

# *IRAS @ 60 and the Future of Religion and Science*

with Karl E. Peters, "The 'Ghosts' of IRAS Past and the Changing Cultural Context of Religion and Science"; Michael Ruse, "Why I Am an Accommodationist and Proud of It"; Nancy Ellen Abrams, "A God That Could Be Real in the New Scientific Universe"; Whitney Bauman, "Religion, Science, and Globalization: Beyond Comparative Approaches"; Zainal Abidin Bagir, "The 'Relation' between Science and Religion in the Pluralistic Landscape of Today's World"; Sarah E. Fredericks and Lea F. Schweitz, "Scholars, Amateurs, and Artists as Partners for the Future of Religion and Science"; and Willem B. Drees, "From Authority to Authenticity: IRAS and Zygon in New Contexts."

## SCHOLARS, AMATEURS, AND ARTISTS AS PARTNERS FOR THE FUTURE OF RELIGION AND SCIENCE

*by Sarah E. Fredericks and Lea F. Schweitz*

*Abstract.* We recommend that the future of religion and science involve more partnerships between scholars, amateurs, and artists. This reimagines an underdeveloped aspect of the history of religion and science. Case studies of an undergraduate course examining religious ritual and technology, seminarians reflecting on memory and identity in light of Alzheimer's disease, environmentalists responding to their guilt and shame about climate change, and Chicagoans recognizing the presence of nature in the city show how these partnerships respect insights and experiences of our varied partners, identify and resolve community problems, and advance scholarship. Sourdough starter, a new metaphor, describes these collaborative, nourishing partnerships.

*Keywords:* amateurs; artists; climate change; guilt; memory; partnership; pedagogy; ritual; shame; sourdough starter; technology; urban nature

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What if we understood the adventure of research in religion and science to be like sourdough starter? Sourdough starter is a key ingredient in robust

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sourdough bread. It consists of nothing more than quotidian elements of life—yeast from the air, water, flour, and time. Yet, in the right combinations and with a little tending and baking, something nourishing emerges which can be shared or used to feed a community. The starter comes from a particular place and is changed by being in that very place. Some of it is saved, and some returns to a community to nourish it.

We will return to the sourdough starter metaphor in the conclusion to mine further its evocative potential for religion and science's futures. However, at the outset, we want to name a temptation. The temptation is to ask: What is religion? What is science? And, what element corresponds to the religion and science scholar? Is she the baker who is responsible for producing and distributing the bread? Is he the yeast, the truly active agent in the mix? We claim this as a temptation because it too easily simplifies the multifaceted, reciprocal relationships of working in religion and science.

Although religion and science has long valued breadth of scholarship and diversity of audience, there remains a sense in which the world of religion and science is divided into professional insiders engaging in the intellectual work of teaching and research and a passive audience of outsiders whose responsibility is to consume (or be consumed by) the teaching and research of the insiders.

Neither Sarah Fredericks's context as a religious studies teacher-scholar at a public university nor Lea Schweitz's context as a theological teacher-scholar at a Lutheran seminary divides work in religion and science into such neat categories. In this article, we argue through the use of case studies for more expansive and inclusive views of the teacher-scholar of religion and science and our "audiences." Using the sourdough starter metaphor, scholars, teachers, students, and curious participants are all in the mix, and the distinction between scholar and audience is not the primary concern so long as the process of exploring religion and science feeds the community of inquiry and practice.

Our hope and expectation is that the futures of religion and science will include researchers as partners alongside active participants reimagined as amateurs and artists in the field. For us, the first questions to ask are: "Who will be the future of religion and science?" and "How can research be of service?" Only after we have attended to these questions should we ask: "What will (or should) be the future of religion and science?"

Through the use of four case studies we will demonstrate some of the opportunities that emerge when the audience is reimagined as amateurs and artists in partnership with teacher-scholars. We will consider an undergraduate course examining religious ritual and technology, seminarians reflecting on memory and identity in light of Alzheimer's disease, environmentalists responding to their guilt and shame about climate change, and Chicagoans recognizing the presence of nature and creation in the city to show how these partnerships respect insights and experiences of our

varied partners, identify and resolve community problems, and advance scholarship.

#### TRANSFORMING THE “AUDIENCE” WHO IS TRANSFORMING US

In Karl E. Peters’s 1987 article about the past, current, and future structure of “science and religion” as a discipline as exemplified in the journal *Zygon*, he suggested that science and religion should be evaluated based on whether or not its results can be communicated to other branches of the science and religion discourse (i.e., that theologians, scientists, religious studies scholars, and philosophers can communicate with each other) and, even more importantly, whether the discourse “speak[s]” to “ordinary human beings who are trying to discover how their own lives can be meaningful and significant, and of societies that are trying to cope with one another in our pluralistic world” (Peters 1987, 55–58). While Peters’s examples focus on his work at theological schools and with ministers, he envisioned a larger impact for religion and science work noting that “we have still only limited success in translating our scholarly work for use by the average individual” (Peters 1987, 58). Indeed, Peters claimed that doing so is a part of “the original vision of both the Center at Meadville/Lombard Theological School (CASTS) and of its organizational successor CASIRAS” and that “if we fail to keep this part of the original vision in mind as something that is absolutely necessary, human life itself—the everyday living of people—will select against our whole enterprise. Our science and religion scholarship will continue to exist only for a few thousand people who read *Zygon* and the books we write. It will then continue only as a very small and isolated cultural subspecies, always threatened by extinction—unless we find ways to transmit it into the minds and hearts of ordinary citizens of our world” (Peters 1987, 58). We agree. Though Peters wrote these lines twenty-eight years ago, we find his priorities as important today as they were then. While scholarship for scholars is certainly important in its own right, these ideas are not so significant if they just sit on the shelf.

