

IRAS

INTERWEAVING ART, SCIENCE, AND SPIRITUALITY

Program and Schedule

Institute on Religion in an Age of Science

45th Annual Star Island Conference, July 25 to August 1, 1998

Conference Statement

When we talk about "feeling religious," we refer to a spectrum of human emotions and states of being that includes assent, awe, communion, enlightenment, gratitude, hope, humility, immanence, reverence, and transcendence. Religious sorrow generates acceptance and renewal; religious joy elicits celebration; religious reflection offers the possibility of growth and transformation; religious fellowship affirms our interconnectedness.

This conference will explore such "spiritual" emotions and states of being. We will ask what is known about their neural organization and neurochemistry and what is known about their evolution. We will consider how they are evoked by art (musical, poetic, and visual), by ritual (dance, chant, meditation, and prayer), by the contemplation/understanding of Nature, and by psychoactive agents such as peyote. We will also ask how art functions to bridge our emotional, scientific, and religious lives.

Speakers will address these topics from both theistic and non-theistic perspectives using examples from both western and non-western religious traditions. Disciplines represented will include brain science, psychology and evolutionary psychology, comparative religion, art, literature, and theology. Afternoon workshops will explore the spiritual dimensions of artistic and ritualistic practice and experience.

Questions will include the following:

- What are emotions? What are they for? How do they work? How do they evolve? How are they mimicked/elicited by pharmacological agents?
- What is transcendence? Is achieving transcendence a human impulse? What is the relationship between transcendence and art? Between transcendence and the theistic impulse? Can some form of transcendence be achieved through the practice of science?
- How (if at all) are religious art and ritual distinctive from other kinds of art and ritual? To what extent is the transmission of religious doctrine (e.g., cosmology, ethical codes) dependent on its artistic expression in poetry, myth, visual art, architecture, and music? Are religious art and ritual adaptive? In what ways are traditional religious art and ritual relevant to our times?
- How does nature, and an understanding of nature (science), engage with spiritual experience? To what extent can art reflect, interpret, and make meaningful the understandings wrought by science?

WELCOME TO STAR ISLAND!

With great pleasure I welcome you to IRAS on Star Island. If you are here for the first time, you will find yourself rapidly becoming part of a unique blend of traditions combining the beauty and history of the New England coast, the 100-year anniversary of Star Island as a conference center, and 45 years of IRAS conferences.

You will hear the people who are returning to the island called "old shoalers." But as a newcomer you already are becoming an "old shoaler." I hope you will enjoy getting to know one another and those who have heeded the call from previous years, "You will come back." Welcome to both new comers and those returning once again.

Echoing the thoughts of Ursula Goodenough, immediate past president of IRAS, there is no one way to participate in an IRAS conference. Each of us must discover our own optimal combination of intellectual, spiritual and recreational exploration. While some actively seek friendships, others revel in long-sought solitude. Some focus the week on their own projects; others participate in group discussions; most of us do both. What emerges is a shared sense of discovery, which keeps many of us coming back year after year.

Please introduce yourself to me during the week. I look forward to getting to know you and to helping ensure that your time here is thoroughly enjoyable and rewarding.



Karl E. Peters
President of IRAS

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ORIGIN AND PURPOSE OF IRAS

In the late 1940s the American Academy of Arts and Sciences organized a Committee on Science and Values to address topics relating contemporary scientific knowledge to fundamental human concerns about life's morals and meanings. The Committee, which included astronomer Harlow Shapley, neurobiologist Hudson Hoagland, geologist Kirtley Fletcher Mather, biologist George Wald, and Ralph Wendell Burhoe, the executive secretary of the Academy, stated that "we believe that . . . the survival of human society depends on the reformulation of man's world view and ethics, by grounding them in the revelations of modern science as well as on tradition and intuition."

Several from this committee accepted an invitation to bring their views to an interfaith group at the Coming Great Church Conference on Star Island in the summer of 1954. Later in 1954 the group from the American Academy accepted an invitation of the Coming Great Church Conference to form the Institute on Religion in an Age of Science, a multidisciplinary society, which carried forward the work of both predecessor groups. Other leaders involved in the establishment of IRAS included Brand Blanshard, Edwin Prince Booth, Dana McLean Greeley, Donald Szanthy Harrington, Henry Murphy, Lyman Rutledge, and Malcolm Sutherland.

Since 1954 IRAS has held an annual conference on science, values, and religion on Star Island, ten miles off the coast of Portsmouth, New Hampshire. IRAS has also conducted--on its own or in collaboration with other groups--conferences in other places: at universities and theological schools, and at meetings of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Academy of Religion.

In 1965 IRAS joined with the Meadville Theological School of Lombard College (later Meadville/Lombard Theological School) to establish a journal: *Zygon: Journal of Religion and Science*. The first issue was published in March 1966 under founding editor Ralph Wendell Burhoe, director of the newly formed Center for Advanced Studies in Theology and the Sciences (CASTS) at Meadville/Lombard. In 1979 when Karl Peters succeeded Ralph Burhoe as editor, the editorial offices moved to Rollins College in Florida; IRAS, the Center for Advanced Study in Religion and Science (CASIRAS--successor to CASTS), and Rollins College became joint publishers. In 1989 the editorial offices moved back to Chicago under the editorship of Philip Hefner, director of the newly formed Chicago Center for Religion and Science. During the past quarter century, *Zygon* has been the chief international voice for the scholarly community in science and religion, and has greatly strengthened the influence of the IRAS-CASIRAS approach to relating religion and the sciences.

IRAS is a society of natural scientists, social scientists, philosophers, scholars of religion, theologians, and many others who seek to provide a forum for discussing issues of relevance to religion in an age of science. In its Constitution, the IRAS purpose is stated as follows:

The Institute on Religion in an Age of Science is established:

- (1) to promote creative efforts leading to the formulation, in the light of contemporary knowledge, of effective doctrines and practices for human welfare;
- (2) to formulate dynamic and positive relationships between the concepts developed by science and the goals and hopes of humanity expressed through religion; and
- (3) to state human values in such universal and valid terms that they may be understood by all peoples, whatever their cultural background or experience, in such a way as to provide a basis for world-wide cooperation.

The Institute is to carry on the work initiated by the Conference on Religion in an Age of Science, first held on Star Island, off Portsmouth, New Hampshire, USA, July 31 to August 6, 1954, and to engage in the development of such additional conferences, lectures, study groups, seminars, research projects, publications, etc., as may be useful for its purposes.

IRAS is a non profit membership organization. Governance is by a volunteer Council whose members are elected from the entire membership. New IRAS members and tax-deductible contributions are always welcome.

IRAS ON STAR ISLAND

Star Island, first settled by Captain John Smith in the early 1600s, is situated in what was known as the best fishing grounds in the Colonial world. Today one can still see the lobstermen setting their traps. A small museum and island tours allow one to recapture this early human history; and tours of the local flora and fauna, tide walks, and a marine biology lab help one appreciate the local environment.

Because it is ten miles off shore from Portsmouth, New Hampshire, Star Island's temperature is usually ten degrees cooler than on the mainland. It thus became an ideal resort setting for one of the premier late-nineteenth century hotels on the east coast. Today the hotel, along with several cottages and motel-type units, is a conference center run by the Unitarian-Universalist Association and the United Church of Christ; these two religious organizations have formed the Star Island Corporation. Although IRAS is not affiliated with any particular religious organization, we have enjoyed the hospitality of the Star Island Corporation since our first IRAS conference in 1954.

The nineteenth century hotel and other facilities provide both the charm and the amenities of that period. Rooms are provided with wash basins and water buckets, and in most cases the toilet is down the hall. The Star Island management and its staff of mostly college students--called Pelicans--are first rate in meeting the various needs of guests from infants to octogenarians. A highlight of the week is the Pelican Talent show--a delightful "extra" from the hard-working staff. And in recent years IRAS conferees have returned the favor with their own talent show on the final night of the conference.

Star Island and other islands in the Isles of Shoals are excellent examples of the rocky New England coast. There are no roads, no cars, no bicycles, no TVs, and one public phone. (A cellular phone, 603-534-2190, is for emergencies only.) But there are rocks, bushes, grasses, nesting sea gulls, crashing ocean waves, sometimes fog horns, and sometimes crystal clear night skies to explore through telescopes with some of our professional astronomers (IRAS's first president was astronomer Harlow Shapley). There are opportunities for swimming, rowing, tennis, and ballroom dancing. And the Star Island Book Store and Gift Shop offer books related to the conference theme and other items to remember the week on the island.

Then there are the people who come to IRAS conferences--more than 200, from a variety of academic and professional fields as well as many well-educated "lay persons." Many belong to IRAS, which has about 300 members. Others come because they are interested in how liberal religion relates to science and in the particular topic. There is active dialogue in lectures, discussion groups, and late night "owl sessions"--and also in conversation on the porch overlooking the harbor, on the rocks, and at the social hour before dinner. For those interested, there are opportunities to meditate and worship together in the stone chapel on a high point of the island, at the gazebo, or in the reflective evening candlelight services.

Those who have been coming for a long time to IRAS conferences believe that the natural setting, the island history, and the people provide a unique opportunity for rigorous meaningful dialogue regarding religion and values in relation to contemporary science.

GENERAL CONFERENCE INFORMATION

The conference topic for this year, *Interweaving Art, Science, and Spirituality*, continues the themes of the last two conferences, *The Epic of Evolution* and *The Evolution of Morality*. It also anticipates upcoming Star Island conferences on the evolution of sexuality and the nurturing of humans in their growth and development. All these conferences are focused on one of the guiding interests of IRAS: exploring how human beings can find meaning, purpose, and moral guidance in an evolving universe.

