I. **TECHNOLOGY INTEGRATION**: I have been afforded the opportunity to implement several modes of technology into my curriculum.

a. **Blackboard Learning System® and Elluminate Live!® Distance Learning** – through Blackboard, I have been able to provide extended learning opportunities beyond the 50 minutes of classroom time. Students have 24 hr. web access to class announcements, calendar, notes, homework, web quests, handouts, video-tutorials, communication (i.e. blog/discussion board, email, virtual classroom, chat) end of class surveys and assessments. Interfaced into Blackboard, Elluminate Live enabled me to easily and seamlessly deliver live classes. They included voice over the internet, video, text messaging, shared whiteboard with PowerPoint import. Students who missed the class or participants were able to access recorded sessions directly from the Blackboard Learning System. This will completely revolutionize the meaning of *instruction*.

b. **Promethean ActivSlate®** - This tiny 8" x 11" electronic slate allows a teacher to deliver energy-filled, interactive science lessons to his/her students. The instructor can create a “flip chart” that incorporates text/notes, web links, videos, and questions or simply download specific content from online shared resource area.

c. **TurningPoint® Response Cards** – Many times in his/her career, a teacher will encounter a student who is unwilling to participate in class. However, using the remote response cards along with the TurningPoint software (enhanced PowerPoint) all students felt comfortable to respond to any class discussion or review questions. Students even got the chance to *instantly* vote on two legislative bills on mandatory stem cell research and cancer gene testing for all public school students during a student congress debate in class.

d. **WebQuests** – These web based tutorials promote inquiry-based learning especially when hands on lab equipment may be in short supply or non-existent. I supplemented the curriculum with several web quests on topics including scanning electron microscope, cells, gel electrophoresis, DNA timeline, DNA extraction, cloning, meiosis, genetics and frog dissection.

e. **Digital Photo-story** – Students use Windows Movie Maker® or Microsoft Photo-story (free download) and still digital pictures to a real-life application of concept covered in at least 10 chapters. Photo-stories must include title, caption, credits, various transitions, video clips (optional). A “fun” alternative is to create a digital account of their Spring Break. You must provide a clear rubric detailing guidelines regarding content.

f. **Video and Photo Journal** – Students appreciate their best work being displayed at the end of the semester or year. Invest in both a video camera and digital camera.
BEST TEACHING PRACTICES

II. OUTSIDE OF THE BOX (BOOK) CURRICULUM – Many teachers believe the textbook is their only tool for survival in the classroom; however, it is not the only tool available used to strengthen your curriculum. Here are some of these ideas used:

a. Student Congress Debate – a non traditional (non Lincoln-Douglass) style of debating where student legislators defend their positions on a bill related to science concept (stem cell research; cancer gene testing). Students learn legislature rules and etiquette along with having a solid scientific argument to convince fellow student congressmen of their position. If your school has a debating team, utilize the sponsor and students as key resource to offer mock debate and tips to your students.

b. Genetic Disorder Brochure – students randomly selected a genetic disorder. In researching the topic, students had to create 2 color brochures for a medical office detailing general disorder, picture of chromosome including number, specify type of mutation, symptoms, treatment, possible research outlook, and support group available. Students gave a three-minute presentation on their research.

c. DNA Day Guest Speaker – Did you know that National DNA day is April 25? (celebrated 4/24 this year) Well, on Friday 4/24/09 students were addressed by a local geneticist from The Institute of Human Genomics at University of Miami. The topic included social, ethical and legal issues associated with genetic testing.

d. Case Studies – students are provided with several with bioethical scenarios both as an individual home assignment and an in-class group assignment. Students are carefully analyze each situation and respond to thought provoking questions. For class discussion, set ground rules regarding respect for different viewpoints.

e. GATTACA Movie Review – Videos may seem overused and overplayed by many. However, a timeless film accounting the impact of genetic engineering, biotechnology and ethics (the human spirit) is worth showing and discussing especially after covering the topic. Students completed movie review and reflective essays on future of genetic engineering and civil liberties.

f. Biweekly Bio-Blogs (Discussion Board) – Forget the old, boring current events. Select a “hot” recent biology related topic from Time magazine, US News or Science Journal, pose a “spark” question and allow students to post their viewpoints online. A clear rubric and deadline must provided to ensure favorable outcome.

g. End of Class Evaluation – Do you value your students’ output? Then you should also value their input (for the most part). An end of class evaluation is a great tool for learning, growing and improving as an educator, regardless of the student population. It provides students with a chance to candidly and anonymously evaluate your strengths and weaknesses. I provided students with both an online (surveymonkey.com) and paper version. This is not for the faint of heart or sensitive type.