

TEXAS SCIENCE TEXTBOOK CONTROVERSY

- SHOULD YOU BE CONCERNED?
- HOW TEXAS' SYSTEM WORKS
- WHAT THE ARGUMENTS WERE
- THE POLITICS AND OUTCOME
- WHAT THE FUTURE MAY HOLD

WHY CONCERN GOES BEYOND TEXAS

- **ADOPTED TEXTS MUST COVER TEXAS ESSENTIAL KNOWLEDGE AND SKILLS (TEKS)**
- **TEXAS IS THE COUNTRY' BIGGEST UNIFIED TEXTBOOK PURCHASER**
- **PUBLISHERS BENEFIT FROM ECONOMIES OF SCALE**
- **TEXAS' SELECTIONS AFFECT NATIONAL AVAILABILITY**

ASK AS STORY UNFOLDS WHAT IS GOING ON HERE?

- PUSHING A METAPHYSICAL VIEW?
- FAVORING INDOCTRINATION vs. EDUCATION?

OR

- ADVOCATING SOUND SCIENCE?

OR

- IS THERE A CONFUSING MIX?

CONTEXT - 1

- 1981 – TX - ESSENTIAL ELEMENTS (EE's)
- 1981 – NSCE FOUNDED –Evo Advocacy
- 1985 – TEXAS ADOPTS STRENGTHS AND WEAKNESSES LANGUAGE IN EE's
- 1987 - LOUISIANA - Edwards v. Aguillard –
No parallel creationism to be taught

CONTEXT - 2

- 1995 – TX EE's ADD "NO FACTUAL ERRORS"
- 1997 – INITIAL TEKS ADOPTED
- 1999 – KANSAS-Deletes Evolution Testing
- 2001 - TEXAS -TEKS CONTINUE
 - STRENGTHS AND WEAKNESSES
 - NO FACTUAL ERRORS

PRINCIPLE PROTAGONISTS

- **AGAINST STRENGTHS AND WEAKNESSES**
 - NATIONAL CENTER FOR SCIENCE EDUCATION
 - TEXAS FREEDOM NETWORK
 - TEXAS CITIZENS FOR SCIENCE
- **FOR STRENGTHS AND WEAKNESSES**
 - DISCOVERY INSTITUTE
 - TEXAS FREE MARKET FOUNDATION
 - TEXANS FOR BETTER SCIENCE EDUCATION

CONTEXT - 3

- 2003 – TX - BIOLOGY TEXTBOOK REVIEW
 - “ERRORS” IDENTIFIED BY PRO “S&W”
 - “ERRORS” DENIED BY ANTI “S&W”
 - RESOLUTION PASSED TO TAMU
 - SOME “ERRORS” CONFIRMED
- 2005 – DOVER, PA,
 - TEACHING ID UNCONSTITUTIONAL
- 2007 – KANSAS: New Bd. overturns 2005 directive allowing criticism of evolution
- 2008 – TEA TEKS DRAFTING BEGINS

MILLER “ONLY A THEORY” HIS 2008 VIEW OF CONTEXT

- EQUATES ID WITH CREATIONISM
 - ENVIES ID’S POLITICAL POSITION
 - ID RISKS “AMERICA’S SCIENTIFIC SOUL”
 - COVERS ALABAMA, ARKANSAS, GEORGIA, LOUISIANA, MISSISSIPPI
 - SAYS DOVER, PA, WAS ID’S GETTYSBURG
- BUT**
- ONLY PASSING MENTION OF TEXAS

NATIONAL ATTENTION BEGINS IN 2008

JUNE - NY TIMES EDITORIAL

FIRES THE OPENING SHOT

The New York Times

ARTHUR OCHS SULZBERGER JR., *Publisher*

Founded in 1851

ADOLPH S. OCHS
Publisher 1896-1935

ARTHUR HAYS SULZBERGER
Publisher 1935-1961

ORVIL E. DRYFOOS
Publisher 1961-1963

ARTHUR OCHS SULZBERGER
Publisher 1963-1992

The News Sections

BILL KELLER, *Executive Editor*
JILL ABRAMSON, *Managing Editor*
JOHN M. GEDDES, *Managing Editor*
JONATHAN LANDMAN, *Deputy Managing Editor*

Assistant Managing Editors

DEAN BAQUET
RICHARD L. BERKE
TOM BODKIN
SUSAN EDGERLEY
GLENN KRAMON

GERALD MARZORATI
MICHELE McNALLY
WILLIAM E. SCHMIDT
CRAIG R. WHITNEY

The Opinion Pages

ANDREW ROSENTHAL, *Editorial Page Editor*
CARLA ANNE ROBBINS, *Deputy Editorial Page Editor*
DAVID SHIPLEY, *Deputy Editorial Page Editor*

