



“The heavens declare the glory of God” (Psalm 19:1)

REASONS TO BELIEVE - SEATTLE AREA CHAPTER

NEWS AND VIEWS

July 2004

FYI

[Hugh Ross Visit](#)

Hugh Ross will be visiting the Seattle area in September. We are currently looking for great speaking/outreach opportunities. If your church or group is interested in hosting Dr. Ross, contact the chapter immediately at seattle@reasons.org.

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The chapter does presentations on a wide range of topics. These can be short talks on specific issues or in-depth, multi-part presentations. If your church or group is interested in hosting one of our speakers, contact the chapter at seattle@reasons.org.

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The chapter is planning to sponsor a booth at the upcoming National Science Teachers Association Conference in Seattle this fall. The booth fee is about \$1,400. If you would like to help financially, please send contributions to Seattle RTB, 1314 Mukilteo Blvd., Everett, WA 98203.

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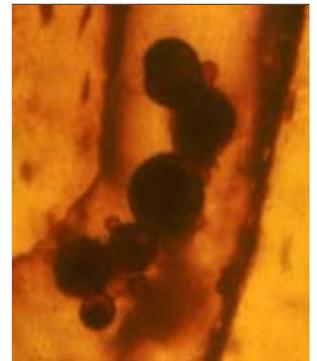
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Dinosaur Blood?

GREG MOORE

Some creationists claim scientists have found dinosaur blood—actual red blood cells—in the bone of a *Tyrannosaurus rex*. This, they say, is proof of a recent creation. They argue dinosaur bone should be completely fossilized if it is millions of years old, but the discovery of blood cells in “fresh” bone proves dinosaur remains are only a few thousand years old.

The dinosaur blood claim has gained wide acceptance in young-earth circles. It is stated in much of their printed material and on many of their websites. It has even been presented to school boards as evidence of a young earth and reason for allowing creation “science” into the classroom.¹ Given its wide dispersal, it is important to assess the validity of the claim.



ORIGIN OF CLAIM

The major source of dinosaur blood claim is a 1997 article by Carl Wieland titled, “Sensational dinosaur blood report!”² Wieland is a young-earth creationist and CEO of Answers in Genesis in Brisbane, Australia. The article states Montana State University researchers found “traces of real blood” in the leg bone of a *Tyrannosaurus rex*.

Wieland reports the researchers noticed some parts deep inside the *T. rex* bone had not completely fossilized. Examining a thin section of the bone through a microscope, they noticed tiny round objects, translucent red with a dark center, in the blood vessel channels. When one of their colleagues looked at the objects, he shouted, “You’ve got red blood cells!” Mary Schweitzer, the lead researcher, was skeptical the objects could be blood cells and expressed her doubts to her boss, famous paleontologist Jack Horner. Horner suggested the researchers try to prove the objects were not blood cells. According to Schweitzer, “So far, we haven’t been able to.”

Wieland describes several tests the researchers conducted that indicate the presence of hemoglobin—the protein in red blood cells that makes blood red and carries oxygen

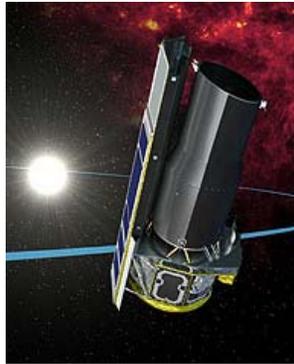
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Spitzer Discovers Raw Ingredients for Life?

GREG MOORE

The Spitzer Space Telescope was launched into orbit in August 2003. Spitzer is a space-borne, infrared observatory and the final mission of NASA's Great Observatories Program—a family of four orbiting observatories, each observing the universe in a different kind of light (visible, gamma rays, X-rays and infrared). The other observatories include the Hubble Space Telescope, Compton Gamma-Ray Observatory and Chandra X-Ray Observatory.

During its 2.5-year mission, Spitzer will play a key role in NASA's Astronomical Search for Origins Program. The purpose of this program is to answer the questions: Where did we come from and are we alone? Spitzer will focus on three primary areas of investigation: (1) understanding how today's galaxies, stars and planets came to be, (2) learning how stars and planetary systems form and evolve and, (3) exploring the diversity of other worlds and searching for those that might harbor life.