The impetus for this conference came from the sense of many in IRAS that it is important to intersperse our more "left-brained" conferences on the science/religion interface with occasional "right-brained" conferences that explore the more emotional facets of religious experience. Our focal topic, the universal human activity we call art, is of course a cognitive as well as an emotional activity, and we are very excited to be exploring its interface with the many ways that persons are religious. Exploration is very much the key word for an IRAS conference: What we most hope will happen are outcomes that we in no way can anticipate in advance. Such outcomes are invariably the result of a deep collaboration among speakers, workshop leaders, and conferees.

The **plenary session lectures and discussion** are scheduled in the morning (starting at 10 am) and evening (starting at 7:30 pm). The speakers will develop the theme of the conference as they address different issues and questions from their own disciplines and perspectives.

A variety of optional concurrent activities offer choices during the afternoons. These include an IRAS seminar, Free University sessions, and Workshops.

An **IRAS seminar** on some of the issues raised by a manuscript, *The Epic of Creation: Scientific and Christian Religious Perspectives on Our Origins*, will be held on Monday, Tuesday, and Wednesday, 1:40 to 2:40 pm. Further information may be found on page 13.

"**Free University**" sessions, from 1:40 to 2:40 pm each day except Thursday, provide conferees with an opportunity to present their ideas and discuss them with others. We expect that a number of conferees will, as in past years, volunteer to conduct these sessions, which will be announced in the *Star Beacon* and posted on the chalkboard. For those planning to organize a free university session, please check with Nancy Anschuetz the day before for a space assignment and, after doing so, give a written note to Jilana Ordman, editor of the *Star Beacon*.

Workshops or Discussion Groups will be offered during the afternoon from 2:50 to 3:50 and 4:00 to 5:00 pm. Leaders and workshop locations are listed in the schedule on the back page of this program booklet, and seminar and workshop descriptions are on pages 14ff.

At the end of afternoon activities, from 5:30-6:30 pm, we gather informally in Newton Centre for an hour of libations, snacks, and socializing. (Contributions to cover the cost are needed and appreciated.)

Afternoons are also opportunities for recreation: talking, thinking, napping, reading, walking, and playing. You can visit the Marine Laboratory of the University of New Hampshire on Appledore Island on Monday afternoon. (Please sign up at the front desk in advance--the boat capacity is limited.) Various tours by the Star Island staff will be announced or posted. The hardy (or masochistic) can enjoy a polar bear swim each morning. There will be a traditional lobster dinner on Wednesday (tickets *must* be purchased by Monday noon), and the traditional IRAS banquet will be on Friday. The Pelican show (organized by the Pelicans, the young people who do all the

hard work to make our stay on Star Island so delightful) will be on Thursday evening, and the IRAS talent show on Friday. If you would like to participate in the Talent Show, especially if you have talent (this is an optional requirement; all hams are welcome), Barbara Avakian will be happy to hear from you.

Those who wish to learn more about IRAS and Zygon are invited to a reception at 5:10 pm on Wednesday in Newton Centre..

The *Star Beacon* is an IRAS tradition. This conference newspaper will appear at breakfast each morning and will give you up-to-date information on the conference and its participants. It will also provide an opportunity for you to publish poetry, commentary, and other forms of artistic expression, including humor--all at the discretion of the editor and as space is available.

Candlelight services allow time for quiet reflection and winding down at the close of each day. These have been arranged by Betty Lau.

The **snack bar**, open until 11 pm, is a favorite place for congregating and socializing after the candlelight service.

An informal **farewell party** will be held on Friday night. This will be an opportunity for final conversations with old and new friends in a pleasant, noisy setting before "packing up," and for using up any refreshing substances left over from the social hours.

If you have any questions or suggestions concerning the conference, please bring them up with Nancy Anschuetz, Bob Schaible, or Ursula Goodenough.

Notes

The porch bell will be rung (a single stroke) five minutes before the beginning of the morning and evening sessions, at 9:55 a.m. and 7:25 p.m. We hope this advance warning will enable everyone to reach his/her seat in time to allow a prompt start at 10:00 a.m. in the morning and 7:30 p.m. in the evening.

A coffee/hot chocolate/bouillon break is scheduled for 10:55 - 11:15 a.m. each morning. When you hear the bell at the end of this break, please return quickly to the auditorium.

For those with children: children must participate in the children's program unless Nancy Anschuetz receives a signed waiver.

ARCHI PELAGOS: IRAS CONFERENCE YOUTH PROGRAM

While parents cogitate, their children play, interrelate, and explore Star Island under the guidance of a professional staff of teachers, administrators, and counselors -- primarily from the seacoast to facilitate planning. Our goal is to enjoy together stimulating games, opportunities for creative expression, crafts, stories, and songs. Our hope is to deepen our connection with Star Island and each other. We explore marine biology and island flora and fauna directly through the science center and out and about. We row over to Smutty Nose Island for a close-up of intertidal life and fresh seaweed and mussels on the beach. We have access to the island historian and musician. Older groups touch upon conference themes.

We meet each morning at 9:00 for group activity, attendance, and to select our social hour activity. By 9:30 we are involved in age-specific groups until noon. The morning session is structured with both energetic and quiet activities. Our social hour (5:15 - 6:15) brings us together for mixed group activities chosen earlier that day. Following supper we offer a sunset program (7:45 - 8:30) featuring bonfires, music, storytelling, and games. Parents and friends are invited to join in. Parents will receive a detailed schedule at registration. The activities are thoughtfully, but not rigidly, planned. Inspiration is appreciated. After all, this is a vibrant place where we can discover and nurture our collective being.

Thank you all for trusting us with your precious children.

Sandra Woodworth, Coordinator

Staff for each age group

Sue Pike (4 - 7)

Susan Trelevan and Rick Agran (8 - 9)

Bob Byrnes, Jennifer Whitten, and Lisa Rockenbecker (10 - 12)

Steve Kowal and Sue Morse (high school)

P.S. There will be a meeting for parents, children, and staff on Saturday at 5:15 pm in Brookfield, immediately after the Star Island Orientation Meeting. All parents with children in the Archi Pelagos program are asked to attend.

LECTURE ABSTRACTS AND BIO-SKETCHES

SATURDAY EVENING

WHAT POETRY BRINGS TO THE TABLE

Robert Schaible
University of Southern Maine.

ABSTRACT

This conference will study the arts in the context of science and religion in order to clarify how art (in its various guises) and the feelings and ideas it evokes arise physiologically and have served us in our evolutionary and spiritual survival and development. Our perspective will be both historical and cross-cultural. Ever since Plato's famous attack on poets in Book X of "The Republic," literary types have felt pressed to defend poetry, and indeed from ancient times to the present, literature and art have had to fight various battles against philosophy, religion, and science. This conference turns swords into ploughshares by fostering discussion of the mutual benefits derived from the free and open intercourse among the arts, science, philosophy, and religion. Although my talk will focus on poetry, most of it will apply to other arts forms as well.

All too often people think that poetry is irrational, vague, indirect, transcendental and mystical; or, more pejoratively, poetry is regarded as soft, feminine (in the sexist sense), emotional, decorative, and more or less irrelevant to "real" knowledge. I want to reverse this perspective and speak of the poet as precise, hyper-observational, rational, concrete, and cognitive. The poet gives us cognitive as well as emotional knowledge. And some of the basic mental structures with which the scientist studies the "text" of nature (facts, laws, theories) find their counterparts in ways an informed reader studies the poetic text. If poets once found in science something damaging to beauty and the human spirit, modern poets increasingly plumb science for raw materials and render it more human by translating it into personal and aesthetic terms. The differences between science (along with philosophy and religion) and poetry are felt most keenly in how each uses and values language and in the aims with which each pursues knowledge. The distinction in both cases has much to do with the differing levels of comfort experienced by scientists, philosophers, and artists with metaphor at its more profound levels of definition and use.

I will keep this talk from waffling off into abstraction by working with poet A. R. Ammons. Many in IRAS, and elsewhere, are interested in what we are calling the Epic of Evolution, a new story or myth to give meaning and coherence to life. My hope is to show how Ammons's poetry bridges the gap between science (the

sphere, according to Loyal Rue's configuration, of "what is") and religion/philosophy/morality (the sphere of "what matters"). Born and reared a Southern Baptist, knowledgeable in both science and Eastern religion thought (especially Taoism), Ammons will serve as my candidate for what a poet of the Epic of Evolution might look and sound like. With whimsy, close observation, measurement, humor, lyricism, and insight, this artist of words helps us know how not only to survive, but how to rejoice in a natural world rich with both miracle and entropy.

BIOSKETCH

Bob Schaible is an associate professor of arts and humanities at the University of Southern Maine. His teaching and scholarship are primarily interdisciplinary. In recent years, he has collaborated with faculty in a variety of fields to offer papers and courses in such areas as "Metaphor in Science, Religion, and Literature," "Life and Literature after Darwin," "Photography and Poetry: Two Ways of Speaking," and "White Males Teaching for Diversity: Why and How." He has also worked in programs funded by the NSF and the NEH designed to help both secondary and college-level faculty develop curricula that bridge the gap between the sciences and the humanities. He is attending the conference with his wife, Sally Bowden-Schaible, a psychotherapist, and his step-son, Joel, 15.