The Business Management

SCOTT H. HECKIN-CANEY, *President, General Manager*
DENNIS L. STERN, *Senior V.P., Deputy General Manager*
DENISE F. WARREN, *Senior V.P., Chief Advertising Officer*
ALEXIS BURYK, *Senior V.P., Advertising*
THOMAS K. CARLEY, *Senior V.P., Planning*
YASMIN NAMINI, *Senior V.P., Marketing and Circulation*
DAVID A. THURM, *Senior V.P., Chief Information Officer*
ROLAND A. CAPUTO, *V.P., Chief Financial Officer*
TERRY L. HAYES, *V.P., Labor Relations*
THOMAS P. LOMBARDO, *V.P., Production*
MURIEL WATKINS, *V.P., Human Resources*

CRISTIAN L. EDWARDS, *President, News Services*
VIVIAN SCHILLER, *Senior V.P., General Manager, NYTimes.com*
MICHAEL ORESKES, *Editor, International Herald Tribune*

The Cons of Creationism

When it comes to science, creationists tend to struggle with reality. They believe, after all, that evolution by means of natural selection is false and that Earth is only a few thousand years old. They also believe that students who are taught a creationist view of biology — or who are taught to disregard the Darwinist view — are not being disadvantaged.

The Texas State Board of Education is again considering a science curriculum that teaches the “strengths and weaknesses” of evolution, setting an example that several other states are likely to follow. This is code for teaching creationism.

It has the advantage of sounding more balanced than teaching “intelligent design,” which the courts have consistently banned from science classrooms. It has the disadvantage of being nonsense.

The chairman of the Texas board, a dentist named Don McLeroy, advocates the “strengths and weaknesses” approach, as does a near majority of the board. The system accommodates what Dr. McLeroy calls two systems of science, creationist and “naturalist.”

The trouble is, a creationist system of science is not science at all. It is faith. All science is “naturalist” to the extent that it tries to understand the laws of nature and the character of the universe on their own terms, without reference to a divine creator. Every student who hopes to understand the scientific reality of life will sooner or later need to accept the elegant truth of evolution as it has itself evolved since it was first postulated by Darwin. If the creationist view prevails in Texas, students interested in learning how science really works and what scientists really understand about life will first have to overcome the handicap of their own education.

Scientists are always probing the strengths and weakness of their hypotheses. That is the very nature of the enterprise. But evolution is no longer a hypothesis. It is a theory rigorously supported by abundant evidence. The weaknesses that creationists hope to teach as a way of refuting evolution are themselves antiquated, long since filed away as solved. The religious faith underlying creationism has a place, in church and social studies courses. Science belongs in science classrooms.

NY TIMES ARGUMENT

THE PROBLEM IS “CREATIONISTS”

- THEY STRUGGLE WITH REALITY
- THEY INSIST EARTH IS YOUNG
- THEY BELIEVE NATURAL SELECTION IS FALSE

NY TIMES ASSERTIONS ABOUT “WEAKNESSES”

- SOUNDS MORE BALANCED
THAN TEACHING “ID”
- OTHERS LIKELY TO FOLLOW
- BUT “THIS IS CODE FOR
TEACHING CREATIONISM”

THE ARGUMENT IS OVER LANGUAGE IN CRITICAL THINKING CLAUSE

3(A) analyze, review, and critique
scientific explanations, including
hypotheses and theories, as to
their strengths and weaknesses
using Scientific evidence

NY TIMES ASSERTIONS

- “WEAKNESSES” MEANS TEACH CREATIONISM
- CREATIONIST SYSTEM IS FAITH NOT SCIENCE
- STUDENTS “NEED TO ACCEPT THE ELEGANT TRUTH OF EVOLUTION AS IT HAS ITSELF EVOLVED”

(CONTRAST)

- (“NEED TO UNDERSTAND HOW THE ELEGANT STRUCTURE OF NATURE IS COMPREHENDED ”)
- OTHER SCIENCES WERE IGNORED

STATE BOARD OF EDUCATION

- ELECTED FROM 15 DISTRICTS IN TEXAS
- 4 YR. TERMS, 2 YEAR CYCLE
- 10 REPUBLICANS
 - 7 SOCIAL CONSERVATIVES
 - PRIOR WINS ON MATH AND READING
- 5 DEMOCRATS

