The Scientific Case for Intelligent Design

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What Is Intelligent Design?

Intelligent design is the study of patterns in nature that are best explained as the product of intelligence.

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Pattern best explained by intelligence?

Pattern best explained by intelligence?

Pattern best explained by intelligence?

What Is Intelligent Design?

Intelligent design is the study of patterns in nature that are best explained as the product of intelligence.

What Is Intelligent Design?

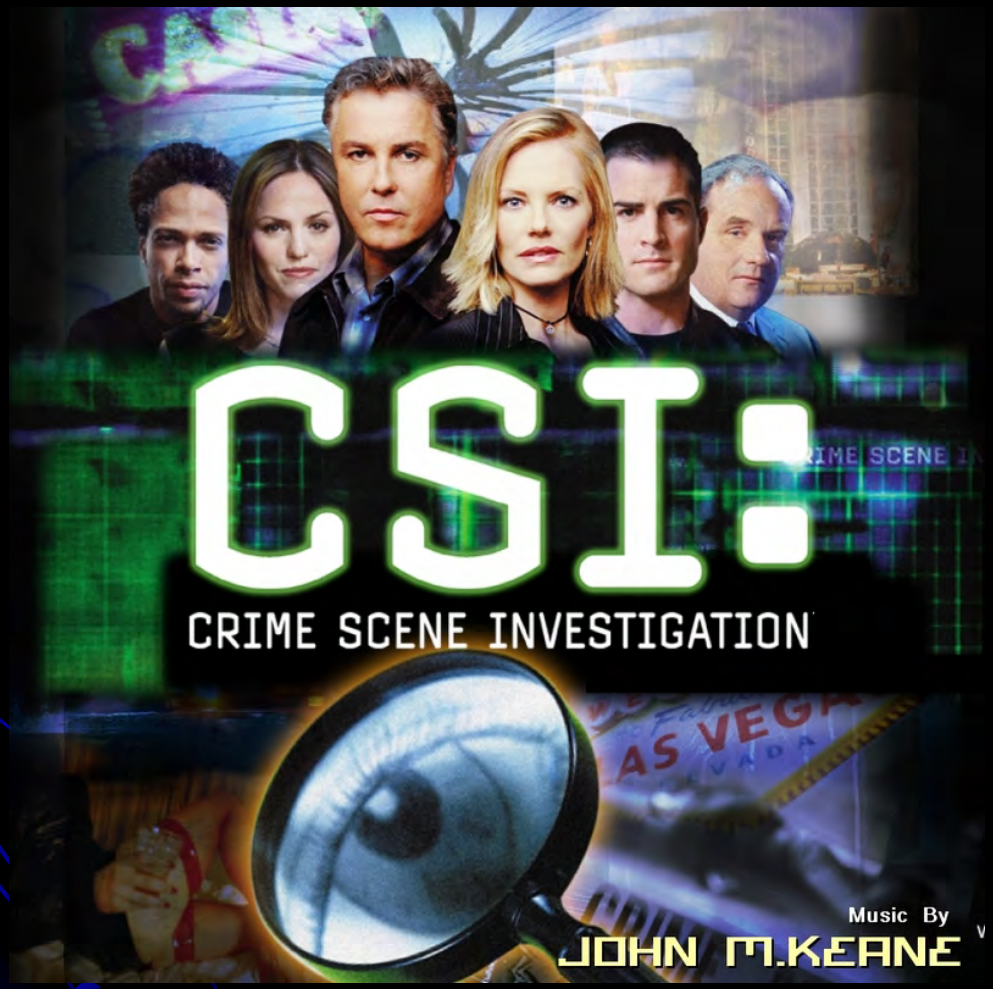
Intelligent design is the study of information in nature that is best explained as the product of intelligence.

Intelligent design is therefore …

* a theory of information
* fully a part of science

Example 1: Forensic Science

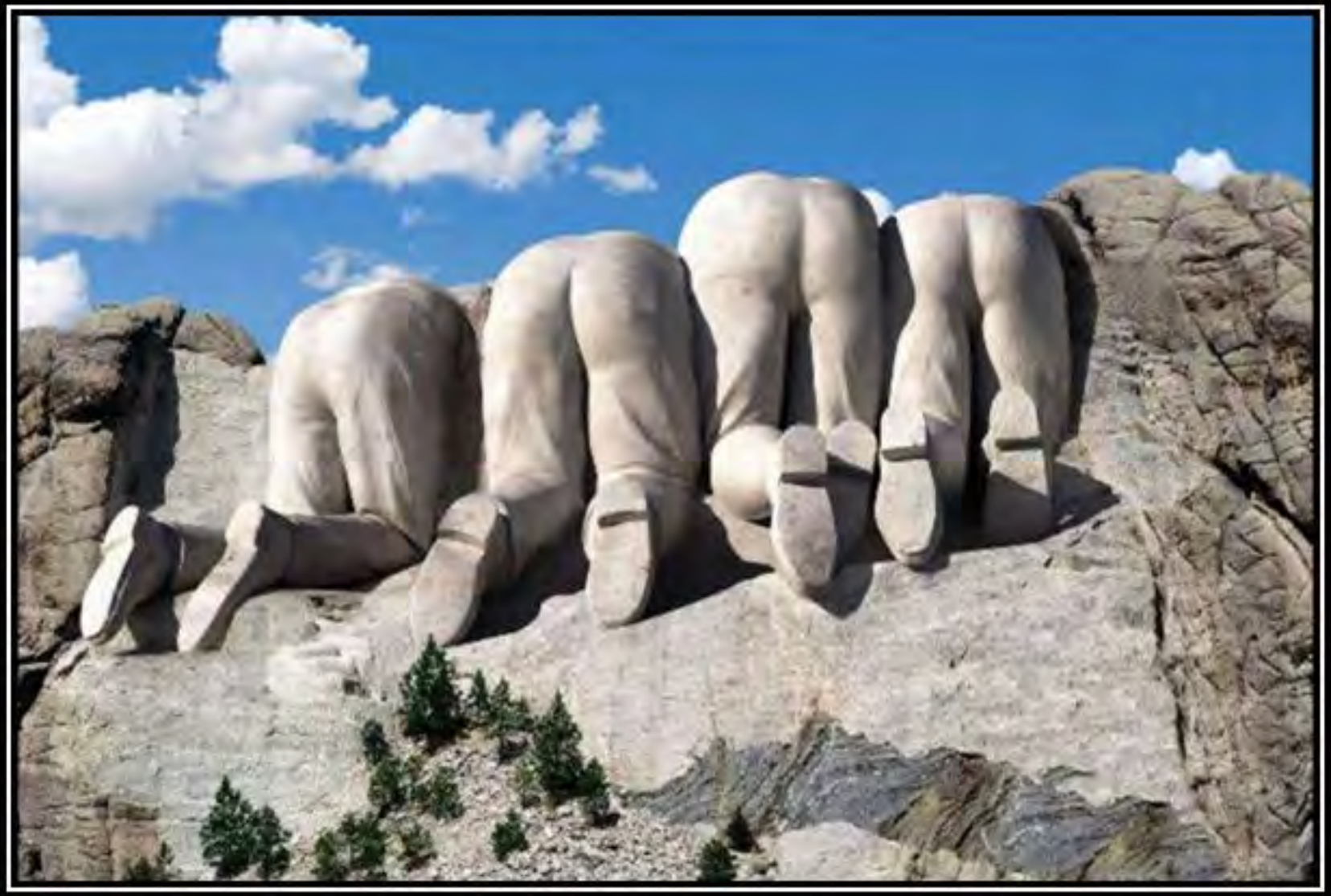
Example 1: Forensic Science



Example 2: SETI

Example 3: Archeology

Example 3: Archeology

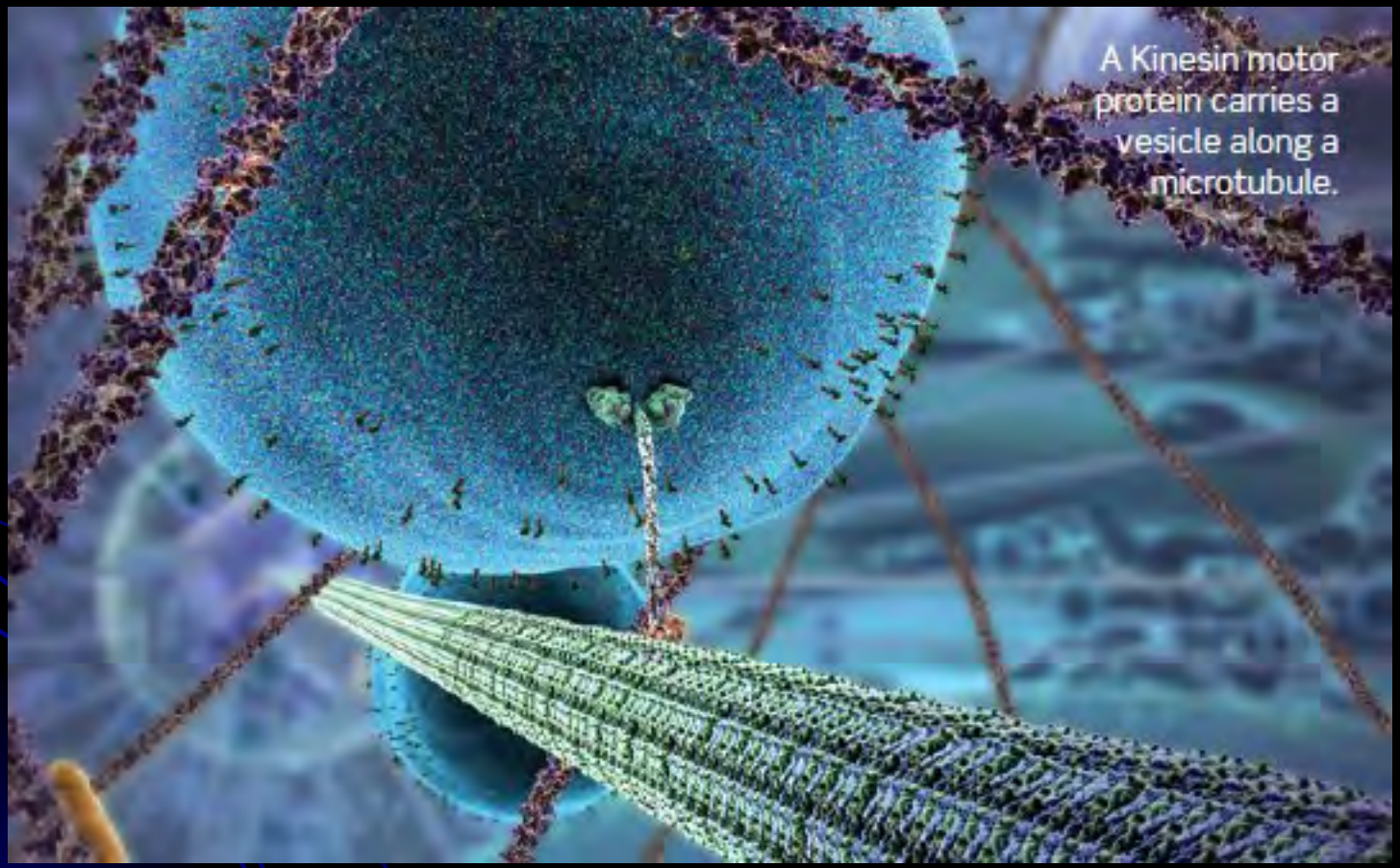


MT. RUSHMORE

The backside

Example 4: Cosmology

Example 5: Biology



Example 5: Biology

But Is Design in Biology Real?