Yet, our concern extends beyond the threat of extinction or minimal impact factors. Our commitments to our audiences have pedagogical, ethical, and theological motivations and rationales. We consider the people that we work with and for, whether college students, seminarians, religious leaders, environmentalists, or families with a member with Alzheimer’s, to be partners in the work. They articulate questions arising from their life experiences such as how to conceive of the humanity of one’s grandmother in the face of Alzheimer’s or how to admit the guilt and shame of one’s own participation in environmental destruction. These are not abstract questions, which we academics can solve by ourselves. They are particular questions that require the insights of those who live out the questions.

Here, we are influenced by Traci West's *Disruptive Christian Ethics*. In it, West reflects on the work of Reinhold Niebuhr who explored social issues of his day in his Christian theology and ethics. West notes that Niebuhr primarily used the experiences of people as examples of his universal moral principles, but he did not give the African Americans of Harlem sufficient credit for being moral agents with their own unique contributions to ethical thought based on their experiences in the world and in relationship to God. In contrast, West develops a liberationist ethic which recognizes the value of individuals and their moral insights (West 2006, 3–16). Similarly, we argue that all people, not just religious studies scholars, educators, or religious leaders may have something to contribute to reflection and problem-solving about religion and science.

These commitments transform our understandings of an *audience* that passively receives information to active partners in the production of wisdom and practices. Further, we propose that these partners be imagined and valued as amateurs and artists in the field rather than outsiders or simply consumers. Admittedly, this is a risky proposition because it shifts the role of the teacher-scholar from the *sage on the stage* or the *brain in the library* to an embodied member of a community of inquiry and practice, but it is a proposition worth the risk.

#### FROM AUDIENCE TO AMATEURS AND ARTISTS

Like Peters, we advocate that religion and science scholars concern themselves with the minds and hearts of “average, ordinary individuals.” However, our diagnosis of the relative lack of success in reaching these people can be seen in the language we use to reach them. We would like to challenge the idea that the task of the religion and science scholar is to translate her work for the masses or to transmit it to them. Even when the “audience” is valued, there is an implicit assumption that ordinary people are either a blank slate, or worse deeply ignorant or misinformed. As such, the work of the religion and science scholar is often either to fill in the gaps or to undo a wrong.

To be sure, we recognize that the overall population of the United States is regrettably not very scientifically (Michigan State University 2007) or religiously literate (Prothero 2007). While such trends suggest challenges for engaging publics in aspects of the field, we contend that it is a mistake to think that low literacy equals disengagement from practices and inquiry in religion and science. They are different, but not absent. Think of people who credit God for healing them through the work of their doctor or their pills. Think of those who cry “sacrilege” upon seeing a familiar beach now coated with oil after a spill. These people are probably not reflecting on weighty tomes about the relationship of religion and science, divine action, or intrinsic value. Rather, they are reacting to and making sense

of their new experiences based on prior experience in the world, religious and ethical backgrounds, and scientific education. While engaging with religion and science literature can help articulate or intellectually justify such reactions, it is not as if people do not already have modes of linking their scientific and religious knowledge and the ability to raise pertinent questions about such issues. Indeed, the case studies below will indicate that amateurs and/or artists often move science and religion dialogue to places that scholars have not yet gone. Keeping this in mind, how can we re-envision the engagement between religion and science scholars and our “audiences” so as to value them as active partners? As a preliminary step, we suggest a shift away from “audience members” to “active partners” who are “amateurs and artists” in the field.

The categories of amateur and artist are abbreviated ways to value and describe the subtle, adaptive integration of religion and science in daily life. This includes the myriad ways people access scientific information, judge it according to a wide range of values, some religious, some aesthetic, some irrational, and act from integrated senses of what the world is and how it matters. These are curious, creative, and adaptive appropriations of religion and science by people who are “outside” the professional pipelines of religion, science, and religion and science. Categories like these are not meant to carry an ontological status. They are fluid and admit of many intermediate, in-between shades. We propose them here to begin to paint a more complex picture of the goals of those who engage religion and science. We hope to challenge scholars in religion and science to be transformed by the gifts that these partners bring to our work.

We use “amateurs” and “artists” in religion and science because they are callings that exist together with and alongside the professional scholars. They are not intended to replace the “professional expert” in the field; each has essential contributions and interventions to offer. Amateurs may have contact with the professional guild through reading popularizations or university press versions of religion and science texts or participating in conferences such as the annual summer conference by the Institute of Religion in an Age of Science, book clubs, or college courses. They bring fresh eyes to old questions, new questions, a passion for the work (unencumbered by the daily grind of it as work), and often a community of inquiry and practice who engage simply for the love of the subject and the community that supports it. Consider the amateur cellist in a community orchestra (Booth 2008) as a model. He cannot replace the professional musician, but he brings new ears to the music and has a rightful place in the music community. In religion and science, an amateur is anyone who has developed their own theories or practices for holding together religious commitment and the results of scientific inquiry or application. As just one example, the amateur may have a sense that the divine can act in, with, or through the evolutionary process. This sense can be explored

through trips to local science museums or through publications of the professional experts in religion and science. In each instance, the amateur is not an aspiring scholar. He or she aims to explore more deeply ways to integrate questions about how the world works into a meaningful life. The integrative theories and practices of the amateur may be more or less explicitly articulated. They may be influenced by and also significantly different from that of the professional theologians or professional religion and science scholars. Our designation as amateur is not one of deficit. This is not a lost innocence or being less-than an expert. It is different, and there is value for religion and science in the differences.

