WitnessKit 2
God And Creation

Class 4
Unity and Diversity and Survival of the Fittest

Proverbs 8:11, 22, 27-31: MIND

11 For Wisdom *is* better than rubies,
And all the things one may desire
cannot be compared with her.

Proverbs 8:11 (NKJV)

22 "The LORD possessed me (Wisdom) at the beginning of His way,
Before His works of old.

Proverbs 8:22 (NKJV)

27 When He prepared the heavens,
I *was* there,

Proverbs 8:11, 22, 27-31: MIND

When He drew a circle on the face of the deep,
28 When He established the clouds above,
When He strengthened the fountains of the deep,
29 When He assigned to the sea its limit,
So that the waters would not
transgress His command,
When He marked out
the foundations of the earth,

Proverbs 8:11, 22, 27-31: MIND

30 Then I was beside Him
as a master craftsman;
And I was daily *His* delight,
Rejoicing always before Him,
31 Rejoicing in His inhabited world,
And my delight *was* with
the sons of men.

Proverbs 8:27-31 (NKJV)

These verses in Proverbs tell us that

God's Wisdom was with Him in the creation of the world. His Wisdom was with Him as He prepared the heavens. His Wisdom was with Him in setting up ocean boundaries. His Wisdom is associated with delight. He, in His Wisdom, delights in His creation, and especially in His creation of people. God has MIND and creativity. God has always loved people.

When we watch science programs on PBS, we should keep these things in mind.

How to watch a PBS program

Which uses evolution as a guiding principle for science.

We should ask good questions anytime we watch.

Example from a fascinating program:

"DOGS AND MORE DOGS," *NOVA*, PBS airdate February 3, 2004

Background Information: Some dog breeds and wolves can interbreed and have fertile offspring.

- Horses and donkeys can interbreed, but usually their offspring cannot produce another generation—mules and jennies don't usually reproduce.
- The genetic information has to be quite close for a cross among species to be able to produce another generation afterwards.

Background from the program: Wolves in the wild

- Wolves in the wild all look pretty much alike.
- The uncommon American red wolf can interbreed with coyotes. It looks like a reddish brown coyote with a longer body and shorter legs – kind of like the "weiner wolf."
- Foxes and wolves have two or three different coat colors in the wild.

Scientists have learned to tame wolves.(Do NOT try this at home.)

- At a research facility in Indiana, scientists are studying how to tame wolves. They socialize the pups – 2000 human hours in shifts, getting them used to human sounds, smells, sights.
- However, they are “only superficially tame.” If you look them in the eye, they may attack. Everyone treads carefully around them.

Wolves do not have floppy ears.

Dogs vary all over the map:

floppy ears,

wagging tails that are long or short,

coats that are long or short or non-existent,

many coat colors and textures.

Various facial characteristics.

Different barks.

Different sizes.

Why?

Why are wolves quite uniform in appearance,

- where dogs,
- genetically close to wolves,
- are extremely varied?

The answer is not what one would expect.

A Russian scientist, in Siberia (due to being out of favor,) decided

To help local fox farmers breed foxes for profit. They wanted the foxes' coats for humans' coats.

- But they didn't want the foxes to bite them.

- Dr. Belyaev bred the foxes for docility.

It took 10 generations to get tame foxes.

- He bred only the calmest foxes in his experiments. For each new generation he would choose the calmest pups to raise the next generation.
- Guess what else showed up?

The foxes looked less and less

- Like foxes.

They had tails that wagged

- Floppy ears
- Spotted coats
- Barking

- And much lower adrenaline levels.

The shift in hormone levels

Allowed genes ALREADY present to be expressed.

- **These were not a big supply of helpful or interesting mutations.**
- These were traits already present, but masked by the interaction of hormone levels.

Survival of the fittest

Created apparent uniformity and masked diversity.

Human design for tameness – running the opposite direction from survival of the fittest—created diversity– from the traits already present in the genes.

