

## Abstracts

Suzanne Bauer, "Living with Soviet Nuclear Legacies: Information Boom, Conversion and Biomedical Research," Professor of the Sociology of Science, Goethe University, Frankfurt

Cold war nuclear programs in the US and the Soviet Union profoundly altered local life and environments in vast territories. In the Soviet Union, major radiation exposures include the Chernobyl region, areas in the Southern Urals nuclear industry and downwind of the Semipalatinsk nuclear test site. After the Soviet Union ended in 1991, local scientists embarked on international projects on environmental and safety issues, economic and infrastructural development, and biomedical studies. This paper will analyse how the nuclear aftermath is being lived and addressed by government science and transnational research agendas, radiation effects, the entangled histories of radiation risk, and the challenges of writing accounts of "the nuclear" in the aftermath of the cold war.

Karena Kalmbach, "Constructing and deconstructing an historical event: the case of Chernobyl," PhD student, European University Institute, Dept. of History and Civilization

Karena's paper will discuss the impact of the Chernobyl accident on Western European societies and focus on the effect of its commemoration on contemporary nuclear politics. She will examine the French, British and Italian discourses on Chernobyl since 1986 from risk assessment, elite and environmental perspectives to better understand how historical events are constructed to underpin political arguments. Different images of Chernobyl in different societies have influenced their respective approaches to nuclear energy and environmental policies in the last 20 years.

Laura Harkewicz, "'We can't locate the world: Activists, Doctors and a Radiation-Exposed Identity,'" Instructor, History of Science, University of California San Diego

In 1985, Greenpeace raised a banner with the epigram noted in the paper's title outside the Kwajalein Missile Range in the Marshall Islands. Greenpeace was relocating the people of Rongelap who were exposed to radioactive fallout from the 1954 Bravo hydrogen bomb test. The Bravo Medical Program (BMP), developed in response to the exposure of over 200 Marshall Islanders, lasted for over 40 years. It provided medical care for the exposed and research into the human biological effects of radiation exposure. In the 1970s, activists supported -- some say created -- Marshallese claims of human experimentation by BMP doctors. By stressing the conflict of interest inherent in the BMP, activists got an independent review but because the causal link between exposure and effect could never be conclusively demonstrated, Marshallese biological citizenship and compensation claims remained contested.

Lisa Rumieli, "Brother Pig, Lauren Donaldson: Reflections on a Scientist's Role in the Pacific Proving Ground, 1946-1964," SSHRC Postdoctoral Fellow, History Department, McMaster University

This paper covers Lauren Donaldson's research expeditions in the Pacific Proving Ground from 1946 to 1964. As the head of the University of Washington's Applied Fisheries Laboratory (AFL), created through the Manhattan Project in 1943 and taken over by the Atomic Energy Commission in 1946, Donaldson was a key figure in the nation's growing military-industrial-academic complex. To understand how radioactive contamination affected the environment and human health during the 1940s, the AEC, examined how foreign toxins interacted and travelled within complex ecosystems. When it took over administering the AFL, the lab's work was directed towards the Pacific Proving Ground, where scientists studied the biological and ecological effects of nuclear weapons testing at Eniwetok, Bikini, and, by 1954, Rongelap atolls. The research is part of a larger project on the disciplinary formation of radiation ecology.

E. Jerry Jessee, "The Atomic Age and the Age of Ecology," PhD Student, Montana State University

In an oral history conducted in the late 1970s, Lauren Donaldson, director of the University of Washington's Laboratory of Radiation Ecology, reflected on his lab's contribution to studies of fallout radiation in the environment for the Atomic Energy Commission (AEC). "I think we came along in a different period of time," Donaldson said, "really ahead of the environmental era when people began to look at the whole ecosystem as a unit, if you wish, or look at whole life cycles... We didn't have people [in the AEC] who were thinking outside laboratories. They weren't thinking in terms of total systems..." While historians of ecology have aptly demonstrated the foundational role that AEC patronage had for shaping the development and prestige of ecosystems ecology, little scholarship has been conducted investigating the ways that ecological approaches to the problem of fallout redirected the research priorities of the AEC. As Donaldson implied above, laboratory-style thinking dominating early AEC approaches to fallout. In this paper, I argue that this early focus on understanding fallout through laboratory-based disciplines such as toxicology predisposed the AEC into thinking that like the environment inside the lab the environment in the outside world was similarly passive and subject to technical control. Within this regulatory framework, the AEC perceived that the primary danger of fallout centered on exposure to external gamma radiation. Yet by the mid-1950s, AEC-sponsored ecological fieldwork by scientists such as Donaldson, Stanley Auerbach, and the Odum brothers revealed that the environment proved to be a critical factor for delivering biologically significant doses of radiation to the human body. By connecting the health of human bodies to environmental processes like biomagnification and other food chain dynamics, ecologists reoriented how the AEC conceived of fallout risks by highlighting the problem of internal radioactive hazards. Only when one thought of the "total system," as Donaldson put it, could one make the connection between the health of the environment to the health of human bodies. Ironically, this realization of the connectedness of bodies and environment motivated the public controversy over fallout and led to the passage of the Limited Test Ban Treaty which ended atmospheric testing. This case illuminates how assumptions about the nature of the environment and bodies underpinned scientific practices in the laboratory and the field and how those practices shaped what was known about the biological effects of fallout and thus how regulatory bodies conceived of risk.

