

BioCEP Online Course on Bioethics

Course Summary

We are currently engaged in a biotechnological revolution as new discoveries are being made in science and medicine. The ability of scientists to create designer babies, edit the human genome, and utilize stem cells to cure disease has also elicited many bioethical and medical ethical questions.

Using a case study approach, this course is structured to prepare students for the BioCEP experience to better enable them to identify and resolve bioethical and medical ethical dilemmas that they will observe when visiting various sites in Bangkok, Thailand.

One Week Course Objectives

1. To enable students to identify bioethical dilemmas that arise from new discoveries in science and medicine.
2. Understand the five major bioethical guidelines.
3. To develop specific approaches to resolve or manage bioethical dilemmas associated with new or developing biotechnologies.
 - a. Science - based approach-
 - b. Bioethical guideline –based approach
 - c. History and legal- based approach
4. To integrate these approaches within a legal, social, cultural, and global framework.

Skill set development

1. Identify bioethical dilemmas directed to specific technologies.
2. Develop a hierarchy of these guidelines when they conflict with one another.
3. Develop a multidisciplinary approach to augment the hierarchy of bioethical guidelines.
4. Analyze a primary biotechnology paper from a bioethical perspective.
 - a. Assessing the science.
 - b. Identifying cultural, social and legal ramifications of a biotechnology.
5. Apply bioethical guidelines to resolve or manage actual bioethical dilemmas.
6. Effectively communicating bioethics to professional and lay audiences.

Requirements

1. Each day students will be required to read from the textbook or assigned readings. They will be presented with two questions to which they will respond. Their responses should be in Word format and no more than one page in length.
2. After attending the BioCEP program, students will be required to submit a 5-10 page paper in which they write about the bioethical dilemmas they encountered in the site visits at BioCEP and how they would address these dilemmas.

Daily Topics

Monday:

1. Introduction to Bioethics and
2. History of Bioethics

Tuesday:

1. Impact of culture, legal and social issues on new biotechnologies and
2. Establishing a hierarchy of bioethical guidelines

Wednesday:

1. Bioethical – based approaches to resolving bioethical dilemmas using Human reproductive cloning as a Case Study and
2. History - based approaches to resolving bioethical dilemmas – Using Reproductive medicine (IVF and gestational surrogacy) as a case study.

Thursday:

1. Applications of biotechnologies to non-medical interventions- Using gene editing as a Case Study.
2. Ethics of creating human-animal chimeras.

Friday:

1. Medical Ethics - part 1- Medical tourism
2. Medical Ethics – part 2- Clinical trials and privacy

Day 1- Monday -Learning Objectives:

- a) Define the four classical bioethical guidelines- autonomy, beneficence, non-maleficence, and justice. Identify which guideline is most appropriate in analyzing specific cases.
- b) Decide whether other possible bioethical guidelines such as the “yuck” factor” or respecting human dignity should be added as bioethical guidelines.
- c) Understand how moral errors leads to new regulations of bioethical guidelines.
- d) Understand the role of the press plays in analyzing bioethics.

Reading and viewing Assignments:

- a) Video title "[Moral concerns of "cloning" breakthrough](#)"
- b) Video title "[Clones - Bioethics Music Video](#)"
- c) Read Chapters 1, 2 and 3 –available online

Writing Assignments: Please send in Word Format to John.Loike@gmail.com.

- a) Present another actual case study (besides human reproductive cloning) that highlights one of the four bioethical guidelines.
- b) Find a current news story that may violate bioethical guidelines.

Day 2- Tuesday -Learning Objectives:

- a) Impact of culture, legal and social issues on new biotechnologies
- b) Establishing a hierarchy of bioethical guidelines

Reading and viewing Assignments:

- a) View "[MetaEthics](#)"
- b) View "[Gender selection debate](#)"
- c) [View](#) and [Read](#) Bioethics at the Bedside"
- d) Read "[Inequality in U.S. organ transplants](#): Researchers detail how the wealthy game the system"

Writing Assignments: Please send in Word Format to John.Loike@gmail.com.

- a) Identify two legal issues that arise from IVF.
- b) How do resolve a bioethical dilemma when there is no ethical consensus? Two example are:-

A man has a family history of Huntington's disease but does not want to be tested since there is no treatment for this fatal disease. He meets a woman and agrees to marry her on the condition that they do not have children because he does not believe in abortion and does not want the fetus tested for Huntington's disease. His wife agrees but accidentally gets pregnant and wants to test the fetus. If the fetus is positive it means that the husband has the gene for this disease and she understands that he does not want to know his genetic outcome. How would you advise her?

Estimate the medical costs of performing one heart transplant per lifetime of a patient. Then estimate via the web, how many heart transplants are done in the US per year. Is this cost ethically justified for those few patients or would the money be better spent to fund cardiovascular research?

Day 3- Wednesday -Learning Objectives:

- a) Learn about the science behind IVF, gestational surrogacy, and PGD.
- b) Use history to help resolve the ethical challenges emerging from human reproductive medicine.

- c) Who should regulate biotechnologies?

Reading and viewing Assignments:

- a) View "[PGD](#)"
- b) Read "[Who should regulate the practice of medicine?](#)"
- c) Read "[Surrogate mothers 10 years on: a longitudinal study of psychological well-being and relationships with the pares and child.](#)"
- d) Read Chapters 5 and 6

Writing Assignments: Please send in Word Format to John.Loike@gmail.com.

- a) Who is the legal mother in three parent generated children? Justify your response
- b) What are the ethical challenges in recruiting surrogates from developing countries?

Day 4- Thursday -Learning Objectives:

- a) Learn about the science behind molecular genetics and gene editing.
- b) Ethical considerations of non-medical enhancements.
- c) Learn about the science behind human-animal chimeras.
- d) Ethical considerations of human-animal chimeras.

Reading and viewing Assignments:

- a) View "[Genome Editing with CRISPR-Cas9](#)" And [CRISPR](#)
- b) View "10 Incredible Ways Genes Control Our Lives"
- c) View "[Designer Babies. Should scientists be playing GOD?](#)" This takes about 53 mins to view.
- d) Read Chapters 9 and 10.

Writing Assignments: Please send in Word Format to John.Loike@gmail.com.

- a) How does culture and religion address the ethical challenges of editing the human genome?
- b) Are there areas of ethical non-medical enhancement?
- c) Under what conditions is it ethically sound to create human animal chimeras? When does the ethical guideline of respecting human dignity play a role?

Day 5- Friday-Learning Objectives:

- a) Medical Ethics - part 1- Medical tourism
- b) Medical Ethics – part 2- Regulating medical interventions

Reading and viewing Assignments:

- a. View "[Future of Medical tourism](#)"

- b. Read "[Should religious belief allow parents not to vaccinate?](#)"

Writing Assignments: Please send in Word Format to John.Loike@gmail.com.

- d) How do you reconcile religious freedom and autonomy with the need to vaccinate all children?
- e) What are the most critical issues related to medical tourism and how should American Hospitals respond?

Reading from "A Scientific Approach to Bioethical Decision-Making"

By John D. Loike, Ph.D. and Ruth L. Fischbach, M.P.E., Ph.D.

Chapters 1,2,3,5,6,9, and 10 See PDF files online