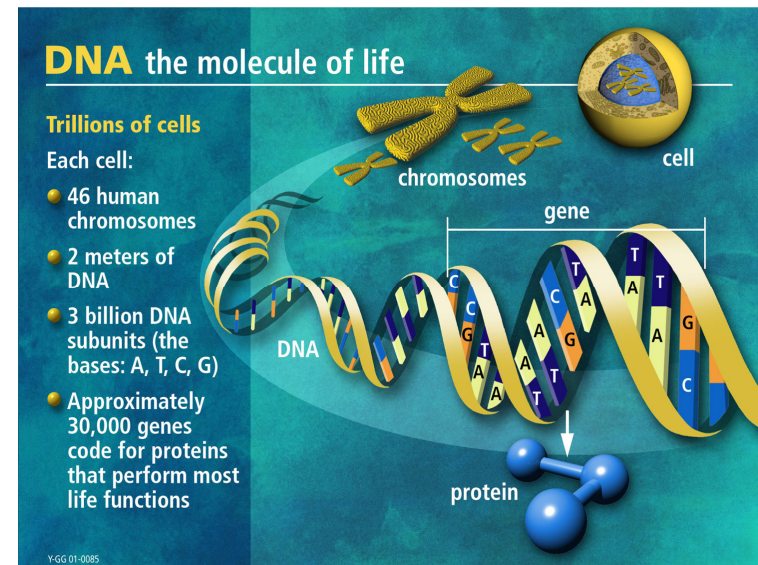
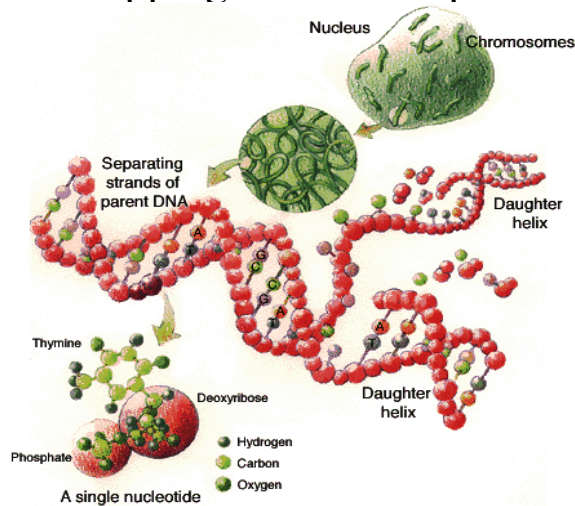


## Life and its Origin

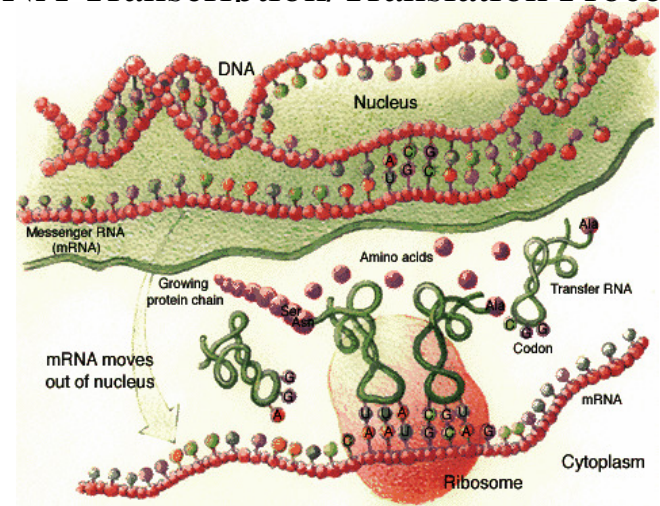
- High-level view of life components
- Illustrate that there's no “simple life”
- We are “fearfully and wonderfully made” (Ps 139:14)
- Proposed natural scenarios of life's origin
- Major difficulties with natural origin scenarios
- Natural origin killer: information & its processing



