

AP Biology

Brookings High School

Kelly Riedell



I'm not just making this stuff up:

17th year teaching in South Dakota

Bachelor of Science

Northern Illinois University

Biological Science

Minor-Chemistry

Master of Biological Science

Northern Illinois University

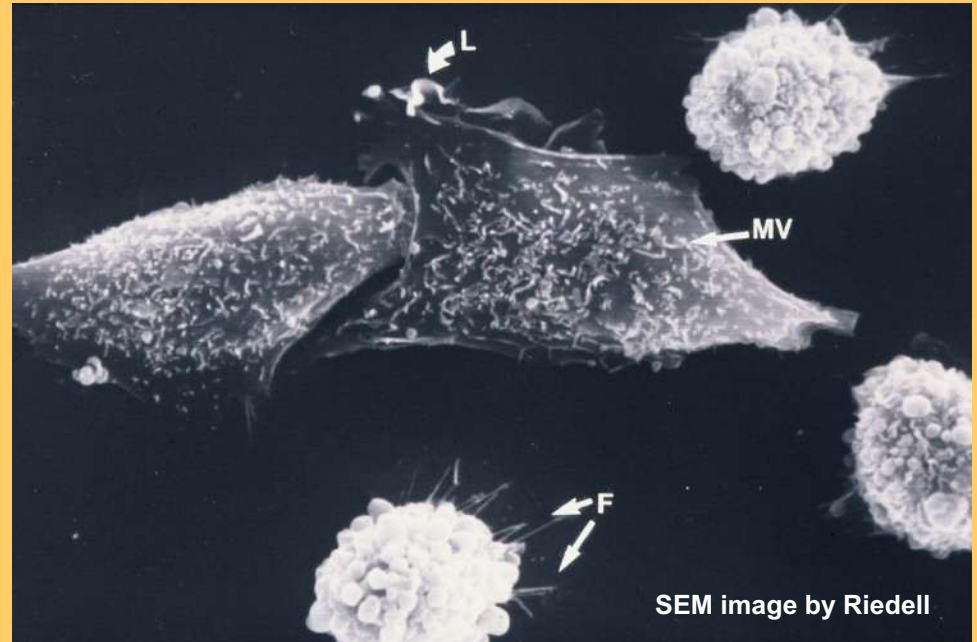
Coursework toward PhD

Southern Illinois University

Molecular Biology

6 years Lab Research Experience:

- Human cell/tissue culture
- Microscopy
- radio-labeling
- animal dissection
- enzyme assays



- Master's Thesis-

Morphological Differences in Wild-type, Mutant, and Revertant Chinese Hamster Ovary (CHO) Cell Lines: Light Microscope and Scanning Electron Microscope Observations

I'm pretty good at what I do:

Teacher of the Year BHS-2006

NABT-2008

SD Biology Teacher of the Year

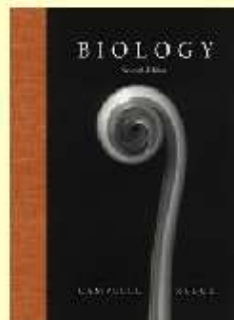
Presidential Scholar Teacher-2011 & 2014



- [ABOUT AP BIO](#)
- [EDUBLOG](#)
- [Campbell & Reece](#) log in
- [Biology Place/Lab bench](#)
- [BHS Biology webpage](#)
(Review stuff you should already know)
- [Other AP BIO websites](#)
- [DDN GRADE CHECK](#)
- [Riedell Science Home](#)
- [Countdown to the test](#)
- [Get ready for the AP Exam](#)

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← LAST CHAPTER



CURRENT CHAPTER



NEXT CHAPTER



OTHER UNITS



Teacher links

[Advice from former AP BIO students](#)

HOW HAS BHS COMPARED? (%)

AP Bio Exam Score	US AVG 2008	BHS AVG 2008	US AVG 2010	BHS AVG 2010	US AVG 2011	BHS AVG 2011	US AVG 2012	BHS AVG 2012	US AVG 2013	BHS AVG 2013	US AVG 2014	BHS AVG 2014
5	18.6	25	18.7	27.8	18.8	50	19.4	52.4	5.4	14.3	6.5	26.7
4	15.6	25	15.1	33.3	16.5	0	16.9	28.6	21.4	71.4	22.1	40.0
3	16.1	25	15.4	33.3	15.2	25	14.3	4.8	36.3	14.3	35.1	25.7
2	15.6	25	14.1	0	14.6	25	14.6	14.3	29.5	0	27.4	6.6
1	34.6	0	36.6	5.6	34.8	0	34.8	0	7.4	0	8.9	0
3 or Higher	50.3	75	49.2	94.4	56.2	75	50.6	85.8	63.1	100	63.8	93.4

PRE-REQUISITES

- **1 year Biology (Bio I & Bio II)**
- **1 year Chemistry (PSChem doesn't count!)**

A qualified AP Biology student is one that:

- **is highly motivated**
- **is academically oriented**
- **has excellent study skills and reading abilities**
- **views learning as a journey rather than an obligation**
- **is responsible for their OWN learning**

WHAT TO EXPECT:

AP BIOLOGY is equivalent to a college Introductory Biology course for majors (2 semester course with labs)

There will be HOMEWORK!

