Joanna Radin, Assistant Professor in the History of Medicine and of History at the Yale School of Medicine, presented her research on the changing ethical meanings of frozen biological samples. Radin researches the consequences, intended and otherwise, of freezer technology that enables scientists to “stopping the biological clock” (a quote from an advertisement for early cryo equipment that she showed in her presentation). The International Biological Program (IBP), which ran from 1964-1974 included early researchers in cryobiology, who hoped the freezers could work as a kind of time machine, a way to collect and preserve information about indigenous populations before they went extinct.

The samples collected by those researchers are now being used in ways that were wholly unimaginable at the time when the samples had been collected. For example, the samples were collected well before it was possible to cheaply and quickly sequence DNA. One specific example of new uses for old samples is what Radin calls “mosquito anthropology”. Some of the samples in the IBP collections contained both human DNA and malaria plasmodia. Malaria researchers are interested in the samples because the malaria contained within them predates chloroquine resistance. Sequencing the pre-resistance malaria genome might help researchers discover alternative compounds that would be effective against the parasite. In coopting the samples for malaria research, the malaria researchers effectively transform a human blood samples into nonhuman samples. This presents interesting questions and thoughts about the boundaries of ecosystems. In Radin’s terms “The project that collected the samples was looking to find the role of the humans in the ecosystem, but it ended up finding the ecosystem within the human”. As there is increasing interest in the human microbiome project, the use of human blood and tissue samples to understand nonhuman DNA will likely become more common. Does this change the ethical considerations given the samples and research on them?

Ultimately, the time machine quality of freezers becomes a problem for researchers who have to live within the constraints of their own mortal existence. Radin asked the audience “What happens when scientists reach the end of their careers and they have samples they’ve been the overseer of, but then they pass?” Freezers make it possible for samples to outlive their collector. Many collections are well curated and cared for, and are finding new purchase as new technologies make them relevant to new questions. But collections are also expensive to maintain, may be physically unwieldy, and contain people’s genetic information that may or may not have been collected in an ethical manner.

During the discussion, Donna Haraway remarked, “nothing gets to die”. She says this issue makes a case for why we need to have productive conversations about death, mourning and senescence. Can we start to think of best practices for allowing things to disappear, decay, or simply be left out of the database? She asked us to imagine what we would do if there weren’t freezers that allow us to keep things for as long as possible, to exploited to the very end. This led to James Battle’s question about salvage politics. The collection of many of these samples are linked to colonial politics and the idea that scientists need to extract information quickly before things disappear. This collect now,
think later mentality works to defer discussions about ethics into an ever-receding future horizon.

Several comments were related to matters of profit and ownership. How much control can we or should we have over our genetic and biological materials after they have left our bodies? Some participants suggested that scientists should be able to claim a sort of ownership or intellectual property of information that comes from biological tissues, because it is the work of the scientists that make that information legible. However, others are concerned that informed consent cannot adequately handle the possibility that technologies change and that biological tissues may be used differently in the future. With the help of freezer technology, biological samples gathered in the 1950's have now come to represent something different. In Radin’s words “it may just be blood until someone makes a massive profit”. The samples and their meanings are dynamic.

Micha Rahder asked if the scientists working with cryo technology believe they are creating the future they imagine. Radin said that they work through what she calls “planned hindsight”. The goal of planned hindsight is to plan for a future inhabited by people that look back and think these scientists planned well for the future. Though they recognize that predicting the future has inherent limitations, these scientists try to anticipate the consequences of their plans as best as they can. Radin said that the problem with this is that it is at odds with the salvage conditions under which many of the samples are originally collected, and the trouble with the freezer as technology is that it allows the difficult discussions to be displaced into the future. As the final comment, Haraway reminded us that the person who tries to save everything loses everything.