Optical telescopes depend on the visible light that is emitted or reflected by objects in space. Visible light is the light we can see with our eyes. However, many objects in space are too dim to be detected by their visible light. In addition, many areas of space are filled with vast, dense clouds of gas and dust that block astronomers' view of what lies beyond those clouds. Spitzer's infrared observations allow astronomers to peer into regions of space that are hidden from optical telescopes.

Many cool, dim objects don't emit visible light but they do emit infrared light. Infrared light can pass through many materials which visible light can't. Thus, Spitzer can provide information about cooler objects such as small stars that are too dim to be seen by their visible light, extrasolar planets, and giant molecular clouds. Spitzer can also penetrate the vast gas and dust clouds, allowing astronomers to view regions of star formation, the centers of galaxies, and newly forming planetary systems.

Key to its mission of searching for life, Spitzer is equipped with the most sensitive infrared spectrograph ever to go into space. Spectrographs are instruments that spread light out into its wavelengths creating a spectrum. Within this spectrum, astronomers can study emission and absorption lines that are the fingerprints of atoms and molecules. The pattern of these lines is unique to each element. By studying these lines, astronomers can determine which elements are present in an object or gas,

including organic materials.

In May 2004, NASA announced Spitzer had discovered icy organic materials—ices and sticky hydrocarbons—in several dusty planet-forming discs, which encircle infant stars.¹ NASA also reported Spitzer had discovered a gap in the dusty disc around a protostellar object (young star) which indicated the presence of a planet. If true, this would be the youngest planet ever detected. Some researchers have made several claims based on these findings:

- Since sticky hydrocarbons are the building blocks of amino acids, which are the building blocks of life, the raw ingredients for life might be abundant throughout our galaxy. This suggests life may be abundant in our galaxy and throughout the universe.
- The icy material found in the dusty planet-forming discs may explain the formation of icy planetoids like comets. This may support the hypothesis that comets endowed Earth with many of its biogenic, life-enabling materials.
- Because the protostellar object is only about one million years old and appears to have a planet in its dusty-disc, this indicates planets could possibly form in hundreds of thousands of years and be much more common than previously thought.

As Spitzer relays more and more information, excitement abounds in the scientific community with the possibility that the origin of life mystery has been solved. However, do these findings suggest life is common throughout our galaxy? Not so, says Hugh Ross.

- While confirming that dusty discs are common around young stellar objects, the Spitzer findings do not disturb the conclusion that only about two percent of stars in our galaxy possess planets, or that the Milky Way, compared to other galaxies, is unusually planet-rich.
- The existence of ices and sticky hydrocarbons in many places in our galaxy no more proves life is ubiquitous than does the abundance of silicon throughout the Milky Way prove that laptop computers are ubiquitous (except on Earth).
- Astronomers have found 120 different carbon compounds in interstellar and interplanetary space, including (possibly) trace amounts of the simplest amino acid, glycine. Controlled laboratory experiments have produced up to six of the 20 biological amino acids from these compounds. However, amino acids are highly susceptible to ultraviolet photo-destruction. They are virtually absent in interstellar and interplanetary dust because they are destroyed before they can accumulate.

The bottom line is the Spitzer findings confirm we're on the right

See SPITZER, page 8

Book Reviews

Origins of Life

Fazale Rana & Hugh Ross
Navpress, 2004

Reviewer: Jon Greene

Origins of Life is a thought-provoking book that deals with questions asked by scientists and laymen alike: What was first life like? When did it appear on Earth? How

did it get here? The RTB creation model is contrasted with the naturalistic, evolutionary model. Parameters for each model are outlined and compared to determine how they comport with the scientific evidence.

The RTB model predicts the early and abrupt appearance of life that displays complexity and characteristics of design. In contrast, the naturalistic model theorizes prebiotic molecules self-assembled to form complex biomolecules, which then developed capacities for self-replication and complex metabolic processes, and then ultimately evolved into functioning cells.

Scientific evidence shows first life demonstrated: (1) the capability to produce all the chemical building blocks needed for cell activity, including metabolism, reproduction, and DNA replication, and (2) biochemical pathways for synthesizing amino acids, nucleotides, sugars, and fatty acids. These characteristics demonstrate design. Naturalistic origin-of-life researchers are at a loss to explain how random mechanisms can account for the discovered complexity.

Scientific evidence also indicates life appeared early and abruptly. From 4.5 to 3.9 billion years ago, numerous impact events sterilized the earth's surface. Yet both microfossil and geochemical evidence point to life on earth as early as 3.86 BYA. Naturalistic explanations are lacking for the rapid emergence of biochemically complex life in the short period between 3.9 and 3.86 BYA. The evidence supports the RTB creation model.