STATE BOARD OF EDUCATION

8 YEAR TEXT SELECTION CYCLE

- INTERACTS WITH TEXAS ED. AGENCY
- RECEIVES TEA's STANDARDS DRAFT
- CONDUCTS PUBLIC HEARINGS
- SETS STANDARDS
- RECEIVES TEA's REVIEWS OF TEXTS
- CONDUCTS PUBLIC HEARINGS
- ADOPTS TEXTS

THE TEXAS SYSTEM

- TEXAS ESSENTIAL KNOWLEDGE AND SKILLS ESTABLISHED
- TEXTBOOKS REVIEWED FOR CONFORMANCE
- CONFORMING TEXTBOOKS ADOPTED
- LOCAL BOARDS SELECT
- PUBLIC SCHOOL FUND PAYS FOR ADOPTED BOOKS

TEA TEAM's INITIAL DRAFT

9/15/08

- Chemistry - **Unchanged**
- 3(A) analyze, **review, and critique** scientific explanations, including hypotheses and theories, as to their **strengths and weaknesses** using **scientific evidence and information**

TEA TEAM's INITIAL DRAFT

9/15/08

- **Biology - Revised**
- 3(A) analyze and **evaluate** scientific explanations using **empirical evidence, logical reasoning, and experimental and observational testing**

COMPARE

- CHEMISTRY
- analyze, **review**, **and critique** scientific explanations,
- **as to their strengths and weaknesses**
- **using** scientific evidence
- BIOLOGY
- analyze and **evaluate** scientific explanations
- **using** empirical evidence, **logical reasoning**

IS THERE A PATTERN HERE?

- NATIONAL CENTER FOR SCIENCE EDUCATION TARGETED TEXAS SINCE 2003
 - NSCE's FOCUS IS EVOLUTION
- NY TIMES FIRES NSCE's OPENING SHOT
- NEW TEKS FROM TEA DRAFTING TEAMS
 - MIRRORS NSCE's FOCUS ON EVOLUTION
 - REVISED BIOLOGY, NOT ALL SCIENCES

STRENGTHS AND WEAKNESSES ONLY REMOVED FROM BIOLOGY

- **DISPARITY REENERGIZES CONTROVERSY**
- **QUESTIONS RAISED REGARDING SPECIAL TREATMENT OF BIOLOGY**
- **NEW DRAFT FROM TEA DRAFTING TEAMS**
- **NEW DRAFT REMOVED STRENGTHS AND WEAKNESSES FROM OTHER SCIENCES**

NOVEMBER, 2008, HEARINGS

- **TESTIMONY FAVORING DRAFT TEKS ARGUES:**
 - RELIGIOUS BELIEFS WILL BE TAUGHT AS SCIENCE
 - EXPENSIVE LITIGATION WILL RESULT
 - STATE WILL BE UNABLE TO ATTRACT HIGH TECH INDUSTRY
- **BOARD OBSERVATIONS AND QUESTIONS**
 - LANGUAGE ALREADY USED FOR 18 YEARS
 - NONE OF THESE THREATS MATERIALIZED
 - WHAT IS DIFFERENT NOW?

OUTCOME OF NOVEMBER HEARINGS

- **BOARD VOTED 8 to 7 TO APPROVE DRAFT**
 - **ELIMINATED “STRENGTHS AND WEAKNESS” FROM ALL SCIENCES**
- **BOARD SELECTED PANEL OF EXPERTS TO TESTIFY IN JANUARY**
 - **THREE FAVORING THE NEW DRAFT**
 - **THREE FAVORING STRENGTHS AND WEAKNESSES**

JANUARY, 2009, HEARINGS -1

PUBLIC TESTIMONY

- NSCE PRES. Eugenie Scott and TFN
 - MEANING OF “WEAKNESSES” CHANGED
 - NOW MEANS CODE FOR RELIGIOUS VIEWS
 - THERE ARE NO “WEAKNESSES” IN EVOLUTIONARY THEORY
- SUPPORTERS OF “WEAKNESSES”
 - ALL THEORIES HAVE WEAKNESSES
 - LIMITATIONS OF EVOLUTIONARY THEORY SHOULD NOT BE HIDDEN
 - SCIENCE ADVANCES BY EXPLORING WEAKNESSES IN UNDERSTANDING