- “Biology is the study of complicated things that give the appearance of having been designed for a purpose.”
  —Richard Dawkins
- “Biologists must constantly keep in mind that what they see was not designed, but rather evolved.”
  —Francis Crick

But Is Design in Biology Real?

"The illusion of purpose is so powerful that biologists themselves use the assumption of good design as a working tool."

–Richard Dawkins (ROOE, 1995, p. 98)

But Is Design in Biology Real?

Molecular biologists have themselves needed to introduce the language of high-tech engineering to describe the systems they are seeing:

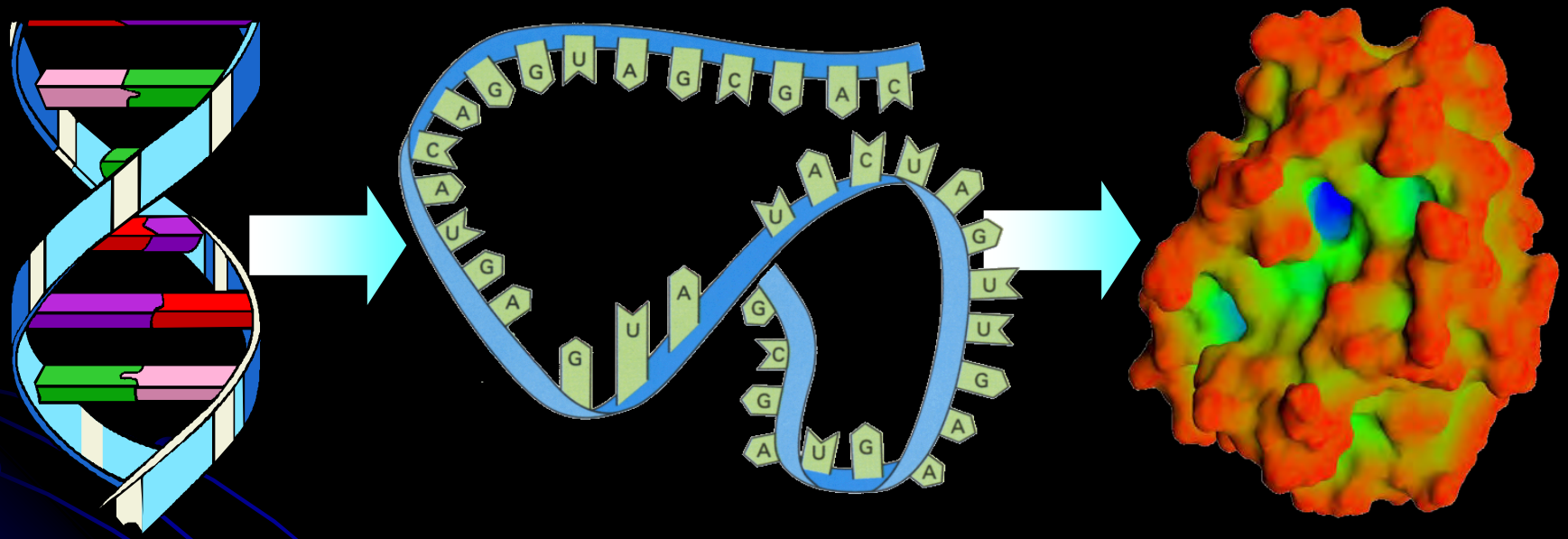
- information storage, retrieval, and processing (genetic code)
- signal transduction circuitry
- high-efficiency nano-engineered motors
- automated parcel addressing (UPS labels / zip codes)
- transportation, distribution, and communication systems
- complex monitoring, error correction, and feedback mechanisms
- self-replicating robotic manufacture

But Is Design in Biology Real?

"Apart from differences in jargon, the pages of a molecular-biology journal might be interchanged with those of a computer-engineering journal."

–Richard Dawkins (ROOE, 1995, p. 17)

The Genetic Code



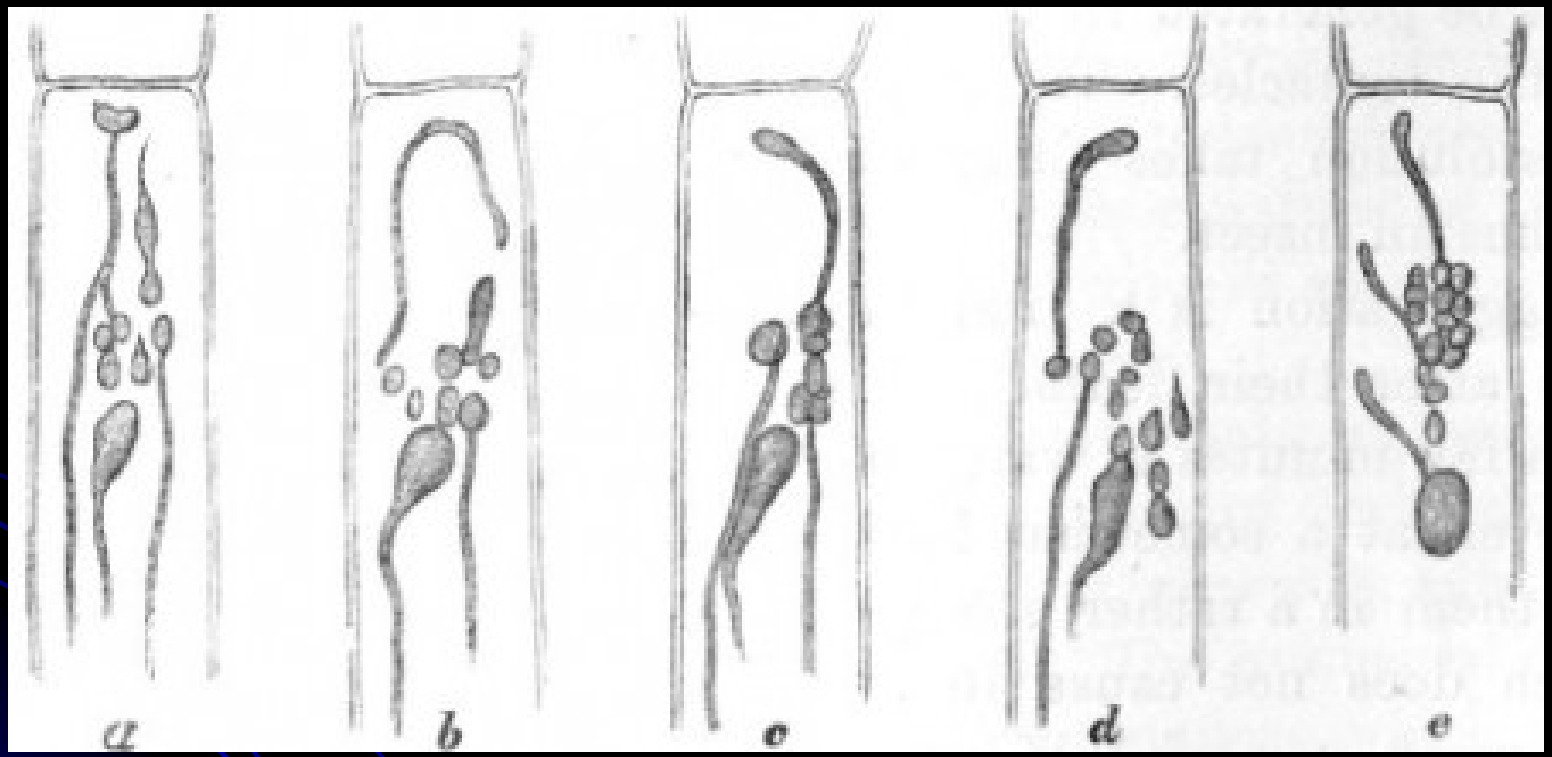
DNA
(Gene)

mRNA
(Gene message)

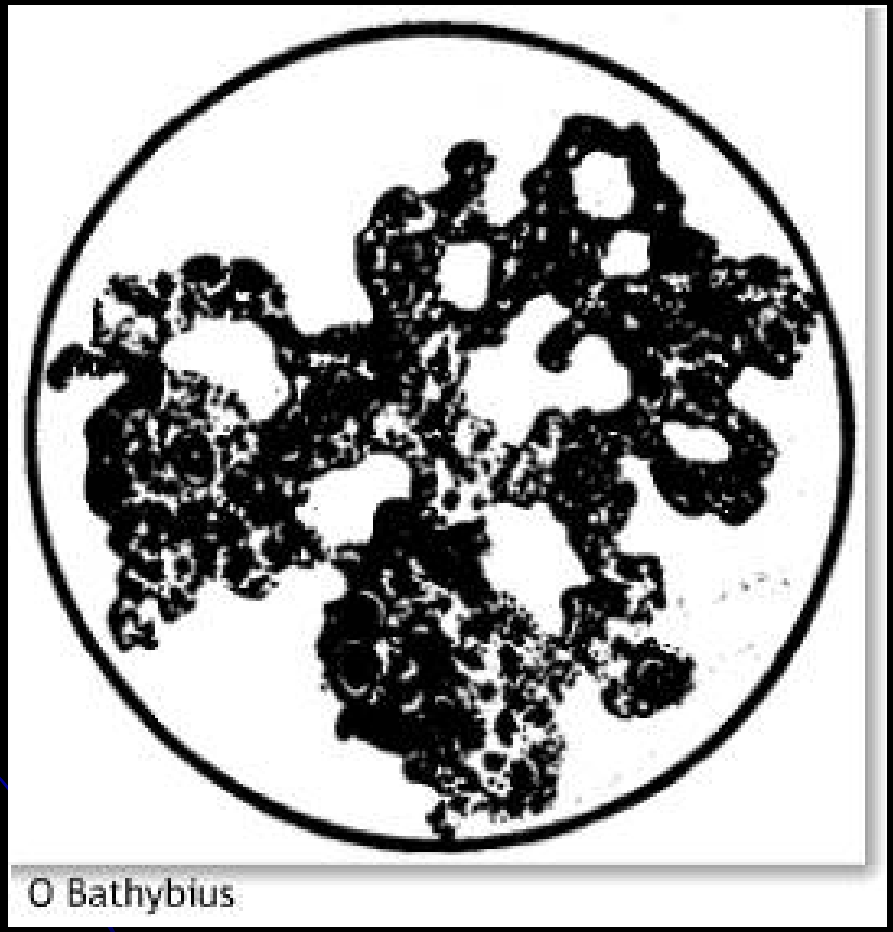
Protein
(Gene product)


The origin of life itself...
eh, it's not really my bag.
The origin of species is where it's at!
DARWIN
ORIGIN
of
SPECIES

