

## **Standoff of the Stakeholders: Panel debates on current genetic dilemmas**

### **3594a: Genome organization, mutagenesis and DNA repair**

Although lab courses provide hands on experience, learning science in the classroom is often a dry practice of memorization. Although understanding the fundamentals is important, science students rarely get to learn about how the science plays out in the real world and with genetics playing an ever increasing role in our lives, it is important to look past the lab bench to understand the far reaching implications of scientific knowledge.

As Teaching Assistants, we decided that debating current issues arising in the field of genetics would help students gain a broader view of the concepts in the course. Student teams were assigned relevant topics from the course's lecture and tutorial material. Teams would act as a panel of experts, arguing either for or against the assigned topic. Two tutorial sessions were allotted for students to work with their teams to assign, research and rehearse their roles before the final presentation. Each student was given a distinct role, namely a stakeholder on the issue, and they were expected to be prepared to answer questions and converse on the topic from the perspective of their given role.

#### **Key concepts**

The goal was to expand on their previous knowledge by identifying the relevant stakeholders in the topic and researching the topic from the perspective of these stakeholders. These stakeholders could be anyone from a concerned parent to a government official or a CEO of a relevant industry.

#### **Learning objectives**

- Identify stakeholders in a current issue
- Formulate clear and logical arguments from the perspective of the stakeholders.
- Identify relevant, accurate and reliable evidence to back up arguments.
- Gain experience doing research outside of the scientific/technical field (legal, economic, and ethical factors).
- Work as a team to bring together a coherent stance
- Practice effective communication and presentation skills
- Experience in clearly and effectively answering questions

#### **Assignment Outline**

Each debate will last 15 minutes in length.

The first four members of your group should have the following roles. This comprises your **panel of experts**:

- The Researcher
- Patient or Citizen (depending on which fits best with topic)

- Genetic Counselor or Farm Owner (depending on which fits best with topic)
- Representative from Private Industry or Technologist

Additional members of your group should be additional relevant and creative stakeholders (e.g. Family member). All roles should be clearly indicated with a sign including the panel member's name, role and the company, employer or area of society that they represent. Dressing up to match your role is highly encouraged!

## **Debate Outline**

### **Initial Vote:**

30 seconds for initial vote (pro Vs. con) (blinded to panel)

### **Presentation of Arguments and Stakeholders:**

30 seconds for PRO side to state their proposition and introduce their panel members (any/all member(s) of your group may do this)

1 minute for each PRO argument to be presented by each of the **Researcher, Patient or Citizen, Genetic Counselor or Farm Owner and Representative from Private Industry or Technologist** (order of presentation of arguments from these stakeholders may be decided by your team).

30 seconds for CON side to state their proposition and introduce their panel members (any/all member(s) of your group may do this)

1 minute for each CON argument to be presented by each of the **Researcher, Patient or Citizen, Genetic Counselor or Farm Owner and Representative from Private Industry or Technologist** (order of presentation of arguments from these stakeholders may be decided by your team).

\*All arguments should be given from the perspective of the individual's role in society. The panel member (stakeholder) should use their specific expertise and viewpoint when presenting arguments.

### **Rebuttals/Questions:**

5 minutes for questions from the audience. When asking a question:

- Pick a team (PRO or CON)
- State the panel member your question is for
- Ask your question

### **Call the vote:**

30 second closing vote (Was anyone persuaded to change sides?)

**KEYS TO SUCCESS: Rehearse, rehearse, rehearse! 1. Research your topic 2. Organize what you will say 3. Strategize with your team!**

### **Debate Propositions (One will be assigned to your group by your TA)**

Exome Sequencing of all newborns will replace current prenatal newborn genetic screening protocols in hospitals and be mandatory for all newborns born in a Canadian Hospital.

All human genetic sequence data from medical testing or research initiatives will be shared in an open access database online for the entire research community with the goal of speeding up the rate of medical research.

Canada will continue to use genetically-modified plants (introduction of foreign genetic material) for the purpose of increasing crop yields.

Any genetic test performed for medical purposes in Canada will be accessible to the RCMP/Municipal Police for the purpose of solving crimes.

Medical insurance companies will be given the right to request genetic profiles for the top 50 high-risk disease genes for individuals they insure or plan to insure.

A home test kit for the *BRCA1* mutation will be introduced to the Canadian market to be purchased at any local drugstore. The government is intervening to ban this product from the market.

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