



Alpha Eta Mu Beta

NATIONAL BIOMEDICAL ENGINEERING HONOR SOCIETY

AEMB Initiation – Ethics Example – edited by Stephanie Naufel, MS

Bioengineering, with its broad and deep impacts on health care, scientific progress, and technological development, is rife with potential ethical conflicts. The honorable bioengineer is one who takes a heartfelt interest in both deliberating on the ethics of his or her work and who also acts in accordance with a sound moral code. All areas of bioengineering are accompanied by their own relevant ethical issues, some of which we will consider today.

Healthcare is a sector that bioengineers widely influence, both with regard to developing and promoting medical devices, and in researching cures and new methods of treatment. Care for the patient in these cases is of the highest concern.

In medical ethics, there are four core ethical principles that must be considered, both by doctors and bioengineers. The first is the principle of respect for autonomy. This means that the patients should be involved in making their own informed decisions with regard to their care. Next is the principle of nonmaleficence, which is most simply described by the dictum 'do no harm'. Similarly, the principle of beneficence requires that health care providers work for the good of the patient. Finally, the principle of justice dictates that patients should be treated with fairness and equality.

Ethics also plays a large role in biomedical research. Imperative to true scientific discovery is integrity, and for this reason, bioengineers must always act ethically in presenting honest data. Data falsifications only serve to lead others astray, and this serves as harmful to the biomedical community. Much of biomedical research also relies on the use of animal and human subjects, and both must be treated with respect, and in accordance with approved protocols.

Biotechnology also has societal implications that the bioengineer should consider. Certain aspects of technological and scientific development are met with controversy, such as the use of stem cells and the possibilities of genetic engineering. Revolutions in neurotechnology, for example, also raise questions on what it means to be human when we consider the current and up-and-coming integrations of man and machine.

These latter concerns may best be addressed in forums where scientists, engineers, ethicists, and laymen come together to converse on the most ideal way to push forward. Such forums will bring together people of various disciplines for educated conversation, and bioengineers should engage themselves in these discussions so that they may lead to beneficial action.

AEMB is committed to these forums and instilling ethical behavior in its members.

In short, engagement in ethical concerns is one of our messages today. If the bioengineer cares to consider the ethical implications of his or her work, and takes proper courses of action as a result, the status of the medical and scientific world will continue to prosper as a result.