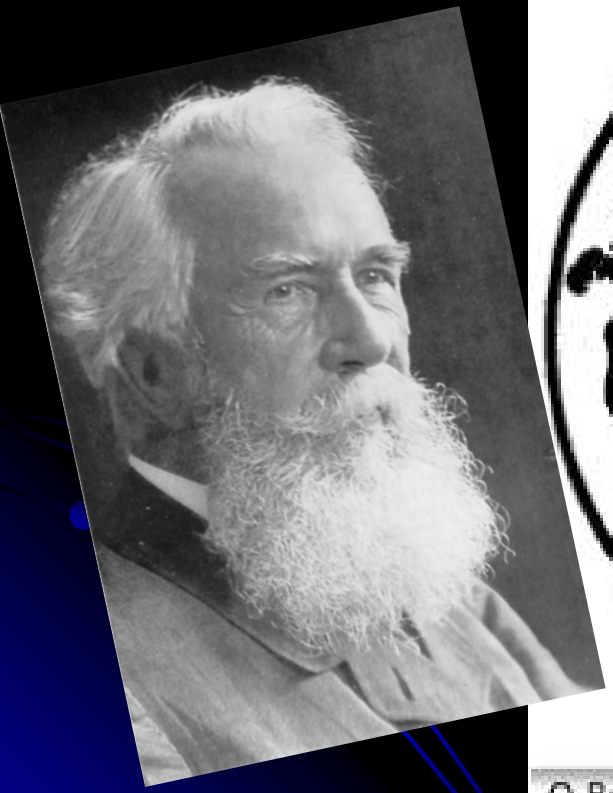
The Cell in Darwin's Day

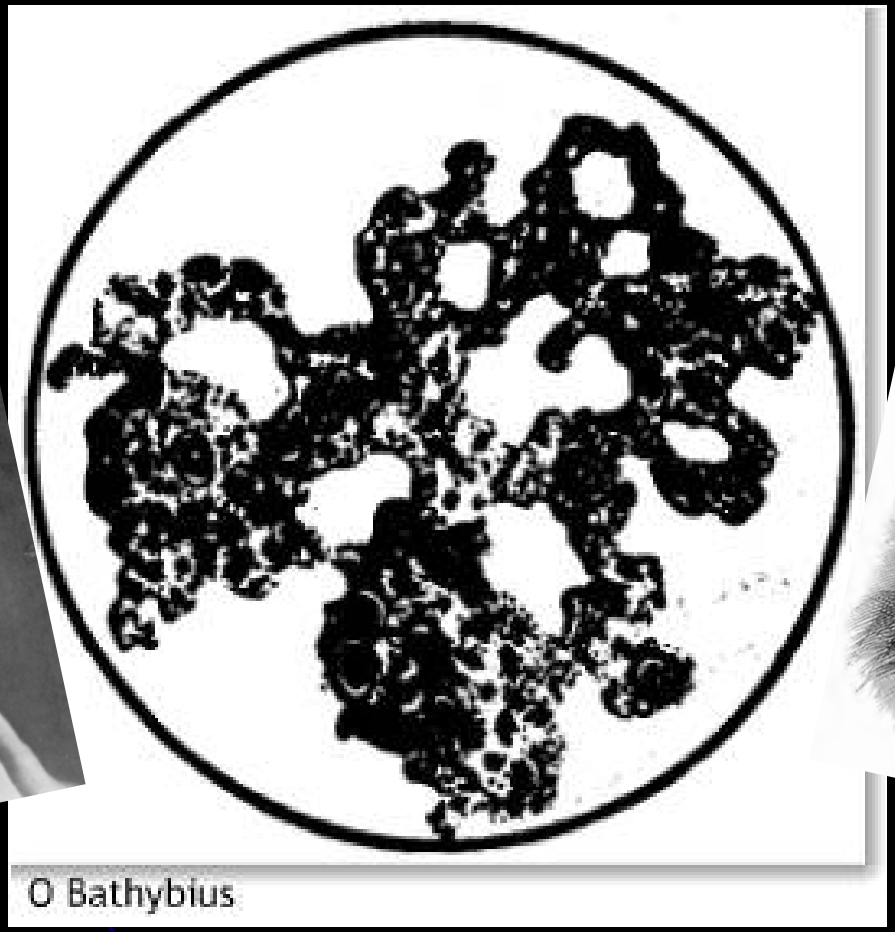


The Proto-Cell in Darwin's Day

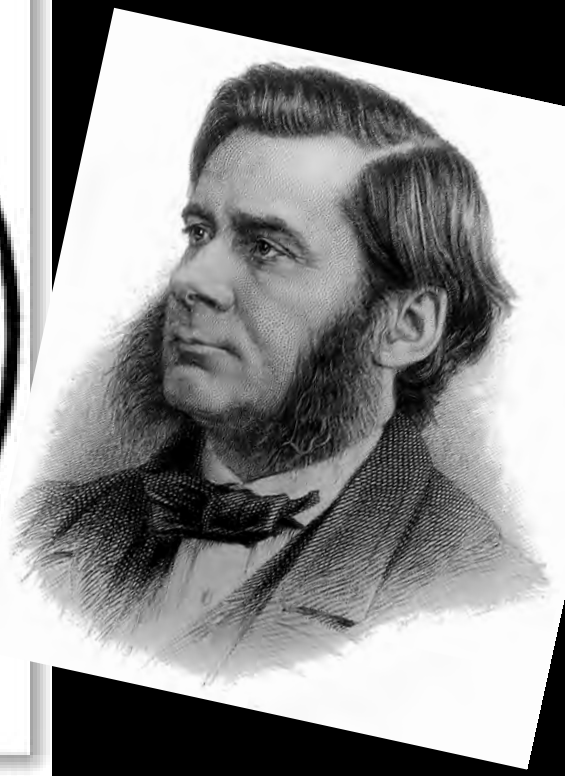


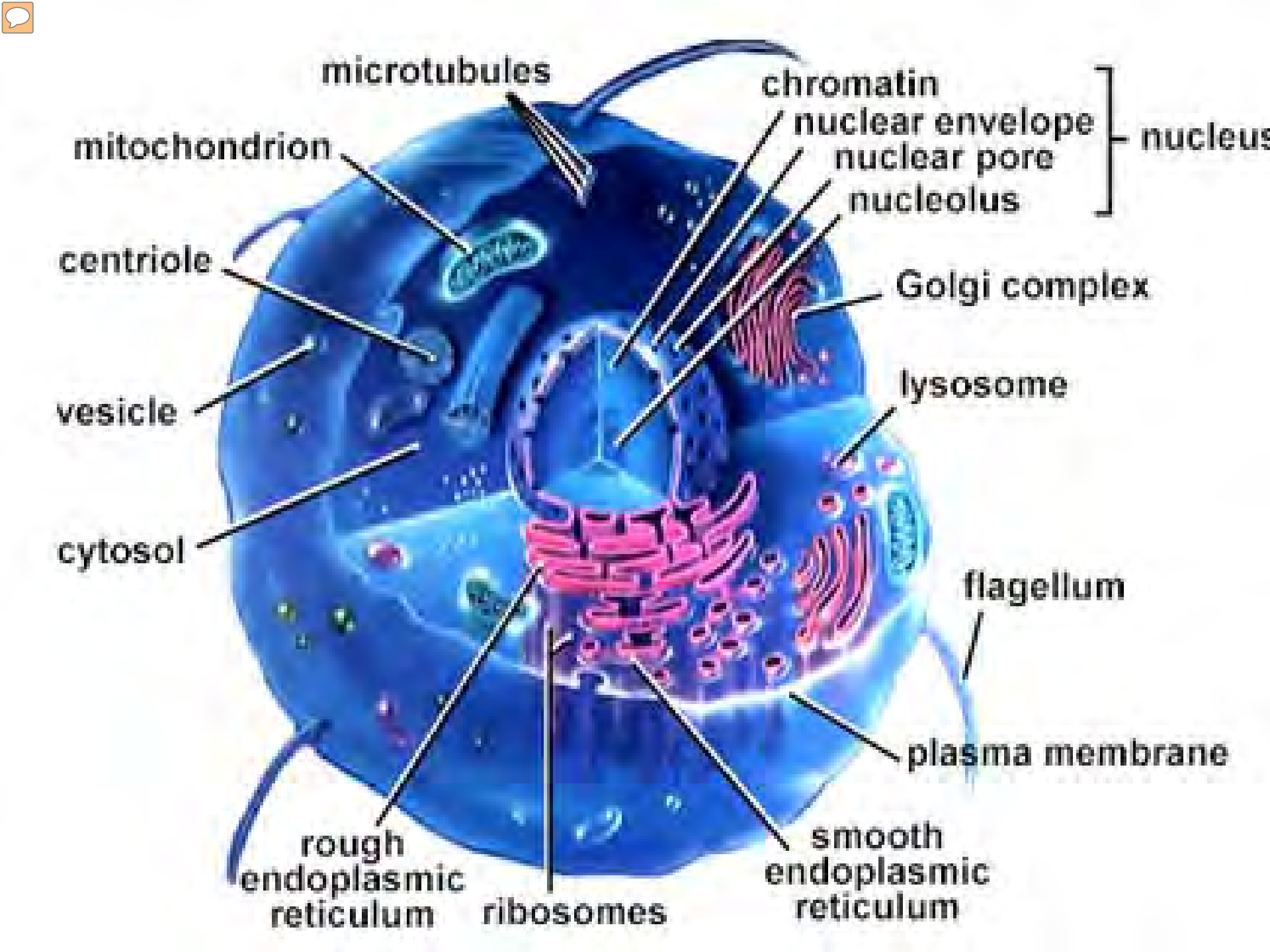
Bathybius haeckelii

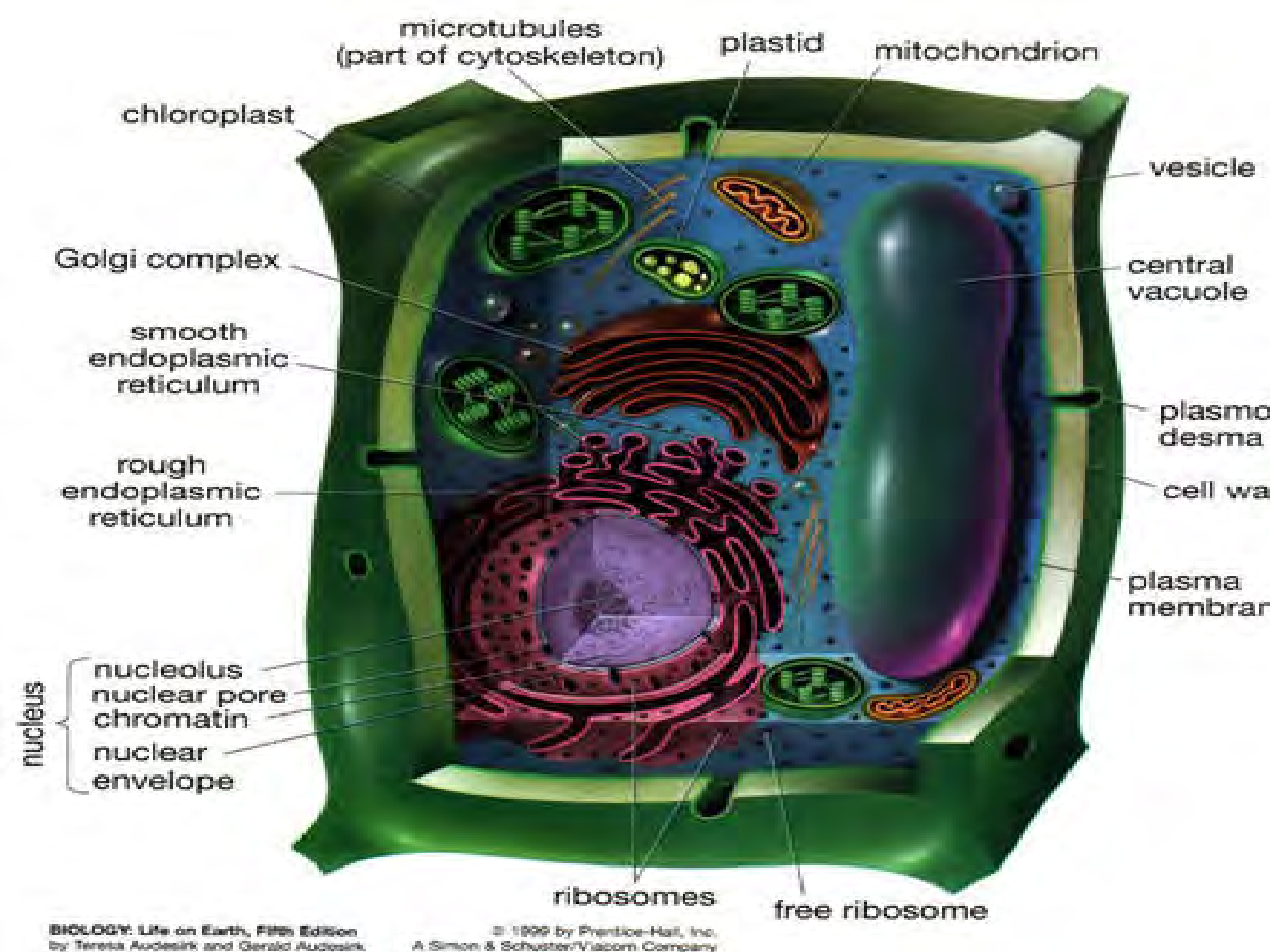




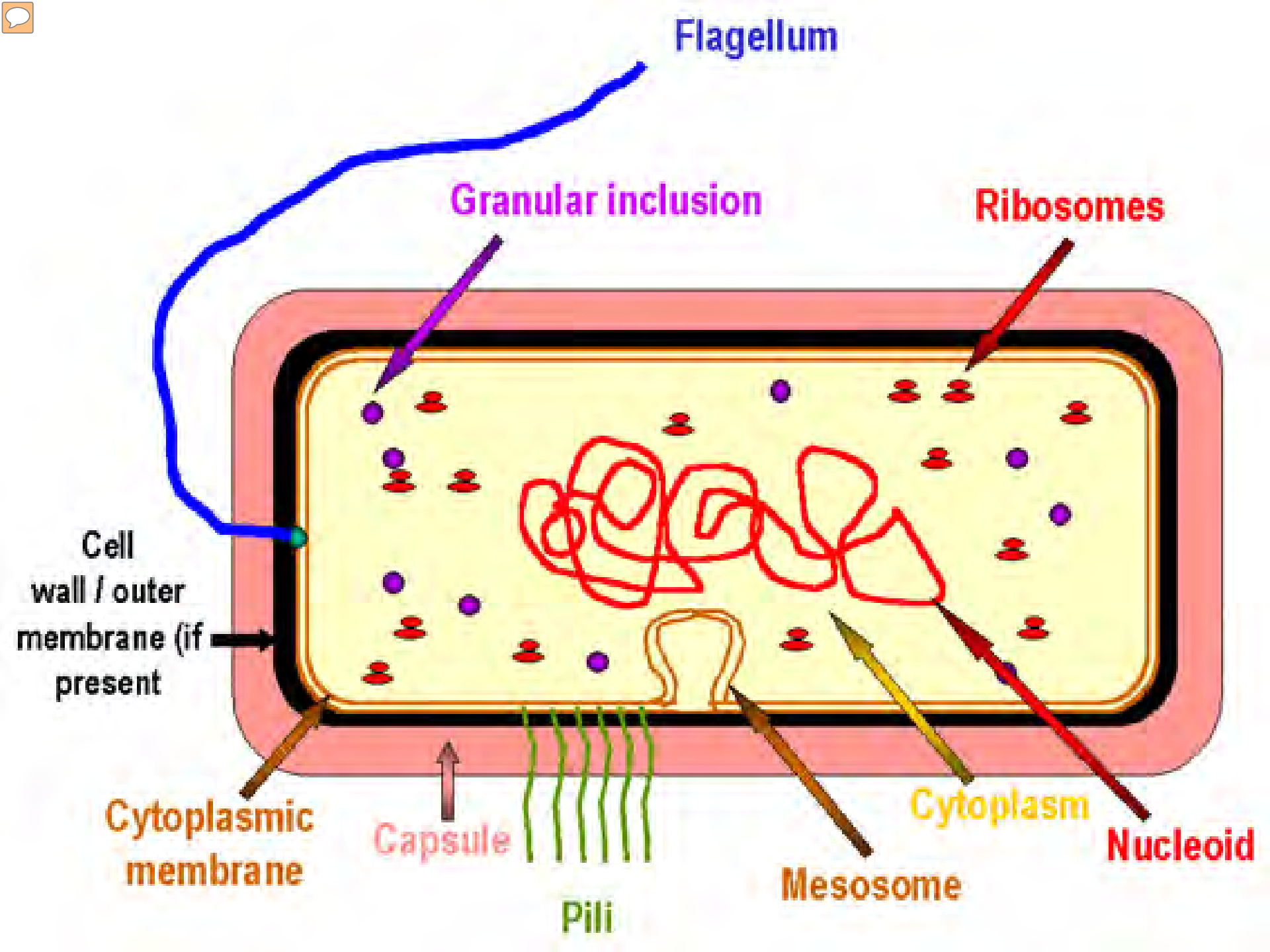
O Bathybius




microtubules
mitochondrion
centriole
vesicle
cytosol
chromatin
nuclear envelope
nuclear pore
nucleolus
nucleus
Golgi complex
lysosome
flagellum
plasma membrane
rough endoplasmic reticulum
ribosomes
smooth endoplasmic reticulum



BIOLOGY: Life on Earth, Fifth Edition
by Teresa Audesirk and Gerald Audesirk


Flagellum
Granular inclusion
Ribosomes
Cell wall / outer membrane (if present
Cytoplasmic membrane
Capsule
Pili
Mesosome
Cytoplasm
Nucleoid

Cell Phone vs. Laptop Computer

The Collapse of Darwinian Explanations

There are presently no detailed Darwinian accounts of the evolution of any biochemical or cellular system, only a variety of wishful speculations.

– Franklin Harold

The Way of the Cell

(OxfordUP 2001)

The Collapse of Darwinian Explanations

There are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, only a variety of wishful speculations. It is remarkable that Darwinism is accepted as a satisfactory explanation for such a vast subject — evolution — with so little rigorous examination of how well its basic theses work in illuminating specific instances of biological adaptation or diversity.