This was a loss of genetic information—the high adrenaline genes were weeded out. It was a gain in visible diversity.

This brings up an obvious question.

Can survival of the fittest account for biological diversity if in the real time laboratory it accounts for uniformity?

Can a mechanism that produces uniform "widgets" and masks the diversity in the genome really account for the tree of life—molecules to humans?

And if survival of the fittest accounts for uniformity

How did the diverse information in the genome get there?

Why would all those hidden, interesting traits be present in the fox population?

And why are those particular traits

So endearing to humans who like dogs?

- Wouldn't it be interesting if God wrote the code for all those neat traits into the canine genome, and wrote the emotional software in the human brain to appreciate them?
- And then waited for us to domesticate canines, and watched for the fun?

Do you think the PBS presentation

Gave this explanation for how the doggie traits arose? *(This explanation is speculative—a "story.")*

- No. The PBS program said the traits in the genome might have arisen by survival of the fittest in wolves that *domesticated themselves by scavenging* from human leftovers.
- Note that *this explanation is a "story" too*.
- The difference in the stories is the assumptions behind the stories.

Is the “scientific story” reasonable?

If so, one would expect to see similar domestication traits in other scavengers of human leftovers, such as raccoons, opossums, sea gulls, crows, rats, bears, and coyotes—not to mention insects.

But these animals all have that sort of wild uniformity that *survival of the fittest* shows in foxes.

One would not expect tame traits in non-scavengers.

Where do we see the diversity of traits in domesticated species that are uniform in the wild?

- We see it in rabbits—wild rabbits are uniform, and domesticated ones are diverse.
- We see it in chickens, ducks, parakeets, cats, horses, sheep, goats, and cattle.
- These are not scavengers, yet their genomes have “tame traits” built in.
- How did those tame traits get into their respective genomes?

“Survival of the fittest”

- Sounds reasonable for explaining things in biology. But it really does not explain how tame traits would survive for millions of years in wild genomes, since those traits tend toward friendliness to potential predators.
- Those traits seem to be very different from survival traits.

If you assume an impersonal beginning to the universe --

You are limited in mechanism to physical law and chance and time.

- Survival of the fittest is physical law.
- Mutation is chance.
- These limits do not give a compelling reason for tame traits to appear in wild genomes.

If you assume a Personal Beginning for the universe--

The Mind of God could create the information in the genome.

- This assumption opens up more reasonable explanations for the information quality of the genomes of living things.
- The possibility of a Personal Beginning opens up **more possible explanations** than an Impersonal Beginning assumption would allow. So the more **open** assumption is that there could be a Personal Beginning.

Intelligent Design Theory

Gives the scientists mathematical tools to recognize the imprint of intelligence in nature.

- In and of itself, it does not assume either form of a beginning.
- Rather, it looks for data in support of either beginning. It uses mathematics—a reasonable sort of tool.
- It is certainly a reasonable way to open up science to new possibilities.

To bridge the gap between science and faith, we must understand both.

We already know that evolution is supposed to work based on physical law plus time plus chance:

- Physical law is the law of survival of the fittest.
- Chance is the accumulated effects of mutations.
- We need to understand mechanisms.

We can bridge the gap between science and faith

Mechanisms of evolution

by learning these mechanisms of evolution:

1. Reproductive Isolation with adaptation
2. The founder effect
3. The bottleneck effect
4. The difference between loss and gain of genetic information

Key Concept:
Note that some kind of isolation

- Is mandatory. Isolation has to take place, adaptation has to take place, and change has to become so pronounced that the new group can't go back to join the original group. The competition between the two groups is supposed to weed out the less fit group, eventually resulting in a new species. If the groups get back together, they simply intermingle and produce offspring together, and remain one species.

1. Isolation with Adaptation

When part of a population is separated, it has a different percentage of various traits in its genes than the overall population. This is assuming the sample size is small—not large enough to be statistically representative of the entire population.