Artists may also be amateurs in that they can be influenced by the formal study of religion and science, but in our formulation, they may or may not know of science and religion studies. Their value in the field is in what they can provide in terms of evocative, creative, transformative shifts in questions and perspectives. They are not beholden to the values of the scholarly guild, and as such, they can open new spaces. Consider as models poets such as Mary Oliver or novelists like Annie Dillard. Both writers are often invoked for their abilities to integrate religious sensibility and knowledge of the natural world (Oliver 2014, Dillard 2013). Yet, artists in religion and science need not be professional artists. They may be a pastor who references DNA in a sermon as a way to signal something that is deeply encoded in the life and identity of the congregation or the parent who tells her children multiple kinds of stories, some mythical, some religious, some scientific, in order to help teach deep truths about how the world works.

Lisa Stenmark suggests that the “field” of religion and science ought to be a “disputational friendship” between religion and science. She characterizes such a friendship as one in which friends are committed to one another and a constant exchange of ideas and practices, “an argumentative companionship.” It is argumentative in the sense that similarity, familiarity, comfort, and warmth are not given priority. The primary value is placed in pointing out and maintaining difference and plurality for the sake of engaging the world (Stenmark 2013, 196–97). If Stenmark is right that the relationship of religion and science needs to be a disputational friendship, then, we need to include friends in the field who can help us locate and explore difference (Stenmark 2013, 196). Recognizing amateurs and artists as such friends who are members of the field, rather than an audience outside of it, is one preliminary step towards building the deep engagement between religion and science that has been a long-expressed, but unrealized, hope for the “field.”

RELIGION AND SCIENCE SCHOLARS AS PARTNERS IN SHARED,  
EXPERIENTIAL ENDEAVORS

Risk accompanies the transformation of the audience because it is not only the audience that changes in this process. The inquiry and practice of religion and science scholarship changes, too. Methodologically, the transformation of the audience demands a transformation in scholarly practices. In our work, increasingly, we need to act as partners, mentors, and advisors who are in participatory relationships with the reimagined "audience." These amateurs and artists are genuine partners in the work and demand that we be in relationship with them. One implication of this shift is the decentering of traditional theological and philosophical discourses from a position of privilege. Analytical analysis is accompanied by more embodied, holistic spheres of inquiry and practice.

We have been inspired by methods of participant observation drawn from the qualitative research methods of the social sciences, especially in anthropology and sociology. As a method, it aims to gather data and generate research questions through relationships over a significant duration of time. A striking feature for us in this method is the value it gives to communities, creatures, and places as the primary way to engage the content. However, it does not yet seem to capture the ways in which we are advocating for ongoing partnership.

Being partners, mentors, and advisors who are also scholars in religion and science transforms our work. It calls us to step back from a position of total authority/expertise and to recognize that while we may be experts with respect to our scholarship, what our partners bring to the table is irreplaceable. The questions, insights, methods, and evidence/data that our amateur-artists partners bring need to be considered in and of themselves and to see how they can inform our scholarship. Scholars in religion and science can raise pertinent questions, connect people with resources of science and religious traditions, articulate and highlight the strengths and weaknesses of different modes of interaction with disciplinary knowledge, deepen and enrich reflection upon the questions raised by their friends, and help systematize such responses. Yet, we contend that these valuable contributions are enriched when we extend a wide welcome and keep the "boundaries" of the field porous.

As the case studies below show, partnerships between scholars of religion and science and amateurs and artists will push the "field" to include more fully the lived questions of our partners in addition to abstract, conceptual, or analytical ones. Here, we draw upon the work of Wesley J. Wildman and John J. Carvalho, IV, who have advocated an applied, problem-solving approach to science and religion (Carvalho 2008, 220–21; Wildman 2007), or better yet, a constellation of methods, rather than a strict field with a neatly delineated subject of inquiry. We find the move to problems

over canonical content an important step. Furthermore, we emphasize the practical or engaged problems of religion and science that arise from the people and places in our expanded disputational friendship with amateurs and artists.

This way of doing religion and science decenters some of the questions and methods that typically describe the “field.” Religion and science discourse has often emphasized analytical assessments of intellectual conundrums over embodied, enacted, ethical, or emotional responses. This emphasis is seen in the typical prioritization of abstract questions of the Big Bang cosmology or divine action over questions of how new technology is shaped by or shapes religious ritual; the analysis of ideas over emotions or experiences; and the emphasis on the ideas of the professional scientists or religious leaders rather than laypeople or amateurs.

These emphases occur in part because theologians and philosophers are overrepresented among people who characterize the field. As Karl Peters and Niels Gregersen acknowledge, the field looks different depending on where one comes from; scholars often focus their description of the field on their own subject of study (Gregersen 2014, 425; Peters 1987, 44). Thus, it should not be surprising that philosophical and theological analyses are consistently registered as dominant or privileged in the field and that predictions for the field’s future often pay less attention to the social sciences and religious studies perspectives than theology and philosophy. There are historical reasons for this priority, and it is because of them that we are even in the position to be able to offer these hopes for the field (Clayton 2014, 433–34). That said, this priority still influences conceptualizations of the field.

For example, in Neils Henrik Gregersen’s article “Prospects for the Field of Science and Religion: An Octopus View,” he devotes three paragraphs to the theological and religious studies branches of the field, three to the scientific, two to the philosophical, and one very general paragraph to all of the cultural and social scientific perspectives (Gregersen 2014). Notably, his reflections on theology and religious studies are dominated by ideas of the various religions rather than their rituals, material culture, history, linguistics, or religious experiences. Thus, even when he has the possibility of broadening his analysis to include all facets of religion, he focuses on the most intellectual/rational. Similarly, in his brief discussion of cultural studies, he looks to theories of wide-scale cultural analysis, with only one mention of social-scientific surveys, and none about economics, history or anthropology (Gregersen 2014). Gregersen’s categorizations of the field are one representation of a larger trope of characterizations that tend to marginalize the methods and participants of other aspects of religion and science.