– James Shapiro, 1996

Review of *DBB*

The Collapse of Darwinian Explanations

Anyone who tells you that he or she knows how life started on the earth some 3.45 billion years ago is a fool or a knave. Nobody knows.

– Stuart Kauffman, 1995

The Collapse of Darwinian Explanations

Anybody who thinks they know the solution to this problem of the origin of life is deluded.

– Leslie Orgel, 2004

The Collapse of Darwinian Explanations

No serious scientist would currently claim that a naturalistic explanation for the origin of life is at hand.

– Francis Collins, 2006

The Failed Challenge of Biological Evolution to Intelligent Design

Premise 1: If unguided evolutionary mechanisms adequately explain biological complexity and diversity, then intelligent design is superfluous.

Premise 2: Unguided evolutionary mechanisms adequately explain biology complexity and diversity.

Conclusion: Therefore, intelligent design is superfluous.

The Received Wisdom

By attributing the diversity of life to natural causes rather than to supernatural creation, Darwin gave biology a sound scientific basis.

— Campbell's BIOLOGY, 5th ed.

The Received Wisdom

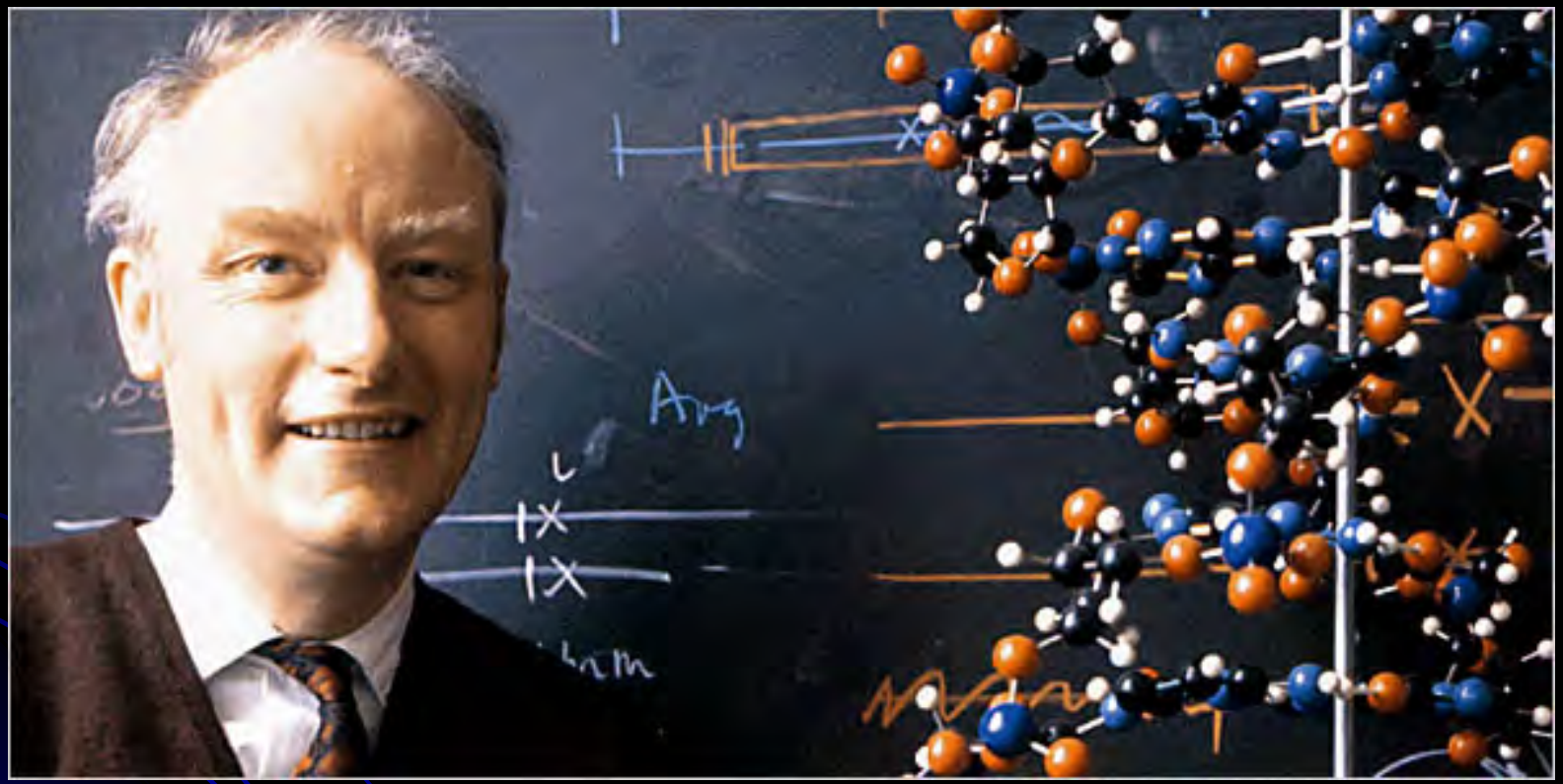
He [Darwin] dismissed it [design] not because it was an incorrect scientific explanation, but because it was not a proper scientific explanation at all.