## Unzipping DNA to Replicate



## DNA Transcription/Translation Process



## Interesting Observations

- **“Physics books may be complicated, but ... the objects and phenomena that a physics book describes are simpler than a single cell in the body of its author ... organized with intricate architecture and precision-engineering into a working machine capable of writing a book... Each nucleus ... contains a digitally coded database larger, in information content, than all thirty volumes of the Encyclopedia Britannica.”** *Richard Dawkins, Climbing Mount Improbable, 1996*
- **“Biology is the study of complicated things that give the appearance of having been designed for a purpose.”** Dawkins “The Blind Watchmaker”, p. 1
- **“Although they claimed to be wise, they became fools and exchanged the glory of the immortal God for images made to look like man and birds and animals and reptiles.” (Rom 1:22)**

### Cells: Wonderfully Made

- Membrane permits/denies passage to 1000s compounds
  - Organelles perform nutrition, repair, waste disposal, communication, and reproduction
- Each cell is a complex chemical factory ( $10^{-13}$  Viking's size)  
<1 sec to do what scientists can manufacture in weeks  
Self-replicating, 3-D, networked computing/storage system
- Examples of Specialized cells
- Manufacturing hemoglobin requires  $2.5 \times 10^{17}$  ops/sec
  - 100 billion neurons in human brain, each linked to 10,000 other neurons ( $10^{15}$  synaptic interconnections)
  - Brain performs  $10^{16}$  ops/sec (> all computers in the world)
  - 1 sec of optic nerve's data: hours on supercomputer
  - Talking:  $>10^5$  neuromuscular events/sec, using >100 muscles (controlling diaphragm, tongue, cheeks, jaw, etc.)

## Man is “fearfully and wonderfully made” Ps. 139:14

>20,000 genes, each with >1000 bits of information  
(many overlapping to produce >100,000 proteins)  
>6,000,000,000 bases (ACGT) in folded 6',  $10^{-12}$  gram chain  
Digital (base 4) self-correcting encoded information  
3 groups of 1-of-4 bases:  $4^3$  (= 64) possible codons  
20 amino acids for proteins redundantly codon-specified  
Information in 1 teaspoon of DNA: all people + all books  
Even "simplest" organism's DNA has >150,000 nucleotides  
DNA/RNA/proteins must be fully-formed/functional  
>2000 enzyme proteins enable reactions

*“Human DNA is like a computer program but far, far more advanced than any software we've ever created.”* Bill Gates, *The Road Ahead, 1995, p.228.*

“Life is basically the result of an information process, a software process. Our genetic code is our software.”  
Craig Venter. 2010 Guardian interview.

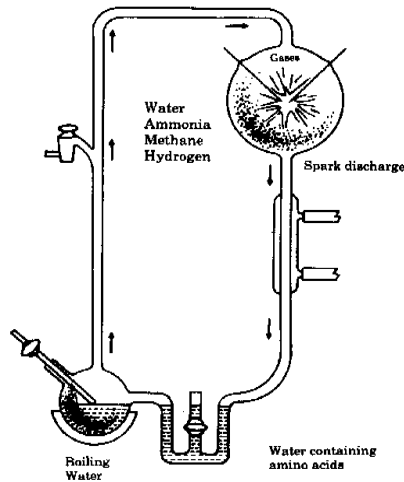
## What Might Be a Protocell’s Minimal “Genome”?

Don Johnson, *The First Gene, 2011, p284-307*  
The origin of life’s biggest mystery is the origin of the genome which contains the information to cybernetically control all aspects of cellular life today. Without formal control, no life would exist.

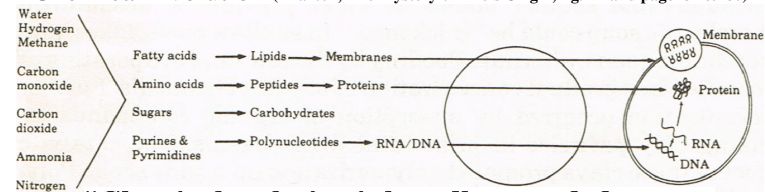
Proteins 1<sup>st</sup>: chemicals→amino acids→proteins→DNA  
RNA (Genetics) 1<sup>st</sup>: a ribozyme (replicator with enzyme capabilities) spontaneously formed  
Metabolism 1<sup>st</sup>: a “bag of chemicals” (composome) presumably would grow until it reaches a size that enables it to divide, with each “daughter” inheriting about half the chemical contents

Reliable, yet evolvable, replication is fundamental to life  
Cybernetically-controlled chemical metabolic networks are needed to admit and process fuel to harness energy for growth, reproduction, manufacturing, etc.