Notice how such tropes extend to the metaphors used to describe the field. Gregerson compares the status of the field of religion and science to



an octopus with many tentacles. While he wants to avoid the colonizing imagery of an octopus (Gregersen 2014, 419), he seems less concerned about privileging theory or rationality as he aligns the head and brain of the octopus with theorizing about the relationship of religion and science. The other, more peripheral studies are left to gather that information. He recognizes that the arms are vitally important, but not in their particularity. Arms are needed but the embodied, detailed particularity is not. In the end, it seems as though it really is the head that drives the creature. The metaphor echoes the privileges typically offered to the abstract and rational over the particulars of religious experience, ritual, material culture, or technology.

We do not mean to suggest that all theological or philosophical approaches are problematic; we use them often ourselves. We also recognize that the theorizing of the past has allowed us, and scholars of our generation, the ability to raise the questions and concerns we do today. Rather, we are concerned about the ways in which consistent privileging of theology and philosophy in the religion and science can push it away from asking certain types of practical questions and paying adequate attention to the audience for religion and science literature. The case studies below illustrate the types of questions, methods, experiences, and insights that may be overlooked if the field emphasizes the analytical study of ideas by scholars over the work and methods of other disciplines and partners.

#### CASE STUDIES

*Religion and science by undergraduate learner.* Our first case study involves an undergraduate religion and science course involving a teacher-scholar of religion and science (Fredericks) and students from a wide variety of religious, agnostic, and atheist backgrounds and studying many different fields at a large state school. This example illustrates how collaboratively engaging with students in the study of religion and science leads to creative new questions, approaches and results, even about such traditional questions as how science and religion relate. After recognizing several lacunas in existing religion and science studies, and common needs among her students, yet not finding traditional texts for undergraduates to cover these topics, Fredericks decided to do something different. During the summer of 2012, she received a grant from her university to rework her religion and science course to better meet these challenges with a collaborative research project.

As Fredericks began thinking about her upcoming undergraduate religion and science class, she knew she wanted to overhaul it. The common syllabus elements she had been using were increasingly dissatisfying for her and her students. Fredericks's students belong to a wide range of religious traditions and often come to class wanting to learn about religious diversity. Many, for example, return from wars in Iraq or Afghanistan hungry to

learn about Islam. Given this religious pluralism and curiosity, they were frustrated by schemas of relating religion and science whose examples relied almost exclusively on Christianity. They knew that having examples from a narrow range of religions was not enough to make a robust generalization about the relationship of religion and science. However, they did not quite have enough knowledge about other religions to satisfactorily counter or support the theories discussed. Additionally, there were some who struggled with the idea and practice of humanities scholarship. Some students have not had experience critiquing ideas in a scholarly way, and/or want to avoid any controversy that they assume comes with critique. Participating in the process of doing research seemed to be the best answer.

Recent surveys suggest that many college students view college as a place to explore big questions such as “What is the meaning of life?” and “How should one live one’s life?” They want to develop their values, sense of self and spirituality; and apply what they learn to their lives (Astin, Astin, and Lindholm 2011). Many students also struggle with questions of how or whether to keep their faith and practice alive in light of changing culture and new life experiences. While these questions blend belief and practice, most of Fredericks’s training, her department (a combined philosophy and religion department that emphasizes philosophy), and, as we have seen, the field of religion and science, emphasizes beliefs, ideas, and analysis over practices, rituals, emotions, and experiences. Thus, Fredericks also aimed to broaden her course to include this multifaceted approach to religion.

In the last half of her spring 2013 science and religion course, her students participated in a hypothesis-based, iterative, collaborative research project on the ways that religious practices shape and are shaped by new technologies. In this project, students studied the interaction of religious ritual and technology around the world. After earlier units on the theory of the relation between religion and science and cases on the Galileo Affair and responses to evolutionary theories in Christianity and Judaism, they read studies of religious ritual, technology, and Heidi Campbell’s work about the mutual interaction of religion and technology (Campbell 2010). This background material exposed the student-amateurs to ideas from within the field of religion and science and helped establish a vocabulary for later analysis. The class theorized that religious practice is an application of and a driver of theology like technology is the application of and a driver of scientific research, and, like Campbell, that religion and technology mutually influence each other.

Students formed groups of four to five, each group to focus on one religion. Each student chose a ritual of his or her group’s religion and a technology used or potentially used in a ritual. Selections included participating in pilgrimages via webcam or using geographical positioning systems (GPS); using cell phone apps in confessions or tarot card reading, or to learn

a religion's tenets; the use of technology in proselytism; and the practice of meditation in virtual reality spaces such as Second Life, among others.

Students learned about how their chosen ritual was conducted and conceived of before and after the adoption, modification, or rejection of the technology; predicted how the technology would be received; and then studied how the religious community actually engaged with the technology. To do so, they used traditional academic sources such as books and peer-reviewed journal articles, particularly to learn about the traditional ritual, as well as less formal sources including news stories, blogs, and discussion boards because many of the interactions between ritual and new technologies were so new that they had not been documented by academic sources. Within each group, members shared information about their religion and its attitudes about ritual and technology and collaborated to articulate a generalization about how their religion viewed and lived out the intersection of technology in religious ritual. Each individual wrote a paper about his or her findings; groups presented their collaborative work to the class. Then, the whole class discussed whether they could combine upon their results to generalize about how religious ritual and technology interact.

During this last exercise, students beautifully synthesized information from their work, their group, and the whole class. They experienced how research conclusions in the humanities are based on a rich combination of knowledge, experience, and analysis and started to feel what it was like to be able to do that type of work. One of the major insights of the class was that religious groups with higher commitment to individual religious experience often were quicker to embrace new media technologies that made religious information or experience more accessible and customizable to each adherent. While this idea is related to Campbell's claim that visions of religious authority often shape a community's interaction with technology, the students asserted that their research emphasized individual experience and creativity as much or more than authority itself and that it was drawing on a larger range of religious traditions than the monotheistic traditions Campbell focuses on. Thus, they were proud to significantly extend her work.