Realizing the deficiencies of traditional models, naturalists have resorted to alternative hypotheses for the origin of life, including: (1) extremeophiles—organisms emerging in very hot or very cold environments, (2) panspermia—life on Earth seeded from extraterrestrial locations, (3) life from Martian meteorites or Jupiter's moon Europa, and (4) generation of life in deep-sea hydrothermal vents. Ross and Rana explain the intractable problems science has uncovered for each of these hypotheses.

Origins of Life offers the apologist a plethora of sound scientific evidence to challenge naturalistic origins-of-life theories. Evidence from science points to design—not random, chance processes.



The New Mormon Challenge

Beckwith, Mosser, Owens, et al.
Zondervan, 2002

Reviewer: Sean Drew

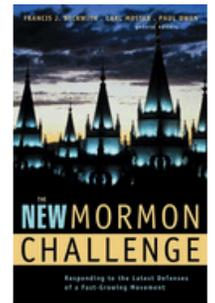
The New Mormon Challenge pits top evangelical scholars against the latest truth claims of the Mormon Church. This major apologetic work examines

Mormonism from many angles, including creation, the nature of God, the veracity of Christian scriptures, critiques of materialism and textual analysis of Mormon Scripture. The book's contributors reads like a Who's Who list of evangelical scholars with names like William Lane Craig, J.P. Moreland, Craig Blomberg and more.

The tone of the book is always respectful and the topics covered are presented fairly and in depth. The Mormon church has fostered a formidable intellectual body that has performed respectable in-depth scholarship. Mormon scholarship has gone mainly unchallenged from evangelicals and this book is the first step in remedying that state of affairs. The book has over a hundred pages of endnotes which are worth referring to.

One essay provides an excellent defense of the doctrine of creation *ex nihilo* from Bible and extrabiblical sources, including writings of the early church fathers and early Jewish writings. The textual analysis is buttressed with deductive philosophical and inductive scientific arguments. The philosophical arguments deal mainly with the concept of infinity and the implications of actual infinities. The scientific arguments include evidence for the big bang such as the expansion of the universe and the second law of thermodynamics. One interesting tidbits presented is the required initial geometry of the universe if no singularity were to have been present at creation. Penrose calculates that the odds of getting a universe with the correct initial geometry without an initial singularity would be 1 in $10^{1000B(3/2)}$, where B is the number of baryons in the universe ($\sim 10^{80}$). However given the phase space of possible configurations to work in and the constraints of the Weyl curvature hypothesis, the odds simplify to $10^{10(123)}$ thus making the initial singularity a virtual certainty.

I learned a great deal from this book regarding theology, philosophy, church history, textual analysis, and ancient near eastern culture. More importantly, the book was very faith affirming and has allowed me to witness much more confidently to our Mormon brothers and other lost souls.



throughout the body. He then makes the following statement:

Evidence of hemoglobin, and the still-recognizable shapes of red blood cells, in unfossilized dinosaur bone is powerful testimony against the whole idea of dinosaurs living millions of years ago. It speaks volumes for the Bible's account of a recent creation.

Wieland also states "to find unfossilized dinosaur bone is already an indication more consistent with a young age for the fossils." And, in a sidebar titled, *More on fresh dino bone*, he states:

To claim that bone could remain intact for millions of year without being fossilized (mineralized) stretches credibility. The report here of red blood cells in an unfossilized section of dinosaur bone is not the first time such bone has been found.

EXAMINING THE SOURCE

Wieland's article is based on a 1997 magazine account of the work of Montana State University researchers published in *Earth* magazine titled, "The Real Jurassic Park."³ The *Earth* article focused on the possibility of finding dinosaur DNA, a popular topic at the time due to the release of Steven Spielberg's film, "Jurassic Park." Because *Earth* was written for the general public—not a scientific journal—the article was a journalistic blend of fact and hyperbole.

