for their profitable cafeteria and their money-losing bowling alley.

According to the book, "The Glazer Corporation proposed to let the Davis brothers out of the lease on the bowling alley space if they would integrate their restaurant. The Davis brothers immediately accepted and integrated the cafeteria." Later, one of the brothers "announced that all Davis Brothers Cafeterias would be integrated – a remarkable step forward for restaurants in the South."

In the 1950s, under the leadership of Alvin Weinberg, who was appointed Clinton Laboratories' research director in 1947 and ORNL director in 1955, nine reactors had been built at ORNL despite the decision by the Atomic Energy Commission in 1947 to relocate all reactor research to Argonne National Laboratory. Because of the increasing need for expertise in reactor development and operation, UT in 1957 formed its Nuclear Engineering Department. "It's now one of the top two or three nuclear engineering departments in the country," Riedinger said.

Ten years later, because of the outstanding research being performed at the ORNL Biology Division and because of a conversation involving Weinberg and key personnel from the National Institutes of Health and UT, it was decided to start the UT-Oak Ridge Graduate School of Biomedical Science. Between 1967 and 1997, selected researchers in the Biology Division were given UT status as part-time faculty. They taught graduate courses to students living in Oak Ridge and guided their dissertation research in the division that led to Ph.D. degrees from UT.

In April 1962 Weinberg published in Science magazine the paper "Federal Laboratories and Science Education," which advocated that national labs find ways to contribute to the education of aspiring scientists and engineers. Riedinger stated that one of Weinberg's ideas was to "establish 'joint institutes' with neighboring universities."

Students would earn their degrees from a university, and national lab researchers would serve as part-time faculty for those universities by guiding students in their dissertation research at the lab. "It was an idea ahead of its time," Riedinger said. "It did not happen fully until the Bredesen Center was started in 2010 between UT and ORNL." Riedinger was the founding director of the Bredesen Center for Interdisciplinary Research and Graduate Education, now called the University of Tennessee–Oak Ridge Institute for Innovation's Bredesen Center.

In 1970, the first of 29 user facilities located at ORNL was constructed. It was the product of a partnership in nuclear physics that involved researchers at ORNL, UT and Vanderbilt University (mainly Joseph Hamilton, the founder of UNISOR). UT and Vanderbilt led 12 universities in forming the University Isotope Separator at Oak Ridge (UNISOR). UNISOR, which became a division of Oak Ridge Associated Universities (which contributed to the facility's funding), ended in June 2015.

ORNL, UT and Vanderbilt scientists worked with Russian scientists almost 10 years ago to discover the new superheavy element tennessine-117, an artificially created element that was produced in an accelerator by forcibly combining the nuclei of calcium-48 atoms (20 protons per nucleus) in Dubna, Russia, with berkelium-249 atoms (97 protons) obtained from ORNL's High Flux Isotope Reactor.

In another connection involving one person, Jack Gibbons, a physicist at ORNL, was asked by Weinberg to head the new ORNL Environmental Program. "In that role," according to Riedinger's book, "Gibbons initiated and directed research on energy efficiency in buildings, transportation and electricity generation, while also exploring the environmental impacts of energy production and supply and resource use."

Then Gibbons was persuaded to head UT's first energy institute, which was started in 1973 and which he later renamed the Energy, Environment, and Resources Center. The center worked with ORNL's Energy Division to compare heating and cooling strategies in three demonstration houses along Alcoa Highway.

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In 1979 Gibbons moved to Washington, D.C. to head the Office of Technology Assessment, which provided for Congress analyses of the benefits, costs and risks of various efforts to address the scientific and technological challenges facing society. In 1993-98 he served as President Bill Clinton's science advisor.

Thanks, Carolyn. The last of the series is next, Part three: The 1980s through 2024.



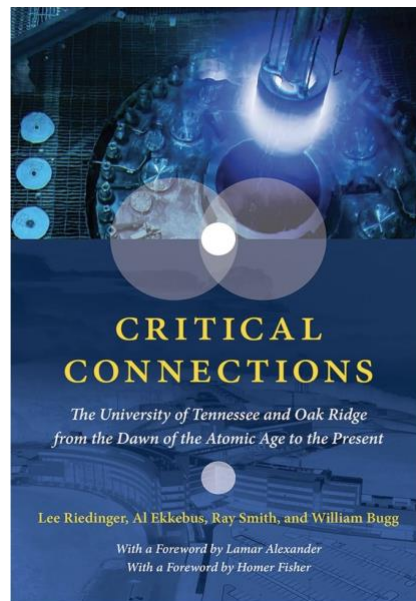
Lee Riedinger speaking to the Friends of ORNL audience

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Friends of Oak Ridge National Laboratory lecture audience nearly filled the room



Critical Connections book