— David Hull

The Received Wisdom

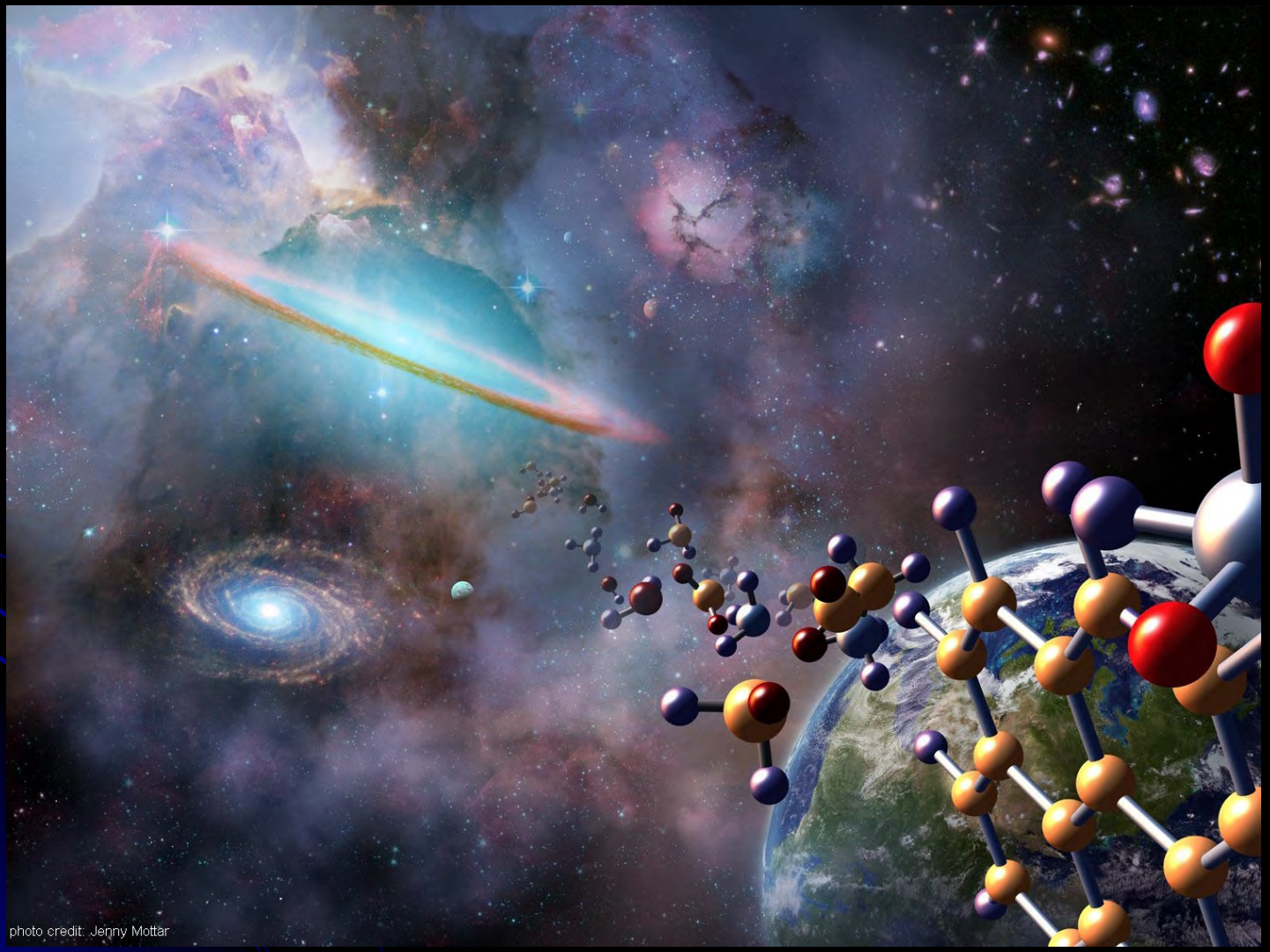
Intelligent design is not science because it cannot be science.

Design Theorist?

