

Generations of Sky and Earth: Science in Dialogue with Biblical Imagery

Spring Semester 2022

SPI

Time: Tuesdays 9:15-11:40 am

Academy for Jewish Religion

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This class will examine the natural imagery that permeates the Hebrew Bible – trees, mountains, wind, and stars – together with related areas of science – biology, geology, meteorology, and astrophysics – to discover how we might read the Bible in new ways in juxtaposition with science? For example, how does understanding the underground communications of trees graft new layers of meaning onto the metaphor of the Tree of Life? How does considering the formation of stars and the explosion of supernovas shed light on our understanding of God’s promise to Abraham that his descendants will be like the stars? That is, how might contemporary people relate to the images of the Bible, informed by the sciences? What does each biblical source bring to the conversation about our relationship with the natural world? By understanding the science behind these phenomena, as well as the ways that the Bible perceives them, students will be able to deepen the theological and ideological impact that this imagery can have for themselves and those they serve.

This course will be taught by Rabbi Dr. Jill Hammer and will involve five guest scientists: Dr. Allan Frei, Barry Pollack, Dr. Robert Pollack, Dr. Zeeve Rogoszinski, and Kohenet Jessica Rubin. Rabbinical students who already completed their Science and Judaism requirement, as well as cantorial students, are able to take this class as a Bible elective.

Required Books:

Hebrew Bible

Robert Alter, *The Book of Psalms* (New York, NY: W.W. Norton and Company, 2007). ISBN: 978-0-393-33704-4

Robert and Amy Pollack, *The Course of Nature: A Book of Drawings on Natural Selection and Its Consequences* (Createspace 2014). ISBN: 978-1499122244.

Jan. 18, Session 1: Introduction: “Playing with the Globe of the Earth”: The Space of Creation

Proverbs 8:22-36, Psalm 104, Job 38:1-41

K. J. Dell. 'Wisdom', in J.W. Rogerson & J.M. Lieu (eds.), *The Oxford Handbook of Biblical Studies* (Oxford University Press, Oxford 2006), pp. 409–419.
<https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199237777.001.0001/oxfordhb-9780199237777-e-24#oxfordhb-9780199237777-div1-124>

Jan. 25, Session 2: “These Are the Generations of Sky and Earth”: Biblical Texts on Time

Lecturer: Dr. Zeeve Rogoszinski (Astronomy)

Genesis 1:1-2:4 (creation)
Ecclesiastes 1:4-11 (cyclical/elemental time)
Leviticus 23:1-44 (biblical calendar)
Leviticus 25:1-12 (sabbatical and jubilee year)
Jeremiah 8:6-7 (inner knowing of right time)

Lefebvre, Michael. *The Liturgy of Creation: Understanding Calendars in Old Testament Context*. (IVP Academic, 2019), Chapters 1-3, p. 11-54. ISBN: 978-08308-5262-8

Katharine Dell, “The Cycle of Life in Ecclesiastes,” *Vetus Testamentum* (2009), vol. 59, no. 2, p. 181-189.

Feb. 1, Session 3: “The Earthling Became a Living Being”: Biblical Accounts of the Emergence of Life

Lecturer: Dr. Robert Pollack (Biology)

Genesis 1:1-2:25

Stephen Grosse. “Building a Relationship with the Earth: Humans and Ecology in Genesis 1-3,” *Denison Journal of Religion*, vol. 5, article 4 (2005).

Robert and Amy Pollack, *The Course of Nature: A Book of Drawings on Natural Selection and Its Consequences* (Createspace 2014), Chapter 1-3.

Feb. 8, Session 4: “The Moon to Mark the Seasons:” Biblical Texts on the Moon, Sun, and other Heavenly Bodies

Lecturer: Dr. Zeeve Rogoszinski (astronomy)

Genesis 1:14-19 (the creation of sun, moon, and stars)
Genesis 37:1-11 (Joseph’s dream)
Psalms 136:1-9 (making of heavenly bodies)

Exodus 12:1-2 (establishment of calendar)
Numbers 10:10 (celebration of new moon)
Psalm 81:1-4 (celebration/shofar on the new moon and full moon)

Joshua 10:1-14 (sun and moon stand still)
Daniel 2:21-22 (changing of the seasons)
Job 38:31-33 (constellations)

Robert Alter, *The Book of Psalms* (New York, NY: W.W. Norton and Company, 2007), Introduction xiii-xl, 288-290 and 469-472.