## Miller Experiment for Amino Acid Formation



## Chemical Evolution (Thaxton, *The Mystery of Life's Origin*, Fig. 2-1 and page 182 & 186)



**“Chemical evolution is broadly regarded as a highly plausible scenario for imagining how life on earth might have begun. ... what has emerged over the last three decades ... is an alternative scenario which is characterized by destruction, and not the synthesis of life. ... The undirected flow of energy through a primordial atmosphere and ocean is at present a woefully inadequate explanation for the incredible complexity associated with even simple living systems”**

True for Proteins, DNA/Enzymes, RNA (ribozymes), or Metabolism First



## Interesting Observations

- "None of the papers published in JME (Journal of Molecular Evolution) over the entire course of its life (1971-) as a journal has ever proposed a detailed model by which a complex biochemical system might have been produced in a gradual, step-by-step Darwinian fashion." *Michael Behe., Darwin's Black Box: the biochemical challenge to evolution, 1996, p176*
- "The unexpected levels of complexity revealed at the molecular level have further strained the concept of the random assembly of a self-replicating system." *AW Swee-Eng, "The Origin of Life: A Critique of Current Scientific Models", CEN Tech. J. 10-3, pp300-314, 1996*
- "It's hard to see how the chemicals on early Earth could have combined to form the complicated nucleotides that make up RNA." *John R. Davenport, "Possible Progenitor of DNA Re-Created," Science Now, 11/16/00, p1*
- "Ribosome creation requires many RNA-modification enzymes that are still unknown." *Patrick Barry, "Life from Scratch," Science News Online: 173 (2), 1/12/08, p27*

## Recent Speculations on Life's Origin

Comet yields 'rich array' of organics (BBC News, 7/30/15) "frozen primordial soup. It's the kind of stuff that if you had it, and warmed it up somehow, and put it in the right environment, with the right conditions, you may eventually get life forming out of it."

Computing the origin and evolution of the ribosome from its structure, "Phylogenetic trees ... were built from a genomic census of millions of encoded proteins and associated terminal Gene Ontology terms. Trees reveal a 'metabolic-first' origin of proteins, the late development of translation, and a patchwork distribution of proteins in biological networks mediated by molecular recruitment." *Comp & Struct* V13, 2015, 427-447.

Meteorite impacts can create DNA building blocks, *Sci Daily*, 8/18/15  
"A new study shown that meteorite impacts on ancient oceans may have created nucleobases and amino acids. Researchers discovered this after conducting impact experiments simulating a meteorite hitting an ancient ocean."

## Primordial Prescription: The Most Plaguing

### Problem of Life Origin Science (Abel, 2015)

"All known living cells are programmed. They are cybernetic... To have any hope of explaining life origin, we must first explain the birth of prescription and its processing. Then, we must explain the instantiation of prescription and its processing into the physical cosmos."

"We have still another chicken-and-egg paradox associated with life-origin ... Only agency can make programming decisions and engineer processing devices. Only agency can organize parts and events into useful entities and procedures. Yet agency exists only in association with, or as a product of, already-existing life."

## Origin of Life Observations

"The origin of life remains one of the humankind's last great unanswered questions, as well as one of the most experimentally challenging research areas." Miller & Cleaves, "Prebiotic Chemistry on the Primitive Earth," in *Systems Biology VI: Genomics*, 2007

"The origin of life remains one of the most vexing issues in chemistry, biology, and philosophy," *Bioinorganic Photochemistry*, 2009, p109

"The challenge for an undirected origin of such a cybernetic complex interacting computer system is the need to demonstrate that the rules, laws, and theories that govern electronic computing systems and information don't apply to the even more complex digital information systems that are in living organisms." Johnson, *Probability's Nature and Nature's Probability*, 2009/2010, p48