Expect to spend 5-10 hours each week working on biology outside of class.

This is NOT a class where cramming the night before a test will work!

You must do the READING & HOMEWORK & KEEP UP!

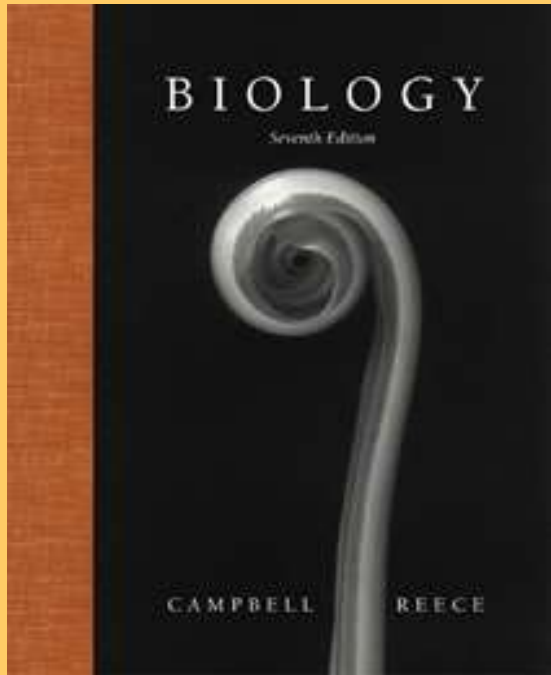
Due to the rigor and expectations of an AP course, grades are weighted.

A "B" in an AP course carries the same weight as an "A" in a regular class when calculating GPA averages.

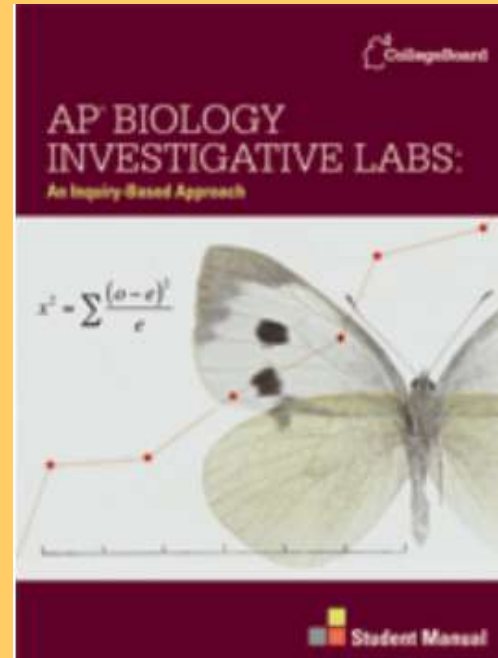
SUPPLIES

- SEVERAL 3 ring binders (3")
- Tab dividers
- Loose leaf paper
- PENCILS/PENS
- Simple 4 function calculator (with $\sqrt{\quad}$)
- Colored pencils/markers (optional)

TEXTBOOK & Lab Manual



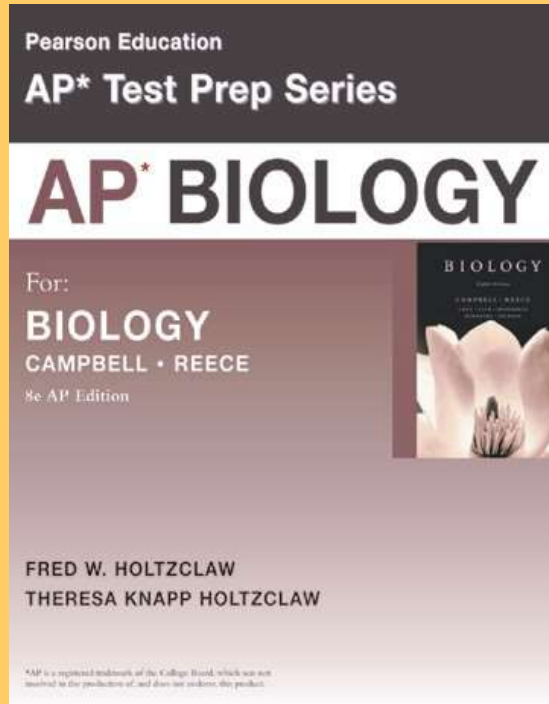
BIOLOGY (AP edition)
Campbell and Reece; 7th ed;
Prentice Hall Publishing; ©2005



