



BC04: 2:45–2:55 p.m., City Terrace 7.



Designing Physics Courses for Non-traditional College Students: Theology

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Location: City Terrace 7

Sponsor: Science Education for the Public
Committee
Date: Monday, January 10
Time: 2:15–2:55 p.m.
President: John Griffith, Mesa Community College

My talk

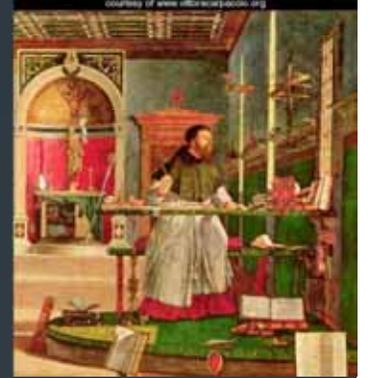
- Why Physics for Theology students?
- Current physical science requirements
- Design of curriculum
- Applications: Can we (they) calculate anything?

St. Augustine (AD 354-430) is the most generally revered *church father* in all Christendom.





St. Augustine: physicist/ theologian/teacher



In *The Literal Meaning of Genesis*, Augustine laments

It not infrequently happens that something about the earth, ... about the motion and rotation or even the magnitude and distances of the stars, ..., about the nature of animals... may be known with the greatest certainty by reasoning or by experience, *even by one who is not a Christian*. It is too disgraceful and ruinous, ... that he [the non-Christian] should **hear a Christian speaking so idiotically on these matters, ... as if [the Christian's thinking is] in accord with Christian writings, that he might say that he could scarcely keep from laughing...**

Why propose physics for theology?

1. Physics and Theology are organized the same way.

- Principles, from which all else follows.
- HOWEVER, like most physics students today, pastors treat the subjects as large collections of “formulas to remember”

2. Attributes of God are fundamentally issues of Physics and the fundamental theological question is *“Who is God?”*

- God in theology

- Eternal → Time
- All-powerful → power, energy, force
- All-knowing → order, entropy
- Determined “from the beginning” → cosmology

3. Physics and Theology could be mutual supporters. (!)

- Debates must move away from matters like evolution;
- ...away from religion as outside any sort of physical law.
- Instead, discuss/debate questions like...

“Let’s suppose God is eternal and exists in “heaven”, somewhere outside our normal four dimensions.

How can that fit with physical law?

What could we reasonably conclude from this and does it agree with what your scriptures say?”

4. Pastors teach a MUCH larger number of students every week than we physics teachers; and over many years.

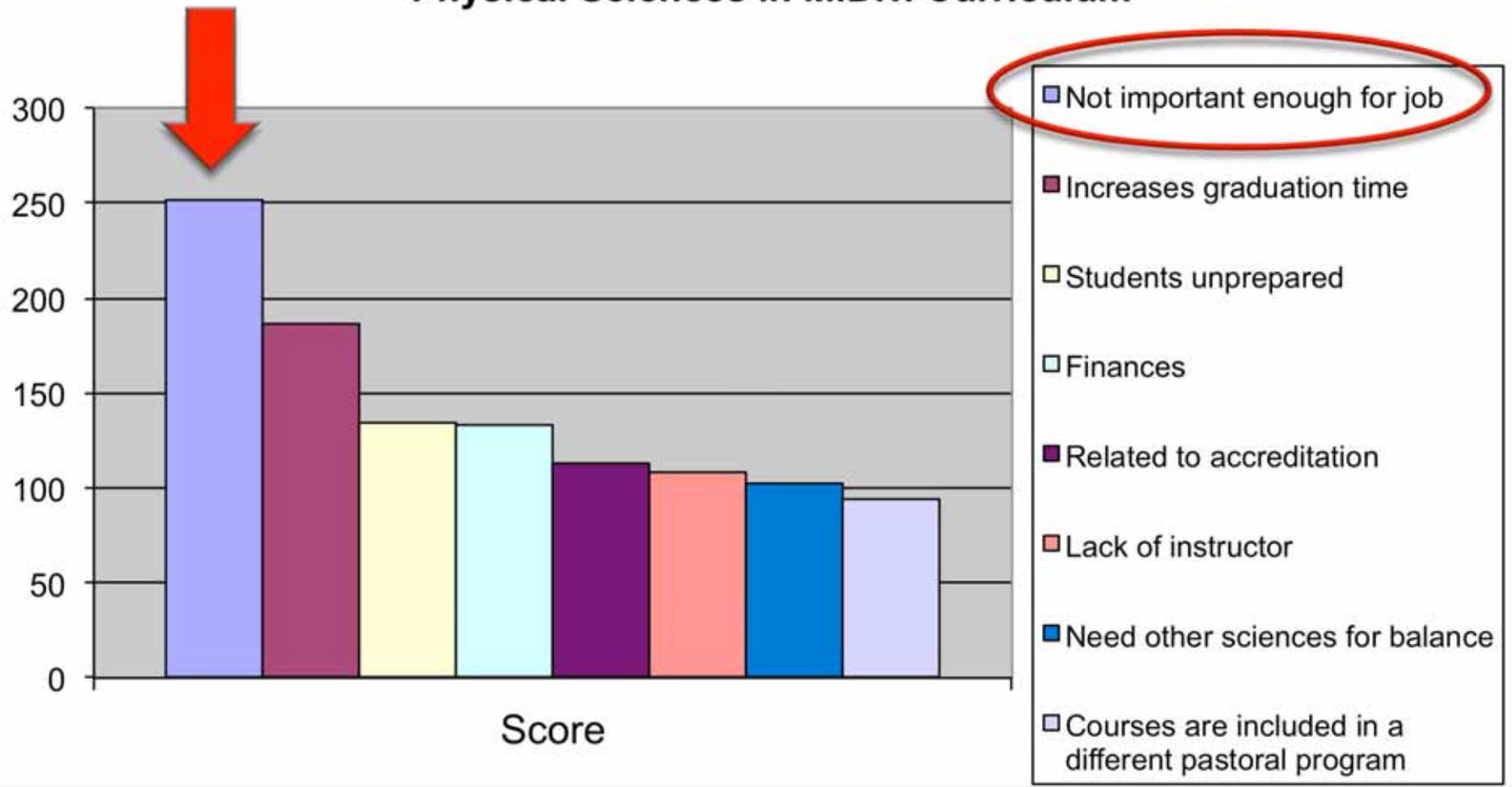
(Even if only 7% of Americans go to church every week!)