Kate Brown, “Dismantling the Plutonium Curtain: Post Cold War Conflicts over Health and Security,” UMBC (Maryland)

At the end of the Cold War, paradoxically, the on-going struggles to contain and control knowledge about radioactive waste and resulting health effects did not diminish, but intensified against the background of entrenched ideas about science, health and security built up during the Cold War. Focusing on the world's first two plutonium plants, Brown describes how whistle-blowers at the American Hanford plant were harassed, threatened, bullied, watched and terminated for trying to alert corporate supervisors to alarming safety problems. In Muslumovo, a village along the Techa River downstream from the Russian Maiak Plant, villagers live on highly radioactive terrain and face charges that their health complaints are due to their own poor habits (drinking and in-breeding) while medical officials encourage the villagers to stay hoping to attract foreign research funds for this unique three generational cohort of people living on radiated ground.

Kypos Kyprianou and Simon Hollington, “The Nightwatchman,” Art Installation, with Photos, Posters, Video and a Talk on the cyclical history of the nuclear power debate in the UK and the intersection between public relations, science and government. It was commissioned by Arts Catalyst and SCAN with a talk at the Royal Society of Arts, Art and Ecologies Program. The artists have exhibited internationally at various sites, as well as museums and art galleries including the Tate Modern, the 51<sup>st</sup> Venice Biennale and the ICA, London England.

Mauro Elli, “Nuclear Industry in Italy: ENI Group’s Interest in Fuel Production in the 1960s,” PhD in History, Centre for Foreign Policy Studies, State University of Milan

Since its beginnings, nuclear power has been highly divisive in Italy, on political and economic grounds. In such an environment, ENI Group developed a liaison with the British, built a nuclear power station south of Rome and with nationalisation in late 1962, asserted its interest for nuclear fuel production. Several years later the Italian Parliament passed a law that empowered ENI to extend its activities to nuclear fuels. In spite of the government's lack of an energy policy and tensions inside the state-controlled industry, ENI developed expertise and cooperated with the French on the Superphénix reactor. Unfortunately, this was not enough to prevent Italian nuclear failure even before the environmentalist challenges in the 1970s and the Chernobyl disaster.

Lisa Marshall, “Nuclear South – Mapping Nuclear Energy from the Carolinas,” PhD student, Department of Geography/ Nuclear Engineering, UNC-Chapel Hill

With resilience as environmental stewardship, energy independence, and national security intertwine with nuclear power production, the nuclear revival has had a resurgence. This has specific implications for local communities. With the union of nuclear utilities and vendors to form such consortia as NuStart Energy; the relocation and expansion of nuclear fuel fabrication plants in the Carolinas; GE's Nuclear Energy "merger" with Hitachi; the construction of a mixed oxide fuel facility at Savannah River Site in Aiken, SC; the establishment of the Carolinas Nuclear Cluster; and, the continual growth of nuclear engineering university programs, such connections transcend borders. What does this mean for the Carolinas? How do these acts

translate to other spaces as nations keep or expand their energy portfolio to include nuclear energy? New energy-societal relations are being negotiated and this paper maps their implications.

Robert S. Anderson, “What does negotiating nuclear power mean (1940-1980)?,” Simon Fraser University & Clare Hall, University of Cambridge

Abstract: becoming and remaining a nuclear power required a kind of negotiation which was punctuated by bargain-making and bargains. By tracking the nuclear powers in relation to an almost-non-power like India (from 1940), one can see the interplay of the ‘large’ and the ‘small’ on the world nuclear stage. To show how long term negotiations and short-term bargains worked together, I shall select for discussion three examples of bargains around reactors-for electricity, ingredients for potential weapons, and essential supplies like heavy water, engaging the networks of the nuclear powers and India - and then South Asia – up to 1980. Most of the technologies were ‘dual use’ from the beginning and continued that way. It is not the ‘nuclear status’ of India alone that was being worked out between 1940 and 1980, particularly after the first test in May 1974 in Rajasthan, it was also the relative status of the nuclear powers themselves. They were all becoming nuclear powers together. There is contemporary relevance of this story to Pakistan, North Korea and Iran.