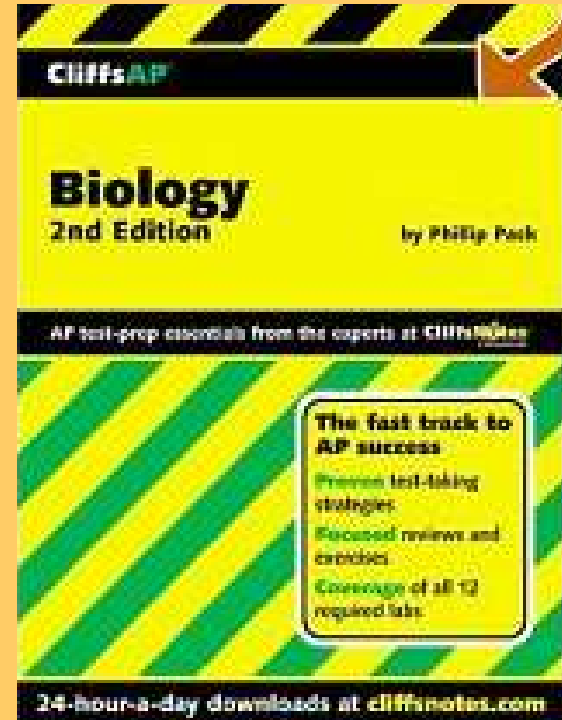
AP BIOLOGY
Student Lab Manual

Student Media CD ROM
(\$15 replacement cost if lost or damaged)

OTHER RESOURCES



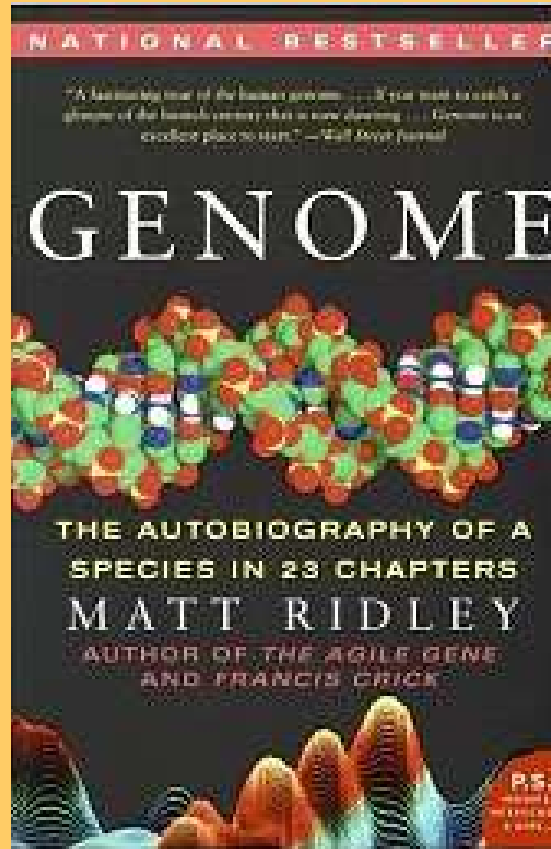
**AP BIO
TEST PREP
Holtzclaw & Holtzclaw**