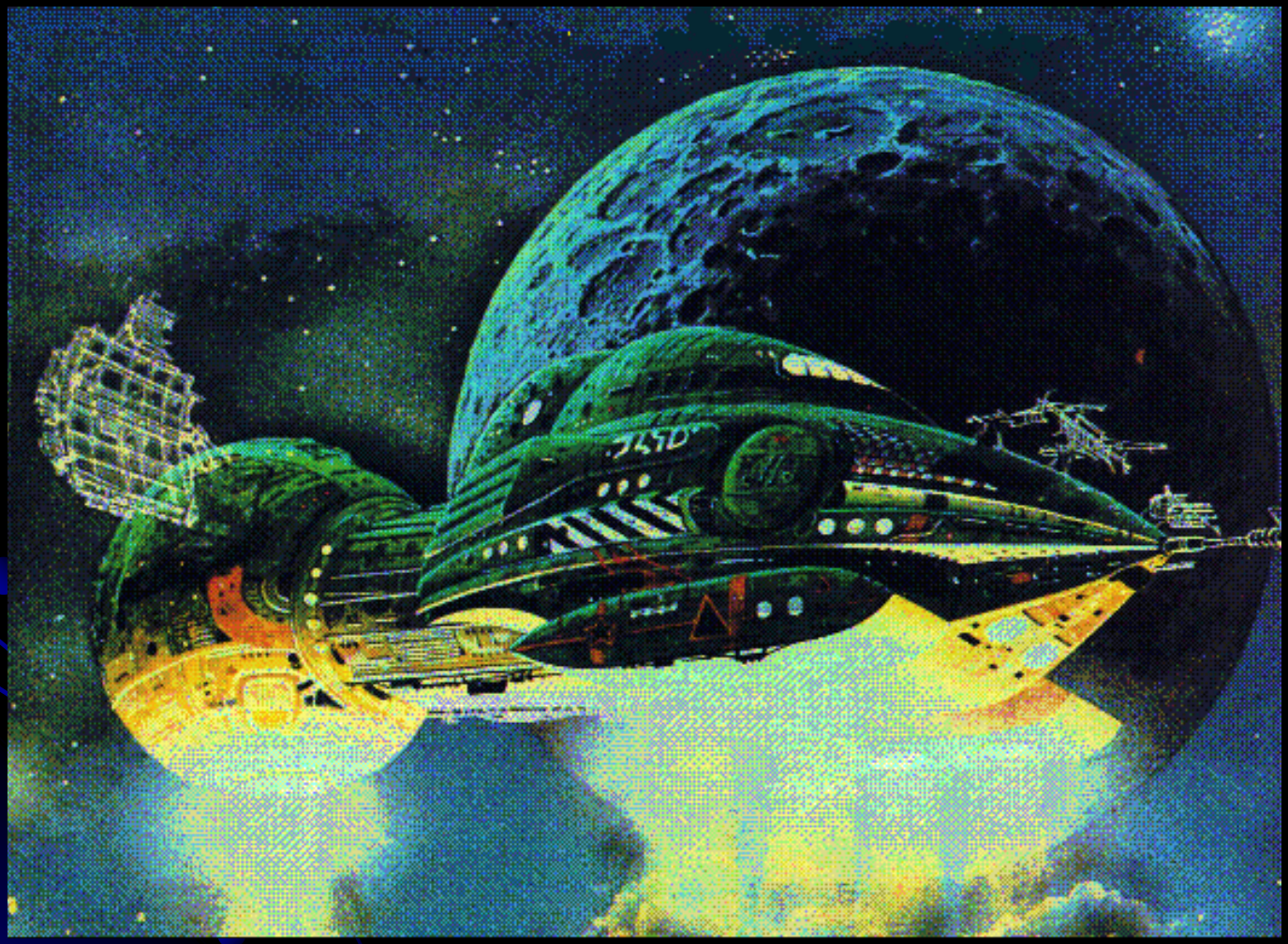


Directed Panspermia

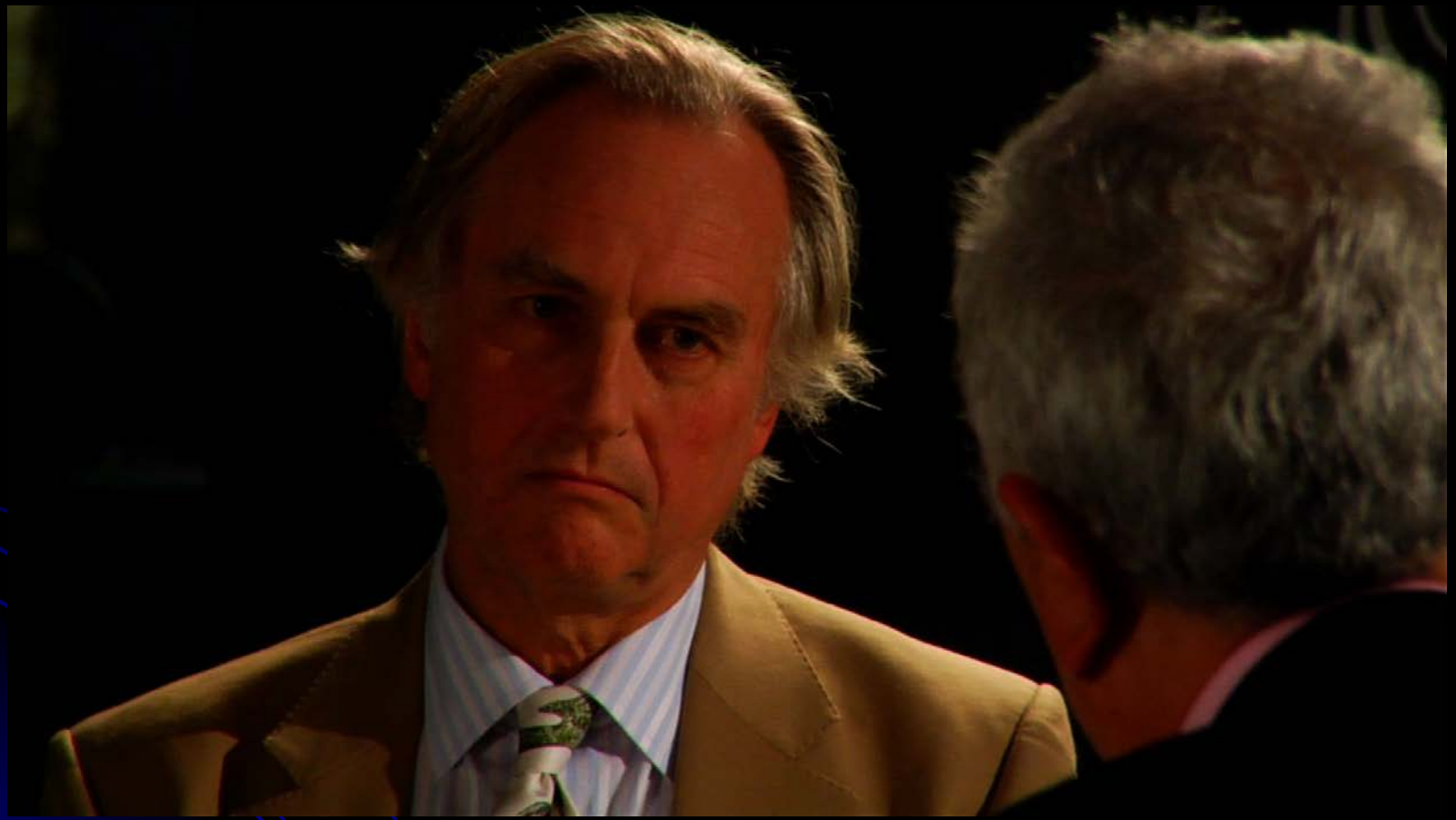
Panspermia



Directed Panspermia

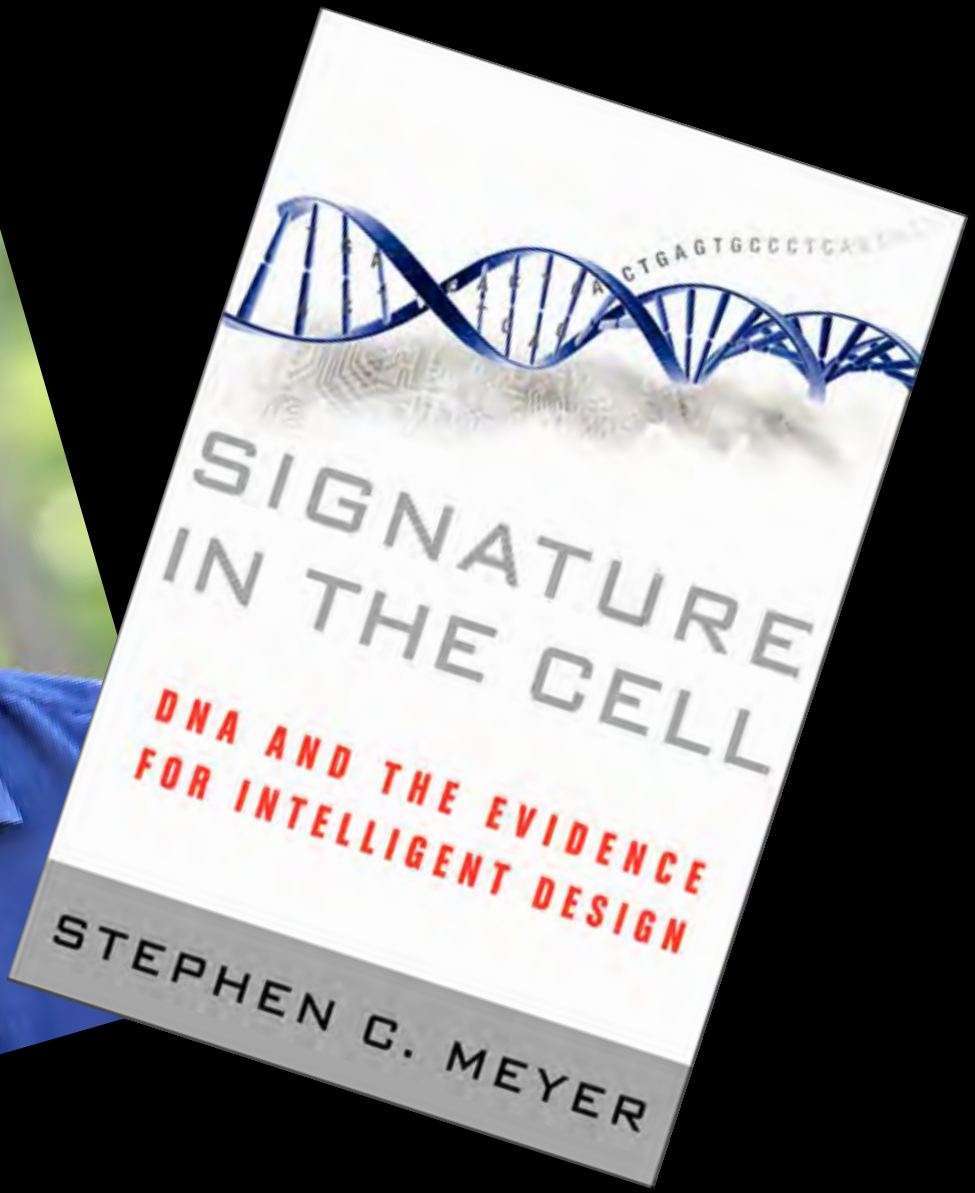


Directed Panspermia

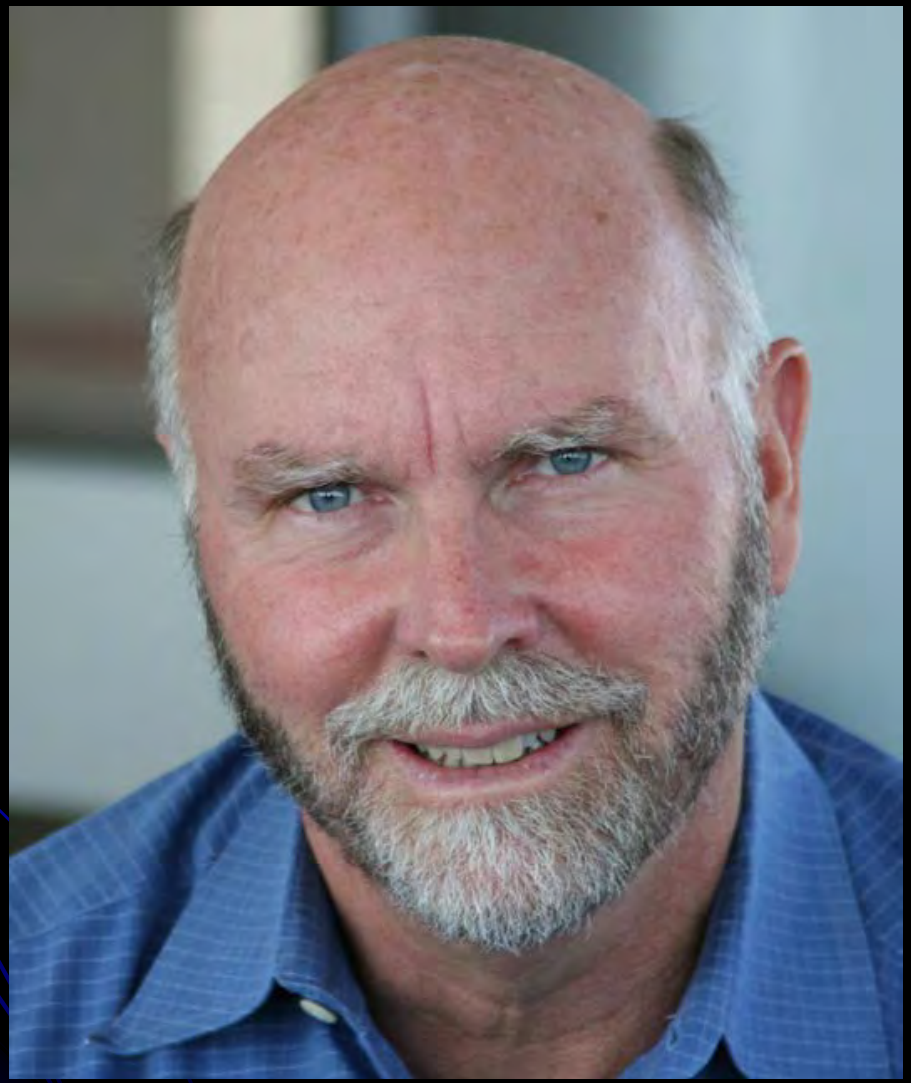


Directed Panspermia

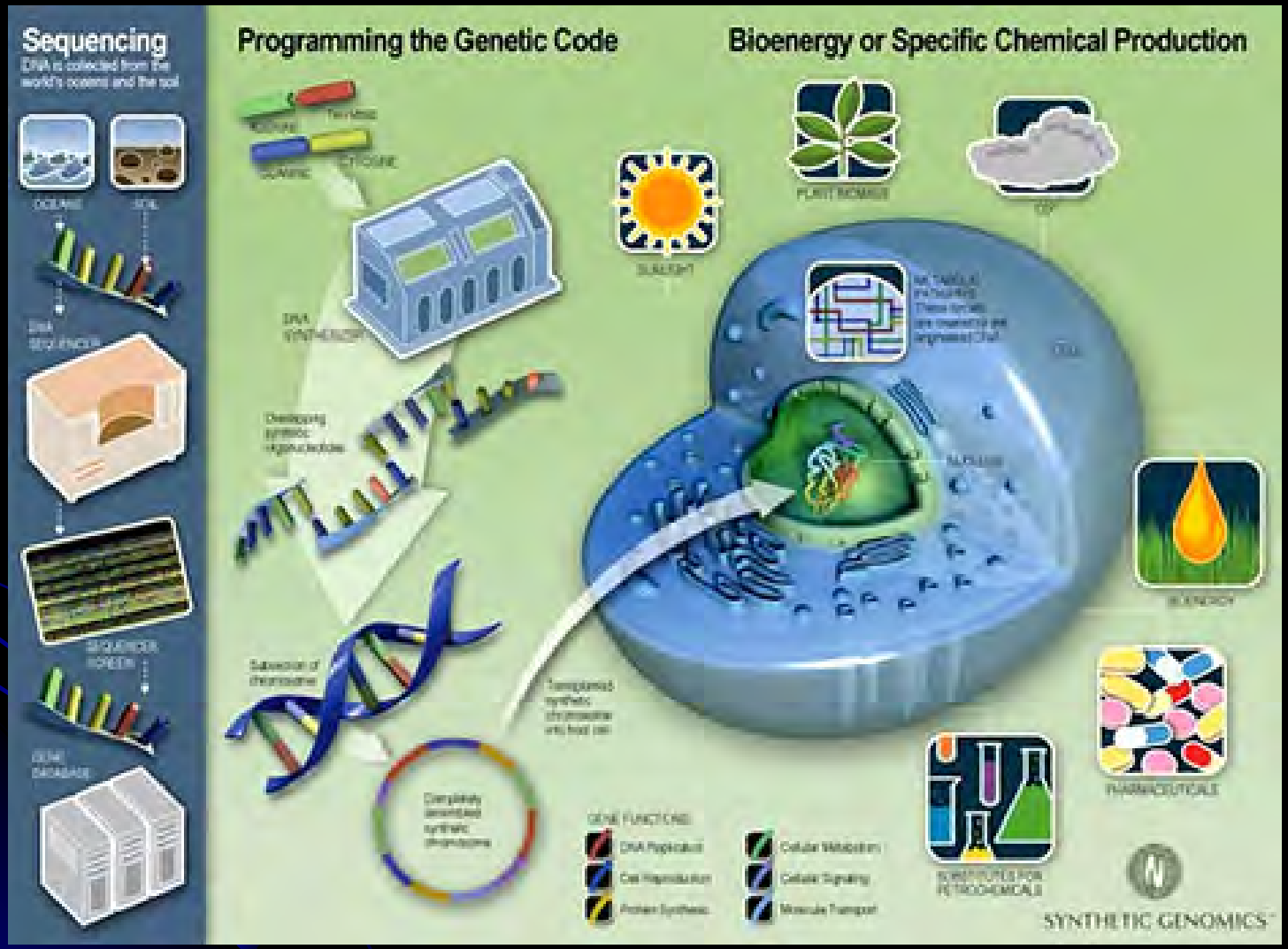
Signature in the Cell



Craig Venter



Venter's Synthetic Genomics



Venter's DNA "Watermarks"

The five coded messages embedded in the first synthetic genome :

VENTERINSTITVTE
CRAIGVENTER
HAMSMITH
CINDIANDCLYDE
GLASSANDCLYDE

–Wired, 28jan08

How Do We Detect Design?