JANUARY, 2009, HEARINGS - 3

PANEL OF EXPERTS TESTIFY

- **THREE FAVORING NEW DRAFT LANGUAGE**
 - David Hillis, University of Texas, Austin
 - Gerald Skoog, Texas Tech University
 - Ronald Wetherington, Southern Methodist
- **THREE FAVORING ORIGINAL LANGUAGE**
 - Stephen C. Meyer, Discovery Institute
 - Ralph W. Seelke, Univ. of Wisc.-Superior
 - Charles Garner, Baylor University

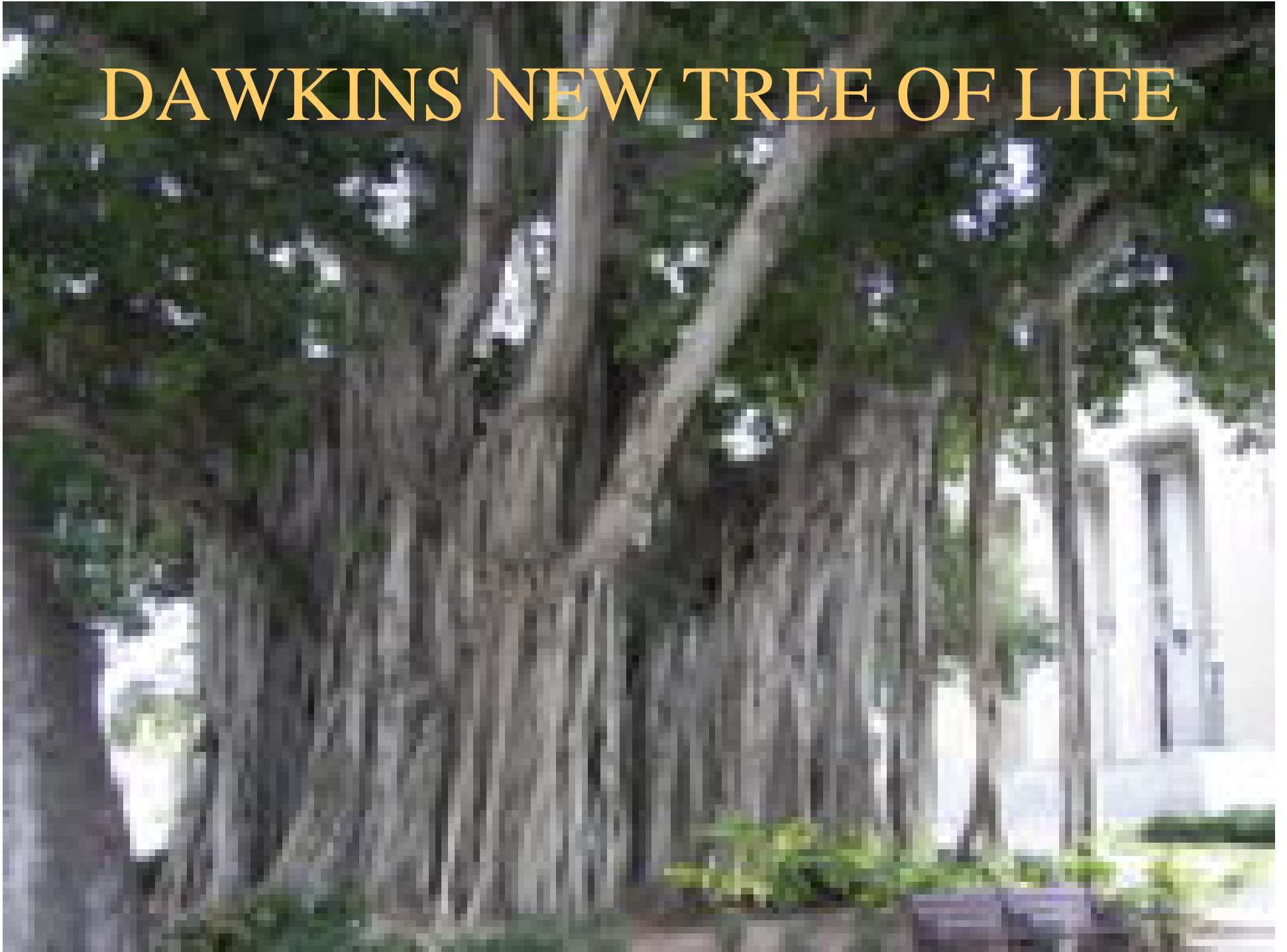
Dr. HILLIS' TESTIMONY

- **LEADING EXPERT ON TREE OF LIFE**
 - “Overwhelming correspondence.....protein to protein..... DNA sequence to DNA sequence”