Breeding within the isolated group reinforces those differences, so long as the differences are neutral or favorable for survival.

Definition

- **Gene Frequency** refers to the percentage of a particular genetic trait found in the population—whether or not that trait is expressed.
- The tail-wagging trait had a certain frequency in wild foxes, even though it was not noticed in that wild population.
- A small group of separated animals or plants would have some hidden or unexpressed traits.

1. Isolation with Adaptation

Environmental stresses in the isolated group will tend to reinforce certain traits and weed out others.

If the new environment is significantly different from the earlier environment, some further change in gene frequency may appear in later generations, because some of the transferred members die from environmental stress before they reproduce.

This **weeding out process**

Is called **adaptation**. It is not as though the population DECIDES to adapt. It has to have survivor traits ALREADY present in its genome to be able to adapt.

- Adaptation represents **a net loss of genetic information**, as the negative traits are weeded out by environmental stresses.
- The isolated population will have a **more** uniform genome than the original or "parent" population after adaptation has occurred.

This weeding out process

Adaptation generally represents the net loss of genetic information.

Even though the two populations appear to be more diverse than the single original "parent" population, no actual gain in information has taken place.

Adaptation does not equal a gain in information.

How can isolation occur?

- Geographic relocation to an island, perhaps blown by storm winds.
- Spreading out of a population over a wide territory, such that different extremes have widely varying conditions. In adapting to those extremes, the creatures at the extremes may not be able to interbreed with those at the other extreme.
- Ecological isolation, such as differing breeding cycles in different niches, where only test tube conception is possible.

2. The Founder Effect

When a very small sub-group is isolated, it has more profound differences in gene frequency than the parent population.

The smaller the sample size that is isolated, the more distinct the differences will be in subsequent generations.

Domestic breeding

Reveals the founder effect.

- Human breeders select animals for specific traits in setting up new breeds of dogs or horses or ducks or cabbages or carrots.
- They are able, by careful limitations on the animals or plants selected, to produce dramatic differences from the parent population.
- Chihuahuas are considerably different from wolves, but are likely descendants.

Plants are particularly interesting

Because some of them exhibit polyploidy…

Where chromosomes double and differences become even more pronounced.

Enormous variety is revealed

By isolation and adaptation.

- This variety is an expression of traits **already present** in the genome.
- The isolated groups have fewer overall traits present than the parent group.
- So even with greater variety of expression, there is a **loss** of information.
- The appearance of gain in information is only appearance, not reality.

3. The Bottleneck Effect

When a catastrophe of ecological proportions occurs, the number of members of a population may be greatly reduced.

- They will have a different percentage of various traits in their genes than the parent population.
- Over time, the survivors will show differences from the parent group.

The Bottleneck Effect

The Bottleneck Effect is sometimes reversible. That is to be expected for incremental changes.

- The Galapagos finches with beaks that change depending upon drought and the kinds of resulting seeds in their food supply—
- Will change back when rainfall becomes normal again.

The Bottleneck Effect is Sometimes Reversible.

- The moths that became dark in England during the industrial revolution
- Are light again after environmental improvement.

The Bottleneck Effect--

Is reversible when the stress on the population is temporary—

And the traits that are preferred in the earlier environment remain in the gene pool after the bottleneck event.

Reversible changes are not “evolution” in the sense of being an event on the road to a new creature. They represent “microevolution” or change WITHIN kinds.

4. The difference between loss and gain of genetic information

- Genetic isolation and adaptation do not add anything to the genes that are present. These mechanisms change the frequency of occurrence of genes in a population and may result in a loss of genetic information.
- Nevertheless, they do contribute to apparent diversity of species—by allowing genes to be expressed that were masked in the original population.

4. The difference between loss and gain of genetic information

- The change in gene frequency allows some recessive genes to “get together” and be expressed.
- The change in environment can also change traits—such as adding protein in the diet increasing growth. These traits do not transfer to the next generation by way of genes, though—a reduced protein supply will stunt growth in the next generation.