**Cliffs
AP BIOLOGY**

ADDITIONAL READING

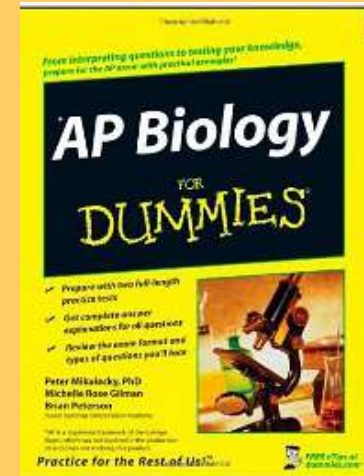
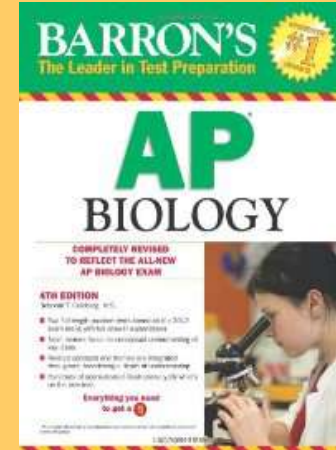
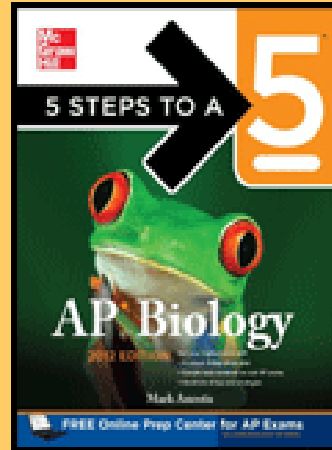
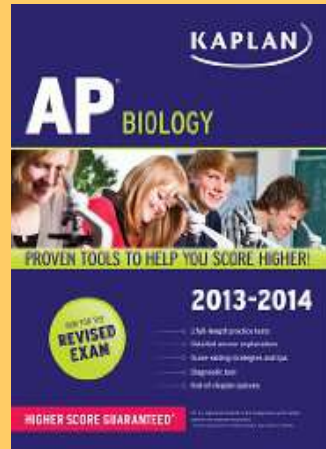
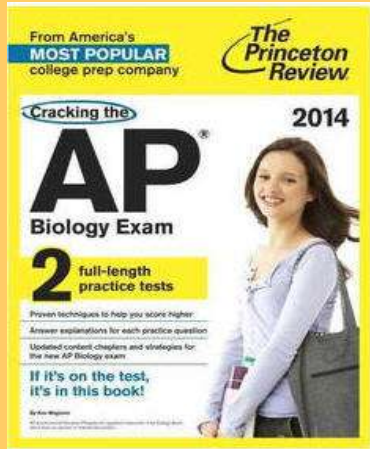
"Just For Fun"



Genome - by Matt Ridley

An Autobiography of a species in 23 chapters

OTHER AP BIOLOGY RESOURCES



- The Princeton Review Cracking the AP Biology Exam
- Kaplan AP BIOLOGY Test Prep
- McGraw-Hill 5 Steps to a 5 in AP BIOLOGY
- Barron's AP BIOLOGY
- AP Biology for Dummies
- SHMOOP test prep website
- Check copyright dates-
MAKE SURE IT SAYS- "FOR APBIO REVAMP 2013"

4 BIG IDEAS

BIG IDEA 1.

The process of evolution drives the diversity and unity of life.

BIG IDEA 2.

Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain homeostasis.

BIG IDEA 3.

Living systems store, retrieve, transmit and respond to information essential to life processes.

BIG IDEA 4.

Biological systems interact, and these systems and their interactions possess complex properties

SCIENCE PRACTICES

The student can:

1. use representations and models to communicate scientific phenomena and solve scientific
2. use mathematics appropriately
3. engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course
4. plan and implement data collection strategies in relation to a particular scientific question
5. perform data analysis and evaluation of evidence
6. work with scientific explanations and theories
7. connect and relate knowledge across various scales, concepts, and representations in and across domains

13 Suggested AP BIO Labs

Lab 1. Artificial Selection

Lab 2. Mathematical Modeling: Hardy Weinberg

Lab 3. Comparing DNA Sequences (BLAST)