Students also experienced the process of research and all of its complexities. Frequently their predicted relationships between technology and religious ritual needed modification after engagement with the data. They often had assumed that religions would be more conservative than they actually were or that they would prioritize abstract ideas over the ritual itself. Being challenged by the data made the students confront their stereotypes about religious change and constancy as well as the importance of rituals. Being compelled to modify their generalizations about the relation of ritual and technology based on the findings of their research, that of their group members, or that of the class as a whole also taught them about the

nuanced negotiations of drawing conclusions in research. This enabled them to be informed amateurs in religion and science. Very few of these students will become professional scholars in religion and science; this is not their aspiration. However, they leave these learning experiences better able to understand and question the results of other studies they encounter. Engaging learners as amateur partners nurtures an ongoing curiosity and participation in research. It also gives them vocabulary with which to reflect on the use of technology in their own practices.

This case study illustrates our commitment to listening to and partnering with others as amateurs in the practice of religion and science. Students brought their own questions about religious diversity and, often their own religions or favorite technologies, to the class. The project also enabled them to develop skills of evaluating scholarly claims and understand what went into such claims, not necessarily to make all of them scholars, but rather to better understand the complex relationships between religion ritual and technology in everyday life. The next example, set in and around a seminary, deals much more explicitly with the faith and practice of the participants.

*Narrative and memory as religious leaders.* The following case study is drawn from student questions in a senior, interdisciplinary seminar in the Masters of Divinity program at the Lutheran School of Theology at Chicago. The course, “Fostering Narratives of Hope,” is taught by Kathleen Billman and focuses on investigating hope and despair in the practice of ministry. One might think this is an unusual site for religion and science work, but thanks to a grant from the John Templeton Foundation Schweitz has had the opportunity to develop learning modules in religion and science for the seminary curriculum with the faculty at the Lutheran School of Theology at Chicago. In an initial conversation with Billman, Schweitz heard that students consistently ask questions such as: “How does memory shape one’s sense of self? How does one nurture relationships with family, friends, or the sacred when cognitive functions are impaired or degenerating? What happens to the brain as we age? How can we respond compassionately to these natural processes? How can we foster narratives of hope in the face of processes that threaten one’s very capacity to narrate one’s life?” To respond to these questions, she and Billman created a module for the course to explore questions of Alzheimer’s, identity, and hope.

Students come to this course asking these questions because they have spent a year of internship in congregations with members who are suffering from Alzheimer’s or they have aging parents and grandparents who need care and support. They are drawn from real experiences of family, friends, and communities—and they are fine examples of the kinds of embodied, interdisciplinary, integrative inquiry in religion and science we advocate.

The question, “What happens to the brain as we age?” is asked in light of their experiences of people who are not only aging brains but people in communities with religious leaders who seek to foster narratives of hope. As such, students needed to understand not only what was happening to the brain in the aging process and in diseases like Alzheimer’s, but they needed to be able to integrate this with religious practices, pastoral care, and family systems—often both for the congregations they will serve and for their own faith and life.

To begin this module, Heather Snyder presented an overview of the human brain, how it ages, and what happens when Alzheimer’s impacts it. She introduced current research on the neuroscience and sociology of the disease and its impact as well. This wealth of information about the brain and its processes provided introductory information to the class of amateurs and artists in religion and science.

The scientific aspect of the module was necessary and relevant because it provided basic scientific content. However, it was a different experience than simply googling information on the web. In the module, a working scientist who respected and welcomed questions from the learners presented information. They were treated as amateurs, and these religious leaders “in training” were able to practice interpersonal skills as amateur partners in a shared religion and science project, namely caring for those who are suffering from Alzheimer’s in ways that are theologically adequate, pastorally hope-filled, and scientifically credible.

However, this was only part of the module. The remainder of the course left space for artistic integrations of the content. Students were invited to share narratives of their experiences with Alzheimer’s. For some this included journaling, for some oral storytelling; one student wrote a play about her experiences with her grandmother. Both instructors were moved by the artistic, integrative narratives students shared. Students and instructors were connecting scientific research to understand the brain, the medical work to treat the disease, the emotional realities of how the disease impacts one’s family and community, and theological possibilities for nurturing lives of faith. Learners had experiences with hymns as a way to maintain connections and relationships; this has been corroborated by recent studies on the positive effects of music therapy for dementia. With this hopeful possibility, additional questions were raised about nurturing relationships in ways that are not dependent on an individual’s linear memory. Students began to explore creatively how moments, hymns, and communal memories can do this work in ways that are scientifically credible and theologically promising.

This learning experience and the scholarship in religion and science that it might foster was possible because the scholars involved took the posture of partner with the amateurs and artists for whom their various fields of expertise were in service. The students were treated as amateurs and artists

in the field of religion and science. Their questions, insights, and creative appropriations were valued. They were included as partners in the project. The learning module was not simply about educating scientifically literate “outsiders” to religion and science; it aimed to raise religious leaders who can integrate this bit of neuroscience into their vocational identity and carry it with them as they live out their “professional” calling. The learning experience was not just an opportunity to share information and strategies. It was a chance to share stories and to partner in a religion and science project.

*Climate guilt and shame with community partners.* While our previous examples arose in part out of educational settings, not all engaged partnerships involving amateurs and artists do (or should). Indeed, this third case, regarding guilt and shame about environmental activities originated in Fredericks’s perusal of home design and environmental lifestyle blogs when she was in the process of buying and fixing up her first house. Her study of these texts indicates some possibilities for religion and science when emotion and religious practices are analyzed as primary data.