Wieland states the researchers found actual red blood cells. However, in reading the *Earth* article, it is apparent no actual blood cells were found—the objects merely resembled blood cells. (Note: real red blood cells appear as translucent red objects with a lighter center and dark, refractive outer membrane.) The researchers describe the objects as "mysterious structures at best derived from blood" and "unknown structures...[perhaps] derived from red blood cells."^{4,5} Mary Schweitzer also clearly states she did not believe the objects were red blood cells:

So I showed these microscopic bone slices to my boss, paleontologist Jack Horner, renowned for his work on dinosaur nesting sites. He took a long look and then asked, "So you think these are red blood cells?" I said, "No."⁶

Wieland states the *T. rex* bone contained traces of hemoglobin. However, in the *Earth* article, the researchers do not make this claim:

By now, we felt fairly comfortable claiming that these dinosaurs tissues contained heme. But heme doesn't quite equal hemoglobin. Some other proteins that contain absolutely no hemoglobin do contain a heme unit.⁷

In fact, in the concluding paragraphs, the researchers state they are not even certain if the objects in the *T. rex* bone are blood products:

So far, we think that all this evidence supports the notion that our slices of *T. rex* could contain preserved heme and hemoglobin fragments. But more work need to done before we are confident enough to come right out and say, "Yes, this T. rex has blood compounds left in its tissues."⁸

Wieland states unfossilized dinosaur bone is an indication of a young age for the fossils. While the *Earth* article does not go into length about the fossilization process, it is clear the researchers were not troubled by the fact the bone was

Apologetics Tool Kit

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Join Hugh Ross each Tuesday, 11:00 AM to 1:00 PM (PT), for an exciting discussion about how the

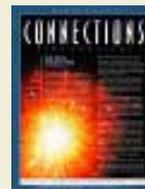


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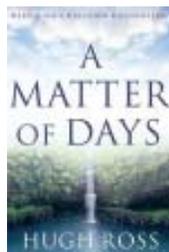


Great Resources

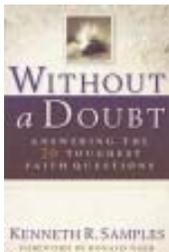
In this new book, *Origins of Life: Biblical and Evolutionary Models Face Off*, Hugh Ross and Fuz Rana reveal how life's beginnings can be tested. They examine the latest evidence from the origin-of-life field and explode the myth the data supports a naturalistic origin of life. *Intermediate/Advanced, Hardback, US\$ 12.95.*



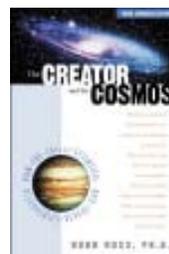
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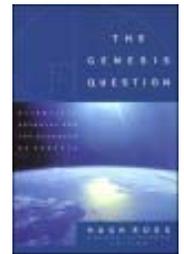


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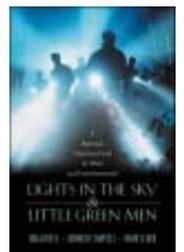
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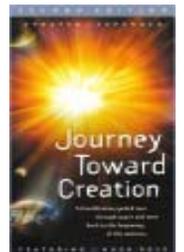
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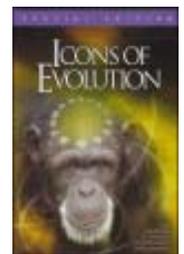
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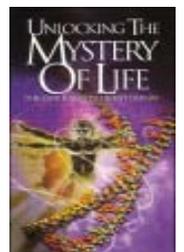
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not completely fossilized. They explain:

Normally a bone becomes fossilized with the help of groundwater, which permeates it, washes away its organic components and replaces them with minerals. ...One possible explanation was that not much water had gotten into this *T. rex*. If that was true, then some biomolecules could remain.⁹

Wieland also states the presence hemoglobin in the *T. rex* bone tissue casts doubt upon the millions-of-years idea. However, in the *Earth* article, the researchers state hemoglobin products are known to survive for a very long time:

We also thought hemoglobin could be in the tissue because at its core are structures that have a reputation for durability. Called heme units, these chemically stable structures consist of a ringlike organic compound called porphyrin bound to an iron atom. Porphyrins are an important part of many biological molecules, including chlorophyll, which plants need for photosynthesis. Porphyrins derived from chlorophyll have been found in sediments dating back to the Carboniferous, when vast forests blanketed the planet many millions of years before the dinosaurs existed. So we did not think it too far-fetched that heme units from hemoglobin might still exist in our *T. rex*.¹⁰

In comparing the two articles, it is apparent Wieland was very selective in the information he reported. The excitement he states the researchers were struggling to restrain was not that they had found red blood cells but the possibility they had found residual blood products that might contain dinosaur DNA—the focus of the *Earth* article. Wieland states the researchers were unable to prove the objects were not red blood cells. This is true but they were also unable to prove they were red blood cells.