A different mechanism is needed

To explain gains in genetic information.

- When the macro-evolution theory explains the formation of **new organs**, new **body plans**, new means of **locomotion,** new means of **reproduction**, new means of **respiration –**
- These sorts of changes **require gains** of genetic information.

Information follows physical laws

Similar to thermodynamic laws – such as the conservation of energy and matter

- And the tendency from order to disorder in the entropy of systems.
- Because information represents order or organization of matter, it tends to be conserved at best, and to go toward disorder in general, when left to chance.

Example

An email represents information.

- Imagine an email forwarded automatically by an advertising company. The original message has 200 letters forming specific sentences in a specific order. Nothing will cause that email to gain information if no human mind adds information to it.
- However, it could lose information if some kind of random event throws random letters into the mix, causing the meaning of the words to be lost.

Another Example:

- Classics converted to eBooks. If the scanning process used to load classic texts into an eBook format is imperfect, the letter *e* can appear as the letter *c.* This loss of information makes the reading more difficult.

Principle

- Time plus chance plus physical law may preserve information or allow information to be lost.
- Time plus chance plus physical law will not add information.
- One would not expect a different book to appear by scanning a particular book. One would expect either the same book or a corrupted text of the same book to appear on the eReader.

Chance mechanisms do not generally increase information.

The mechanism proposed for increasing biological information is chance plus law –

- Chance in the form of mutations and environmental stresses
- Law in the form of “survival of the fittest.”

Environmental stresses

Reduce information.

- **Mutations** reduce information in the genome if the organism with the mutation fails to reproduce or has an early death. We know that mutations are either harmful or fatal 999 out of 1000 mutations.
- SO mutations reduce information *the vast majority of the time.*

Mutations

- Mutations increase information for those that reproduce and yield a reproductive advantage—a small fraction of the time—one in a thousand mutations.
- Note that isolated mutations “on the way to a new organ system” would not be expected to increase reproductive advantage, but would make the organism less efficient.

Example from the textbook: The Giraffe

The Giraffe has a long neck and long legs.

It has a circulatory system that is unique and complicated to keep the blood pressure on its brain in a safe range, whether the head is up in the treetops or down at the river.

It has an ungainly walk, but a powerful kick to keep predators at bay.

It has powerful lungs and breathing muscles, to manage the airflow through the long neck.

Example from the textbook: The Giraffe

All its systems together form a survival packet. It is hard to see how one change at a time would do so. In fact, added one at a time, these changes would make the animal less likely to survive.

Each part of the packet would also have to integrate into the rest of its structure—endocrine system, circulatory system, nervous system, and embryonic development.

Mutations

Survival of the fittest is a “mutation reading mechanism” that selects which mutations continue to the next generation, because 999/1000 mutations cause harm or death. It is a mechanism that reads and filters information, not a mechanism that writes it.

- Survival of the fittest is information neutral or reductive, because it selects for only one trait – reproductive efficiency, including survival to that point.

Why is this mechanism problematic?

- It is problematic because new organ systems, new body plans, and new means of locomotion, and new means of reproduction all require multiple coordinated mutations to add the appropriate new genetic information to the systems.
- They generally **also** require coordinated changes in embryonic development, some of whose information is separately coded in the ovum.

Why is this mechanism problematic?

They also require coordinated changes in the neurological system to accommodate new functions.

Sometimes they require coordinated changes in the metabolic system to accommodate new chemistry.

Sometimes they require coordinated changes in the respiratory system as well.

Information Field

Law

P+1

P $\longrightarrow$ 0

Rare Contingent Event

External pattern: The complete set of changes that lead to survival advantage.

Why is this mechanism problematic?

- Half-way measures won't add reproductive advantage.
- Remember, any major changes have to be coordinated with the other systems of the body and brain. This requires even more changes to take place at the same time.
- This is NOT an incremental change.
- This is not a simple chance event.