SUNDAY MORNING

THE EMOTIONAL BRAIN/THE CREATIVE MIND

Andrew Newberg
University of Pennsylvania

ABSTRACT

In the past few decades, neuroscience research has greatly expanded our understanding of how the human brain functions. In particular, we have begun to explore the basis of emotions and how emotions are applied to all other aspects of behavior, thought, and experience. Studies on these topics have included neuropsychological tests, physiological measures, and brain imaging. These different techniques have enabled us to open up a window into the emotional brain. It is from the functioning of the emotional brain that we begin to understand the concept of the creative mind. From a neuropsychological perspective, the mind represents the functions of the brain. The brain and the mind are inseparable and simply represent different ways of looking at the same thing. It is through the use of emotions and other higher cognitive functions that the mind can create ideas, music, literature, and ultimately our entire repertoire of behaviors. How these different creative abilities are derived can also be traced back to

various parts of brain function. Modern neuroscience allows us to begin to understand the creative aspect of the mind and perhaps can take us one step further to understand consciousness itself as creative, not only of ideas, but possibly of matter itself.

BIOSKETCH

Andrew B. Newberg, M.D., is a researcher in the Nuclear Medicine Department and Psychiatry Department at the University of Pennsylvania and has been studying brain physiology and function for the past six years. He has been particularly involved in the study of mystical and religious experiences as well as the more general mind/body relationship. He is a co-founder of the Institute for the Scientific Study of Meditation. He has published numerous articles and chapters on brain function, brain imaging, and the study of religious and mystical experiences. He has presented his work at scientific and religious meetings throughout the world and has appeared on ABC World News Tonight as well as in a number of media articles. He was an associate director of the Neuroscience Section for the recent consensus conference on Scientific Research on Spirituality and Health sponsored by the National Institute of Healthcare Research and is a member of the advisory board for the American Association for the Advancement of Science Program on Science and Religion.

SUNDAY EVENING

CREATIVITY AND THE AESTHETIC/RELIGIOUS CONTINUUM

Eugene d'Aquili
University of Pennsylvania

ABSTRACT

An analysis of the underlying neurophysiology of creativity allows for the development of an aesthetic/religious continuum. This continuum pertains to the variety of creative and spiritual experiences available to human beings. An analysis of this continuum allows for the ability to understand the neurophenomenological aspects of a variety of human experiences ranging from relatively simple aesthetic experiences to profound spiritual and unitary states such as those obtained during meditation. However, it may be possible, through neuropsychological analysis, to determine the similarities that exist across such experiences. Thus, certain parts of the brain may be functioning in similar ways during different experiences. It may be the case that the specific neuropsychological components of a given experience may depend on the strength of the affectual response of the person and the ability to mark such experiences as significant. Further, even though similar structures may be functioning during different experiences, their inhibitory and excitatory interactions may be different.

Through such a neuropsychological analysis, it may also be possible to determine how various neurophysiological parameters may facilitate the experiences along the aesthetic/religious continuum. It may even become possible to evaluate a person's ability to have such experiences. This allows for the possibility of a new field of neurophysiological and neuropsychological research. Finally, a neuropsychological analysis of the aesthetic/religious continuum will allow for an analysis of epistemological and theological issues.

BIOSKETCH

Eugene d'Aquili was born in Trenton, NJ in 1940. After attending parochial school in Trenton he was accepted by Villanova University into an honors program with a dual major in philosophy and science. He graduated from Villanova in 1962 and then attended the University of Pennsylvania Medical School. During his four years at medical school he was awarded the position of Research Trainee at the Institute of Neurological Sciences. In 1966 he received his M.D. from the University of Pennsylvania, having been awarded the Priestley Prize for Original Scientific Research. After doing an internship and a two year stint in the navy, d'Aquili returned to Penn where he began a four year residency in psychiatry at the Hospital of the University of Pennsylvania. Toward the end of his residency he began graduate studies in anthropology at Penn. He received his M.A. in anthropology in 1979 and a Ph.D. in 1989. After holding several full time academic positions in the Medical School, d'Aquili decided to divide his time between private practice and research. Since 1979 he has been a Clinical Associate Professor of Psychiatry at the University of Pennsylvania.

Currently, he is an Associate Professor of Psychiatry at the University of Pennsylvania and has studied human ritual and religious experience for the past 20 years. He has published numerous books including *Biogenetic Structuralism* and *Brain, Symbol & Experience*. He has also published a broad variety of papers and chapters regarding the relationship between brain function and religious and mystical phenomena. Since teaming with Dr. Newberg, their research in the development of specific models of brain function during religious and mystical experiences has greatly expanded. They have also begun a brain imaging project to study the human brain during mystical states. They have published numerous articles in a variety of peer-reviewed journals and presented their work at both national and international meetings.

MONDAY MORNING

EVOLUTION, EMOTIONS, AND SPIRITUALITY

Randolph Nesse
University of Michigan

ABSTRACT

Our emotional capacities were shaped by natural selection to benefit our genes, giving us the capacity for vast suffering, but also experiences of love, pleasure and transcendence. How can we make sense of these emotions? I will try to explain, as best I understand it, how natural selection shaped these states, and the many implications of inhabiting bodies controlled by brains for the benefit of our genes. In particular, I will try to explain why the pursuit of pleasure and happiness is hopeless and perhaps counterproductive, why we cannot give up desire despite our efforts. The coming age of pharmacological manipulation makes it likely that we will be able to choose how we feel. What will we choose, and what will human nature then be like? Finally, I hope to have something to say about the origins of transcendence and awe and their relationships to religions, with suggestions as to how natural selection may have shaped our deep capacity for subjectivity.

BIOSKETCH

Randolph Nesse is a Professor of Psychiatry in the Department of Psychiatry and the Institute for Social Research at the University of Michigan. He loves seeing patients, but his passion is trying to figure out why organisms, including people, are the way they are. Being a doctor, this led him to try to understand not only why they are such miracles of design, but also why they are designed so badly and, in particular, why human life is so full of suffering. With the biologist George Williams, he wrote a book to try to answer that question with respect to disease (*Why We Get Sick: The New Science of Darwinian Medicine*, Vintage, 1995). Now he is trying to figure out if low mood and depression might be useful, the origins of the moral passions, the utility of subjectivity, and whether the capacities for awe and religions are happenstances or adaptations.

MONDAY EVENING

*TRANSITIONS IN HUMAN REPRESENTATIONS
OF REALITY*

Merlin Donald
Queen's University, Kingston, Ontario

ABSTRACT

I have argued that the human mind evolved its basic structure after passing through two radical "transitions," the first of which took place two million years ago, and the second, about two hundred thousand years ago.

These two transitions established the two most fundamental dimensions of traditional human culture: ritual, and various oral traditions. Recently we have entered into another period of radical change, and a third cognitive transition. The third transition is defined primarily by the proliferation of external symbols, the growth of the communications media, and the introduction of "cognitive artifacts" such as computers. These events have structurally altered the way we think, remember, and represent reality. All traditional civilizations, including Western religions, are faced with an unprecedented intellectual and spiritual challenge.

BIOSKETCH

Merlin Donald is Professor of Psychology and Education at Queen's University in Kingston, Ontario, Canada. He obtained his undergraduate training in Philosophy from Loyola College in Montreal, and his Ph.D. in Neuropsychology from McGill University in 1968. He also spent 5 years in New Haven, CT, associated with the Yale University School of Medicine. He has published many scientific articles on the human brain, and is also a published poet. He is the author of a best-selling book, *Origins of the Modern Mind* (Harvard University Press, 1991) in which he has proposed a novel theory of human origins. He is currently working on a book on the subject of consciousness.

TUESDAY MORNING

HOW AND WHY IS ART IMPORTANT?

Ellen Dissanayake
Independent Scholar and Writer

ABSTRACT

The anthropologist Radcliffe-Brown noted in 1922 that ritual ceremonies maintain and transmit from generation to generation "the emotional dispositions on which a society depends for its existence." Ritual ceremonies are, essentially, collections of arts -- visual display, dance, song, poetic language, and performance -- which create for participants a "world" that is different from and more compelling than that of the everyday. But how and why did the arts arise in the first place? Why did they persist? Most recent work traces the temporal arts (music, dance, poetic language, performance) to ritualized elements evolved in ancestral mother-infant interactions. This new view fits in with and extends recent scientific theories about the origins of other human cultural abilities. Additionally, it is relevant to concerns by artists and others about attitudes towards the arts in modern society.

BIOSKETCH

Ellen Dissanayake is an independent scholar and writer who has lived outside the United State for more than 15 years -- primarily in Sri Lanka, but also for periods of a year or more in Papua New Guinea and Nigeria. For

even longer she has been thinking seriously about the place of the arts in human evolution. She is the author of *What Is Art For?* (1988) and *Homo Aestheticus: Where Art Comes From and Why* (1992), both of University of Washington (Seattle) Press. When she began her studies, the arts were treated entirely as "cultural" products, and therefore without "biological" relevance. Now that the biological and cultural are no longer seen as dichotomous, there is a more receptive climate -- both in biology and in the humanities -- for looking at evolutionary origins and functions of the arts. Her most recent book, *Rhythms and Modes in Love and Art: Taking the Arts Seriously*, will be published in 1999 by the University of Washington Press (Seattle). This fall she will be "Distinguished Visitor" at the University of Alberta at Edmonton.

