

# Spirit Matters: In Search of a Personal Ecology

Institution: Pomona College

Instructor: Jerry Irish

This course explores scientific and religious ways of knowing and how they might be in dialogue with one another. What kind of assumptions, metaphors, hypotheses, and practices characterize scientific and religious knowledge? How do these features mirror and shape our experience? What are their implications for our behavior? In what ways are scientific and religious knowledge divergent and/or convergent? How can we imagine and exercise our personal agency in a world understood at once scientifically and religiously?

We will seek answers to these questions through the following activities:

1. weekly readings in religion, science, and how they are related will be the subject of short papers and classroom discussion;
2. laboratory/workshop exercises led by professors in Physics and Biology will be the subject of written reports and classroom discussion;
3. semester-long practice in meditation, contemplative reading, and prayer will be the subject of personal journals and classroom discussion;
4. the planning and execution of an environmental community service project involving the entire class; and
5. the development of a personal ecology articulated in writing and discussion.

## **Class schedule and required readings:**

### **Week One**

**Wed.**-- Who are we? Why are we here? What do we bring with us?

Introductory session. Gather and share information about ourselves, why we are taking the course, and what scientific and religious backgrounds, academic and personal, we bring with us. Discuss course content, format, and objectives.

Through the seven weeks of the course following today's introductory meeting, the Monday session each week will focus primarily, though by no means exclusively, on religious ways of knowing; the Wednesday session on scientific ways of knowing. The last six weeks of the course will be devoted to ways of relating scientific and religious knowledge. Several additional sessions are scheduled to accommodate particular

activities. In the final weeks of the course an environmental service project will take the place of two regular class sessions.

Required readings are to be completed prior to the class session for which they are listed. Readings bearing an \* are recommended for alternative or complementary approaches to the subject matter. A somewhat more comprehensive course related bibliography appears at the end of the syllabus.

## **Week Two**

**Mon.**-- What is insight meditation? How is it practiced?

Instruction in and practice of insight meditation led by Professor Zhiru Ng, Religious Studies.

Peter Harvey, An Introduction to Buddhism, pp.244-79.

\*Stephen Batchelor, Buddhism Without Beliefs, pp.1-54.

**Wed.**-- What is scientific method? How is it distinguished from other forms of human discovery and expression?

Ian Barbour, Religion and Science, pp.v-74, 106-36; skim 77-105, 136-61.

## **Week Three**

**Mon.**-- What are your initial impressions of insight meditation? How does your own experience compare with Thich Nhat Hanh's account?

Thich Nhat Hanh, The Miracle of Mindfulness.

\*Batchelor, pp.55-115.

**Wed.**-- What is quantum theory? How was it arrived at? What are some of its implications?

Barbour, pp.165-77.

Richard P. Feynman, Q.E.D.

\*Paul Davies, God and the New Physics, Chapter 8.

\*Heinz R. Pagels, The Cosmic Code, Part I.

## **Week Four**

**Mon.**-- What is contemplative reading? How is it done?

Instruction in and practice of contemplative reading.

Susan Muto, A Practical Guide to Spiritual Reading, Part I.

\*Norvene Vest, No Moment Too Small, Chapter 2.

**Wed.**-- What is the theory of relativity? How was it arrived at? What are some of its implications?

Barbour, pp.177-94.

Paul Davies, Other Worlds, Chapter 2.

\*Lincoln Barnett, The Universe and Dr. Einstein.

\*Robert John Russell, et al., Quantum Cosmology and the Laws of Nature, pp.81-89.

**Additional session:** Workshop/laboratory exercise with Professor Tom Moore, Physics.

[**Note to CTNS reviewers:** Prof. Moore will lead this workshop/laboratory exercise on a particular aspect of quantum theory or relativity. It will be scheduled when most pedagogically effective in Week Three or Four. Prof. Moore will provide whatever preparatory readings might be necessary for this session, and he will join us for at least one of the regular Wed. classes during this two-week period.]

## **Week Five**

**Mon.**-- What are your initial reactions to contemplative reading? How does it differ from the kind of reading you normally do?

Selected texts for contemplative reading drawn from Buddhism, Christianity, and Islam.