Carol Newsom, *The Book of Job: A Contest of Moral Imaginations* (Oxford University Press, 2003), p. 234-252.

Feb. 15, Session 5: Noah's Ark: Biblical Texts on Cataclysm

Lecturer: Dr. Allan Frei (Climatology)

Genesis 6:5-8:22

Robert Alter, *Genesis: Translation and Commentary* (New York: W.W. Norton and Company, 1996). Commentary on Genesis 6-8, p. 26-37. ISBN: 978-0393316704

Withington, John. *Flood : Nature and Culture*, Reaktion Books, Limited, 2013. ISBN: 978-1780231969. *ProQuest Ebook Central*, <https://ebookcentral.proquest.com/lib/huntercollege-ebooks/detail.action?docID=1803086>. (Assignment: Chapter 1, *Myth*, p. 9-32)

Solomon, Steven. *Water: The Epic Struggle for Wealth, Power, and Civilization*, Harper Perennial, 2010. ISBN: 978-0060548315-- Ch. 2 Water and the start of civilization, p. 15-23, Ch. 3: Rivers, irrigation, and the earliest empires.

Feb. 22, Session 6: The Nature of Animals: Biblical Texts on Other Animate Life

Lecturer: Dr. Robert Pollack (Biology)

Genesis 6:9-22 (animals on the ark)
Leviticus 11 (laws of kashrut)
Proverbs 30:24-30 (praise of specific animals)
Job 39-41 (praise of animals)
Ecclesiastes 3:21 (difference between animals and humans)

DeWitt, Calvin. "Biodiversity and the Bible." *Global Biodiversity*, vol. 6, p. 13-16.

David Seidenberg, *Kabbalah and Ecology: God's Image in the More-Than-Human World*, p. 129-131, 139-142.

Robert and Amy Pollack, *The Course of Nature: A Book of Drawings on Natural Selection and Its Consequences*, Chapter 8-10.

March 8, Session 7: The Earth Opened Her Mouth: Biblical Texts on What Lies Beneath the Earth

Lecturer: Mr. Barry Pollack (Geology and Vulcanology)

Psalm 139:1-15 (the origin of the body/soul)
Numbers 16:1-35 (story of Korach)
Jeremiah 31:37 (foundations of the earth)
Jonah 2:1-11 (the great Deep)
Psalm 24:1-2 (the waters under the earth)
Psalm 30:1-13 (the Pit)
Psalm 75:1-4 (earth's pillars)
Psalm 82:5 (the earth's foundations)
Psalm 104:5 (the earth's foundations)
Job 38:4-21 (foundations and watery underworld)

Robert Alter, *The Book of Psalms* (New York, NY: W.W. Norton and Company, 2007), 81-83, 102-104, 262-264, 291-293, 362-368, 479-483.

Jill Hammer, "Sacred Shrine, Sacred Wild: Exploring the Three Worlds of the Bible."
Unpublished essay.

March 15, Session 8: "God Loads the Clouds with Moisture": Biblical Texts on Storms and the Water Cycle

Lecturer: Dr. Allan Frei (Climatology)

Genesis 2:4-14 (moisture in the Garden of Eden)
Deuteronomy 32:1-4 (dew, rain, and speech)
Job 38:31-38 (God's role in the weather)
I Kings 19:1-14 (Elijah)
Psalm 18:1-21 (God as earthquake and storm)
Psalm 29:1-13 (God as thunderstorm)
Proverbs 8:28-29 (limits of the sea)

Robert Alter, *The Book of Psalms* (New York, NY: W.W. Norton and Company, 2007), 52-55, 98-101.

Oded Borowski, "Seasons, Crops and Water in the Land of the Bible," Chapter 53 in *Behind the Scenes of the Old Testament: Cultural, Social, and Historical Contexts*, eds. Jonathan S. Greer, John W. Hilber, and John H. Walton (Grand Rapids, Michigan: Baker Academic, 2018), p. 411-415. ISBN: 978-0801097751.

March 22, Session 9: "The Tree of Life": Biblical Images of Trees

Genesis 3 (the tree of life)
Genesis 18:1-8 (Abraham's hospitality)
Judges 4:5 (palm tree of Deborah)
Micah 4:4 (vine and fig tree)
Proverbs 3 (the tree of life, revisited)
Psalms 1 (the beauty of trees)
Psalms 128:1-6 (olive saplings)
Isaiah 6:13 (regeneration)
Lev. 19:23-25 (protecting trees)

Robert Alter, *The Book of Psalms* (New York, NY: W.W. Norton and Company, 2007), p. 3-4, 45-46.