TUESDAY EVENING

ART AND THE SACRED

Stephanie Raynor
Artist

ABSTRACT

As a visual artist I will be giving the "up close and personal" viewpoint of what art is, where it comes from, and, to the best of my ability, the psychic process re the conception/genesis of a work of art. I will also be showing slides of works from my show, *The Eden Contract*. Some of the works deal with perceived pitfalls -- e.g. "the trickster's" gift of technology -- while others, I believe, show the possibility of a bridge between science and religion, a bridge not based on any one cultural interpretation of God but rather the sacred as revealed through the universal phenomena that bind us to the cosmos. It is a wonderfully rich time to be an artist, watching how old patterns are dissolving and reforming in unimaginable combinations through rapid changes in science/technology, art, and religion. This new holy trinity is involved in a mysterious, weaving, interchanging dance where art waltzes with technology, science becomes religion, and humanity fumbles with God-like powers while groping for the clarity of vision and the spiritual strength to withstand them. Although we seem to be missing our era's Virgil or Homer, I hope these art works give a sense of the truly mythic dimensions of the age in which we live.

BIOSKETCH

Stephanie Rayner was raised deep in the Canadian woods. A childhood desire for a time machine led to 10 years travelling through ancient timeless places by such means as camel, horseback, and dugout canoe (she has some really good amoebic dysentery stories to share).

Becoming an artist (though born to a long line of them) was much like the caterpillar/chrysalis process including, probably, a similar element of surprise. For the last 20 years she has been working on her art full-

time. A solo show, *The Eden Contract*, has been touring art museums for the last 6 years.

"For the last 15 years my theme has been science and religion, and I have worked and thought very much alone on this subject. After all these years 'in the desert,' your knowledge, thoughts, idea, perceptions, and questions will be like manna to me."

WEDNESDAY MORNING

THE ROLE OF ART IN TRADITIONAL RELIGIONS

John Grim
Bucknell University

ABSTRACT

Drawing on ethnographic studies as well as my own field work, I will explore the experiential basis of aesthetic theories among different indigenous peoples (Yekuana of South America, Brazil/Venezuela), and the ways in which such personal experiences can result in ways of knowing based on breath (Temiar of Malaysia), wind (Navajo-Dineh of the Southwest USA), and dreams (Kelabit-Penan of Borneo). My position is that diverse indigenous aesthetics share religious concerns for cosmological ordering. These concerns serve to socialize individuals into the community by encoding patterns of symbolic behavior which are intimately connected to local bioregions. Cultural and genetic coding are constantly being negotiated in the aesthetic worlds of social power, personal visions, and ecological engagement. I seek to transmit these perspectives in a narrative style which carries the theoretical in more inspired and personal pottery.

BIOSKETCH

John Grim is Associate Professor of Religion at Bucknell University in Lewisburg, PA. As a historian of religions, John undertakes field studies in American Indian lifeways among the Crow peoples of Montana and the Salish peoples of the Columbia River Plateau in eastern Washington. He published *The Shaman: Patterns of Religious Healing Among the Ojibway Indians* with Oklahoma University Press. With his wife, Mary Evelyn Tucker, he has edited *Worldviews and Ecology*, a book discussing perspectives on the environmental crisis from world religions and contemporary philosophy. Over the past three years Mary Evelyn and John have been organizing a series of 10 conferences on Religions of the World and Ecology held at Harvard's Center for the Study of World Religions. The conference proceedings are being published in 10 volumes by the Center and Harvard University Press. John is also President of the American Teilhard Association.

BUDDHIST TANTRIC ICONOGRAPHY

Jensine Andresen
Boston University

ABSTRACT

Iconographic imagery in the Indo-Tibetan Buddhist Tantric tradition is replete with polymorphic symbolic forms often difficult to interpret. Tantric texts themselves are multivalent, containing information on astronomy, cosmology, physiology, pharmacology, alchemy, botany, philosophy, and sexuality. Here, we consider specifically the Kalacakra Tantra, a text considered so seminal a representation of medieval Indian Buddhism that it was translated into Tibetan over a dozen times between the 11th and 14th centuries. Iconographic representations of the male-female "father-mother" (Tib. yab-yum) couple are examined alongside textual renditions of ritualized dialogue between a man and a woman in the latter portion of the third chapter of this text. Data is then provided supporting the thesis that when women are "venerated" in the text, male practitioners actually are worshipping stylized female images that they themselves have created. Female "agency" in the Kalacakra Tantra is realized only when a woman appropriates these male-generated representations and accompanying roles. I conclude by discussing the Kalacakra Tantra's yogic insights concerning the body as a vehicle of self-knowledge, generalizing to other Buddhist Tantric literature.

BIOSKETCH

Jensine Andresen is Assistant Professor of Theology at Boston University, working with Wesley Wildman to administer and teach in the Ph.D. Program in Religion, Science and Philosophy. She completed her Ph.D. at Harvard last June, and her dissertation is a combined ethnographic and philological study of the *ÆMDITØ`Sar`imlaghu K`amlacakratantraÆMDNMØ*, a.k.a., the *ÆMDITØK`amlacakra TantraÆMDNMØ*, a medieval Sanskrit and Tibetan Tantric manuscript and practice tradition. The direction of Jensine's research has shifted over the past few years, and she currently is engaged in research relating to religion and science. She organized a symposium on "Cognitive Science and the Study of Religious Experience" at the University of Vermont in June of 1998. She is very much looking forward to her first trip to the IRAS Star Island conference.

THE CHRISTIAN MYTH IN THE ART OF THE WESTERN WORLD

Carl Frank Smith
Washington University

ABSTRACT

Over the last nineteen centuries, Christianity has produced a great deal of art. The direct impact of that art on those who have seen, heard, and read it has often been profound, on believers and non-believers alike -- if sometimes in very different ways. But as can and will be demonstrated, the indirect impact of the Christian tradition on the art of the western world has been both more fundamental and, at the same time, far more extensive than is generally recognized.

Beyond that, however, the question might be asked (as it was once asked of me) whether Christianity itself has given birth to so much art because of a connection of some kind between certain of the tenets of the faith and the process of art itself (i.e. the means by which art is made or comes into being). The answer I will suggest to that question is surprising both in its ramifications for our own critical thinking about art and, even more, in its implications for considering the ways in which a certain kind of awareness of the process of art might actually -- if unintentionally -- have influenced in its transmission and dissemination the nature of the Christian myth itself.

BIOSKETCH

Carl Smith was, until very recently, a long-time resident of St. Louis, where he was organist and choir director at Trinity Presbyterian Church and an instructor in the Music Department of Washington University. He was also involved in concert-giving, as a soloist and a conductor, in the US and Europe, but especially in Italy where his work has allowed him over many years to indulge two of his other great passions, the Renaissance art in its various guises and the Romanesque architecture of that most artistically gifted of lands. In a few weeks he will begin a new career, one in which he will be called upon to reveal the wonders of western harmony to unsuspecting (and probably unwilling) freshmen at the School of Music at Vanderbilt University in Nashville. Those who survive their freshman year may also elect to study vocal and choral composition with him. In packing for the move to Nashville, he discovered (often in unexpected places) the manuscripts of quite a large number of musical compositions, sonatas, art songs (more than a hundred of them), cantatas, solo works for keyboard instruments, etc., the sheer weight of which caused the expense of the move to rise far in excess of any potential income the music might hope ever to generate.

THURSDAY EVENING

*BUDDHA AND CHRIST:
IMAGES OF WHOLENESS*

Robert Elinor
Art and Religion

ABSTRACT

Buddhism and Christianity are the only major religions in which the faithful consider the founder not only the author of scripture and the model for salvation, but the incarnation of ultimate reality itself. Incarnation -- making the invisible Absolute (Dharma/God) visible -- translates into art as the numinous-salvific quality we sense when standing before all the great images of Buddha and Christ. The obvious differences in the images may be seen as local inflections of this universal archetype: the Cosmic Person imaging wholeness. We unpack this observation while looking at slides from three periods in the respective traditions.

BIOSKETCH

Robert Elinor, born in the Hollywood Hospital, became an Eagle Scout, did a Ph.D. in philosophy of religion at the University of Edinburgh, was ordained by the Presbytery of Brooklyn, taught at Vassar College and Reed College, and was Dean of Faculty at Richmond College (London) and New England College, where he began offering courses in the relationship of art and religion. Retirement led to several trips throughout Asia and Europe photographing Buddha and Christ images, and completion of a book on the subject now seeking a publisher. For the past 16 years, escaping New Hampshire winters, he has lived near London, enjoying the research facilities and the extensive Buddhist community.

FRIDAY MORNING

*DREAMING ABOUT NATURE:
REPORTS FROM SCIENTISTS AND POETS*

Philip Hefner
Lutheran School of Theology at Chicago

ABSTRACT

Nature is an objective realm in which we live our lives and the universe spreads out its career -- the universe is nature. Nature is also an idea we construct -- is it a machine? a Gaia organism? a dynamic historical process? Nature is finally also what we think is basic or essential (for example, we say "it is human nature to strive for recognition").

Scientific knowledge tells us about nature as an objective realm in which we live. My presentation will focus upon nature as an idea and nature as what is essential. Science was mainly responsible for us in the West to think of nature as rather one-dimensional, a closed chain of cause-and-effect that possessed no depth,

that allowed for no dimension of ultimacy or what earlier ages called transcendence. This is the idea of nature that the 19th century bequeathed to us.

In our time, the sciences themselves have demolished the idea of nature as a shallow one-dimensional realm. The poets have likewise fashioned a rich idea of nature as the bearer of depth and ultimacy. What about nature in terms of what is essential? Scientists do not focus so directly on this aspect of nature in their work. They do give some hints, however, that bear our attention. Poets are more likely to go out on a limb and speak about what is essential in our natural world.

