Introduction: This bibliography contains resources on the ethical, legal, and social implications (ELSI) of advanced biopreservation. The bibliography also includes information about ethical frameworks used to analyze emerging technology. Because this advanced biopreservation technology remains in early stages of development, dedicated ELSI literature about specific envisioned applications of this technology is relatively scarce. This bibliography includes that literature and provides resources for ELSI issues relevant to the various use cases. This document centers on ELSI issues and does not seek to replicate the full scientific literature for each application area. As such, the bibliography generally features articles that reference ELSI issues and excludes more technical resources. This bibliography is limited to sources published in or after the year 2000, and sources published in English.

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This bibliography is organized into eight topical areas. Readers may navigate to each section and subsection by clicking the corresponding text in the Table of Contents. Within each subsection, entries are listed alphabetically by the first author or for full books, by editor. For subsections with multiple articles from a single author, these resources are then further organized by year. Many of the resources contained in this bibliography could be cross-listed in multiple sections, but each is listed only once.
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I. Ethics and Policy Issues Raised by Advanced Biopreservation

U.S. National Science Foundation (NSF). *Solving Organ Shortage Through Organ Banking and Bioengineering*. 2015. [Link](https://static1.squarespace.com/static/57d7d2ad15d5db47a2e81a13/t/58bccdc046c3e4c07ae685ed/1488768452341/OrganBankingRoadmap.pdf).

Wachtel SS, Tiersch TR. *Ethical Considerations for the Application of Cryopreservation to Aquatic Species, in Cryopreservation in Aquatic Species* (Tiersch TR, Mazik PM eds., 2000). [Link](https://doi.org/10.1007/978-1-4614-6309-8_3).


II. Guidance for Responsible Innovation

A. Responsible Innovation/Risk Innovation


B. Anticipatory Governance/Governance of Emerging Technologies
Preparation supported by NSF Grant No. EEC 1841543


C. Ethical Innovation in Nanotechnology


D. Public Opinion on Emerging Technologies


III. Organ Transplantation

A. Ethics and Regulatory Sources


Kelly E. FDA Regulation of 3-D Printed Organs and Associated Ethical Challenges. *University of Pennsylvania Law Review* 2018;166:515-545. [Link](#).


B. Applications — ELSI issues

1. Commercialization, Exploitation, and Trafficking

Capron AM, Delmonico FL. Preventing Trafficking in Organs for Transplantation: An Important Facet of the Fight Against Human Trafficking. *Journal of Human Trafficking* 2015;1:56-64. [Link](#).

Council of Europe Convention Against Trafficking in Human Organs, March 25, 2015, C.E.T.S. 216. [Link](https://rm.coe.int/16806dca3a) [Link](#).
Preparation supported by NSF Grant No. EEC 1841543

The Declaration of Istanbul on Organ Trafficking and Transplant Tourism (2018 ed.). 
*Transplantation* 2019;103:218-219. [Link](#).


## 2. Equitable Allocation of Organs


Organ Procurement and Transplantation Network (OPTN). *How Organ Allocation Works*.  


3. **Human Testing of Manipulated Organs**


IV. Cells, Tissues, and Other Medical Products of Human Origin

A. Ethics and Regulatory Sources

American Association of Tissue Banks (AATB). *AATB Guidance Documents.*


Preparation supported by NSF Grant No. EEC 1841543


B. Applications -- ELSI Issues

1. Biobanking


2. Production and Scaling Up of Cell Therapies

Preparation supported by NSF Grant No. EEC 1841543


### V. Microphysiological Systems and Organoids

#### A. Ethics and Regulatory Sources


Hyun I. The Bioethics of Stem Cell Research and Therapy. *Journal of Clinical Investigation* 2010;120(1):71-75. [Link](https://doi.org/10.1172/JCI42562).


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B. Applications – ELSI Issues
VI. Whole Organisms

A. Model Organisms

1. Ethics and Regulatory Sources

2. Applications --ELSI Issues

B. Pathogens

1. Ethics and Regulatory Sources
Preparation supported by NSF Grant No. EEC 1841543
U.S. National Institutes of Health (NIH). National Science Advisory Board for Biosecurity (NSABB).

2. Applications--ELSI Issues

VII. Environmental Uses
A. Ethics and Regulatory Sources
https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5916&context=faculty_scholarship. Link.
Preparation supported by NSF Grant No. EEC 1841543


B. Applications -- ELSI Issues

1. Biorepositories to Protect Biodiversity


Preparation supported by NSF Grant No. EEC 1841543
San Diego Zoo Wildlife Alliance. Frozen Zoo®.
U.S. National Institute of Standards and Technology (NIST). NIST Biorepository.

2. Combining Advanced Biopreservation with Other Technologies (Like De-Extinction or Gene Drive Technology)
Revive & Restore. The Genetic Rescue Toolkit.

VIII. Aquaculture & Food Production

A. Ethics and Regulatory Sources


Lowenstein E. Regulating the Blue Revolution: A Sea of Change for the United States’ Offshore Aquaculture Industry or a Missed Opportunity for Increased Sustainability. *University of Miami International and Comparative Law Review* 2019; 26;473-498. [Link](#).

National Agricultural Law Center. *Aquaculture: Overview*. [Link](#).


U.S. Food and Drug Administration (FDA). Seafood Guidance Documents & Regulatory Information. [Link](#).

Preparation supported by NSF Grant No. EEC 1841543


B. Applications -- ELSI Issues


