

## Web Site Directory for Alles Biology

There are 61 papers and 2 essays on this web site. All are projection ready PDF files formatted as 8-1/2 by 11 inch pages to fit on letter size paper for printing. The first 25 web papers are illustrated lectures for my courses. The balance of the papers consists of my formal research papers (8), and case studies and supplemental material for my courses (28).

All of these web papers have been developed for the express purpose of supplying up-to-date Internet resources for science educators in secondary schools and higher education. Their non-profit use for educational purposes is, therefore, encouraged.

### **Biology 101: Illustrated Lecture Presentations (12 pdf papers)**

- The Nature of Science
- Cosmological Evolution
- Biological Evolution
- Life as a Chemical Function
- The Hadean Eon
- The Archean Eon
- Life and Energy
- The Proterozoic Eon
- The Paleozoic Era
- The Mesozoic Era
- The Cenozoic Era
- Biology and Society

Lectures Available at: [http://fire.biol.wvu.edu/trent/alles/101Lectures\\_Index.html](http://fire.biol.wvu.edu/trent/alles/101Lectures_Index.html)

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### **Biology 350: Illustrated Lecture Presentations (13 pdf papers)**

- The Nature of Science
- Public Ethics in a Pluralistic Society
- A Primer on Genetics

- Cystic Fibrosis and Genetic Screening
- The Human Genome Project
- Human Reproduction
- Assisted Reproductive Technologies
- Stem Cell and Cloning Research
- Human Longevity
- History of the Human Population
- How many people can the Earth support?
- The Human Impact on Biodiversity
- Ethics and Equity in the 21st Century

Lectures Available at: [http://fire.biol.wvu.edu/trent/alles/350Lectures\\_Index.html](http://fire.biol.wvu.edu/trent/alles/350Lectures_Index.html)

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### **Formal Published and Unpublished Papers (8 pdf papers)**

- The Nature of Evolution
- Synthesizing Scientific Knowledge: A Conceptual Basis for Non-Majors Science Education
- Teaching Human Evolution
- Using Evolution as the Framework for Teaching Biology
- Ethical Naturalism: A Normative Analysis
- Essays on the Nature of Causality
- The Third Culture: Exploring the Relationship between Biology and Philosophy
- Worldviews: A Darwinian View of Human Decision-Making

For Papers Go To: <http://fire.biol.wvu.edu/trent/alles/papersindex.html>

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## **Cosmological Evolution (5 pdf papers)**

This section expands on the conceptual basis of my Biology 101 course. See also my papers *Synthesizing Scientific Knowledge: A Conceptual Basis for Non-Majors Science Education*, and *The Nature of Evolution* in the formal papers section.

- The Evolution of the Universe
- The Origin of the Elements
- The Life History of Stars
- Stellar Nursery in the Orion Nebula
- The Formation of Stars and Solar Systems

For Papers Go To: [http://fire.biol.wvu.edu/trent/alles/Cosmic\\_Evolution\\_index.html](http://fire.biol.wvu.edu/trent/alles/Cosmic_Evolution_index.html)

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## **Global Ecology and Remote Sensing (7 pdf papers, plus 2 pdf essay)**

This section further develops my unit on humanity's impact on the Earth's ecosystems in my Biology 350: Biology and Society course.

- Remote Sensing of the Earth by NASA's Polar Orbiting Satellites
- Asian Air Pollution (plus a separate essay on extreme air pollution events)
- Extreme Air Pollution Events in Beijing China 2010 & 2013

For Essay: <http://fire.biol.wvu.edu/trent/alles/ExtremeAirPollutionEventsBeijing.pdf>

- Marine Phytoplankton Blooms (plus a separate essay on the Barents Sea)
- Marine Phytoplankton Blooms in the Barents Sea

For Essay Go To: [http://fire.biol.wvu.edu/trent/alles/BarentsSea2011\\_2012.pdf](http://fire.biol.wvu.edu/trent/alles/BarentsSea2011_2012.pdf)

- Water Pollution and Algal Blooms in U.S. Coastal Waters
- Biodiversity Hot Spots: The Florida Everglades
- Freshwater Shortage and Desertification
- The Aral Sea

For Papers Go To: <http://fire.biol.wvu.edu/trent/alles/GlobalEcologyindex.html>

## **The Colorado River: An Ecological Case Study (6 pdf papers)**

This case study is a further expansion on the theme of global ecology and coupled human and natural systems.

- Introduction to the Colorado River
- The Grand Canyon
- The Lower Colorado River
- Geology of the Salton Trough
- The Colorado River Delta
- The Sea of Cortez

For Papers Go To: <http://fire.biol.wvu.edu/trent/alles/ColoradoRiver.html>

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## **Supplemental Web Papers (10 pdf papers)**

These web papers are supplemental material for my courses and published papers. Note especially that *A Review of Current Research on Human Evolution* is an illustrated and much expanded version of my published paper *Teaching Human Evolution* in my formal papers section.

- A Review of Current Research on Human Evolution
- Central Figures in the History and Philosophy of Science
- Prairie Memories: A Synthesis of Philosophy, Art, and Science
- China's Deserts
- Geomorphology and Dust Storms in China
- The Altyn Tagh Fault
- Trilobites
- Stromatolites
- Great Salt Lake Utah
- Voyager 1

For Papers Go To: <http://fire.biol.wvu.edu/trent/alles/webpapersindex.html>

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