**Wed.**-- How do astrophysicists account for the origin of our planet? How did they arrive at their current theories?

Barbour, pp. 195-220.

Davies, God and the New Physics, Chapters 2-4.

\*Russell, pp.35-50, 51-81.

\*Pagels, Part II.

\*Steven Weinberg, The First Three Minutes.

## Week Six

**Mon.**-- What is prayer? How is it practiced?

Instruction in and practice of Islamic prayer led by the Imam at the local mosque.

Frederick Mathewson Denny, An Introduction to Islam, pp.119-24.

Mircea Eliade, The Encyclopedia of Religion, Vol.4, pp.341-44; Vol.13, pp.20-23.

Tazim R. Kassam, "The Daily Prayer (Du a) of Shi a Isma ili Muslims."

**Wed.**-- What are some of the implications of astrophysical theory for the past and future of our planet?

Barbour, pp.209-20.

Davies, Chapters 5-7 and 9-17.

Nancey Murphy, George F. R. Ellis, On the Moral Nature of the Universe, Chapter 3.

\*Stephen W. Hawking, A Brief History of Time.

\*John A. Jungerman, World in Process, Chapter 7.

\*Russell, pp.165-184.

**Additional session:** Workshop/laboratory exercise with Prof. Moore.

[**Note to CTNS reviewers:** Prof. Moore will lead this workshop/laboratory exercise on a particular aspect of physical cosmology. As above, the precise timing of this exercise in Week Five or Six and what might be necessary in preparation for it are still under discussion. Once again, Prof. Moore will join us for at least one of the regular Wed. classes during this two-week period. Perhaps I should mention here that Prof. Moore has won national recognition for the way he teaches introductory physics.]

## Week Seven

**Mon.**-- What are your reactions to prayer? Allowing for the difference between Islamic and Christian prayer, how does your experience compare with Margorie Suchocki's account?

Marjorie Hewitt Suchocki, In God's Presence, Chapters 1-3.

**Wed.**-- What is evolutionary theory? What are some of the assumptions in question among evolutionary theorists?

Barbour, pp.221-49.

Robert John Russell, et al., Evolutionary and Molecular Biology, pp. 21-57.

\*Warren S. Brown, et al., Whatever Happened to the Soul?, Chapter 3.

## **Week Eight**

**Mon.**-- What is the difference between “I-It” experience and “I-You” relation? At what points do you find yourself in agreement or disagreement with Martin Buber’s account?

Martin Buber, I and Thou.

**Wed.**-- What are some of the implications of evolutionary theory for your understanding of your own place in the scheme of things?

Barbour, pp.253-80.

Russell, pp.59-78.

\*Brown, Chapter 2.

**Additional session:** Laboratory/workshop exercise with Professor Gene Fowler, Biology.

[**Note to CTNS reviewers:** Prof. Fowler will lead this session in the field where students will take observational data on local flora and fauna. The precise scheduling of this exercise in Week Seven or Eight and what might be necessary in preparation for it are still under discussion. In any case, Prof. Fowler will lead one of our Wed. sessions, building on the field exercise in a discussion of evolutionary models and their application in evolutionary medicine. By this point in the course Prof. Fowler will also have helped us identify our environmental community service project. In addition to his own teaching and research, Prof. Fowler was for six years the Director of Pomona College’s Bernard Biological Field Station.]

## **Week Nine**

**Mon.**-- How do we experience and exercise personal agency? How do you react to H. Richard Niebuhr’s claim that there are symbolic forms and models implicit in that agency?

H. Richard Niebuhr, The Responsible Self, Prologue and Chapters 1-2.

**Wed.**-- How do images, metaphors, models, concepts, and paradigms figure in scientific and religious ways of knowing? What are the roles of experience and imagination in religion and science?

Barbour, pp.106-161.

Sallie McFague, Models of God, Chapter 2.

\*Thomas S. Kuhn, The Structure of Scientific Revolutions.

## Week Ten

**Mon.**-- How might science and religion be related? Where among the options Barbour and Haught discuss do you find yourself at this point?

Barbour, pp.77-105.

John F. Haught, Science & Religion, pp.1-71.

**Wed.**-- What are the salient features of process thought? What the strengths and weaknesses of process thought as a description of your own experience?

Barbour, pp.281-304.