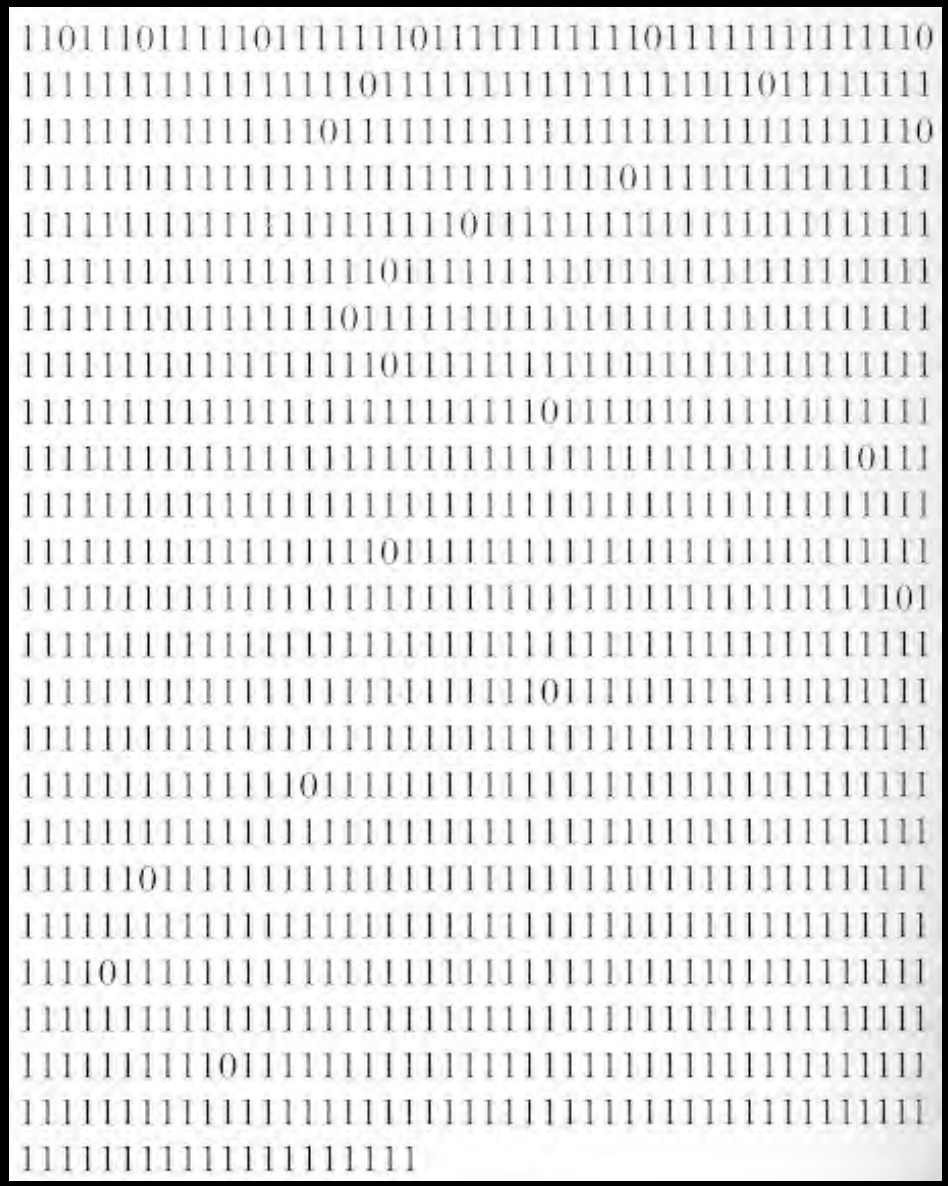
SETI: The Search for Extraterrestrial Intelligence

Discerning Design: Jodie Foster as a SETI researcher in *Contact*.

What persuaded the scientists that they had found an extra-terrestrial intelligence?

The detection of a highly improbable or complex specified event!

2 3 5 7 11 13



A Criterion for Detecting Design

What should we be looking for?

- Complexity (improbability)
- Specification (independent pattern)

Connection between Complexity and Probability

Why Probability?

Unless we discipline how we attribute chance, we can explain anything.

This Is Spinal Tap

Dumb and Dumber

“Getting lucky” is not a scientific explanation!

"We can accept a certain amount of luck in our [scientific] explanations, but not too much."

–Richard Dawkins (TBW, 1987, p. 139)

Why a Pattern?

Just about anything that happens is highly improbable/complex. Thus to ensure that something didn't just happen by chance, it must conform to a pattern.

What Do You See?

Why a Specification?

*The patterns we use to identify design must be **objectively given** – we need to make sure that we're not just reading the pattern into what we're seeing.*

Seeing What We Want to See?

"Perceiving the world as well designed and thus the product of a designer ... may be the product of a brain adapted to finding patterns in nature. We are pattern-seeking as well as pattern-finding animals. ... Finding patterns in nature may have an evolutionary explanation: There is a survival payoff for finding order instead of chaos in the world…."

— Michael Shermer

WDM, 2006

Seeing What We Want to See?

"We are the descendants of the most successful pattern-seeking members of our species. In other words, we were designed by evolution to perceive design."

— Michael Shermer
WDM, 2006

Problem

You can’t use evolution to refute our ability to detect design since that ability in turn throws evolution into question. When two things call each other into question, deciding between the two requires looking to independent evidence.

Seeing What We Want to See?

Seeing What We Want to See?

Seeing What We Want to See?

Specifications as Statistical Rejection Regions

The Case of Cryptography

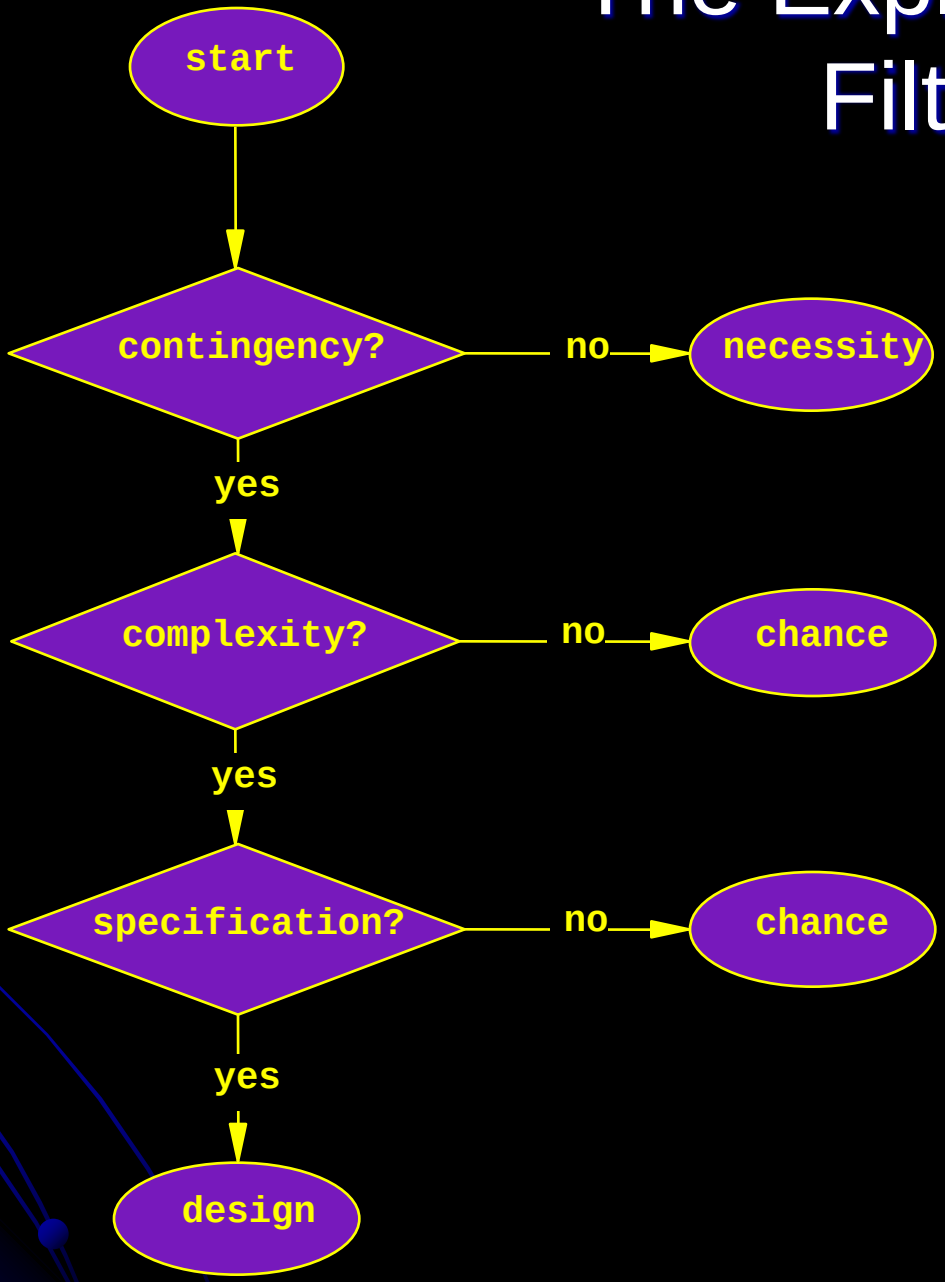
Encrypted Text

nfuijolt ju jt mjlf b xfbtfm

Decrypted Text

methinks it is like a weasel

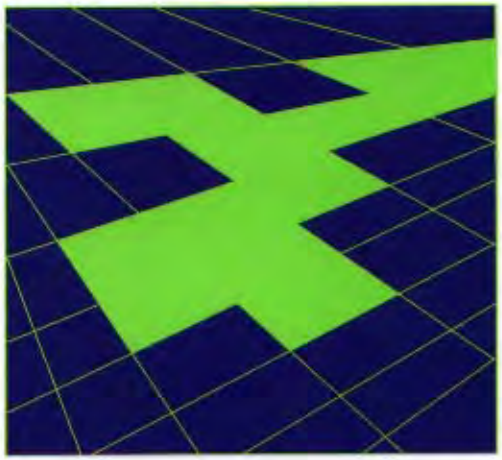
The Explanatory Filter



Cambridge Studies in Probability, Induction, and Decision Theory

THE DESIGN INFERENCE

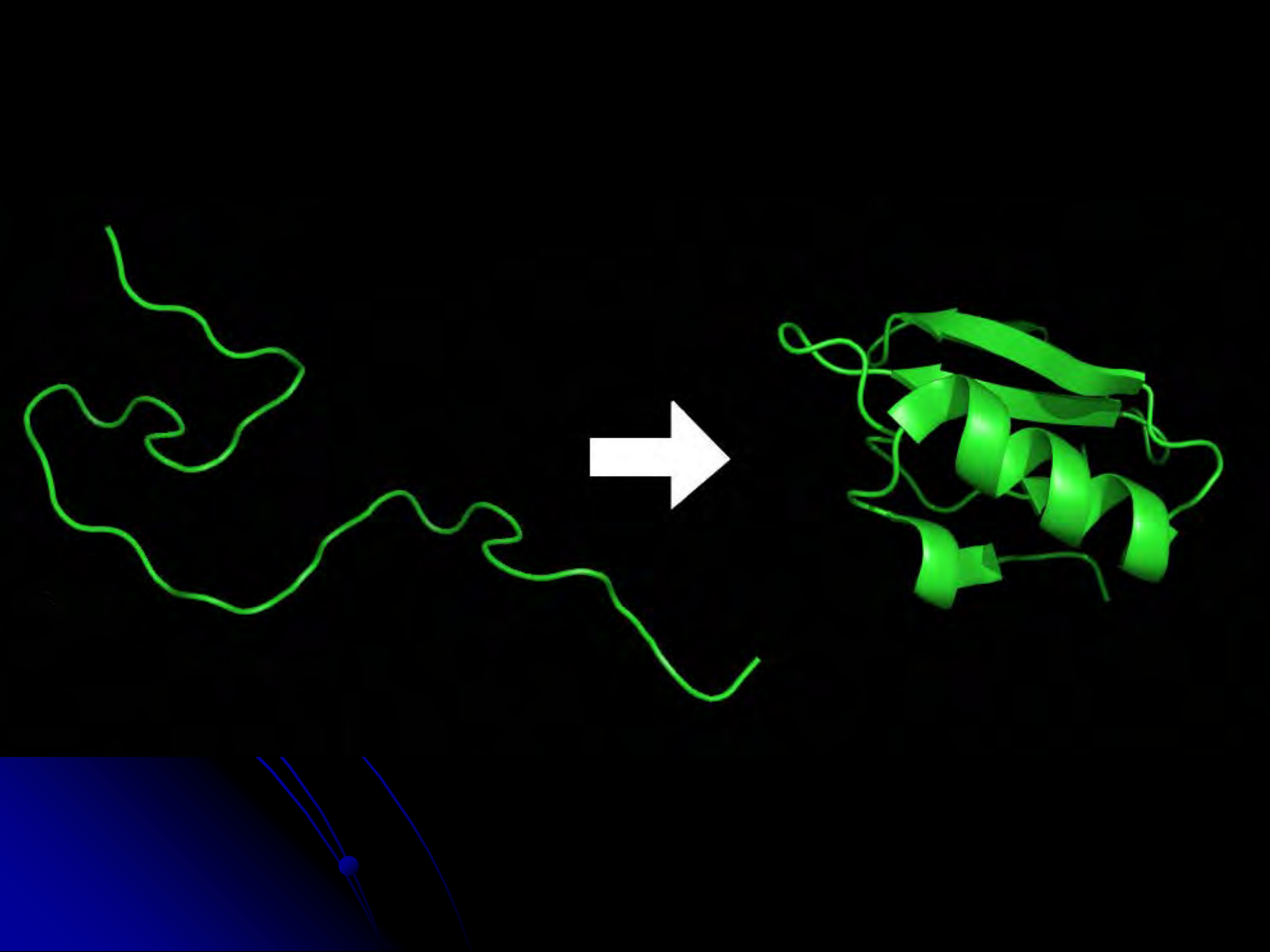
ELIMINATING CHANCE THROUGH SMALL PROBABILITIES



WILLIAM A. DEMBSKI

What does the filter identify?

