

FINAL REPORT
Bush Faculty Development Grant
Area 4a

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Genetically Modified Organisms (GMOs):
Comparison of American and European Perspectives

December 21, 2005

Lectures Prepared

Lectures to cover this material were delivered in Genetics on December 5 and 7, 2005. In addition to the lectures, the DVDs were shown in lab the same week. Background information for the lectures was obtained from conversations with Dr. Jan Chojecki, Director of the PBL, Norwich Research Park, England, and other scientists at the John Innes Centre, Norwich, England. Other materials included:

Peter J. Russell. 2003. Essential iGenetics. Benjamin Cummings.

Peter J. Russell. 2006. iGenetics. Second Ed. Benjamin Cummings.

www.cropgen.org (A British public service web site on GMO crops)

www.hematech.com (A local Sioux Falls biotech company)

U.S. Food and Drug Administration. Genetic Engineering: The Future of Foods?

(www.fda.gov/fdac/features/2003/603_food.html)

U.S. Food and Drug Administration. Are Bioengineered Foods Safe?

(www.cfsan.fda.gov/~dms/fdbioeng.html)

DVDs

I used some of my Bush grant to purchase two DVDs for the class: Genetically Modified Crops, Hope Vs. Hype. 2004.

Films for the Humanities and Sciences.

Genetic Engineering: Dreams and Nightmares, Applications and Issues. 2004.

Films for the Humanities and Sciences.

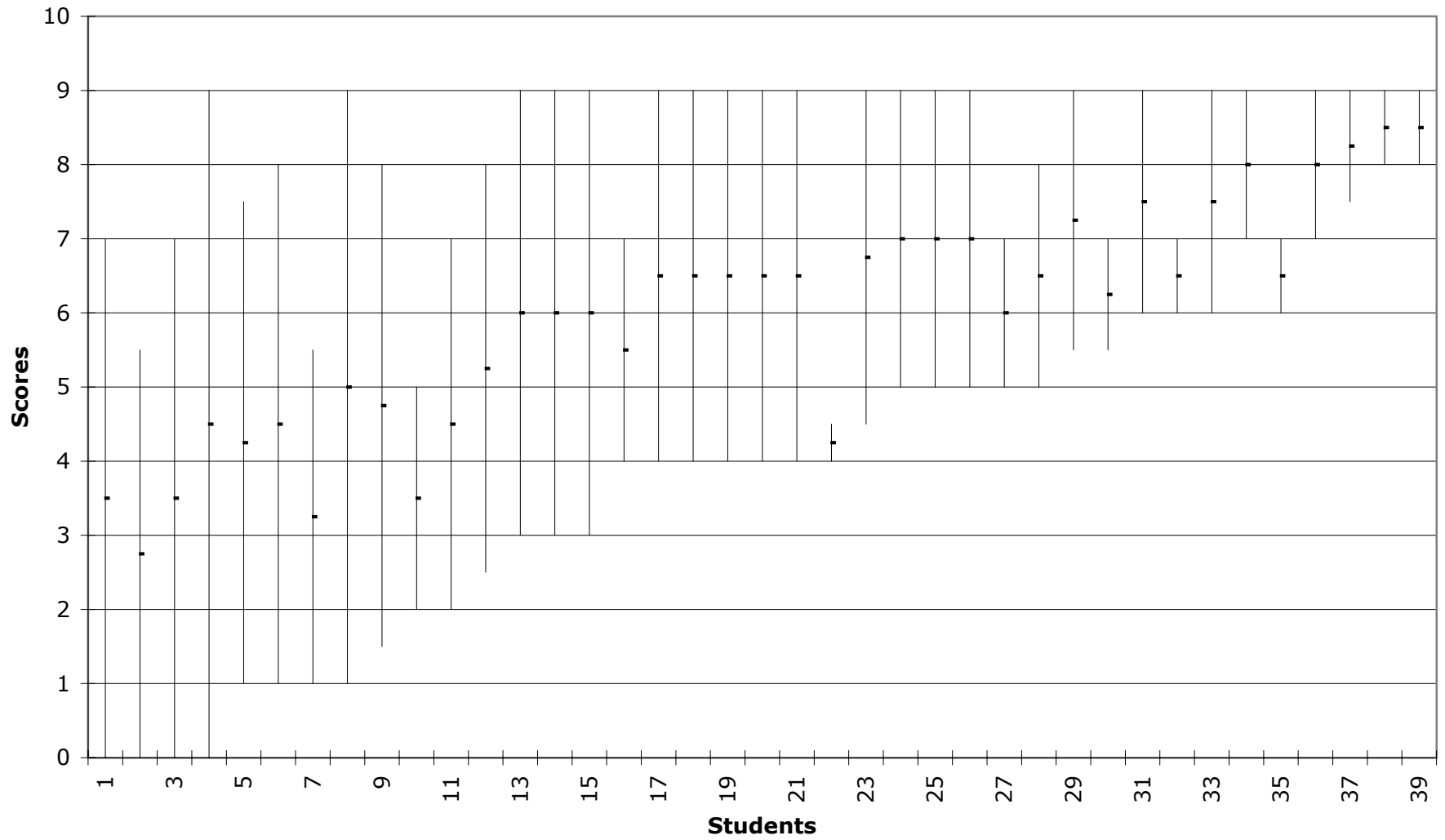
Evaluation Activities

The initial survey of student awareness and understanding of GMOs and biotechnology, and of global attitudes toward GMOs was carried out at the beginning of the semester. These responses were compared to responses on the final exam of the course. Four questions were used in the initial survey and on the final exam. They were:

1. What is a genetically-modified organism (GMO)? (2 pts)
2. Briefly describe one method for producing a GMO. (2 pts)
3. Give one example of a commercially significant GMO. (2 pts)
4. Are there differences between American and European public opinion on GMOs, and if so what issues are involved? (3 pts)

There was a significant increase in the scoring for these questions from the beginning of the course to the final exam. The mean for the initial evaluation was 3.9; the mean for the final evaluation was 8.0. Of the 39 students who took both the initial survey and the final exam, 37 increased their scores, and 2 decreased their scores. A paired t-test was used to analyze the data and the difference between the two evaluations was found to be significant at a p value of <0.001 . The figure shows the range in score between initial and final evaluation for each student.

Figure 1. GMO Assessment.
Range for beginning and final scores for each student is shown.



FINAL	BEGIN	AVERAGE
7	0	3.5
5.5	0	2.75
7	0	3.5
9	0	4.5
7.5	1	4.25
8	1	4.5
5.5	1	3.25
9	1	5
8	1.5	4.75
5	2	3.5
7	2	4.5
8	2.5	5.25
9	3	6
9	3	6
9	3	6
7	4	5.5
9	4	6.5
9	4	6.5
9	4	6.5
9	4	6.5
9	4	6.5
9	4	6.5
4	4.5	4.25
9	4.5	6.75
9	5	7
9	5	7
9	5	7
7	5	6
8	5	6.5
9	5.5	7.25
7	5.5	6.25
9	6	7.5
7	6	6.5
9	6	7.5
9	7	8
6	7	6.5
9	7	8
9	7.5	8.25
9	8	8.5
9	8	8.5