Our ideas of nature and our notions of what is essential are among the most important elements of human living. They are also wholly the contributions of our culture, which in turn is significantly constituted by imagination and what I call dreaming. This element of dreaming and its adequacy are therefore utterly essential for our living. We generally recognize that dreaming is central to the vocation of the poet. It is not so often understood that the vocation of scientists is incomplete apart from dreaming, as well.

I will reflect on these kinds of questions and issues by reading and commenting on some of my poets: Gerard Manley Hopkins (English, 1844-1889), A. R. Ammons (American, contemporary), Richard Wilbur (American, contemporary), and Jorie Graham (American, contemporary).

Among the poems I will focus on are Wilbur's "In the Field"; Ammons' "Singling and Doubling Together"; Hopkins' "Ribblesdale" and "As Kingfishers Catch Fire"; and Graham's "The Geese" and "The Age of Reason."

BIOSKETCH

Phil Hefner has lived in the same southside Chicago neighborhood for most of the last 45 years. For more than 30 years, he has taught ministerial candidates at the Lutheran School of Theology at Chicago, where he is Professor of Theology and Director of the Chicago Center for Religion and Science. He remembers very clearly that Star Island and IRAS introduced him to the dreaming scientists that he speaks of in his presentation this year. As for the poetry, it is so much more primordial to his life that he cannot remember who or what first put it in his bones. Some people say that one couldn't live in Chicago for half a century without poetry. Phil replies that he wouldn't know, since he never tried living there (or anywhere else, for that matter) sans poetry.

IRAS SEMINAR

In the IRAS Seminar, seminar leaders comment on a manuscript or recent book by a member (or members) of IRAS, followed by open discussion by all who would like to participate.

THE EPIC OF CREATION: SCIENTIFIC AND CHRISTIAN RELIGIOUS PERSPECTIVES ON OUR ORIGINS

This book has 26 authors. Six of the authors are IRAS members (Terry Deacon, Tom Gilbert, Ursula Goodenough, Philip Hefner, Bill Irons, Gordon Kaufman), of whom three (Tom Gilbert, Ursula Goodenough, and Phil Hefner) will be on the Island and participate in the seminar. The Commentators will be Elizabeth Bjorkman, Ted Laurenson, and Karl Peters. Bob Schaible will be moderator the first day. Following presentations by the commentators and responses by authors (if they so choose or if specific questions are raised on material in their chapters), there will be open discussion in which the authors participate. Because the manuscript (around 500 pages in 29 chapters) would be too expensive to reproduce, the discussion material consists of three of the four prologue chapters (the fourth will be distributed if it is completed in time) and the chapters by Goodenough and Hefner. For those who did not send in a request for a copy of the seminar material in advance, copies are available at the bookstore for \$3. The preface is reproduced below.

PREFACE

Two stories are told in this book: the scientific story of creation and the Christian biblical story of creation, followed by theological interpretations that explore the meaning of the stories. The motif is the quest for meaning: for answers to questions concerning how we should live, what we should value and why, our place in the world, our relationship to the rest of the world, how the world works, what/who governs the course of events, and our destiny. The quest may be understood as a quest for knowledge and understanding we need in order to live.

The information needed is too vast and too complex to be comprehended in detail in its entirety and must be summarized in order to be useful. One way of doing this is in the form of stories. Stories do more than summarize information. They also shape the ideas, concepts, and mental images that govern our perceptions, thoughts, emotions, and actions. We may speak of what is shaped as our perspective, orientation toward life, framework of meaning, religious faith, or worldview. Each of these words and phrases carries a different nuance and a different emphasis, but together they carry a common meaning. The word "worldview" is intended to convey this common meaning. The "quest for meaning" may be interpreted as "worldview building," a process by which we each continue the construction of the worldview we inherit from the communities in which we are nurtured.

Among the many different kinds of stories that shape our worldviews, "myths" -- stories that point beyond themselves and give meaning, purpose, and direction to life -- are especially important. The focus of this book is on myths of a particular kind: creation myths. Creation myths are stories of beginnings -- of the beginning of the world and of life and humans in the world -- and of becoming -- of how the world, life, and humans became what they are today -- that illuminate the issues and questions encountered in the quest for meaning. Religious creation stories, and also the scientific story of creation, are creation myths in the foregoing sense.

The stories are also epics: dramas that convey a significant legend or history on a heroic scale -- often, but not necessarily, as stories of the deeds of a legendary or historical hero. Both the biblical and scientific creation stories convey a significant legend or history. God fills the role of hero in the biblical story. The scientific story does not have a hero, but the events recounted are history on a heroic scale.

The Christian biblical story of creation includes stories of beginnings and stories of continuing creation as told by the Hebrew prophets about three thousand years ago and by Jesus of Nazareth and his disciples about two thousand years ago. It is a record of what they saw and heard and believed, written in the language of their cultures, that has been translated by biblical scholars into the language of our culture. The stories tell us how we should live and why, presented as messages from God in the context of the experiences and perspectives of the original authors. The stories have shaped the worldviews of one third of the present global human community and had a powerful influence on almost all human communities.

The scientific story of creation has been written by members of the scientific community in the past two centuries. It seeks to reconstruct past events from records in starlight, rocks and fossils without attempting to interpret these events for how we should live or why. The story is still undergoing revision and editing as new records and better methods for reading the records are found. It is spreading to many different religious and secular communities and beginning to reshape traditional worldviews.

Both stories are presented from an evolutionary perspective, where "evolution" is understood as change that is not chaotic or cyclic: a trajectory that appears to have a beginning and an end, even though the beginning and end are hidden from our view. The creation/evolution controversy is not over evolution in this sense, but over how evolution occurs and what happened in the past: who/what guides the course of

events and what we would find if we could travel back in time and observe past events with our own eyes.

In view of the pervasive influence of the biblical creation story and the growing influence of the scientific creation story, and also the problems many Christians encounter in attempting to reconcile the two stories, we need to become familiar with both stories. Regardless of how we view them -- as inerrant guides for living, accurate accounts of past events, or merely as inspiring or fascinating stories -- we need to understand what they tell us and why they have had, and are having, a powerful influence on our lives and our communities. This book is intended to provide some of the information needed.

PARTICIPATING AUTHOR BIOSKETCHES

Tom Gilbert is "Resident Scientist" at the Lutheran School of Theology at Chicago. He is grateful for the way in which he has been made welcome as a colleague in the seminary community in spite of his heretical views and tendency to comment on theological matters about which he knows very little. His main activity during the past ten years in this position has been to organize an annual course and lecture series out of which the manuscript under review emerged. Until his retirement in 1987 he was a senior physicist at Argonne National Laboratory. His fields of research were the electronic structure of atoms, molecules, and defects in solids, and environmental risk analysis. Since his retirement he has become interested in questions generated by the encounter of worldviews shaped primarily by the knowledge and traditions of religion and worldviews shaped primarily by the knowledge and traditions of science.

Ursula Goodenough is a professor of biology at Washington University in St. Louis, MO. She was educated at Radcliffe, Barnard and Columbia, received her PhD in cell biology from Harvard in 1969, and was on the faculty in Harvard's Biology Department for seven years before assuming her present academic position. She directs a laboratory that studies the evolution of sex in microorganisms, using the tools of molecular genetics and cell biology, and teaches cell biology to undergraduates. She is active in promoting the federal funding of scientific research, and has served as president of the American Society of Cell Biology, and president of Institute on Religion in an Age of Science. Ursula has just written a book, *The Sacred Depths of Nature*, (Oxford, 1998) that seeks to integrate our scientific understanding of Nature with our need for religious orientation and aesthetic experience. She is married to fellow-scientist John Heuser and they have five children, Jason, Mathea, Jessica, Thomas and James. In her spare time she sings in a Presbyterian choir, goes out dancing in East St. Louis, and talks to her friends.

Philip Hefner is Professor of Systematic Theology at the Lutheran School of Theology at Chicago. He serves also as Co-Director of the Chicago Center for Religion and Science, as well as Editor of *Zygon: Journal of Religion and Science*. His most recent book, which is relevant to the Epic series, is *The Human Factor: Evolution, Culture, and Religion* (Fortress Press, Minneapolis, 1993).

COMMENTATOR BIOSKETCHES

Elizabeth Bjorkman provided an overly modest biosketch of herself, which does not do full justice to her intelligence and the insights she has acquired in her own quest for meaning (the motif of the manuscript under review). As she put it, "I don't have any fancy degrees, just a BA in physics. I worked for about 10 years with computers, doing programming, systems design and evaluation. I almost have a masters degree in elementary education and have taken and audited some courses in divinity school. I consider myself a Reader in science and theology...and I ask probably too many questions." At the time she wrote this, she probably wasn't aware that a major purpose of the Epic book was to goad people into asking more questions, especially questions that probe into the depths of our worldviews, and that one of the reasons she was asked to be a commentator is that she asks many intelligent, penetrating questions, uncluttered by the biases of academic specialization.

Ted Laurensen practices corporate and securities law in New York City, with a particular but not exclusive emphasis on investment companies, investment advisers and various specialized aspects of the way the securities markets work. He did his undergraduate work at Amherst College and got his law degree at Yale Law School. In addition to practicing many types of corporate law at one point or another, immediately after law school he clerked for a federal judge, and he retains a deep and continuing interest in constitutional law and myriad aspects of public policy. After mostly majoring in psychology as an undergraduate, he took some time off to work against the Vietnam War and then switched into an independent study program focusing on the intersections of psychology, political theory and moral philosophy, considering questions that he continued to pursue in law school and in his ongoing spiritual and intellectual ruminations. He finds himself interested in almost everything artistic and intellectual and has enjoyed doing the IRAS newsletter write-ups of the Star Island conferences a number of times in recent years. Following up on one of his long-time core interests, he will be one of the chairs of next year's conference on Human Sexuality: A Scientific, Religious and Moral Exploration. He is a devoted Unitarian-Universalist and is currently president of his local church in Hastings-on-Hudson, New York.