Specified Complexity



doi:10.1016/j.jmb.2004.06.058 J. Mol. Biol. (2004) 341, 1295–1315

JMB

Available online at www.sciencedirect.com

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Estimating the Prevalence of Protein Sequences Adopting Functional Enzyme Folds

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Structural Biology Unit
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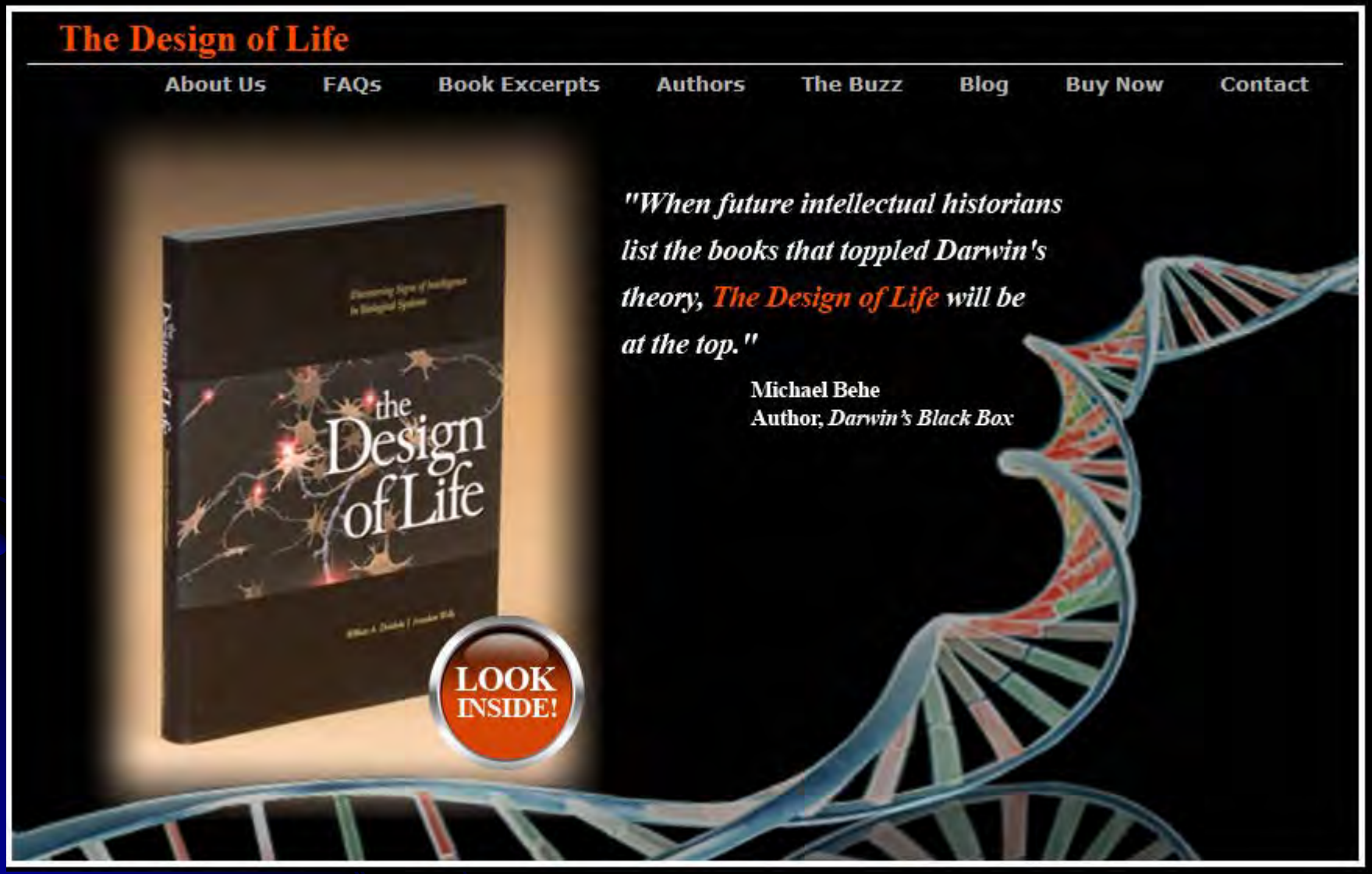
Cambridge CB2 4AT, UK

Proteins employ a wide variety of folds to perform their biological functions. How are these folds first acquired? An important step toward answering this is to obtain an estimate of the overall prevalence of sequences adopting functional folds. Since tertiary structure is needed for a typical enzyme active site to form, one way to obtain this estimate is to measure the prevalence of sequences supporting a working active site. Although the immense number of sequence combinations makes wholly random sampling unfeasible, two key simplifications may provide a solution. First, given the importance of hydrophobic interactions to protein folding, it seems likely that the sample space can be restricted to sequences carrying the hydropathic signature of a known fold. Second, because folds are stabilized by the cooperative action of many local interactions distributed throughout the structure, the overall problem of fold stabilization may be viewed reasonably as a collection of coupled local problems. This enables the difficulty of the whole problem to be assessed by assessing the difficulty of several smaller problems. Using these simplifications, the difficulty of specifying a working β-lactamase domain is assessed here. An alignment of homologous domain sequences is used to deduce the pattern of hydropathic constraints along chains that form the domain fold. Starting with a weakly functional sequence carrying this signature, clusters of ten side-chains within the fold are replaced randomly, within the boundaries of the signature, and tested for function. The prevalence of low-level function in four such experiments indicates that roughly one in 10^{64} signature-consistent sequences forms a working domain. Combined with the estimated prevalence of plausible hydropathic patterns (for any fold) and of relevant folds for particular functions, this implies the overall prevalence of sequences performing a specific function by any domain-sized fold may be as low as 1 in 10^{77}, adding to the body of evidence that functional folds require highly extraordinary sequences.

www.thedesignoflife.com



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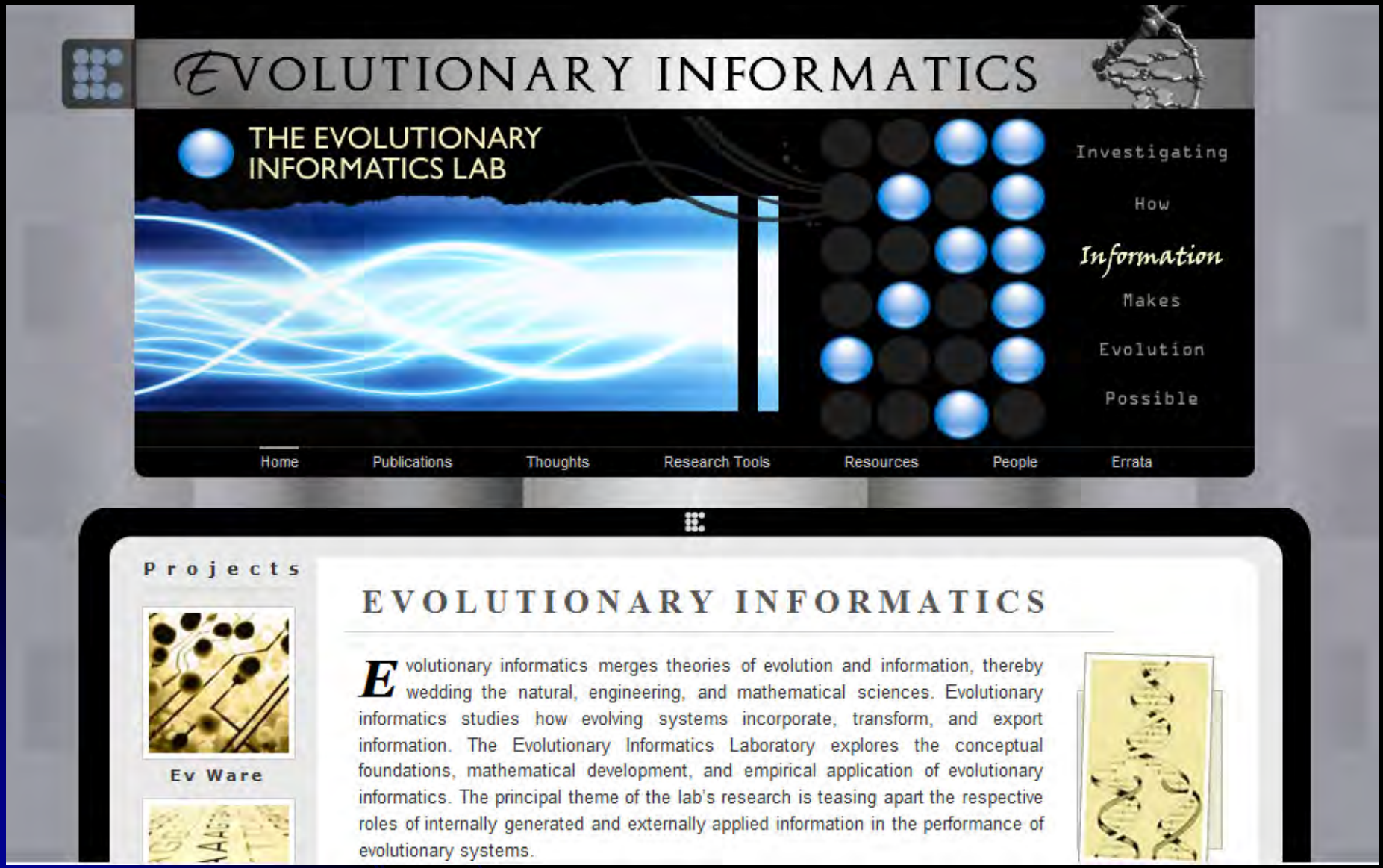
biologic INSTITUTE

Intelligent Science...

Biologic Institute brings together scientists with diverse expertise, unified by the realization that a revolution in biology—with far reaching implications—is well under way. Like many revolutionary ideas, this one is powerful in its simplicity:

The more we learn about the organization of life,
the more clearly it reveals design.

EvoInfo.org


EVOLUTIONARY INFORMATICS
THE EVOLUTIONARY INFORMATICS LAB
Investigating
How
Information
Makes
Evolution
Possible
Home
Publications
Thoughts
Research Tools
Resources
People
Errata
Projects
Ev Ware
EVOLUTIONARY INFORMATICS
Evolutionary informatics merges theories of evolution and information, thereby wedding the natural, engineering, and mathematical sciences. Evolutionary informatics studies how evolving systems incorporate, transform, and export information. The Evolutionary Informatics Laboratory explores the conceptual foundations, mathematical development, and empirical application of evolutionary informatics. The principal theme of the lab's research is teasing apart the respective roles of internally generated and externally applied information in the performance of evolutionary systems.

Discovery.org/CSC

Why Is This Important?

Since the creation of the world God's invisible qualities–his eternal power and divine nature–have been clearly seen, being understood from what has been made, so that men are without excuse.

–Romans 1:20