While reading these environmental and home design blogs and websites, Fredericks was often struck by the religious language authors used to describe their environmental reflections. Bloggers and people who commented upon blogs or discussion boards repeatedly talked about “confessing their eco-sins” or ways they were troubled by “eco-guilt.” In the spring of 2012, a call for papers about religion, nature, and popular culture from the International Society for the Study of Religion, Nature, and Culture prompted Fredericks to study these texts in more detail. In the article that resulted from this work, she analyzed over 1,000 news articles, blog posts, and discussion board comments (Fredericks 2014). Drawing on the idea of “nature religion” or “nature religions” developed by Bron Taylor and Catherine Albanese, coupled with Catherine Bell and Jonathan Z. Smith’s ideas of ritual, she argued that these online communicants were unintentionally developing a religious ritual to deal with their moral guilt and the existential crises they experience when they fail to live up to their basic environmental values (Fredericks 2014; Bell 1997; Smith 1980, 1987; Taylor 2007).

Using the terminology developed above, we suggest that the participants in these discussions are “artists,” as they confront their visceral reaction to their knowledge of environmental degradation through creative textual confession and reconciliation rituals and/or new physical rituals (i.e., recycling). We place these creative people under our heading of “artist” because they do not focus on academic analysis or argumentation, but rather on recognizing and dealing with the affective experience of guilt and shame that arises when one has participated in or contributed to environmental degradation. Taking these artists seriously implies recognizing that irreducible

emotional and psychological experiences can and do inspire religious innovations among laypeople, including those who do not claim membership in a traditional religion.

Recognizing these innovations is the first step in a new partnership. To ensure that she has something to bring to the potential collaboration, Fredericks is working to document the existence of environmental guilt and shame. She is also compiling information from a variety of sources including more firsthand accounts from various media, surveys about environmental guilt and shame, and moral psychological studies about guilt, shame, and their effects (Pleasants 2009; Pearce 2008; von Jessen 2009; Vaze 2009; Hickman 2005; National Geographic and GlobeScan 2012; Tangney and Dearing 2002) to predict the harms of environmental guilt and shame.

Moral psychology defines guilt, negative judgments about one's actions when one fails to live up to one's ideals, as compared to shame, which regards one's whole identity when one fails to live up to one's ideals (Tangney and Dearing 2002). Numerous studies show that guilt, defined in this way, is more likely to provoke action, apologies, and changed behavior. Shame, in contrast, often leads to denial of one's culpability, hiding or withdrawal, and anger. These results suggest that aside from wanting to avoid such negative emotions, guilt and shame about environmental activities need attention if people who care about environmental issues are to avoid being paralyzed in the wake of anthropogenic environmental degradation. For the health of individuals, relationships between people, and the human impact on biota and the physical environment, dealing with our failures, our concept of ourselves, and the emotions that arise from them, is important. Fredericks aims for her current research to call attention to this understudied issue, one sparked by the experience of amateurs and artists.

She aims to provoke questions among religious communities and environmental groups about whether they are adequately responding to the affective aspects of their members and opponents. Fredericks also posits that scholars of religion and science, environmental ethics, moral psychology as well as the literature and experience of collective guilt and shame and truth and reconciliation commissions and restorative justice endeavors: a) can be resources for religious communities, environmental groups, and nations to respond to moral emotions that may hinder environmental action and b) should consider moral emotions when developing their theories or action plans. Here again, ideas articulated on paper or computer screen must be coupled with those ideas and practices of amateurs and artists working together to respond to environmental degradation and all of its effects in our communities. Fredericks thinks that rituals to transform individuals and communities—both with respect to their affect, relationships, and physical actions—are needed to assuage environmental guilt and shame

but the characteristics of such rituals and drive to implement them must come from the community to be maximally effective.

Fredericks knows that further development of this project to live out the suggestions of this article requires partnering with a community or communities. Yet, she is deliberately waiting to begin such a partnership for several reasons. The diffuse groups of people contributing to climate change and the fact that human and nonhuman victims are dispersed in space and time means that possible models for dealing with climate guilt and shame (e.g., apologies; truth and reconciliation commissions; restorative environmental justice projects) need many modifications before they could work in this case. While Fredericks fully expects that any suggestions she brings to a community to help deal with guilt and shame would be revised to fit the particular needs of the community in question, she thinks that she needs to develop some terminology or a preliminary plan or plans before she reaches out to a community. Otherwise, she could easily reach out and then have little to say or contribute aside from a pile of scholarly sources and a vague idea that they might fit together. That mode of engagement does not seem respectful of the needs, or time, of the community. Far better, in our opinion, to have some ideas from one's expertise as a scholar and be seriously open to correction from the community. Such a partnership values everyone's potential contributions to the solution while enabling the organic development of relationships.

*Theology of urban nature with Chicago creatures.* Our final case study represents some preliminary brainstorming for a project that Schweitz will begin in earnest during an upcoming sabbatical. It aims to include an expansive set of research partners and to take seriously not only concepts and ideas but also lived experiences and practices. Because the project is at an early stage, some of the guiding questions and methods are gaining focus, but part of the task of the project now is to stay open to the ways that these partners will change the questions. We include it here because it is yet another example—even if so far unrealized—of the kinds of futures we propose for religion and science.

Schweitz's project begins with the question: How can we reclaim urban nature as a site of theological reflection and spiritual practice? The question was first articulated in student reflections on creation in Schweitz's systematic theology class as students prepared their theological sightings assignments. These assignments are reflections on the places beyond the classroom where they experience either God or theology at work in the world. During the creation locus, students often bring back "sightings" of the sacred from trips to the Boundary Waters or Yellowstone National Park, but rarely do they engage urban nature as God's creation or the site of theological reflection. Schweitz did not notice this absence until her own



encounter with urban nature in the form of an opossum outside her home on Chicago's south side.