VS

- **KEN MILLER's 2003 Biology Textbook:**
 - Student Exercise shows molecular/morphological conflict
- **Campbell- Reece 2008 AP Biology**
 - Figure with molecular vs. morphological trees

DAWKINS NEW TREE OF LIFE



MARCH HEARING RESULTS

- **STRENGTHS AND WEAKNESSES
DEFEATED 8 to 7**
- **TWO CHANGES TO DRAFT TEKS 3(A)
ADOPTED 13-2**
- **A TEKS PROPOSED ON ORIGIN OF LIFE
ADOPTED 13-2**

ADOPTED TEKS

WORDING OF CRITICAL TEKS 3(A)

In all fields of science, analyze, evaluate and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing including examining all sides of scientific evidence of those scientific explanations so as to encourage critical thinking by the student.

COMPARE 3(A) WORDING

TEA DRAFT

- analyze and evaluate scientific explanations
- using empirical evidence, logical reasoning and experimental and observational testing

ADOPTED VERSION

- analyze, evaluate and **critique** scientific explanations
- using empirical evidence, logical reasoning and experimental and observational testing
- **examining all sides of scientific evidence of those scientific explanations**

CONSIDERATIONS?

- **WAS ORIGINAL “WEAKNESSES” RELIGIOUS?**
 - Scientific evidence was required
 - **IS THE NEW WORDING: BETTER OR WORSE?**
 - Does it reflect sound science practice?
 - Conducive to understanding science?
- OR
- Might it also be deemed “RELIGIOUS”?

NEW TEKS ADOPTED

Para 112.34 Biology

(c) Knowledge and skills

(9) Science concepts.

(D) analyze and evaluate the evidence regarding formation of simple organic molecules and their organization in long complex molecules having information such as the DNA molecule for self-replication.

NEW TEKS ADOPTED

Earth and Space Science

(c) Knowledge and Skills (13) (F)

discuss scientific hypotheses for the origin of life by abiotic chemical processes in an aqueous environment through complex geochemical cycles given the complexity of living systems.

PUBLIC REACTIONS?

- **Dallas News:**
 - "Conservatives lose another battle over evolution"
- **Wall Street Journal:**
 - "Texas Opens Classroom Door for Evolution Doubts"
- **Eugenie C. Scott of NSCE**
 - "The final vote was a triumph of ideology and politics over science"
- **SCIENCE 12 June 2009**
 - "Scientists view new version as more insidious"

POLITICAL REACTIONS

15 BILLS IN TEXAS LEGISLATURE

- ALL DESIGNED TO STRIP SBOE OF AUTHORITY
 - OVER STANDARDS AND TEXTS
 - OVER PUBLIC SCHOOL FUND
- CHAIRMAN'S RENOMINATION BLOCKED
- ONLY HB 4294 BECAME LAW
 - REMOVES AUTHORITY FOR ELECTRONIC MATERIALS FROM THE SBOE
 - TRANSFERS AUTHORITY TO THE COMMISSIONER OF EDUCATION

THE NEXT ROUND(S)

- LOBBYING PUBLISHERS
- WALL STREET JOURNAL JULY 14
 - TEXAS MARKET IS HUGE
 - PUBLISHERS AGGRESSIVELY SEEK APPROVAL OF SBOE
 - PUBLISHERS SOMETIMES ADOPT EDITING SUGGESTIONS VERBATIM

THE NEXT ROUND(S)

- GOV. PERRY APPOINTS A SOCIAL CONSERVATIVE SBOE CHAIRMAN
- BIOLOGY TEXTBOOK HEARINGS
 - START IN 2010
 - SBOE ELECTIONS IN 8 DISTRICTS
 - 5 “LIBERAL” – 3 “CONSERVATIVE”
 - FINAL ADOPTION IN 2011

IS THERE A WIN/WIN?

- MOST BIOLOGY NOT AT ISSUE
- TEACH BIOLOGY LIKE PHYSICS
- HOW THEN TREAT EVOLUTION?
 - Basically unchanged
 - Reduce some arguable conjectures
 - Acknowledge issues in literature
 - Describe as research challenges
 - Clarify status of Origin of Life
 - Explicitly exclude ID or creationism

AS STORY CONCLUDES WHAT WAS GOING ON HERE?

- ADVOCATING A METAPHYSICAL VIEW?
- FAVORING INDOCTRINATION vs. EDUCATION?

OR

- ADVOCATING SOUND SCIENCE?

OR

- WAS THERE A CONFUSING MIX?