First: a Focus on the Year of Darwin!

What a year for Evolution! So many fascinating articles about Darwin the Man, new insights into his life and his work, and how far we’ve come, building on his broad shoulders. I tried to read and write reviews on as many as I could - especially those that offered useful insights for teaching about evolution and everything directly related to that. In case you missed any of these, I urge you to scan down the past several “News, Changes, Additions” posted on the Home page.

http://www.indiana.edu/~ensiweb/ Notice the books, journals, and TV programs announced (and some reviewed) there.

In March, I made a pilgrimage to Downe to visit Down House, the Darwin family home. I walked his Sandwalk made with beautiful flint (chert), visited his gardens and greenhouses. Upstairs, above his study, we found a new display showing a full-scale representation of the little cabin where Darwin slept and studied on the Beagle for 5 years. We (I brought my family) had a delightful lunch and tea in the patio outside the house, and visited his church in the village nearby. In London, we searched for his brief residences there, visited the special “Darwin’s Big Idea” exhibit in the Natural History Museum, and visited his grave in Westminster Abbey. Hoping that some of you might make this trip, I posted some of the highlights, with suggestions and some questions to explore, asking for feedback. Nobody has replied to my request yet.

A new journal has emerged this year, featuring articles of special interest to teachers of evolution. This journal, *Evolution Education & Outreach* is freely available online, providing many teaching ideas and information about the current state of evolution research in many areas. Some reviews are cited in my announcements on the ENSI Home page. I strongly encourage you to select and print some of the articles of interest; they will enrich your teaching.

The latest lesson added to the site is Dr. Platt’s “Case of the Threespine Stickleback - a Model of Macroevolution.” It’s the first lesson we have that introduces key elements of from “evo-devo” studies. I also replaced the photos of varve blocks (in John Banister-Marx’s Varve Dating lesson) with sharper photos of real varves that I took through a microscope. Now you can count every varve. Your students should count them on actual varve samples from the Greenriver formation if possible, but the photos will do in a pinch.

In September, the NABT conference in Denver featured a symposium on “Evolution in Extreme Environments.” I was unable to attend, but if any of you acquired any useful insights or teaching ideas from the symposium (and/or the conference), please send them to me, and I’ll post them on the ENSI site.

In October, a flurry of TV programs on human evolution was announced, most notably the analysis of the 4.4 million year old fossils of *Ardipithecus ramidus* (and the many plant and animal remains found in context) which had been first discovered in 1992. An entire issue of the journal *Science* was devoted to articles about this find and its interpretations. The significance of this “Ardi” find is awesome - getting us much closer to the likely features of that common ancestor to humans and chimps, revising some earlier ideas, e.g., an intriguing possible cause for bipedalism. The existence of a pelvis clearly adapted to bipedalism combined with feet with grasping big toes is most impressive. See the reviews linked to from the announcements on our Home page.
A BRIEF HISTORY of ENSI: A 150 Year Reflection, With Emphasis on the Past 20 Years:

1859 Darwin published his *Origin of Species* - paving the way for all that has followed, including ENSI!

1988 ENSI Planning, NSF grant proposals initiated by Drs. Beard, Nelson and Nickels

1989 First series of 3 ENSIs began at the Indiana University: Summer, Fall and Spring for 3 years

1992 Second series of 3 ENSIs began at San Jose State University, CA: Summer, Fall and Spring for 3 years

  First 3 SENSI’s began, in Indiana, Kentucky and Ohio.

1993 Eight more SENSI’s were started in Indiana, Kentucky, Ohio, Michigan and Illinois

1994 An additional 13 SENSI’s began in Indiana, Ohio, Illinois, Missouri, Idaho, and California

1995 Another 8 SENSI’s began in Ohio, Minnesota, Colorado, California, and Illinois

1996 Another 13 SENSI’s began in Illinois, Ohio, and California

1997 The last 4 SENSI’s started in California

  A total of 6 ENSIs and 49 SENSI’s, training more than 1000 teachers across the country.

Out of these teachers, at least 19 were awarded OBTA (Outstanding Biology Teacher Awards) in their 10 states, along with many other awards (see <http://www.indiana.edu/~ensiweb/peopl.fs.html>). The many lessons developed and classroom tested by the ENSI and SENSI teachers over the years of the program are a testament to the quality and dedication of all of the exemplary teachers who participated.

1997 Planning for ENSIWEB began, as a readily accessible repository for all of those great lessons, to be freely accessible to teachers everywhere.

1998 As lessons were being added to ENSIWEB, a “hit” counter was installed in October to track the accessing.

  October: ENSIWEB debut at CSTA (Calif. Science Teachers) conference, San Jose, CA

  November: ENSIWEB was introduced at the NABT conference in Reno, Nevada

1999 ENSIWEB promoted at the NABT conference in Ft. Worth, Texas

2001 ENSIWEB promoted at the NABT conference in Montreal, Canada, along with the launch of the PBS *Evolution* Lead Teacher Program

2002 The first annual Evolution Educator of the Year was awarded by the NABT to ENSI-trained and SENSI Lead Teacher Steve Randak.

