Biology Discipline Policy Statement on Dissection

Dissection and experimentation are essential tools for studying the anatomy and physiology of animals, and it is reasonable that it be a required practice in appropriate laboratory courses in the biology discipline. Animal tissues are complex, subtle, diverse, and variable, and no CD-ROM, simulation, or model can adequately capture the richness of real biological materials.

The biology discipline affirms the mandatory use of dissection in appropriate laboratory courses for the following reasons:

- Dissection is the only way to observe the full complexity of animal tissues. Organs and tissues are three-dimensional structures with interconnections and textures and mechanical properties that cannot be rendered on a two-dimensional screen, and cannot be fully appreciated in limited and static models.
- Animal experimentation is a necessary process to generate new knowledge. The whole point of an experiment is to learn something new, not just to uncover predefined properties of a computer model, and the only way to achieve that is to actually work with biological materials. Students in these courses must be willing to go directly to the source of new information about biology, to the organisms themselves.
- Dissection is a skill in itself, requiring practice to master. While a simulation may assist students in memorizing a simplified version of the layout of an organism, it does not provide any experience in the process of *doing* the experiment or dissection.
- Models and simulations do not adequately represent the variety present in actual organisms. Life is not entirely predictable, and students must be prepared to recognize novelties that they will discover in every individual organism.
- Models and simulations, by design, accentuate and clarify and simplify, and do not accurately represent the challenges of biology. Real organisms are cluttered and are confusing, without experience; distinguishing a fine nerve from a strand of connective tissue, for example, requires an ability to make subtle distinctions and to use multiple strategies to make an identification.
- Dissection teaches essential practical skills to our pre-professional students. Safety rules, health considerations, and the basic pragmatic rules of working with sharp and delicate instruments are all necessary skills for future doctors, veterinarians, and dentists. It would be a disservice to our students if they were to first take scalpel to flesh when they entered medical school; particularly so if that is when they first discover that they dislike the experience.
- Animal physiology and anatomy are wonderful, beautiful activities, and students who elect to take courses in those subjects should expect to get an immersion without reservation in the topic from their instructors. Instructors should also be able to expect that their students will embrace the full breadth of the matter enthusiastically. **Good teaching requires nothing less.**

The biology discipline will respect and try to accommodate students with ethical reservations about dissection, as much as is feasible.

- All dissections and experiments will be carried out with the utmost respect for the animals, on the part of both instructors and students.
- We will not use species that are endangered or whose populations would be substantially depleted by their use in the laboratory.
- The biology discipline will provide a list of courses that incorporate animal dissection or experimentation, so that students can plan accordingly.
- No biology course will require that students sacrifice vertebrate animals. Any necessary euthanasia will be carried out by the instructor by the most humane method possible.

Statements by Professional Societies in Biology

National Association of Biology Teachers
NABT acknowledges that no alternative can substitute for the actual experience of dissection or other use of animals and urges teachers to be aware of the limitations of alternatives. When the teacher determines that the most effective means to meet the objectives of the class do not require dissection, NABT accepts the use of alternatives to dissection including models and the various forms of multimedia. The Association encourages teachers to be sensitive to substantive student objections to dissection and to consider providing appropriate lessons for those students where necessary.

National Science Teachers Association
Observation and experimentation with living organisms give students unique perspectives of life processes that are not provided by other modes of instruction. Studying animals in the classroom enables students to develop skills of observation and comparison, a sense of stewardship, and an appreciation for the unity, interrelationships, and complexity of life. This study, however, requires appropriate, humane care of the organism. Teachers are expected to be knowledgeable about the proper care of organisms under study and the safety of their students.

Human Anatomy and Physiology Society
It is the position of the Human Anatomy and Physiology Society that dissection and the manipulation of animal tissues and organs are essential elements in scientific investigation and introduce students to the excitement and challenge of their future careers.