ADDITIONAL FACTS

Since 1997, Answers in Genesis has also continued to claim the objects were actual red blood cells. For example, in their 1999 book, *Refuting Evolution*, Jonathan Sarfati states:

Red blood cells and hemoglobin have been found in some (unfossilized!) dinosaur bone. But these could not last more than a few thousand years...¹¹

And their 2000, *The Revised and Expanded Answers Book*, states:

There is also physical evidence that dinosaur bones are not millions of years old. Scientists from the University of Montana found *T. rex* bones that were not totally fossilized. Sections of the bones were like fresh bone and contained what seems to be blood cells and hemoglobin. If these bones really were millions of years old, then the blood cells and hemoglobin would have totally disintegrated. Also, there should not be 'fresh' bone if it were really millions of years old.¹²

Wieland has also continued to stand behind the claim. In a 2002 exchange titled, "Evolutionist questions AIG report – Have red blood cells really been found in *T. rex* fossils," Wieland responds to a critic's statement that the objects are not blood cells by saying:

This seems rather disingenuous, since they saw what appeared to be red blood cells under the microscope.

Obviously, this was stunning, and it was Jack Horner who, as we cited, suggested to Mary Schweitzer that she try to disprove that they were red blood cells that were being seen by these people under the microscope.¹³

And, elsewhere in the exchange Wieland states:

...there is no reason for a scrap of retreat from my earlier statements above that a) the evidence is consistent with morphologically intact red blood cells having been discovered...b) the evidence is overwhelmingly more consistent with the belief that the fossils are not millions of year old than with the converse.¹⁴

The problem is the dinosaur blood claim is derived from the *Earth* article, which was a popularization of the research conducted by Schweitzer and her colleagues. The actual research papers, on which the *Earth* article was based, do not indicate the presence of actual red blood cells. One paper published in the Proceedings of the National Academy of Sciences (PNAS), states:

The biochemical and biophysical data...provide powerful support for the hypothesis that some form of heme as well as fragments of hemoglobin proteins are preserved with the dinosaur tissues.¹⁵

The other paper in the Journal of Vertebrate Paleontology states:

Results indicate that the analyzed tissue contains numerous biomolecules. While some the biomolecules are most likely contaminants, the probable presence of collagen type I suggests that some molecules of dinosaurian origin in these tissues.¹⁶

After the *Earth* article, Schweitzer and her colleagues also published a paper in the *Annales de Paléontologie*. Here the researchers are even more explicit that the structures in the *T. rex* bone were not red blood cells:

Clearly these structures are not functional cells. However, one possibility is that they represent diagenetic alteration of original blood remnants, such as complexes of hemoglobin breakdown products, a possibility supported by other data that demonstrate that organic components remain in these dinosaur tissues.¹⁷

Given the controversy created by Wieland's article, a number of people have contacted the researchers to determine if objects were

red blood cells. In Jack Horner's response to a student at Indiana University Southeast, he states:

No cells have been found in any dinosaurs, but the remnants of red blood cells have been hypothesized on the basis of Heme (sic), a kind of iron produced biologically. The discovery of heme, by my graduate student Mary Schweitzer, in a skeleton of T-rex indicates that the remains of cells can be preserved.¹⁸

And, in his response to Jack DeBaun, the person debating Wieland in the 2002 exchange mentioned previously, Horner states:

What we found was heme, a form of iron that has a biological origin, but of course, not any soft tissue or any other component of a cell. It's preserved because it's iron.¹⁹

CONCLUSION

Were actual red blood cells found in the *T. rex* bone as young-earth creationists claim? The data says "no." The objects may be the remnants of blood cells—residual products resulting from cellular breakdown—but they clearly lack cell walls and other structures to claim they are red blood cells. Interestingly, Wieland seems to admit as much in his exchange with Jack DeBaun where he states:

The immunological reaction was the factor that, coupled with the histological appearance, made it more reasonable to claim these were actual red blood cells (*i.e., their remains*) [emphasis added].²⁰

What is significant about this statement is, for the first time, Wieland seems to clarify that what he and other young-earth creationists are calling red blood cells are, in fact, cell remains. The problem is, regardless of the spin one puts on it, cell remains are not "real blood" and "morphologically intact red blood cells."