Marjorie Hewitt Suchocki, God Christ Church, Parts I and II.

\*John B. Cobb, Jr. and David Ray Griffin, Process Theology.

\*Charles Hartshorne, The Divine Relativity.

**Additional session:** View the BBC production “The Blue Planet.”

## Week Eleven

**Mon.**-- What are the images, metaphors, and models that constitute McFague’s theology? Does her “metaphorical theology” reveal the same kind of structure that you find in scientific theory?

Sallie McFague, Models of God.

**Wed.**-- What are the images, metaphors, and models you have discovered in Wendell Berry’s “Fidelity”? How do they compare to and contrast with those of McFague?

Wendell Berry, Fidelity, “Fidelity.”

## Week Twelve

**Mon.**-- Is there a personal ecology explicitly or implicitly present in David Robertson’s Real Matter? If so, what is it, and how does he seem to arrive at it?

David Robertson, Real Matter.

**Wed.**-- Environmental community service project.

## **Week Thirteen**

**Mon.**-- Is there a personal ecology explicitly or implicitly present in McFague's Life Abundant? If so, what is it, and how does she seem to arrive at it?

Sallie McFague, Life Abundant.

**Wed.**-- Environmental community service project.

## **Week Fourteen**

**Mon.**-- How do you relate religious and scientific ways of knowing in a personal ecology of your own?

Discussion of one another's personal ecologies.

**Wed.**-- Same as Mon.

**Additional session:** We will have to schedule an additional session during this fourteenth week in order that everyone in the class has an opportunity to present their personal ecology and get some feedback.

The books listed below are to be read in their entirety. They are available for purchase at Huntley Bookstore and on reserve in the History & Religious Studies Library in Pearsons 109. All other required readings are on electronic reserve through the Honnold Library website and on print reserve in Pearsons 109. All recommended readings are on print reserve in Pearsons 109.

Barbour, Ian G. *Religion and Science* (HarperSanFrancisco, 1997).

Buber, Martin. *I and Thou* (Scibner's, 1970).

Davies, Paul. *God & the New Physics* (Simon & Schuster, 1983).

Feynman, Richard P. *QED* (Princeton U. Press, 1985).

Haight, John F. *Science & Religion* (Paulist Press, 1995).

McFague, Sallie. *Life Abundant* (Fortress Press, 2001).

\_\_\_\_\_. *Models of God* (Fortress Press, 1987).

Muto, Susan Annette. *A Practical Guide to Spiritual Reading* (St. Bede's, 1994).

Robertson, David. *Real Matter* (U. of Utah Press, 1997).

Thich Nhat Hanh. *The Miracle of Mindfulness* (Beacon Press, 1987).

**Discussion requirements:**

1. Participation in class discussion, demonstrating familiarity with the reading as well as attention to the contributions of others. Such participation should be regular, though you certainly do not have to say something in every class session. If discussion comes easily for you, look for ways to encourage others to participate. *Absence from class precludes participation and has, therefore, an adverse effect on your course grade.*
2. On at least one occasion you will be assigned with another student to facilitate class discussion. This will require thorough familiarity with the reading and a critical awareness of the significant issues that emerge from it. Beyond that you should be creative in designing an approach that will result in everyone's active participation in productive discussion of the reading and its implications.

**Practice requirements:**

1. In the second, fourth, and sixth weeks of the course you will be introduced to meditation, contemplative reading, and prayer, spiritual exercises drawn from Buddhism, Christianity, and Islam. You are to practice these exercises from the time they are introduced until the conclusion of the course, allowing for them at least two hours a week in some appropriate combination. For example, you might spend ten to fifteen minutes a day in meditation, thirty to forty minutes a week in contemplative reading, and twenty to thirty minutes a week in prayer. More will be said about an appropriate mix when the exercises are introduced.
2. Participation in an environmental community service project undertaken by the entire class.

**Writing requirements:**

1. Four short papers (four to five pages, typewritten and double-spaced) written in response to the questions posed for a particular session in light of the reading assigned for that session. These papers are to offer: a) substantial interpretation of the reading to the extent necessary to answer the questions, and b) critical assessment of issues you identify as significant in the dialogue between science and religion. These papers will be assigned on a rotating basis with equal attention to science and religion; they will be due in class on the day the material is discussed.
2. Three workshop/laboratory reports, one after each of the exercises conducted in quantum theory or relativity, astrophysical theory, and developmental biology. These



reports will be written to the specifications of Professors Moore and Fowler; they will be due at the first class session following the exercise.