Ingrid Faro, "Tree of Life," in *The Lexham Bible Dictionary*, edited by John D. Barry et al. Bellingham, WA: Lexham Press (2016).

Ted Chertok. "He Is Like a Tree Planted Beside Streams of Water: Reflections of Trees and Men in the Bible." *Jewish Bible Quarterly*, Vol. 43 no. 2 (2015), 73-81.

Jill Hammer, "The Climate Ribbon as a Tree of Life" (Sacred Trees around the World), <http://www.theclimateribbon.org/stories/2015/11/4/the-climate-ribbon-as-a-tree-of-life>

March 29, Session 10: "Out of the Fire:" Biblical Images of Fire and Heat Lecturer: Mr. Barry Pollack (Geology and Vulcanology)

Genesis 3:24 (the fiery ever-turning sword)
Genesis 15:1-21 (Abraham's "covenant between the pieces")
Exodus 3:1-6 (burning bush)
Exodus 13:21-22 and 14:19-20 (pillar of fire)
Exodus 19:16-25 (Sinai)
Leviticus 10:1-2 (Nadav and Avihu)
Judges 13:1-24 (Manoah and Manoah's wife)
Isaiah 6:1-13 (fire as purification)

Rabbi David Cavill, *God of Fire: A Study of Theophany and Pentateuch Fire Imagery* (Master's Thesis, AJR, 2016), 5-7, 12-13, 21-23, 27-29, 32-33, 44-46.

April 5, Session 11: Tree of Life Continued

Lecturer: Kohenet Jessica Ann Rubin, MA (Mycology and Ecological Restoration)

Ellen Bernstein, *The Ecology of Wholiness* (forthcoming; excerpt).

Assignments:

Students are expected to prepare assigned readings. In some cases, students will be asked to present readings; please check each entry on the syllabus to see if this is the case for any given week. This class preparation will be worth 40% of the grade.

A 5-7 page final paper is due April 5. This final paper must discuss the imagery in a particular biblical text (one we studied in class or one of the student's own choosing) and relate this imagery to scientific ideas or facts from any scientific field. The paper can be in the form of a dvar Torah (sermon) on a particular parashah or another section of the Bible. The paper will be worth 60% of your grade.

An A paper will:

- 1) show a nuanced understanding of the biblical text and the meaning and impact of its imagery;
- 2) be able to explain a basic scientific fact, idea, or theory that relates to the biblical text;
- 3) show how that scientific fact, idea, or theory can add meaning to, or shift our understanding of, the biblical text.

Miscellaneous:

Late assignments must be discussed with me prior to the due date. Be sure to keep a copy of any work you turn in and any work that I return to you. This is important in case an assignment gets misplaced, you wish to discuss a grade with me, or you wish to refer to my feedback. Papers may be submitted in person or by e-mail to jhammer@ajrsem.org.

We look forward to encountering this exciting material with you.

Rubric for Science and Biblical Imagery

1. General Expectations

- a. Regular attendance and active class participation.
- b. Regular preparation of all assigned materials.
- c. Meeting deadlines for assignments or taking appropriate measures well in advance when unable to meet deadlines.

2. Class Preparation

- a. Thoroughly read texts and readings and be able to discuss the main points of the readings in class.
- b. Be able to compare and contrast biblical texts and science and consider their alternate ideas, images and narratives.

3. Content

- a. Demonstrate the ability to articulate basic scientific ideas as presented in class.
- b. Demonstrate the ability to think critically about how science fits into a Jewish context.
- c. Demonstrate the ability to interpret texts in new, meaningful ways in light of scientific information.
- d. Understand multiple options for thinking about the relationship of science and sacred text.

4. Communication

- a. Demonstrate an ability to coherently articulate in oral and/or written form a thoughtful analysis of material presented in the course or the results of students' own original research.
- b. Demonstrate an ability to consistently use appropriate scholarly conventions for citation, bibliography, and writing style.
- c. Demonstrate proper spelling of English words and conventional transliteration of Hebrew terms.

5. Relevance

- a. Demonstrate an ability to apply ideas and concepts in the class to one's own contemporary setting and to divrei Torah.