TEA Professional Development for High School Teachers
Module 3: Biotechnology Opportunities and Concerns

Objective 1. Questions	*Online Resources for Careers in Biotechnology*
1 - 4	http://www.austincc.edu/biotech/teaproject/index.html
5 - 8	http://www.shoreline.edu/NWBBECC/EducationvsCareer.pdf
9 - 12	http://bio.org/news/pressreleases/newsitem.asp?id=2008_0618_02
13 - 17	http://bio.org/local/battelle2008/TX_BIO_08.pdf
18	http://www.accessexcellence.org/RC/CC/bio_intro.php
19 - 24	http://www.accessexcellence.org/RC/CC/bio_career_1.php
25 - 27	http://www.accessexcellence.org/RC/CC/bio_career_2.php
28 - 32	http://www.massbioed.org/downloads/pdf/job_departments_and_descriptions.pdf
33 - 38	http://www.bio-link.org/careerTOC.htm
39 – 40	http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?contentidonly=true&navid=AGRICULTURE&contentid=BiotechnologyFAQs.xml
41 – 42	http://www.collegegrad.com/careers/proft62.shtml
43 - 44	http://www.ornl.gov/sci/techresources/Human_Genome/education/careers.shtml
45	http://en.wikipedia.org/wiki/Environmental_biotechnology
46 – 47	http://www.bio.org/speeches/pubs/milestone05/industrial.asp
48	http://www.biotech.iastate.edu/biotech_info_series/bio2.html#anchor14960678
49	http://www.bls.gov/oco/ocos115.htm#nature
50	http://www.bls.gov/oco/ocos115.htm
51	http://www.bls.gov/oes/current/oes194092.htm
52	http://www.bio.org/foodag/positions/aquaculture.asp
53	http://www.marinecareers.net/field_marinebiology.php
Additional Resources	http://www.pathwaystotechnology.org/fields/fl_biotech.html http://science.education.nih.gov/LifeWorks.nsf/feature/indexhtm http://www.oar.noaa.gov/oceans/t_biotech.html

Objective 2. Topics	*Online Resources for Bioethics*

Human Gene Therapy	http://www.ornl.gov/sci/techresources/Human_Genome/medicine/genetherapy.shtml http://bioethics.od.nih.gov/genengineering.html
Stem Cell Research	http://stemcells.nih.gov/index.asp http://www.ninds.nih.gov/research/stem_cell/index.htm
Cloning	http://bioethics.gov/topics/cloning_index.html http://www.genome.gov/10004765
Genetically Modified Organisms	http://www.ornl.gov/sci/techresources/Human_Genome/elsi/gmfood.shtml http://www.councilforresponsiblegenetics.org/GeneWatch/GeneWatchPage.aspx?pageId=46
Pharmogenomics	http://www.ornl.gov/sci/techresources/Human_Genome/medicine/pharma.shtml http://bioethics.od.nih.gov/biotech.html

Objective 3. Tutorials	***Online Resources for Bioinformatics***
Introduction to Bioinformatics	http://www.digitalworldbiology.com/dwb/Tutorials/Entries/2009/2/10_An_introduction_to_bioinformatics.html An introduction to bioinformatics Dr. Sandra Porter 2/10/09 This six minute video describes some of the history of bioinformatics. The NIH defines bioinformatics as the: Research, development, or application of computational tools and approaches for expanding the use of biological, medical, behavioral or health data, including those to acquire, store, organize, archive, analyze, or visualize such data.
BLAST for Beginners Tutorial	http://www.digitalworldbiology.com/BLAST/index.html Dr. Sandra Porter This tutorial is designed as a quick introduction to the BLAST family of sequence analysis programs. These slides show a progression of steps in using blastn, beginning at the home page for the National Center for Biotechnology Information (NCBI) (www.ncbi.nlm.nih.gov) and ending at PubMed, a tool for searching scientific literature. In this series, you will see how to submit a nucleotide sequence, compare it to other sequences using blastn, and interpret some of the results.