3. At least once-weekly journal entries reflecting on your meditation, contemplative reading, and prayer practice. The entries are to chronicle when, where, and for how long you conducted these spiritual exercises, what you experienced during or subsequent to the exercises, and any observations you would like to make about the exercises and how they relate to issues that are emerging in this course. I will read your journals two times during the semester and again at the end of the semester.

4. A final paper, ten pages in length, typewritten and double-spaced, articulating your own personal ecology in specific conversation with the course readings, exercises, and discussions. This paper will illustrate the manner in which you have come to integrate scientific and religious or spiritual ways of knowing in your own life. A one-page summary of your position will be due on Wednesday of the thirteenth week of the course in order that it can be reproduced and distributed for discussion the following week. The completed paper will be due at the time the Registrar schedules for a final exam in this course.

5. Occasional one/two page reflections on activities or events related to the course (P/NC).

6. Course critique due at the same time as the final paper (P/NC).

**Extensions and incompletes** will be granted only in cases of extreme hardship such as hospitalization or emergency absence from Claremont. Arrangements must be made in advance of the relevant due date. Unexcused late work will be reduced a full letter grade for every 48 hours (or portion thereof) that it is overdue.

### **Collaboration and academic honesty:**

There are great educational advantages to collaborative learning. I encourage you to work together on the assignments for this course, many of which are appropriate for study groups. It is certainly advantageous to exchange drafts of your papers for constructive criticism before you submit them to me. Such collaboration is quite consistent with academic honesty; indeed, the two go together. If at any point in the semester you have doubts as to their application in this course, please let me know. The Pomona College policy on academic honesty is printed in the current Student Handbook (pp.66f.) and the current Catalog (p.240).

### **Course evaluation:**

The grade for your work in this course will be calculated as follows: the four short papers, the three laboratory/workshop reports, and your participation in and facilitation of classroom discussion will each carry the same weight, 5%; your practice of the spiritual

exercises, as evidenced in your journal, and your final paper will each carry the same weight, 30%.

**Office hours:**

Wed.: 10:00-12:00; Thurs.: 12:30-2:00; other times by appointment. If you have questions or comments that cannot be dealt with adequately in class, do not hesitate to come to my office hours. *A sign up sheet is posted on my office door.* If you have course or employment commitments that conflict with my scheduled office hours, please make an appointment for an alternative time. Office: Pearsons 106. Phone: x18813. Email: [jirish@pomona.edu](mailto:jirish@pomona.edu).

**Course Related Bibliography**

**Science:**

Barnett, Lincoln. *The Universe and Dr. Einstein* (New American Library, 1948).

Davies, Paul. *God & The New Physics* (Simon & Schuster, 1983).

\_\_\_\_\_. *The Mind of God* (Simon & Schuster, 1992).

Feynman, Richard P. *QED* (Princeton U. Press, 1985).

Gleick, James. *Chaos: Making a New Science* (Viking, 1987).

Hawking, Stephen W. *A Brief History of Time* (Bantam, 1998)

Jungerman, John A. *World in Process* (SUNY, 2000).

Kuhn, Thomas S. *The Structure of Scientific Revolutions* (U. of Chicago Press, 1970).

Pagels, Heinz R. *The Cosmic Code* (Simon & Schuster, 1982).

Weinberg, Steven. *The First Three Minutes* (Basic Books, 1977).

**Religion:**

Batchelor, Stephen. *Buddhism Without Beliefs* (Riverhead Books, 1997).

Denny, Frederick Mathewson. *An Introduction to Islam* (Macmillan, 1994).

Eliade, Mircea, ed. *The Encyclopedia of Religion* (Macmillan, 1987).

Harvey, Peter. *An Introduction to Buddhism* (Cambridge, 1990).

Muto, Susan Annette. *A Practical Guide to Spiritual Reading* (St. Bede's, 1994).

Proudfoot, Wayne. *Religious Experience* (U. of California Press, 1985).