Yet favorable mutations are so rare

That expecting them to happen in coordination in one organism to produce a new working assembly--

Defies a chance mechanism.

This means that micro-evolution

Two Kinds of Things

- And macro-evolution are two different kinds of things.
  - Micro-evolution, or a shift in gene frequencies, appears without adding information to the gene pool.
  - Macro-evolution demands adding information—coordinated information—to the gene pool.

When people talk about evolution

They sometimes use “Bait and Switch” tactics.

- They talk about macro-evolution by using examples of micro-evolution.
- They demand that people buy into their intellectual product – Macro-evolution –
- Based on a different kind of product – micro-evolution.

Sometimes this is not intentional.

- Some people who believe in "evolution," do not realize there is a difference between loss of genetic information and addition of genetic information. They fail to realize there are two different KINDS of "evolution."

Sometimes “buy-in” is a result of assumptions…

The assumption of an impersonal beginning produces a **faith** acceptance of the mutation-survival of the fittest explanation.

- Living things exist. Impersonal beginning. No other way for living things to exist. Voila! Evolution is fact.
- “Evolution from molecules to humans must be a fact.”

Sometimes “buy-in” is a result of assumptions…

- But this just restates the starting assumption in different words.
- It would be more accurate to say “evolution from molecules to humans is an assumption, based on belief in an impersonal beginning for the universe.”

Sometimes people just take the scientists' word for it.

- Many people defer to scientific expertise without understanding the underlying issues.
- That is why it is helpful to understand the mechanisms.
- While the scientists may have much more expertise than we do regarding their data, we may have the edge in thinking about their assumptions. Sometimes a scientist will be so close to the subject that it is hard to be objective about his or her own assumptions.

Sometimes people just take the scientists' word for it.

- It is a necessary part of the scientific enterprise to hold assumptions before looking at data. But it is tremendously important to remember that changes in assumptions can lead to changes in conclusions, while the data remain unchanged. Objectivity requires recognizing the power of assumptions and the bias they can bring to one's work. Open assumptions are better than closed assumptions for examining alternate explanations.

Evolution is no threat to religious belief in reality.

Micro-evolution is no threat at all to creation as an idea—the reproduction after each organism's kind is obvious in the real world, and gradual changes are obvious from plant and animal breeding programs. Microevolution is visible in reality.

Macro-evolution does not have an effective mechanism, so it really is not a threat either. It is not visible in reality, being a historical extrapolation, based on closed assumptions, that cannot be confirmed in a human lifetime.

- The origin of species cries out for a Creator.

The question about Intelligent Design

Is most often posed as “Is ID science or religion?”

- The real question should be “Is ID consistent with reality?”
- Let’s search for TRUTH in every field, using the tools of that field, and integrate our understanding across fields of study.
- An integrated worldview that fits the real world is a healthy worldview. A fragmented worldview is not healthy.

Even though Creation is out of favor in the universities…

- Macro-evolution does not deserve its cultural status at all.
- Darwinism does not have an adequate mechanism for the size of its claims.
- The only other game in town is Creation.

Sometimes scientists reject ID by calling it a “god of the gaps” approach,

- As though science has everything all figured out without appeal to deity,
- and there are only a few little anomalies—gaps—where a supposed god might conceivably be considered to exist,
- and science is sure to plug those gaps soon.

We can be confident that…

Actually, every new organ system or locomotion system or reproductive system from bacteria to people

- IS A BIG GAP.
- In fact, most of the macro-evolution story is made of gaps.

More Detail about The "God of the Gaps" Claim

- The "God of the Gaps" claim appears in two forms in the scientific literature. One form accuses proponents of Intelligent Design of using "God" as a word for "what we don't yet know" about the natural cause of events, as though Intelligent Design was simply an ignorant appeal to the supernatural.
- The other form claims that ID "stops research" by producing a supernatural cause that cannot be the object of experimentation or scientific pursuit.