She and her young son met up with the opossum through the sliding glass doors of her living room. They were playing on the rug, and for a long minute the three of them just gazed at one another. None of them quite knew what to make of the other. This encounter was the subject of an essay for a forthcoming volume that looks at encounters with animals in the city (Schweitz 2015). As she talked with neighbors about the encounter and colleagues about the essay, the conversations carried a sense that something about the experience was unnatural. It was out of place; the clear next step should be to call an exterminator. She decided otherwise, and both the opossum and the questions took up residence.

It was the back and forth between the amateur/artist students in her classroom, the conversations with neighbors, her experience as a mother to a curious toddler, and engagement with religion and science scholarship that yielded the question. It revealed the absence of the engagement with urban nature as creation in her students' theological sightings and a pervasive ambivalence about urban nature in general. Since recognizing the question, she has brought it back in various guises to these same neighbors, colleagues, and students with similar "ah-hah!" moment. Have you ever had an experience in Chicago that compares to seeing the sunset over the Indiana Dunes? If not, why not? Is there anything we can do to change that? These are questions that Schweitz helped to articulate, but, once asked, have had resonance or take up residence with her Chicago neighbors. In the classroom, for instance, students have embarked into the city anew and returned with "sightings" from experiences of swimming in Lake Michigan and bird watching in a prairie restoration site.

Current scholarship that specifically addresses the theological implications of the place of humanity in nature and the role of natural places in the city will be partners in this project (Albertson and King 2010; Cronon 1995; Gorrige 2002, 2011; Scott 2003). It can help articulate unasked questions, provide critical analysis, and inspire constructive claims. However, the research methods propose bringing together not only interdisciplinary scholarship, but people who are engaged with urban nature. The project plans to include oral histories with those engaged in caring for nature in the city. The hope is to include seminarians, urban ecologists, community gardeners, staff at the Peggy Notebaert Nature Museum and Shedd Aquarium, members of Chicago Wilderness, citizen scientists working on projects like Chicago Wilderness Watch which lets anyone with computer access help identify the animals living in Chicago and the suburbs, and amateur naturalists.

Schweitz expects that these partners will help her ask (and then answer) questions like: What keeps people from seeing creation in urban nature? How does a theological engagement with urban nature

impact how we know, feel, and participate in the cities we build? What are the systematic implications for other areas of theological discourse, particularly theological anthropology? Equally important, they will help raise questions that she has not even imagined. These conversations are not simply data, and the people talking are not simply the audience. They are genuine partners in the project. As such, every stage of the research has received—and will continue to receive—input and critical review from this diverse and interdisciplinary community.

## CONCLUSIONS

These examples illustrate some of the myriad ways that transforming the “audience” into amateurs and artists transforms the questions, the applications, and our understanding of who we are as researchers and who our partners are. It also transforms the metaphors we use to describe the religion and science enterprise.

What if we understood the adventure of research in religion and science to be like sourdough starter? Sourdough starter is a key ingredient in robust sourdough bread. It consists of nothing more than quotidian elements of life—air, water, flour, and time. Yet, in the right combinations and with a little tending and baking, something nourishing emerges which can be shared or used to feed a community. The starter comes from a particular place, is changed by being in that very place, and it returns to a community to nourish it.

The temptation in this metaphor is to ask: What is religion? What is science? What is the religion and science scholar? Is she the baker who is responsible for producing and distributing the bread? Is he the yeast, the truly active agent in the mix? We claim this as a temptation because it too easily simplifies the multifaceted, reciprocal relationships of working in religion and science.

We propose the sourdough starter metaphor because of its evocative potential. Sourdough starter, like our case studies, is infused with local flavor. The particular people, places, and social settings of the partnerships shape its character, goals, and outcomes. Religion and science questions, like sourdough starter, have a terroir. Like sourdough, the partnerships we describe fill a need to be nourished. This is not just an intellectual need, though intellectual needs can be met both in baking and in religion and science, but the sourdough starter metaphor pushes religion and science to recognize more fully the needs of communities and needs of the whole person. Sourdough starter comes from communities—somewhere to get the starter from in the first place, somewhere to share the bounty that is baked, and somewhere to spread the starter and favorite recipes. Similarly, in religion and science, the questions and mode of operating can spread from place to place, across the academic, amateur, and artistic communities.

Like sourdough starter, work in religion and science comes from somewhere and returns to a particular place. Sourdough starter is often thought to be just a catalyst for bread, as religion and science is often portrayed as just a scholarly endeavor, but sourdough starter can also be used in muffins, waffles, rolls, and such to nourish people, to teach them about nature, and to bring the community together. Similarly, there is a pluralism to religion and science. As the case studies have shown, it can illuminate experiences of memory and identity and ways of alleviating guilt and shame about environmental destruction, and it can open new questions about ritual, technology, and urban nature.

We find that the biggest challenge and the greatest opportunity for the future of religion and science is for the professionals, the expert insiders, to be open to it, to influence it, even as it is shape-shifting in dynamic, unpredictable ways. It can also be time-consuming and expensive, involve all of the interpersonal struggles that happen in any collaborative endeavor, and destabilize traditional modes of scholarship. Additionally, religion and science scholars, particularly young scholars working to get established in the field, may feel subtle or more explicit pressure to stay within the bounds of traditional scholarship because of the requirements of the job market, tenure reviews, or the prestige of abstract analysis. Finally, scholars who are willing and able to pursue such work may face hurdles stemming from their own disciplinary training to be “pure” academics. Our case studies above indicate some ways in which we are attempting to overcome such obstacles to obtain the greater advantages of such participatory work. In the end, it is practice, both in baking and in the practice of religion and science that will bring results. Learning the skills and methods required for such work will take time and can be furthered by consulting other experts doing participatory work in agriculture, medical ethics, environmental activities, and religious rituals. All of this, we find, can be encompassed properly in the work of religion and science. We encourage their inclusion.