Where did we start?

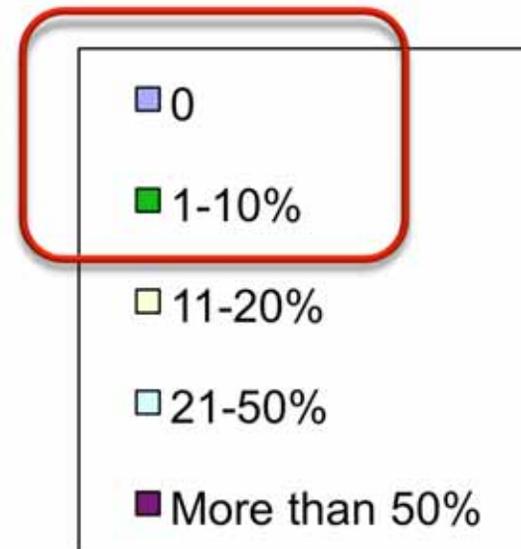
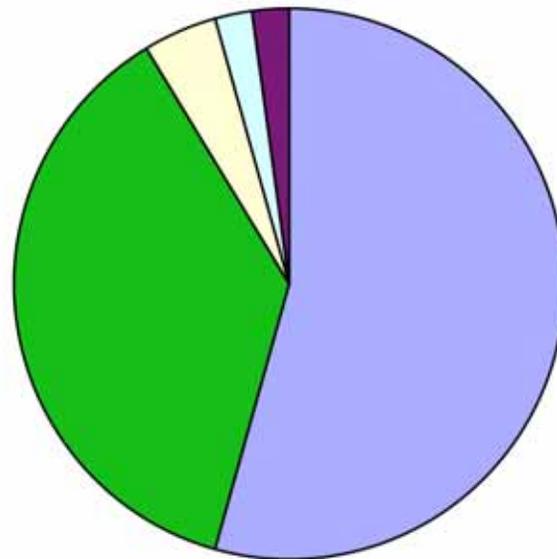
Survey of Theology schools

- Master of Divinity programs
- → Future pastors of ordinary churches
- Used www.surveymshare.com
- Description at www.phy.uab.edu/~nordlund
- Invitations to Deans of 200+ schools accredited by the Association of Theological Schools.
- Replies: 46

Q.17. Reasons for NOT Including Two Semester Hours or More of Physical Sciences in M.Div. Curriculum



Q.14. Percentage of Students Who Study Physical Science While Enrolled in M.Div.



Does not look hopeful, but as Gimli once said,

“Certainty of death, small chance of success—
what are we waiting for?”

Design of a Physics for M. Div. students:

1. Variable length

Deans prefer 3-sh courses, but hesitate to add requirements.

2. Minimal requirement for *expert* teacher.

(Instructor could be from outside school.)

3. Focus on analysis capabilities, not “facts”.

4. Implications for theology must be obvious.

Predestination, trinity, relation between God & humans...

Outline: Physics for Pastors

- I. A gateway to physical understanding
(2-4 weeks)
 - What we need to learn
 - Quantitative tools
 - Probability: when “Yes” and “No” aren’t good enough
 - Testing your ideas: Experiments

Outline: *Physics for Pastors*

II. The major principles of physics (2-4 weeks)

- Understanding from principles
- Conservation Laws
- Quantum mechanics
- Thermodynamics and order
- Dimensions: space & time

Outline: Physics for Pastors

III. How to physically model God and the universe (2 weeks)

- Requirements for a legitimate model
- An expanded “standard” model of the universe that includes God: time axis
- Can we calculate/predict/explain?

Outline: *Physics for Pastors*

IV. Applications to theology (2-6 weeks)

- Original sin, Garden of Eden
- Free will vs. predestination
- The Trinity
- Interpreting scripture
- Miracles vs. laws of nature

- No need to suspend laws of physics.

Can we calculate anything?

Jesus' parable:
Easier for camel → eye of needle,
than rich man → heaven parable

Probability_{camel} = 1 chance in $10^{10^{36}}$

Probability_{rich man} = 1 chance in $10^{10^{49}}$

*Is the parable a metaphor or a statement
by a design engineer?*

Acknowledgements

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