Lisa Lynch, “‘We are all radiated:’ Rematerializing of the Nuclear Power Hazard in the age of Nuclear Green Energy,” Asst. Professor, Dept. of Journalism, Concordia University

This paper explores the shifting terrain of anti-nuclear power activism in the global landscape. Using a documentary film archive about the anti-nuclear-power movement, she demonstrates how fears of the 'unseen dangers' of nuclear power were displaced by an emphasis on hazards implicit in the material production of nuclear power technology, in particular uranium mining and waste storage. This shift is partly a response to the "greening" of nuclear energy, a marketing strategy that identifies nuclear power production as environmentally friendly energy. Some environmental groups remain opposed to expanding the nuclear energy but the idea of green nukes has grown and divided the previously harmonious, mutually empowering relationship between anti-nuclear activism and environmentalism. This paper provides a brief genealogy of this conflicted relationship through films from the 1970s to the present.

JoAnn A. Saltzen, “Radiation and Cancer: Remedy or Risk?,” PhD Educational Psychology, University of Oregon

This paper is an analysis of the three major medical uses of radioactive materials in radiological imaging, radioisotope tracers, and radiation therapy. The medical use of radioactivity is promoted as a positive remedy when an individual is diagnosed with cancer. Through radiation the patient receives the promise of remission, if not a cure, relief from pain and time to live. Millions of individuals have accepted nuclear medicine to treat cancer, even though many may oppose nuclear weapons, nuclear power and/or nuclear waste. The contradictions inherent in this situation will be analyzed as will the connection between nuclear infrastructure and nuclear

radioisotopes, and the possibility that nuclear medicine's promise of remedies for cancer creates a compliant citizenry supportive of the nuclear industry.

Kathleen M. Saul, "Political Ecology of New Nuclear Investment and Energy in America," PhD candidate, Center for Energy and Environmental Policy, University of Delaware

In 2007, after a three decade hiatus, companies started applying to the Nuclear Regulatory Commission (NRC) for licenses to build new commercial nuclear power facilities. The press linked renewable energy sources and new nuclear power facilities. Research and interviews revealed that increased demand for electricity led companies to consider building new capacity, and concern over carbon emissions prompted interest in renewable sources and nuclear power. Without changes in the nuclear reactor licensing process in the 1990s, and either federal financial incentives or cost recovery rate increases, new nuclear power plants will not be built. These factors come together to demonstrate that decisions to build new commercial nuclear power plants derive from environmental/natural resource issues, human energy needs, and capital investment (loans, tax credits).

Ian J. Slater, "Atoms for Profit: Innovation and the Canadian Nuclear Industry," Instructor, Faculty of Science and Engineering, York University

The current 'nuclear renaissance' along with renewable energy technologies is supposed to benefit and popularize green initiatives worldwide. A resurgence of interest in nuclear technology in growth economies in India and China is occurring. The nuclear industry has associated with utilities that shifted to private sector ownership and business models in a wave of economic liberalization in the 1980s and 1990s. This paper examines the effect of this shift on innovation in the Canadian nuclear industry, and assesses Canada's ability to take advantage of the 'nuclear renaissance.'

Thomas Wellock, "The China Syndrome: Regulating Against Catastrophe, an International Perspective," PhD History University of California, historian U.S. Nuclear Regulatory Commission

In 1965, the U.S. Atomic Energy Commission thought its reactor designs could cope with the "maximum credible accident" that might release deadly levels of radiation into the environment. Optimism vanished when AEC staff realized the complete failure of emergency core cooling systems might allow the reactor fuel (the core) to melt right through the containment building. The possibility of the "China Syndrome" altered forever the nuclear power regulation in the U.S. and abroad and invigorated antinuclear activism. This paper examines international efforts to prevent core melt accidents. After the 1979 accident at Three Mile Island, international atomic agencies crafted agreements for improving safety at existing plants and new designs. Differing regulatory and political climates among nations precluded a common approach to the most severe accident scenarios as political, technical, and economic values affect standards of reactor safety.