

APPENDIX E

Science Resources

Best Practice Suggestions for Science in Catholic Schools

- ◆ Present scientific concepts from a superordinate (whole view) perspective before breaking them down into subordinate concepts. This approach (whole to part) can manifest itself in the alignment of courses of study (general biology in younger grades to micro-biology in high school) to the organization and presentation of curricular materials (superordinate concepts first then parallel and underlying concepts).
- ◆ Incorporate nature notebooks for observation to facilitate opportunities of wonder and awe (K-6).
- ◆ Formation of set groups of teachers at workshops designed to address scientific issues of human and cosmic origin from philosophical and theological perspectives (i.e., religion and science teachers, religion and math teachers, and religion and literature teachers). These groupings are to facilitate dialogue and build an interdisciplinary culture within the school. This will allow theology teachers to address scientific topics from a theological perspective as they are concurrently being taught in the science classroom.
- ◆ Avoid interjection of theological doctrine into scientific inquiry in older grades. Consider incorporating a course designed specifically for the discussion of topics of faith and reason.
- ◆ Supplement all science textbooks with biographies of Catholic scientists, such as Copernicus, Mendel, Bacon, St. Albert the Great, and so forth.
- ◆ Consider using an apologetic approach based on facts and evidence (7-12) (Magis Center materials).

Science Resources

Baglow, C. (2012). *Faith, science, and reason: Theology on the cutting edge*. Midwest Theological Forum, Woodridge: IL. Designed as a senior-level high school theology course to integrate faith and science. Contains twelve chapters with supplementary reading, study guide (vocabulary, study questions, and practical exercises) and endnotes. Beautiful artwork enhances the scientific content on the sleek pages of this textbook yet coffee table-styled volume.

Sample from Christopher Baglow's book:

“What do we have to believe before we can hope to become scientists? We must believe that the world is in some sense good, so that it is worthy of careful study. We must believe that his order is open to the human mind, for otherwise there would be no point in trying to find it. We must believe that this order is not a necessary order that could be found out by pure thought like the truths of mathematics, but is rather a contingent or dependent order that can only be found by making experiments. ...the development of science depends on moral convictions such as the obligation freely to share any knowledge that is gained.” (pp. 19-21)

John Paul II. (June 1988). *Letter to Rev. George Coyne, S.J. Director of the Vatican Observatory*. Retrieved from http://w2.vatican.va/content/john-paul-ii/en/letters/1988/documents/hf_jp-ii_let_19880601_padre-coyne.html

John Paul II. (October 22, 1996). *Message to the Pontifical Academy of Sciences: On evolution*. Retrieved from <http://www.ewtn.com/library/papaldoc/jp961022.htm>

Laracy, J. (May-June 2010). *Priestly contributions to modern science: The case of Monseignor Georges Lemaitre*. Faith Magazine. Retrieved from <http://www.faith.org.uk/article/may-june-2010-priestly-contributions-to-modern-sciencethe-case-of-monseignor-georges-lemaitre>

Magis Center. www.magiscenter.org

Pius XII. (August, 1950). *Humani Generis*. Retrieved from http://w2.vatican.va/content/pius-xii/en/encyclicals/documents/hf_p-xii_enc_12081950_humani-generis.html

Spitzer, R. (2010). *New proofs for the existence of God: Contributions of contemporary physics and philosophy*. Wm. B. Eerdmans Publishing Co. Grand Rapids, MI.

Spitzer, R. (2015). *The soul's upward yearning*. Wm. B. Eerdmans Publishing Co. Grand Rapids, MI. Of particular interest might be Chapter 5 on the science behind the transcendent soul and Appendix One on a contemporary view of evidence for an Intelligent Creator.

Spitzer, R. and LeBlanc, C. *The reason series*. Video series, student workbook and teacher resource manual. This series is designed for high school students (9-12) in either science or religion classes. It is designed with an apologetic approach in mind as recommended by the USCCB's 2008 *Doctrinal Elements of a Curriculum Framework for the Development of Catechetical Materials for Young People of High School Age*, with an alignment to the Framework in the teacher's manual. The series includes 5 sequential video modules progressing students through the questions of: Can science disprove God? Is there any evidence for a creator in the universe? Is the universe random and meaningless? Does the bible conflict with science? Does the bible conflict with evolution? Student objectives, summarized points, review questions, and quizzes are included for each chapter. Teacher manual has answers to quizzes, but not discussion questions.

Spitzer, R. and Noggle, M. *From Nothing to cosmos* (2015). This interactive workbook links text content to online resources through both QR codes and web URLs. Topics include: What science can and cannot do, The Big Bang Theory and the modern universe, The

Borde-Vilenkin-Guth proof for a beginning of ANY universe or multiverse, The evidence for a beginning from entropy, Evidence of supernatural design from fine-tuning of universal constants, A response to atheist's objections (particularly, Richard Dawkins), A metaphysical proof of God, Evidence of a transphysical soul from near death experiences, Evidence of a transcendent soul from our five transcendental desires, and Atheism, the bible, science, and evolution and aliens. Chapter review and summary questions are included for each chapter.