We offer this metaphor of sourdough starter for our partnership-process model of religion and science, alongside models like Gregersen’s octopus, rather than as a replacement for them. We trust that they can sustainably and dynamically coexist and co-evolve with religion and science in forms yet unknown. In our experience, these partnerships have been fruitful for scholarship in the traditional sense as they identify new questions, point to new theories, and provide new material to analyze. Equally important, the transformation of the audience into engaged artist and amateur partners has shown how religion and science is and can be more relevant to many beyond the academic world. The case studies we have shared here are an invitation into a way of doing religion and science that we hope will be a life-giving, problem-solving, creative process that transforms us alongside the amateurs and artists who are transforming the work of religion and science.

## NOTE

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## REFERENCES

- Albertson, David, and Cabell King. 2010. *Without Nature? A New Condition for Theology*. New York: Fordham University Press.
- Astin, Alexander W., Helen S. Astin, and Jennifer A. Lindholm. 2011. *Cultivating the Spirit: How College Can Enhance Students' Inner Lives*. San Francisco: Jossey-Bass.
- Bell, Catherine. 1997. *Ritual: Perspectives and Dimensions*. New York: Oxford University Press.
- Booth, William. 2008. *For the Love of It: Amateuring and Its Rivals*. Chicago: University of Chicago Press.
- Campbell, Heidi. 2010. *When Religion Meets New Media*. London; New York: Routledge.
- Carvalho, John J., IV. 2008. “The Agenda for Religion-and-Science: A Biologist’s Perspective on the Future of Science-Religion Dialogue in the Twenty-first Century.” *Zygon: Journal of Religion and Science* 43:217–26.
- Clayton, Philip. 2014. “The Fruits of Pluralism: A Vision for the Next Seven Years in Religion/Science.” *Zygon: Journal of Religion and Science* 49:430–42.
- Cronon, William. 1995. *Uncommon Ground: Toward Reinventing Nature*. New York: W.W. Norton.
- Dillard, Annie. 2013. *Pilgrim at Tinker Creek*. New York: HarperPerennial.
- Fredericks, Sarah E. 2014. “Online Confessions of Eco-Guilt.” *Journal for the Study of Religion, Nature and Culture* 8(1):64–84.
- Gorringe, Timothy. J. 2002. *A Theology of the Built Environment: Justice, Empowerment, Redemption*. New York: Cambridge University Press.
- . 2011. *The Common Good and the Global Emergency: God and the Built Environment*. Cambridge: Cambridge University Press.
- Gregersen, Niels Henrik. 2014. “Prospects for the Field of Science and Religion: An Octopus View.” *Zygon: Journal of Religion and Science* 49:419–29.
- Hickman, Leo. 2005. *A Life Stripped Bare: My Year Trying to Live Ethically*. London: Transworld Publications.
- Michigan State University. 2007. “Scientific Literacy: How Do Americans Stack Up?” ScienceDaily. [www.sciencedaily.com/releases/2007/02/070218134322.htm](http://www.sciencedaily.com/releases/2007/02/070218134322.htm) (accessed January 16, 2015).
- National Geographic and GlobeScan. 2012. *Greendex 2012: Consumer Choice and the Environment—A Worldwide Tracking Survey: Highlights Report*. Washington, DC: National Geographic.
- Oliver, Mary. 2014. *Blue Horses: Poems*. New York: Penguin.
- Pearce, Fred. 2008. *Confessions of an Eco-Sinner: Tracking Down the Sources of My Stuff*. Boston: Beacon Press.
- Peters, Karl E. 1987. “The Contours of an Emerging Territory: Impressions of Twenty Years of *Zygon: Journal of Religion and Science*.” *Zygon: Journal of Religion and Science* 22 (special issue):43–61.
- Pleasants, Jen. 2009. *Bag Green Guilt*. N.p.: Show the Love Media LLC.
- Prothero, Stephen. 2007. *Religious Literacy: What Every American Needs to Know – And Doesn't*. New York: HarperCollins.
- Scott, Peter. 2003. *Political Theology of Nature*. New York: Cambridge University Press.
- Schweitz, Lea F. 2015. “Mysterium Opossum.” In *City Creatures: Animal Encounters in the Chicago Wilderness*, ed. Gavin Van Horn and David Aftandilian. Chicago: University of Chicago Press.
- Smith, Jonathan Z. 1980. “The Bare Facts of Ritual.” *History of Religions* 20(1/2):112–27.
- . 1987. *To Take Place: Toward Theory in Ritual*. Chicago: University of Chicago Press.
- Stenmark, Lisa. 2013. *Religion, Science, and Democracy: A Disputational Friendship*. Lanham, MD: Lexington Books.
- Tangney, June Price, and Ronda L. Dearing. 2002. *Shame and Guilt*. New York: Guilford Press.

- Taylor, Bron. 2007. "Exploring Religion, Nature and Culture – Introducing the *Journal for the Study of Religion, Nature and Culture*." *Journal for the Study of Religion, Nature and Culture* 1(1):5–24.
- Vaze, Prashant. 2009. *The Economical Environmentalist: My Attempt to Live a Low-Carbon Life and What It Cost*. London: Earthscan.
- von Jessen, Fritzie. 2009. *I Killed a Penguin: An Ecological Memoir*. Baltimore, MD: Publish America.
- West, Traci C. 2006. *Disruptive Christian Ethics: When Racism and Women's Lives Matter*. Louisville, KY: Westminster John Knox Press.
- Wildman, Wesley J. 2007. "From Grand Dreaming to Problem Solving." *Zygon: Journal of Religion and Science* 42:277–80.