Karl E. Peters is professor of philosophy and religion at Rollins College, Winter Park, Florida. During the 1980s he was editor of *Zygon: Journal of Religion and Science*; currently he is co-editor. Karl joined IRAS in 1972. He has co-chaired four conferences, and has served as a vice president for religion and as treasurer of IRAS. Currently he is president. Karl earned his Ph.D. from Columbia University in philosophy of religion through the joint program in religious studies at Columbia and Union Seminary. Since graduate school he has focused on issues in religion and science: especially the concept of God and evolution, methodology in science and religion, and a relational understanding of the human self.

IRAS WORKSHOPS

In IRAS Workshops, topics related to the conference or of continuing general interest are explored and discussed in small groups.

*IMAGES OF SCIENCE:
MANDALAS FOR THE SACRED*
(1 session)

Paul Henry Carr

"When I in awesome wonder,
Consider all the worlds Thy hands have made."

This vignette presentation will attempt to convey the aesthetic beauty of scientific images and illustrate how they can be used as mandalas for the sacred. Scientific images, from the macroscopic to the microscopic, can convey a sense of wonder and awe.

The mandala is a symbol of the cosmos. The geocentric universe of Pythagoras, Plato, and Ptolemy was made of concentric spheres which carried the planets and made "the music of the spheres." The planets were circular spheres of "ether," different from the earth, air, water, and fire on the earth. Each of these elements was represented by the 5 regular solids respectively: dodecahedron, cube, octagon, icosahedron, and tetrahedron. These can be inscribed inside a sphere and therefore regarded as approximations to its perfect symmetry. (Plato's philosophy was that existence is a shadow of the perfect essence, symbolized by the sphere.) In the early 16th century, Copernicus proposed his heliocentric system as "pleasing to the mind," as it placed Mercury, the fastest planet closest to the sun, and Saturn, the slowest, the most distant. At the beginning of the 17th century, Kepler adopted this system, because he could place the 5 regular solids as spacers between the orbits of the six known planets. The fit matched the known radii of the planets with such perfection that Kepler was convinced that it was divinely planned. For him, "Geometry was God."

Images can inspire creativity. The Dharmaraja Mandala (Sanskrit, mandala, circle) inspired Karl Muller's discovery of the cuprate high-temperature superconductors. He and his associate, Bednorz, won the 1987 Nobel Prize. The Dharmaraja Mandala is a highly symmetrical visual symbol of the universe used in Hinduism and Buddhism as a guide to meditation. This led Mueller and Bednorz to investigate the highly-symmetrical microscopic crystal structures which were essential to their discovery. The processes of scientific insight and religious revelation are similar. Both are creative experiences. "We are created co-creators". (Phil Hefner).

The aesthetic beauty of the images of modern cosmology can hopefully give birth to a new sacred story. Images from the Hubble Telescope and the COBE (Cosmic Background Explorer) Satellite show the origins of the universe. The Hubble telescope gives us pictures of the galaxies 12 billion

light years away, which are only 2 billion years old. The Hubble also shows us spectacular supernovae, the cosmic explosions in which the heavy elements were created. This cosmic dust is now part of us. The COBE satellite gives us images of the universe only 300,000 years after it was created in a "big bang" some 10 to 15 billion years ago.

We are sitting on an island of knowledge in a sea of mystery.

BIOSKETCH

Paul Henry Carr, Ph.D. (physics) will offer the Templeton-supported course "Science and Religion: Cosmos to Consciousness" at the University of Massachusetts Lowell this fall. From 1967 to 1995 he led the Component Technology Branch, Rome Laboratory, (now Air Force Research Laboratory) Hanscom AFB, MA, where he is now emeritus. His research papers and patents include contributions to microwave ultrasound, surface acoustic waves (SAW), superconductivity, and laser-activated antennas. He is a Fellow of the IEEE and a life member of the American Physical Society. He has studied religion at Harvard (Paul Tillich), B. U. School of Theology, Boston College, and Andover Newton. Margaret Mead attracted him to his first IRAS Star Island Conference in 1969. He has attended every conference since 1995.

THE ART OF SELF-MANAGEMENT
(3 sessions)

Henry Everett

We all wish to be contributors to the betterment of the world around us, be that in our homes, our community, or the world at large. But things get in our way! These things may be internal or external.

In this workshop algorithmic methods for solving these internal and external problems will be demonstrated. These algorithms will provide a framework with which people can invent their own strategies for self-management and problem solving. Participants will share their personal methods. We shall pool these methods and build upon them. Together we can develop formulas for handling all kinds of difficulties. We shall become unstoppable!

BIOSKETCH

Henry C. Everett received his undergraduate degree from Harvard before attending Johns Hopkins for a medical degree. After a two year medical internship at Rhode Island Hospital and a year in general practice, he returned to Johns Hopkins for specialty training in psychiatry. He then spent three years in Madison, Wisconsin, doing teaching, research and

private practice. In 1965 he returned to Massachusetts, practicing in Cambridge and teaching at Harvard Medical School. In 1975 he relocated to Andover, MA, where he continues in private practice. His professional publications are based on research in neurology, group therapy, support groups, family therapy, and psychopharmacology. He seeks to bring knowledge of psychiatry to the general public. Toward this end, he is working on a book.

*INWARD BOUND: THE DIFFERENT WORLDS OF
"PHYSICS-IN-THE-SMALL"*

(3 sessions)

Herbert Fried

For those Artists and Humanists, Philosophers and (even) Biologists who would like to understand the wheres and whyfores of Atomic and Nuclear Physics, Sub-Nuclear Particles, and Quantum Field Theory; of how Quantum Mechanics was invented and used to understand these non-deterministic, microscopic worlds; of the proper place of symmetries in this teeming construction; of speculation (String Theory) which attempts to include Gravitation as the fourth interaction, "unified" with the other three (Weak, Nuclear, and Electromagnetic); for all such interested Artists and Scholars, a series of 3 accessible lectures with the above title is respectfully offered.

BIOSKETCH

Herb Fried was born, bred, and buttered in New York City, with a BS from Brooklyn College in 1950. Saw his first cow in Connecticut, and earned an MS there in 1952. US Army (at the end of the Korean Action), 1952-54. CALIFORNIA (!) and a Ph.D. at Stanford in '57, on the subject of Quantum Field Theory. This was followed by an NSF-supported Postdoctoral year at Ecole Normale Supérieure in Paris; three years as a lowly Instructor in Physics at UCLA; one year as a Visitor at the Institute for Advanced Studies, Princeton; and two more years at the Courant Institute, NYU. Finally settled down at Brown in 1964, although seven of the following 34 years have been spent teaching and doing research in Marseille, Paris, and Nice. Retirement comes at the end of June '98, although professional and personal ties will be kept current at Brown. The author of two books on Functional Methods in Quantum Field Theory, with a third book (on Green's Functions and Ordered Exponentials) finally nearing completion. The father of three talented children, and husband of an intelligent and beautiful woman: on ne peut pas demander plus.

JOURNALING AS A SPIRITUAL PRACTICE

(3 sessions)

Joan Goodwin

In this workshop, the structured exercises from Ira Progoff's book *At a Journal Workshop* will be used to help participants explore and deepen their resources for spiritual growth. This approach centers on meditation followed by individual reflection and writing in the shared silence of the

group. Talk will be at a minimum. The workshop will provide a basis for further journal work after the conference, and the sessions here will, in themselves, offer the opportunity for interesting insights. All participants should attend the introductory session and as many more as they wish. Bring notebook and pen.

BIOSKETCH

After many years of professional church work (Unitarian Universalist), Joan Goodwin now follows her bliss researching and writing women's history and biography. Her sketch of Sarah Alden Bradford Ripley appeared in the March, 1996, *Zygon*, and her biography of SABR will be published this fall. For the past couple of decades, Joan has enjoyed journal writing as a tool for exploring religious/scientific/experiential understandings of her life, life patterns in general, and Life itself.

*ART AND THE ORDINARY...FROM "UNIVERSAL
BEHAVIOR" TO "EVERYDAY SACRED"*

(1 session)

Katharine Houk and Tahra Needell

"The arts, while creating order and meaning from the seeming chaos of daily existence, also nourish our craving for the mystical." (E.O. Wilson) If we think of "art" as a universal human behavior of "making special" (E. Dissanayake) rather than as a product, our concept of art is broadened and melds with many of our everyday experiences. In what ways do you use your body and imagination, alone or with others, to create order, beauty, harmony, a sense of the sacred? Which of your daily activities evokes a sense of timelessness, of connection, of "flow" for you (Csikszentmihalyi)? Together we will explore these activities, whether work, parenting/grandparenting, journal-writing, cooking, gardening, decorating or carpentry, bodily movement or musical/visual expression, body adornment, ritual, community beautification, environmental/social action -- the daily ways we express our human creativity. This workshop is also for those whose art behaviors have been unrecognized, unseen, unacknowledged or devalued by our culture and the "Art World," and will include exploration of ways we each can foster our innate creativity.