Thich Nhat Hanh. *The Miracle of Mindfulness* (Beacon Press, 1987).

Vest, Norvene. *No Moment Too Small: Rhythms of Silence, Prayer & Holy Reading* (Cowley Publications, 1994).

### **Science and Religion/Theology:**

Brown, Warren S., Murphy, Nancey and Malony, H. Newton, eds. *Whatever Happened to the Soul* (Fortress, 1998).

Barbour, Ian G. *Myths, Models, and Paradigms* (Harper & Row, 1974).

\_\_\_\_\_. *Religion and Science* (HarperSanFrancisco, 1997).

Clayton, Philip. *Explanation from Physics to Theology* (Yale U. Press, 1989).

Deane-Drummond. *Biology and Theology Today* (SCM Press, 2001).

Griffin, David Ray. *Religion and Scientific Naturalism* (SUNY, 2000).

Gustafson, James M. *Intersections: Science, Theology, and Ethics* (Pilgrim Press, 1996).

Haight, John F. *God After Darwin* (Westview Press, 2000).

\_\_\_\_\_. *Science & Religion* (Paulist Press, 1995).

Murphy, Nancey and Ellis, George F. R. *On the Moral Nature of the Universe* (Fortress, 1996).

Peacocke, Arthur. *Theology for a Scientific Age* (Fortress, 1993).

Polkinghorne, John. *Belief in God in an Age of Science* (Yale U. Press, 1998).

\_\_\_\_\_. *Quarks, Chaos & Christianity* (Crossroad, 1994).

Russell, Robert John, Stoeger, William R, S.J. and Ayala, Francisco J. eds. *Evolutionary Biology and Molecular Biology: Scientific Perspectives on Divine Action* (The Center for Theology and the Natural Sciences, 1998).

Russell, Robert John, Murphy, Nancey and Isham, C.J. eds. *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action* (The Center for Theology and the Natural Sciences, 1996).

**Philosophy:**

Buber, Martin. *I and Thou* (Scribner's, 1970).

Hartshorne, Charles. *A Natural Theology for Our Time* (Open Court, 1967).

\_\_\_\_\_. *The Divine Relativity* (Yale U. Press, 1948).

Polanyi, Michael. *Personal Knowledge* (U. of Chicago Press, 1958).

Smith, John E. *Experience and God* (Oxford, 1968).

Whitehead, Alfred North. *Adventures of Ideas* (The Free Press, 1933).

\_\_\_\_\_. *Religion in the Making* (Meridian Books, 1926).

\_\_\_\_\_. *Science and the Modern World* (The Free Press, 1925).

**Theology:**

Cobb, John B., Jr. and Griffin, David Ray. *Process Theology* (Westminster, 1976).

Griffin, David Ray. *God & Religion in the Postmodern World* (SUNY, 1989).

McFague, Sallie. *Life Abundant* (Fortress, 2001).

\_\_\_\_\_. *Models of God* (Fortress, 1987).

\_\_\_\_\_. *Super, Natural Christians* (Fortress, 1997).

\_\_\_\_\_. *The Body of God: An Ecological Theology* (Fortress, 1993).

Niebuhr, H. Richard. *The Responsible Self* (Westminster, 1999).

Suchocki, Marjorie Hewitt. *God Christ Church* (Crossroad, 1995).

\_\_\_\_\_. *In God's Presence: Theological Reflections on Prayer* (Chalice Press, 1996).

**Personal Ecology:**

Austin, Mary. *The Land of Little Rain* (U. of New Mexico Press, 1903).

Berry, Wendell. *Fidelity* (Pantheon, 1992).

Dillard, Annie. *Pilgrim at Tinker Creek* (Bantam Books, 1974).

Lopez, Barry Holstun. *Of Wolves and Men* (Simon and Schuster, 1995).

Norris, Kathleen. *Dakota* (Ticknor & Fields, 1993).

Robertson, David. *Real Matter* (U. of Utah Press, 1997).

Snyder, Gary. *The Practice of the Wild* (Farrar, Straus and Giroux, 1990).

Williams, Terry Tempest. *Refuge* (Random House, 1991).

The “Brief Bibliography in Science and Religion” prepared by The Center for Theology and the Natural Sciences will be distributed in class.