

September 2014

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Recommended Citation

Smith, Sherilyn G.F. (2014) "Mission Integration in the Natural Sciences," *Conversations on Jesuit Higher Education*: Vol. 46, Article 10.
Available at: <http://epublications.marquette.edu/conversations/vol46/iss1/10>

Mission Integration in the Natural Sciences

By Sherilyn G. F. Smith

The natural sciences (biology, chemistry, physics) and mathematics seek to understand the nature of nature: the matter and energy of the known universe, the formulae describing natural phenomena, the processes and relationships that govern the realm of living things, and earth's global ecological system. Jesuits have figured prominently in the expansion of knowledge in the science disciplines and include such names as José de Acosta, Matteo Ricci, Francesco Grimaldi, Franz Kugler, and Pierre Teilhard de Chardin; and today there are Kevin FitzGerald, Guy Consolmagno, and George Coyne. These and many other Jesuit scientists have recognized the connection between the spiritual and natural worlds and deepened human understanding of God's creation.

The view of earth from space brought home that we are totally dependent on this planet for life, and we share it with myriad other living things. At this juncture in human history, it is imperative that we recognize the extent to which we rely not only on the planet's physical systems but also on the other living things that perform critical ecological services, keeping the global ecosystem functioning. Human beings can prosper only when the intricate life-support system of that ecosystem is intact. So, how do scientific endeavors to understand the natural world and communicate that understanding to students and others connect to Jesuit mission?

The study of nature and the commitment to see God in all things, including work for social justice, are two sides of the same coin. Awe and wonder manifest themselves in experiencing the natural world, from the joy of a breathtaking landscape to reaching a mountain summit, from watching butterflies flitting among colorful flowers to feeling and smelling the first drops of rain on a breezy spring afternoon. The "ah-ha!" moment, understanding a complex equation, an ecological process, or a perplexing physics problem gives the scientist and the student alike marvelous insight into the glory of God's creation.

As we endeavor to promote social justice, it is evident that ecological degradation is inextricably tied to poverty and injustice. An understanding of ecosystems and sustainability must go hand in hand with efforts to improve the quality of life for suffering peoples. That social justice and healthy environments are inseparable has been recognized by successive popes. In his first papal homily (March 19, 2013), Pope Francis said, "Please, I would like to ask all those who have positions of responsibility in economic, political and social life, and all men and women of goodwill: let us be 'protectors' of creation, protectors of God's plan inscribed in nature, protectors of one another and of the environment." Similarly, Benedict XVI in his Message for the Celebration of the World Day of Peace (Jan. 1, 2010) stated, "We are all responsible for the protection and care of the environment. This responsibility knows no boundaries." In *Evangelium Vitae* (1995), John Paul II outlined an ethical responsibility toward the environment: "As one called to till and look after the garden of the world (cf. Gen 2:15), man has a specific responsibility towards the environment in which he lives, towards the creation which God has put at the service of his personal dignity, of his life, not only for the present but also for future generations. It is the ecological question...which finds in the Bible clear and strong ethical direction, leading to a solution which respects the great good of life, of every life."

This makes it incumbent upon us as scientists and teachers at Jesuit institutions to help form young men and women for others by exposing our students to the connections between the welfare of others, especially the poor, and the welfare of the natural environment. We can integrate Jesuit mission and science in three ways: 1) by personal scientific excellence, with reflection and commitment to furthering the

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understanding of nature; 2) by stimulating our students to deepen their understanding of the natural world and the principles and relationships that govern it, and to recognize the interconnectedness of human beings and God's creation; and 3) by challenging our students (and ourselves) to undergo transformation – to recognize our responsibility for protecting the global ecosystem, and simultaneously to promote ecological, social, and economic justice.

The first way of tying scientific work to Jesuit mission is unique to each of us as we endeavor to fulfill our own potential in our discipline. Personal discernment regarding choices of research topics, dissemination and application of research findings, and interactions with other scientists can make us more fulfilled and more effective in the classroom. We also serve as role models and can have a powerful influence on our students.

The second way of integrating science and mission is in of interaction with our students. Jesuit mission can be manifest in many ways in the classroom, appropriate to each discipline, and can be addressed either explicitly or embedded within coursework. Ignatian pedagogy is an effective approach and also a “natural” for case – and experiment-based teaching, as well as multidisciplinary subjects involving science disciplines. Its steps can parallel the path of the “scientific method” and provide a natural connection to mission, especially in the interpretation of experimental results. That connection can be established in other ways as well, particularly as ethics

and values are important to consider for science-based topics such as environmental issues, genetic engineering, and chemical synthesis and development.

Bringing Jesuit spirituality and mission into a dialogue with science can also be effective not only for students and the academic community but also for those in the non-academic community. Lectures (such as the Science and Religion Lecture Series at Le Moyne College), plays and readings, book discussion groups, and other venues for dialogue can bring ques-

tions of morality, sustainability, ethics and other species, consumerism, and resource use into focus and encourage reflection on what are often thorny issues.

Success at integrating Jesuit mission will produce students who can discern patterns and complex relationships, who see the “big picture,” and who also understand that science does not happen in an ethical vacuum. They can then recognize that scientific discoveries have many connections, implications, and consequences for the entire planet as well as for humans.

The third way of integrating science and mission is taking action on personal, societal, and ecological levels. Scientific understanding comes with the responsibility to do no harm. Humans are, both by sheer numbers and by our exploitation of nature, causing more disruption to natural systems than any single species has ever done before. Massive habitat destruction, extinction of species, pollution on an unprecedented scale, and climate change are but a few of those disruptions. Seeing God in all things must go hand in hand with a deep respect for the earth and its inhabitants, a reverence for nature. Acting on that respect and reverence produces commitment to solving problems in the context of environmental sustainability “to the seventh generation,” based on a solid knowledge of underlying scientific principles and interconnections. Here, then, we have the transformative power of the integration of Jesuit mission and science. ■