BIOSKETCH

Katharine Justine Houk has been attending Star Island conferences since she was in her teens, and returns this year with daughters Tahra and Emily. She earned her BS in Design in 1977 at the State University College at Buffalo, took time to raise and homeschool three children, and is currently a graduate student in ministry at Hartford Seminary in Connecticut. As executive director of an national educational nonprofit she has organized many workshops and conferences and contributed articles on alternative education to books and other publications. Her art work has been shown in regional and national exhibits, and she currently works from her studio in Chatham, NY, where she specializes in unusual vestments, ritual garments, and

wearable art. She is particularly interested in creativity and spirituality in everyday life, and when she's not involved with education, art or ministry, she's likely to be tap-dancing.

Tahra Justine Needell is a 28-year-old waitress/poet/seaglass artist who resides in the highly creative community of Key West, Florida. She is head waitress at an unusual restaurant with a rope swing, chickens, and cats in the dining room, and collects seaglass for her jewelry in the Keys, the Bahamas, Jamaica, and Hawaii. She is a published poet, and the "Blue Heaven Outback Reader," an anthology which included her work, won the Fallot Literary Award for Best American Poetry Anthology in 1994. She was recently involved in a collaborative exhibit of artists and poets at Key West's Woodenhead Gallery, and is currently painting a chicken named Lola on her kitchen wall.

CAVE ART
(1 session)

Solomon Katz

This workshop will explore the earliest archaeological evidence of art and adornment and its relevance to the evolution of religious experience. We will review cave art from such divergent sources as Enkapune Ya Muto (EYM) rock shelter in the central Rift Valley of Kenya, the oldest documented site (40,000 BP) of human ornamentation, to the more familiar cave art of the Dordogne River Valley and of the various caves from Spain. The workshop will also use "live" demos to recreate the art and serve as a basis to build models that reconstruct the human capacities for artistic and symbolic representation as a way of implying the capacity for religious experience may have occurred at much earlier dates than previously hypothesized.

BIOSKETCH

Sol Katz has been active in IRAS since 1972 and attended his first, albeit brief, IRAS Star Conference in 1962. During his time with IRAS he served in many capacities including membership in the IRAS Council, program committees and conference chairs. He was also president of IRAS on two separate occasions for five years. Currently, he is president of CASIRAS, the partner organization that is the co-publisher of *Zygon* and a parent organization of CCRS. Sol is Professor of Anthropology at the University of Pennsylvania and is Director of the Krogman Growth Center at the University and affiliated with the Children's Hospital of Philadelphia and the duPont Children's Hospital of Wilmington. He has also conducted extensive studies of the art and artistic abilities of native Inuit people in the Canadian Arctic.

IMAGES OF ENLIGHTENMENT: A MANDALA FOR SCIENCE
(1 session)

Clifford Matthews

Science -- an endless search for unity in nature, a continuing probe into the mystery of order, a wandering dialogue with

the unknown -- is in our time achieving a new universality through the revelation that life may be an inherent property of matter arising by continuous processes of chemical, biological, and cultural evolution, making possible today our re-entry into Nature, here on Earth and in the Cosmos as a whole.

To help in defining today's scientific world view we construct here a mandala -- a diagram of the structure of human consciousness -- arising from fundamental underlying concepts of science concerned with matter, life and mind. Its mythic elements include the well-known ouroboros, DNA, and yin-yang symbols, combined to represent a universe we see as participatory, transcendent, and open.

A mandala is also a symbol representing the effort to re-unify the self. Such images of enlightenment help us to come to terms daily with the ultimate mystery of existence through our creative activities in art, science, and religion that produce the metaphors, models, and myths by which we live.

BIOSKETCH

Clifford Matthews was born in Hong Kong in 1921 and received his early education there, continuing his studies after World War II at London University (B.Sc., 1950) and at Yale (Ph. D. 1955). Following several years in industry, mostly at Monsanto, carrying out fundamental chemical research, he became a Professor of Chemistry at the University of Illinois at Chicago in 1969, becoming emeritus in 1992. His research on cosmochemistry and the origin of life led him to use the unifying theme of universal evolution in his teaching, which included courses on *Chemistry and Life* (for undergraduates in the humanities, *Environmental Chemistry* (for undergraduate chemistry majors) and *Chemical Evolution* (for graduate students in the sciences). In addition, he collaborated with other faculty members on interdisciplinary seminar courses on topics such as *Science and Society*; *Models of the Future*; *Law in Our Society*; *Time*; *Structure in Art, Music and Science*; *Symmetry in Art and Science*; *Paradigm and Paradox*; and *What is Truth?* In Chicago, he continues to offer a minicourse -- *Milky Way to DNA* -- at the Adler Planetarium. In 1993 he organized a symposium on *Cosmic Beginnings and Human Ends* for the Parliament of the World's Religions held in Chicago. In all these activities his major aim is to add breadth and perspective to the specialized programs demanded of undergraduate and graduate majors in chemistry, and to convey to students of the humanities and professional schools and to the general public something of the excitement and significance of science as the shaping cultural activity of our time.

PHOTOGRAPHY:
A STATEMENT SPIRITUAL AND POETIC
(2 sessions)

Diggitt McLaughlin

"I could look at that picture forever." "I could drown in that photograph." "That says something to me so deep, I don't

know how to say it." Comments like this are made to me with some regularity when my photographs are exhibited.

What is being addressed here? It pleases me, to be sure, and yet there's a sense in which it's bewildering -- only a very few pieces of art have affected me that way.

Much of my work is a conscious homage to the "Intimate Landscapes" nature photography of Elliot Porter. Each part of the photographic experience -- seeking out the places to work, finding the photograph and making it, and printing it -- brings its own kind of pleasure, excitement, and peace.

Apparently the final image is my experience, transmuted. If the people who "could look at that picture forever" had stood with me that day, what would they have seen? If you subtract the vista from the image is what you have left ART?

Nature photography is a good medium for exploring these reactions. I photograph what everyone sees, yet the analogue to my work is poetry. In this workshop, I will discuss the work, the poetry, the poetry in the work; Mary Oliver, Jane Kenyon, Richard Wilbur, and others.

BIOSKETCH

Diggitt McLaughlin was recently named an Award of Excellence winner by Manhattan Arts International Magazine. This past spring, New York City's Phoenix Gallery selected her along with three painters for its program "Artists Talk on Art," about the artistic/creative process. Her work has been exhibited in New York, New England, and other parts of the country. She has studied photography and the applied arts at the International Center for Photography and Parsons Institute in New York and West London College of Art and South London Polytechnic in London, and has studied with Susan Kleckner, Peter Kloehr, Tim Keating, and Ed Fausty, among others. Environmental and nature interests have led her to New York State certification in both field botany and plant systematics from the New York Botanical Garden/Lehman College, and she has done additional coursework through the Institute for Ecosystem Studies and the American Museum of Natural History. She is president of the Beczak Environmental Education Center on the Hudson River in Yonkers, New York. She has photographed extensively in the Hudson Valley and the Adirondacks as well as Canada's maritime provinces.

*GOING THROUGH THE MOTIONS:
THE BENEFITS OF RITUAL*
(3 sessions)

Margaret Nesse

I've often heard people say, "I used to go to church, but then I realized that I was just going through the motions, that I didn't really believe any of that stuff anymore, so I quit." For me, the process of "going through the motions" of religious ritual has always been more important to religious experience than belief. It has seemed to me that rejecting religions simply because their stories and creeds seem "false"

according to the dictates of scientific literalism may constitute throwing out a very large baby with the bath water. My speculation is that participating on a regular basis in a set ritual pattern, be it sitting zazen, keeping a poetry journal, or going to Mass, may, in and of itself, evoke the experiences of peace of mind, transcendence and even ecstasy that we call "religious." In the workshop we will discuss our experiences with religious ritual, with an emphasis on the way the arts, especially music and poetry, are used to enhance ritual, and with the hope that a variety of traditions and points of view will be represented. Each of the three workshops will start with a brief meditative ritual that includes singing, chanting, recitation and silence. The meditations will be derived from Christian, Buddhist, and Hindu traditions. Brief readings will be provided to stimulate discussion. Good authors to explore are Huston Smith, Kathleen Norris, Nancy Mairs, Ken Wilbur, Herbert Benson, Thich Nat Han, Pema Chodron and Rumi, among many others.

BIOSKETCH

Margaret Nesse gets paid for doing technical writing and editing at the University of Michigan School of Natural Resources and Environment, but she considers fiction writing to be her vocation. She's also a singer, for thirteen years a member of an excellent Presbyterian church choir where she often performed as a soloist, and currently a soprano in a small semi-professional chorus. Last year she became a confirmed Episcopalian, though she is in addition a recent convert to yoga and meditation and thinks she may be a Buddhist at heart. She has successfully raised two daughters and a Bernese Mountain Dog, and she lives in Ann Arbor, MI with physican/author Randy Nesse.

CELEBRATE OUR OWN CREATION
(2 sessions)

Helen Potter

In this workshop we will use our intuitive, creative powers to express in visual ways our joy in our creation. Star Island is a beautiful place to explore our inner selves through the right side of our brain. Taking a risk in exploring our human nature will spark our imagination. Our art expression will reveal the randomness of our own nature. We will enjoy the universe as part of our own being.

What qualities of Mother/Father Earth enhance our own personalities? Seasons, growth, renewal, darkness/light, feminine/masculine, rebirth, Moon /Sun are elements to spark our creative energies.

Paper and colored chalk will be provided, or bring your own art supplies. Come to a safe place to meet new friends and a new challenge. No inner critics will be allowed.