Several ways exist to refute both forms of this claim.

- The following two links from Casey Luskin accomplish that purpose extremely well.
- http://www.evolutionnews.org/2012/10/the_self-refuti065411.html
- **http://www.evolutionnews.org/2011/03/a_closer_look_at_one_scientist045311.html**
- We will attempt a simple, verbal response to these claims.

First of All

- Intelligent Design is an appeal to mathematics, not religion. It appeals to statistics, not mysticism. It looks for mathematical evidence of intellectual activity as a cause of events. Period.
- Everyone admits gaps exist. Everyone admits that both the genetic record is not continuous and the fossil historical record is not continuous, and they do not correspond neatly with each other.

Two Approaches

- Of the two approaches, Darwinism and intelligent design, searching for ID is the more open approach, and rejecting ID as a possibility without looking at the math is a closed approach. Rejecting ID is a refusal to look at the math. Closed approaches are much more likely to close research than open approaches.
- Think about the gaps. One approach says, “Let’s use mathematics to confirm or reject all the possible causes.”

The “God of the Gaps” Accusation

- The other approach says, “God could not possibly account for anything in the real world, so we will look for chance and physical law explanations and will reject any evidence of intelligent planning.”
- Which of those two approaches is stopping research?

Secondly: New Directions for Research, (in simplified words)

- Where evidence of Intelligent Design occurs, it carries implications for new directions in research. It opens research to new ideas that are testable. Here is a SIMPLIFIED table of some ideas from Casey Luskin's "**A Positive, Testable Case for Intelligent Design.**"
- ***Table 2. Predictions of Design (Hypothesis):***
- **(1)** Intelligent design in nature should reveal intricate patterns that perform a specific function (e.g. complex and specified information). Chance and physical law would be expected to produce simple patterns.

Secondly: New Directions for Research

- ***Table 2. Predictions of Design (Hypothesis):***
- **(2)** Fossils containing large amounts of novel information would be likely to appear in the fossil record suddenly and with gaps between other forms.
  (3) Genes and other functional parts could be re-used in <u>different and unrelated</u> organisms—called “convergence.”
  (4) Much so-called "junk DNA" could turn out to perform valuable functions.

Preliminary **results** of that kind of research, from the same document, Table 3.

- **(1)** Language-based codes are present in the workings of genetics and inheritance. High levels of specified complexity and irreducible complexity are seen in biological systems, found by using complicated theoretical analysis, computer simulations and math. The cellular system looks more intricate the more we learn. (Behe & Snoke, 2004; Dembski 1998b; Axe et al. 2008; Axe, 2010a; **(1)** Axe, 2010b; Dembski and Marks 2009a; Dembski and Marks 2009b; Ewert et al. 2009; Ewert et al. 2010; Chiu et al. 2002; Durston et al. 2007; Abel and Trevors, 2006; Voie 2006), "reverse engineering" (e.g. knockout experiments) (Minnich and Meyer, 2004; McIntosh 2009a; McIntosh 2009b) or mutational sensitivity tests (Axe, 2000; Axe, 2004; Gauger et al. 2010).

Preliminary results of ongoing research, Table 3 continued.

- **(2)** The fossil record shows that species often appear abruptly without similar precursors. (Meyer, 2004; Lonnig, 2004; McIntosh 2009b) **(3)** Similar parts are commonly found in widely different organisms. Many genes and functional parts are not distributed in the manner that ancestry would predict, and are often found in unrelated organisms. (Davison, 2005; Nelson & Wells, 2003; Lönnig, 2004; Sherman 2007)

Preliminary results of ongoing research, Table 3 continued.

(4) Numerous functions have been discovered for "junk-DNA." Several categories previously labeled “junk” but which have jobs within cells are: pseudogenes, microRNAs, introns, LINE and ALU elements. (Sternberg, 2002, Sternberg and Shapiro, 2005; McIntosh, 2009a)

(Note that labeling DNA “junk” was an error that may have slowed scientific research. The labeling error was made on the basis of evolutionary theory.)

