**Group Project Case Descriptions**

Ethics, Science, and Biotechnology

**Genetic Testing**

1. Choosing for a Mutation – A couple using IVF to have a child must decide whether to implant an embryo containing the BRCA1 mutation (raising the future child’s risk of developing certain cancers) or else not have a biologically-related baby at all
2. 23andMe – The FDA has granted approval to genetic testing company 23andMe to offer direct-to-consumer tests for ten conditions. The move is controversial because it will allow consumers to receive information about their genetic risk for diseases without any counseling from a doctor. Other critics insist the company’s real goal is to hoard your personal data.
3. Savior Sibling – A British couple’s best hope of curing their sick child is to have another child using PGD to ensure that stem cells from the new baby’s umbilical cord will be a tissue match for the sick child. The couple must travel to the United States because the practice is illegal in Britain.
4. PGD for Disposition to Cancer – Some couples use PGD to prevent their future children from inheriting a susceptibility to certain forms of cancer. Critics question whether PGD is appropriate to prevent cancers that may or may not develop later in life, and are often treatable if they do.

**Artificial Reproductive Technology**

1. Octomom – An unemployed single woman on public assistance, who is already a mother to six children through IVF, insists that her doctor transfer her remaining frozen embryos into her womb. The doctor complies and she ends up giving birth to octuplets. Critics question whether the doctor should have refused.
2. Babies from Skin Cells – Within a decade, scientists may be able to create a baby from human skin cells that have been coaxed to grow into eggs and sperm. The process would potentially allow two men to have a baby biologically related to both of them, or infertile women to have eggs created without going through the process of stimulating their ovaries to retrieve eggs.
3. Artificial Wombs – Scientists announce they have created an artificial womb in which lambs born prematurely grew for a month. Human testing has yet to be done, but should an artificial womb succeed for premature infants, it could have far-reaching ethical and legal consequences.
4. Three-Parent Babies – A baby boy is conceived using a controversial technique that mixes DNA from three different people.
5. Gamete Donation Market – Fertility companies offer the possibility of choosing a sperm or egg donor based on the physical appearance and educational background of the donor.

**Embryo Research**

1. 14-Day Rule – Following new advances in embryo research, scientists question whether we should abandon an internationally recognized rule that prohibits research on human embryos in the laboratory past 14 days of development.

**Human Research**

1. UCLA Schizophrenia Study – Researchers at UCLA are charged with failing to get proper consent from schizophrenic patients in an experiment in which they were taken off their medication and allowed to suffer severe relapses.
2. HIV Research in Haiti – American researchers study the blood of Haitians who have unprotected sex with an HIV-infected partner but have resisted infection themselves so far, in order to find out whether some people have natural protections against HIV.
3. Sham Surgery – Studies are done to determine the effectiveness of placebo surgeries on actual patients.
4. Drug Research on the Homeless – Homeless people, many with severe mental illnesses, are being actively recruited by contract companies working for the pharmaceutical industry to test experimental drugs such as anti-psychotics.

**Animal Research**

1. Growing Human Kidneys in Rats – Researchers develop a new technique to grow organs for human transplantation: it involves removing kidneys from aborted human fetuses and growing them inside rats.
2. Tiny Brain Organoids – Scientists implant tiny human brains inside rats to learn more about disorders such as Alzheimer’s and autism. Ethical questions are raised about whether rats with enhanced intelligence would deserve a higher form of respect.
3. Psychological Research on Monkeys – Researchers subject marmoset monkeys to brain surgery and psychological testing to gain vital insights into the brain malfunctions that cause psychiatric conditions such as schizophrenia, OCD, ADHD, and depression.
4. Xenotransplantation – Scientists are using gene-editing technology to make it possible to transplant pig organs into human bodies, opening the door to the possibility of breeding pigs for their organs and saving more human lives.

**Miscellaneous Issues in Genetics**

1. De-extinction – Scientists contemplate bringing extinct animals back to life through cloning or gene editing technology.