## Probabilities of Matching Life's Components

Law of Probability allows a maximum probability of forming-

- a typical functional protein<sup>a</sup>: 1 part in 10<sup>175</sup>
- the required enzymes for life<sup>b</sup>: 1 part in 10<sup>40,000</sup>
- a living, self-replicating cell<sup>c</sup>: 1 in 10<sup>340,000,000</sup>

<sup>a</sup>Thaxton, Bradley, & Olsen, *The Mystery of Life's Origin*, 1992

<sup>b</sup>Fred Hoyle, *The Intelligent Universe* pp. 16-17, 1983

<sup>c</sup>Harold Morowitz, *Energy Flow in Biology*, p. 99

Equivalent to winning each (once is 1 in 41,416,353) CA Superlotto for: <sup>a</sup>23 times, <sup>b</sup>50 years, <sup>c</sup>125 million years

Life is unfathomably complex: "Functionally effective proteins have a vanishingly small chance of arising spontaneously in a prebiotic environment." Jimenez-Montano, "Applications of Hyper Genetic Code to Bioinformatics", *J. Biol. Sys.* (12) pp5-20, 2004

## **\$1 million Origin-of-Life Prize® [www.us.net/life/](http://www.us.net/life/)**

- **“The Origin-of-Life Prize'® ... will be awarded for proposing a highly plausible natural-process mechanism for the spontaneous rise of genetic instructions in nature sufficient to give rise to life.”**
- **LAW of biogenesis: life comes only from life**
- **“Those who insist on undirected natural causes of life are thus in an untenable position when it comes to known science. Not only can they not prove that it’s possible (nonzero probability) for life to come about by undirected natural processes, but the information content of life precludes that possibility.”** Johnson, *Probability’s Nature and Nature’s Probability*, 2009, p54

## **Conclusions**

- **Life is incredibly complex, requiring all components**
- **It is impossible for life to have an undirected origin**
- **Life's origin is scientifically unknowable**
- **Source of life is a matter of faith**
- **Bible account of life is compatible with known science**
- **The Bible IS reliable and can be trusted – “All Scripture is God-breathed and is useful for teaching...”** (2 Tim. 3:16).
- **Our knowledge on any subject is limited – “Now we see but a poor reflection as in a mirror.”** (1 Cor 13:12).
- **The world is blind to many truths (Rom. 1:18-32, 1 Cor. 1:18-2:16) – “They exchanged the truth of God for a lie.”**

## **Biblical Origin of Life**

- **“Then God said, 'Let the land produce vegetation'” Gen 1:11 (day 3)**
- **“And God said, 'Let the water teem with living creatures, and let birds fly above the earth across the expanse of the sky.’” Gen 1:20 (day 5)**
- **“And God said, 'Let the land produce living creatures according to their kinds.’” 1:24 (day 6)**
- **“Then God said, 'Let us make man in our image'... in the image of God he created him; male and female he created them... God formed the man from the dust of the ground and breathed into his nostrils the breath of life.” Gen 1:26-27 & 2:7 (day 6)**

## **Useful ID References**

*Probability's Nature and Nature's Probability*, Don Johnson (2 versions: 2009 Lite/2010 revised Scientists’)  
*Programming of Life*, Don Johnson, 10/10&5/15, Video 8/11&7/15  
*The Privileged Planet*, Gonzalez & Richards, 2004  
*Darwin's Black Box*, Michael Behe, 1996  
*Signature in the Cell*, Stephen Meyer, 2009  
*Darwin’s Doubt*, Stephen Meyer, 2013  
*Uncommon Dissent*, William Dembski, 2004  
[arn.org](http://arn.org), [intelligentdesign.org](http://intelligentdesign.org), [uncommondescent.com](http://uncommondescent.com), [scienceintegrity.org](http://scienceintegrity.org) (PDFs available at [www.4iam.org](http://www.4iam.org))

## **Creation/Biblically-based References**

[answersingenesis.org](http://answersingenesis.org), [creation.com](http://creation.com), [icr.org](http://icr.org), [reasons.org](http://reasons.org)  
*The Case for A Creator*, Lee Strobel, 2006  
*I Don’t Have Enough Faith to Be an Atheist*, Geisler, 2004