If you would like more information,

- Go to the link to the article, and then search the references that follow the article.
- **http://www.evolutionnews.org/2011/03/a_closer_look_at_one_scientist045311.html**
- In particular, the long-standing “junk DNA” hypothesis is undergoing total revision as scientists gain more knowledge of the various functions and intricacies of DNA. New articles appear very frequently.

Intelligent Design

- IS a valuable tool for scientific study.
- Where data support Intelligent Design, the data carry implications toward the philosophy of science, the philosophy of religion, and toward religion.
- This is nothing new—Darwinism has been touted for its philosophical and religions implications for many years.

Intelligent Design or Darwinism

Neither approach should be ruled out because of implications for other fields, but only by the voice of the DATA. Having more than one approach helps us look at data with fresh insights.

An integrated worldview

- Takes **DATA** into account when considering philosophy and religion.
- The data described in *Of Pandas and People*, and in newer books such as *Signature in the Cell,* drive our thoughts toward a Creator—not because a Creator is an entity who can be scientifically described,
- but because His past actions leave a mathematical imprint in reality, which *imprint* can be scientifically described.

How should we respond to this information?

1. By having confidence in God's existence.
2. By using a gentle approach when trying to pry people's eyes open.

Nobody likes to have someone be ungentle when opening their eyes.

Skeptics need to see the large weight of evidence with eyes open to the idea of a Creator.

Homework

In 3 sets, going back and forth between different fields of study.

Homework Class 4 Set 1

- Read John 1:1-18. In what ways does Jesus explain God?
- Read Overview Section 5 and Excursion Chapter 5 in OF PANDAS AND PEOPLE.
- Give some examples from these chapters regarding the subjective nature of classifying similar structures as homologies or analogies.
- Does similarity of structure among various animals rule out intelligent design?

Homework Class 4 Set 1

- The divergence pattern of biological molecules among various species should be the clincher for agreement—at the level of chemical mechanisms—for macro evolution. The patterns of DNA and RNA and chemistry of cellular structures should provide a map for verifying or falsifying macroevolution, since this pattern would have to reveal mutational changes that have survived to the present.

Homework Class 4 Set 1

- Therefore, the evolutionist would expect an orderly sequence of divergence from simple organisms to humans, with a similar sequence in many kinds of molecules that are similar in function. Is this what is observed in the laboratory?

Homework Class 4 Set 1

- Do the observations in the laboratory better fit macroevolution, or intelligent design, and why?
- Explain the idea of equidistance.
- Can the idea of a “molecular clock” explain the data?

Homework Class 4 Set 2

- Read II Corinthians 4:1-7.
- After completing today's lesson, consider the meaning of this passage as it relates to the issue of propaganda, spiritual blindness, and discerning truth.
- Read Chapter 1 in THE CASE FOR A CREATOR.

Homework Class 4 Set 2

- When the media pits white-robed scientists against Bible-thumping preachers, is that a simple factual presentation of the merits of each side, or a form of propaganda?
- Is it possible for the Bible-thumper to be correct and a white-robed scientist to be incorrect in assessing the philosophical implications of scientific research?

Homework Class 4 Set 3

- Read Acts 26:1-18.
- Describe what is meant in verse 18 by “opening their eyes.”
- Read Chapter 2 in THE CASE FOR A CREATOR. Chapter 2 briefly covers the same topics we have already covered in OF PANDAS AND PEOPLE.

Homework Class 4 Set 3

- This chapter discloses the impact on Lee Strobel's belief system when he encountered and believed in the popular icons of evolution.
- What happened in Mr. Strobel's case to cause him to investigate further?

Job 38:36

- **36** Who has put wisdom in the mind? Or who has given understanding to the heart?