Young earth creationists continue to cite the *Earth* article and ignore the other data, including the statements from Horner that no blood cells were found. They claim scientists have simply back-peddled from the original findings because admitting the objects were blood cells undermines the evolutionary dating scheme. However, the discovery of intact dinosaur blood cells would be an amazing find. What researcher would want to keep it quiet? At the same time, what researcher would be able to keep it quiet? To suggest a broad conspiracy among researchers to hide such an earth-shattering discovery is simply ludicrous.

As Christians, we have a responsibility to pursue truth in all matters. When we are wrong, we need to admit it. If we are unwilling to admit our errors in matters of science, why should anyone believe our statements about matters of theology? Intentional or not, young-earth creationists have fostered the idea that actual dinosaur blood—intact red blood cells with hemoglobin—

were found by Schweitzer and her colleagues. Rather than digging in their heels, they should at the very least, provide full disclosure of the facts surrounding this discovery.

Greg Moore is president of Seattle Chapter of Reasons to Believe. He is a trained RTB apologist and works for the City of Everett, Washington.

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track with the current models for planet formation and in identifying which kinds of planets are likely to form first. The results, however, are irrelevant to the origin of life problem. Regardless if organic materials are abundant in space, the past and present conditions on Earth, in our solar system, and in our galaxy, offer no realistic pathway for life's origin.

In the words of James Houck of Cornell University, the principal investigator for the infrared spectrograph science instrument, the implication for life is uncertain:

What we see is a bunch of building blocks, a bunch of bolts, some screws—that doesn't mean that a car is going to appear soon. It just means here are a lot of pieces that are characteristic of the pieces that must have gone into building a car. Predicting life on the basis of the evidence we have now is going very far out on limb.²

As Christians, we shouldn't be alarmed or surprised by these types of reports. Instead, we should follow Paul's admonition to "test everything" (1 Thess. 5:21). All one has to do is examine the findings of the last two international origin-of-life conferences to see that scientists have no credible explanation for how life could have originated on Earth by naturalistic mechanisms.³ By all indications, life appeared suddenly and inexplicably, perfectly matching RTB's creation model.

For more information on the origin of life issue, see Reasons to Believe's new book, "Origins of Life: Biblical and Evolutionary Models Face Off," by Hugh Ross and Fuz Rana.

REFERENCES:

1. Jet Propulsion Laboratory, "NASA Spitzer Telescope Discovers Raw Materials for Life in Planetary Construction Zone," May 2004, www.spaceref.com/news/viewpr.html?pid=14307
2. Leslie Mullen, "First Images Show Organic Molecules," *Astrobiology*, December 2003, <http://www.astrobio.net/news/print.php?sid=732>
3. For a review of the 9th International Society for the Study of the Origins of Life Conference see: <http://www.reasons.org/resources/apologetics/issol99.shtml?main>



REASONS TO BELIEVE SEATTLE CHAPTER

Who Are We?

The Seattle Chapter of Reasons to Believe is a local extension of the worldwide, interdenominational Reasons to Believe ministry. We exist to support our parent organization and foster local involvement in the ministry. We serve the Puget Sound area and we are composed of Christians of different ages and backgrounds.

It is our conviction the same God who created the universe inspired the Bible. Therefore, what God says through His written word must agree with the facts of nature. We reject the notion that science and the Bible are at odds and we seek to provide a scientifically-sound and Biblically-faithful alternative to Darwinian evolution and young-Earth creationism.

What Do We Do?

The Seattle-Area Chapter exists to remove the doubts of skeptics and strengthen the faith of believers. We provide scientific, historical and philosophical evidence that supports the Christian worldview and helps remove barriers to a belief in God, the Bible and the Gospel of Jesus Christ. We carry out this mission by:

- Helping people access RTB and other resources that are scientifically and biblically sound.
- Bringing nationally-known speakers into the area to promote the scientific reliability of the Bible.
- Providing a local team of trained apologists to address questions about science, the Bible and related topics.
- Training Christians to shed their fear of science and use science to spread the Gospel.
- Working with teachers and homeschoolers to achieve a balanced approach to the teaching of origins.
- Building alliances with local churches, ministries and groups to maximize the exposure of the RTB ministry.
- Reaching out to unbelievers with gentleness and respect, encouraging them to evaluate their worldviews.

Questions? Get Answers.

Whether you are looking for scientific support for your faith or answers to questions about God, the Bible, and science, contact us at seattle@reasons.org. You can also call the RTB hotline seven days a week, 5:00 to 7:00 PM at 626-335-5282.