Lab 4. Diffusion and Osmosis

Lab 5. Photosynthesis

Lab 6. Cell Respiration

Lab 7. Cell Division: Mitosis and Meiosis

Lab 8. Biotechnology: Bacterial Transformation

Lab 9. Biotechnology: DNA Analysis

Lab 10. Energy Dynamics

Lab 11. Transpiration

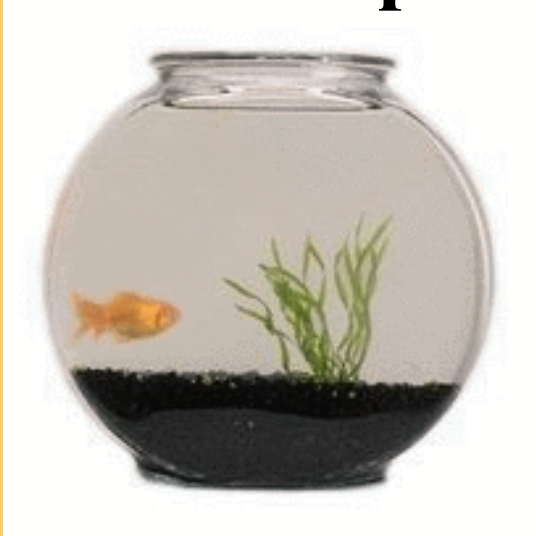
Lab 12. Fruit Fly Behavior

Lab 13. Enzyme Activity

Fruit fly genetics



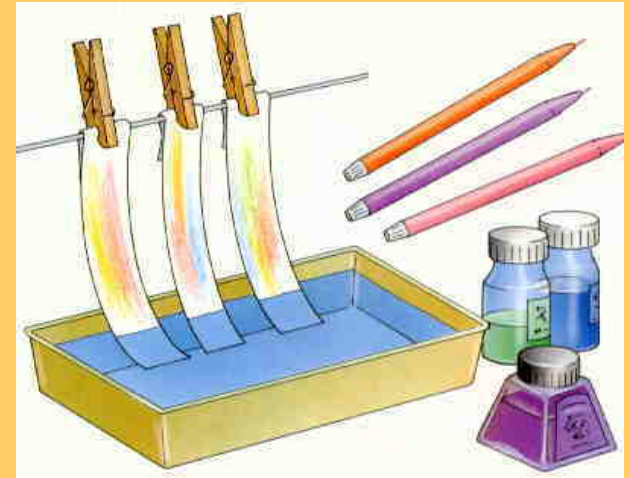
Goldfish Respiration



DNA Fingerprinting



Chromatography



http://www.foxnews.com/images/225221/0_61_060921_fruit_flies.jpg
<http://inhissteps.gospel.com.net/peaches/circuit-riter9.shtml>
<http://glendam1st.50megs.com/images/goldfish.gif>

Image by Riedell
<http://www.valemount.com/joel/lightoptics/images/colour6.jpg>

AP EXAM

Monday May 11, 2015

Cost: \$89

90 minutes-Multiple choice (50%)

63 MC questions

6 grid in questions

10 minutes-reading time

80 minutes- 2 Long FRQ & 6 Short FRQ (50%)

(Essay style questions)

Your score on the AP BIOLOGY EXAM may enable you to receive college credit and exempt out of taking Introductory Biology as a college freshman.

(Check the website to see the requirements for your chosen school)

The "NEW" AP BIO EXAM will ask you to:

“pose a scientific question”

“propose”

“evaluate”

“identify”

“calculate”

“explain”

“perform”

“state a hypothesis”

“predict”

“describe”

“justify”

..... Rather than “regurgitate FACTS”

If one of your goals is to obtain credit for an introductory college biology course, you should contact the colleges you are likely to attend.

Find out if they accept AP scores for credit (most, but not all colleges do).

On the website

<http://local.brookings.k12.sd.us/krs/science/open/info.htm>

there is a link to the College Board that allows students to search for AP credit policies at different universities

Example:

South Dakota State -

3- General Bio I with Lab (BIOL 151/151L)
(4 credits)

5- General Biology I & II with Labs
(BIOL 151/151L & BIOL 153/153L)

(8 credits)

University of Nebraska - Lincoln

4 or 5 - Biol 101 (3 credits)

University of Minnesota- Twin Cities

3,4 or 5- Biology 1009 (General Biology);
fulfills biological science/lab requirement
(4 credits)

**SOME SCHOOLS MAY REQUIRE YOU TO SUBMIT
YOUR AP LAB NOTEBOOK FOR LAB CREDIT**

**Please feel free to contact me
about any concerns you may have
about your student.**

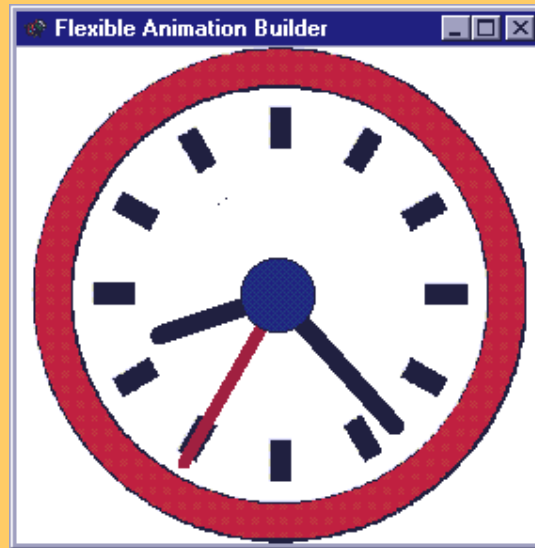
My office phone 696-4146

Email: Kelly.Riedell@k12.sd.us

Homework calendar/class info:

<http://kr021.k12.sd.us>

AP BIO Exam is MONDAY May 11, 2015



Countdown clock