ENSIWEB HITS -- How often the ENSI Home Page was accessed:

First two years (1998-2000) Averaged about 400 per month, ranging from 100 to 700.

Eight Years of Growth (2001-2008) Big jump to an average of about 3400 hits per month, gradually increasing from about 2000 to 4000 averages per month.

Past Year (2009) Seems to be declining a bit from around 3500 to about 2000 average per month currently.

Still, not bad. Looks like there are still lots of teachers going to the site. ENSIWEB is linked to from many other notable sites, including the NABT, NSTA, PBS Evolution, NCSE, Understanding Science and Understanding Evolution, and NESCent.

On our listserves, we still have more than 80 ENSI/SENSI-trained teachers (many have retired), and over 400 FENSI (“Friends of ENSI”) teachers who have joined us over the years, including a number of university Science Education and Biology professors and some museums in various parts of the world.

THE ENSI LESSON COLLECTION

ORIGINAL ENSI LESSONS POSTED: 29 (out of 37 proposed; 8 are still awaiting preparation to post -- delayed in favor of developing new lessons on topics not strongly represented in the original set)

NEW LESSONS ADDED TO ENSIWEB (Beyond the original ENSI lessons) over the past ten years -- 45 lessons added to the ENSIWEB collection, (bringing total available onsite to 74):

Magic Hooey Stick (John Banister-Marx, ENSI-trained)

How’s Your Horoscope? (Larry Flammer, ENSI-trained)

Which Idea is Best? Fair Test (Flammer)

Perception is Not Always Reality -- Illusions (Flammer)

Teaching About Evolution & Special Creation (Anton Lawson & James Platt - ABT Journal)

A Crime Against Plants (Michael Kimmel, ENSI-trained)

Oat Seed Lab (Flammer)
Date a Rock (Karen Kalumuck - Exploratorium)
Deep Time (Flammer)
Varve Dating (John Banister-Marx)
History of Everything: Timeline Project (Thomas Atkins, ENSI-trained)
Time Machine (Flammer)
13 Ways to Tell Time Backwards (Flammer)
Lengthy Relationships (Jennifer Johnson, SSENSI-trained)
Virtual Age Dating Tutorial -- Isochrons and C-14 (Geology Staff at UCLA - Geology Labs Online)
Understanding Geological Time (UCMP)
Patterns in Time (Flammer)

Chronology Lab (Flammer)
Comparison of Human & Chimpanzee Chromosomes (Beth Kramer, ENSI-trained)
Chromosome Connection (Flammer)
Chromosome Fusion (Flammer)
Mystery of the Matching Marks - OR - Search for the Tell-Tale Telomeres (Flammer)
Footsteps in Time -- Lucy’s Tracks (Steve Randak, ENSI-trained)
Laetoli Trackway Puzzle (Flammer)
Classroom Cladogram of Vertebrate / Human Evolution (Flammer)
Primate Classification -- Nested Boxes (Flammer)

Why Cladistics? (Flammer)
Cladistics is a Zip,,„Baggie (John Banister-Marx)
Nuts & Bolts: Is Classification Arbitrary? (Martin Nickels & Craig Nelson, ENSI co-directors)
What did T. rex taste like? (UCMP online tutorial)

Blocks & Screws: Contrivances (Tim Patterson, ENSI-trained)
Natural Selection -- A Cumulative Process (Werner G. Heim - ABT)
Chaos, Order & Complexity (Doug Fraser, Canada)
Natural Selection of Stick-Worms (Don Dunton, Fred Fisher, Larry Flammer; Don was ENSI-trained)
Bebbledwark World (Thomas Atkins & Gene Nelson)
What Darwin Never Saw (Flammer)
Origami Birds (Karin Westerling, ENSI-trained)
When Milk Makes You Sick (Therese Passerini, ENSI-trained)
Lamarck vs Darwin: Dueling Theories (Richard Firenze)
Island Biogeography & Evolution (R.P. Filson)
Peek at the Past: Fossil Patterns (William McComas & Brian Alters)
Becoming Whales: Discovery & Confirmation (Flammer)
Whale Ankles and DNA (Flammer)
Case of the Threespine Stickleback -- EvoDevo (James Platt)
Pseudogene Lessons (Mary Ball & Steve Karr)

**APPEAL FOR NEW, CREATIVE, TESTED AND EFFECTIVE ENSI LESSONS:**
If you develop a new interactive lesson for teaching key elements of the *nature of science* and *evolution*, a lesson that is novel, engaging, effective and you think would work for other teachers, please share by telling us about it. Contact the webmaster at flammer4@gmail.com. If our directors agree that it would be appropriate to add to the ENSI collection, with credit to you as author, we will work out the details together, and post it on the site. We are also interested in effective uses of interactive demos, classroom activities, PowerPoint presentations, TV programs and the application of articles for classroom use, perhaps with viewing or reading guides to focus, clarify and structure accurate understanding of key concepts. Thank you!