BIOSKETCH

Helen Potter first came to Star 20 years ago. After that, the Star Island adventure has always been dear to her heart. Since that time, she and her husband "Skip" have built a house on Nubble Light, from which Star Island is visible on

clear clear days. They have fished off White Island and love this part of the New England coast. As an artist she has photographed and painted the area. She and her daughter participated in the archaeology dig at Malaga Island. She has compiled for the Appledore laboratory her gravestone rubbing of the grave sites on Smuttynose Island to preserve this history. She has experienced the worst of the islands: thorn bushes, wasp attacks, digging in the extreme heat, back-breaking work, carrying artifacts and pails across slimy seaweed rocks, poison ivy itch and sea gulls in their nesting stage. She has also enjoyed the best of the island, sitting on the porch in a rocker at Star, listening to lovable kindred souls, laughing, feeling the gentle ocean breeze on her face.

THE UNIVERSE CATHEDRAL
(3 sessions)

Tom Rockwell

Working together, participants will brainstorm, sketch, and construct a model of a place of worship which celebrates and symbolizes our modern cosmology. Just as the medieval cathedrals were collaborations between artisans and theologians, so a new sacred space will be imagined here in which artists, scientists, and theologians join talents to create a vision of our Universe in stone, sculpture, and painting. A new iconography will need to be invented. Symbolic forms will be chosen to represent the Journey of Evolution as well as the Shapes of Spacetime. The group will create a structure of cardboard, decorated with drawings, collages, and maybe even found objects. Construction materials will be provided. Children (first grade and over) are welcome to join us!

BIOSKETCH

Tom Rockwell is an artist and designer whose work focuses on the interface between Science and Art. Current projects include: the design and construction coordination of a community-built "Science Park" in Salem OR, illustrations for a forthcoming book on String Theory, and exhibits for the headquarters of the Materials Research Society in Pittsburgh PA. When not designing climb-through giant animal cells or trying to illustrate 11-dimensional spaces, Tom can be found spending time with his family or out dancing in Ithaca NY. He and his wife are co-founders of Tiamat Studio, a movement studio and community center for creative and healing pursuits.

POETRY WORKSHOP: A.R. AMMONS
(3 sessions)

Robert Schaible

A. R. Ammons is widely regarded as one of America's best living poets, indeed one of the leading poets of this century. He views the facts and events of nature with the scientist's eye for close observation, the poet's belief in the power and necessity of imagination, and the spiritual person's concern for meaning. Although a poetic descendent of Emerson and Whitman, Ammons is very much a poet of this scientific and postmodern age and cautions us against following any

pied pipers of certainty and final vision. He is by turns spiritual and scientific, lyrical and philosophic, lofty and mundane, elegant and crude. This workshop will read and consider closely some dozen or so of his poems in an effort to see how his vision relates to the central themes of the conference.

BIOSKETCH

Bob Schaible is an associate professor of arts and humanities at the University of Southern Maine. His teaching and scholarship are primarily interdisciplinary. In recent years, he has collaborated with faculty in a variety of fields to offer papers and courses in such areas as "Metaphor in Science, Religion, and Literature," "Life and Literature after Darwin," "Photography and Poetry: Two Ways of Speaking," and "White Males Teaching for Diversity: Why and How." He has also worked in programs funded by the NSF and the NEH designed to help both secondary and college-level faculty develop curricula that bridge the gap between the sciences and the humanities. He is attending the conference with his wife, Sally Bowden-Schaible, a psychotherapist, and his step-son, Joel, 15.

WEAVING THE NOOSPHERE
(4 sessions)

Ingrid Shafer

In my workshop I plan to share (a) some 13 years of computer art, much if not most of which has religious or spiritual themes, (b) show how I have used various forms of computer art (from fractals to captured-and-transformed video images) in web page design, (c) connect visual art with poetry, music, mathematics, and spirituality (d) explore the way computers allow us to generate entirely novel kinds of creative works, (e) use an interface between the camcorder and the computer to generate spontaneous hybrid images, (f) engage in dialogue concerning ways in which this kind of art might be used as a "language" to bridge diverse cultures, religious traditions, and academic disciplines.

I am bringing a multimedia notebook computer and a liquid crystal panel which will allow us to project images for group viewing. I may also show videotapes of a number of projects. I have downloaded websites to CD-ROM, so we will be able to look at them without web access. If there is interest, we might collaborate on creating a website dedicated to the conference.

BIOSKETCH

A native of Innsbruck, Austria, Ingrid Shafer is Professor of Philosophy & Religion and Mary Jo Ragan Professor of Interdisciplinary Studies at the University of Science and Arts of Oklahoma, where she has taught since 1968. At USAO she has developed a series of interdisciplinary courses designed to communicate the most essential and pervasive patterns of the major global civilizations and foster respect for the "other." Shafer has published three books (with two more in press) and over a hundred articles, book chapters, poems, and sermons. She studied at the Vienna Art Academy

in the late 1950s and has been "doing" art ever since she was a child.

Shafer "owns" and moderates several internet discussion forums, including Vatican2 (a Catholic reform group) and "G-ethic," (dedicated to developing a Global Ethic). She is also creator/editor of several websites, including the site for CCRS. Shafer was recently elected Vice President of the Association for the Rights of Catholics in the Church (ARCC) and is an Associate of the Chicago Center of Religion and Science. She has lectured at the University of Chicago, Berkeley, the Chicago Center for Religion and Science, Temple University, the Universitaet Graz, the Academies of Sciences at Vienna and Budapest, at a Christian-Muslim dialogue in Jakarta, and at a Jewish-Christian-Muslim dialogue at Loccum, Germany.

BUDDHIST USES FOR DARWIN'S DHARMA
(2 sessions)

Jeremy Sherman

Calm that sea, and you'll observe the moon as it is. Full. Undistorted.

Biologists also calm their minds to see what is, training patient eyes on life and its reasons. It's not surprising that ancient Buddhist and recent biologists' observations are mutually reinforcing. It's just surprising that Buddhists and biologists rarely talk.

Join us to survey new insights emerging in mainstream evolutionary biology, and learn experientially how to put them to use in your own spiritual practice, to visit Buddha's calm sea beyond stress and self-absorption. The first stress to go is stress about self-absorption. Notice the obvious in nature, and compassion for ourselves and all self-absorbed beings comes easier. Grounded and limber, one feels at home in the universe, warts and all.

Buddhists say the mind is like a turbulent sea, distorting the reflection of a midnight moon.

BIOSKETCH

(See next workshop)

LICKITYSPLIT DRUM SPANKING
(3 sessions)

❖ **Jeremy Sherman**

The shortest distance between liking cool rhythms and playing them. Hand-drumming for the complete beginner, the shy, the closet-hip and the tone deaf. Specialized in teaching egg-heads to funkifize (I am an egg-man myself). In one week, learn the polymathematical secrets ($2+2=4$) to inventing and discovering an infinite number of infinitely funky drum riffs. Jam with your friends and your own badself all your long-legged life. Children welcome.

BIOSKETCH

Jeremy Sherman, lecturer, writer and PhD candidate in evolutionary theory, holds a masters degree in public policy

from UC Berkeley with an emphasis on decision-making science. In a past incarnation, he founded a national environmental lobbying organization based in Washington and now in its 14th year, and was a business consultant on public and environmental affairs to companies like Ben and Jerry's, Working Assets, and the Body Shop. In another past incarnation, he was an elected elder at the world's largest hippie commune and managed development projects in Guatemalan Mayan Villages.

Jeremy has been a student of the nexus between eastern philosophy and western life science for over a decade. He is currently working on a book entitled *Nothing Personal: Likely Stories to Set Us Free*. Jeremy has studied complexity theory at the Santa Fe Institute and presented papers at the Human Behavior and Evolution Society academic conferences. He is devoted to making evolutionary science's implications for our personal and spiritual lives accurate, accessible, and entertaining.

SOME IRREVERENT MUSINGS ON THE COBBLING TOGETHER OF A VERY STRANGE SONG-CYCLE
(1 session)

Carl Smith

In November 1997, there occurred the premiere of a new and rather unusual song-cycle, composed by the presenter. In this workshop, he will discuss some of the problems encountered in composing music for free verse and his solutions to those problems, and other expected and unexpected solutions which eventually presented themselves, in several cases just before the composer began burning the offending passages in a waste basket. Others of the many powerful disincentives to the pursuit of musical composition will be discussed as well, prior to a hearing of the concert recording of the results of the whole undertaking. This is not a work of sacred music.

BIOSKETCH

Carl Smith was, until very recently, a long-time resident of St. Louis, where he was organist and choir director at Trinity Presbyterian Church and an Instructor in the Music Department of Washington University. He was also involved in concert-giving, as a soloist and a conductor, in the US and Europe, but especially in Italy where his work has allowed him over many years to indulge two of his other great passions, the Renaissance art in its various guises and the Romanesque architecture of that most artistically gifted of lands. In a few weeks he will begin a new career, one in which he will be called upon to reveal the wonders of western harmony to unsuspecting (and probably unwilling) freshmen at the School of Music at Vanderbilt University in Nashville. Those who survive their freshman year may also elect to study vocal and choral composition with him. In packing for the move to Nashville, he discovered (often in unexpected places) the manuscripts of quite a large number of musical compositions, sonatas, art songs (more than a hundred of them), cantatas, solo works for keyboard instruments, etc., the sheer weight of which caused the

expense of the move to rise far in excess of any potential income the music might hope ever to generate.

JOYS AND TRAGEDIES OF HUMOR
(2 sessions)

MEDITATION AND BASIC AWARENESS: A RETURN TO PRE-LINGUISTIC ANIMAL CONSCIOUSNESS?

(One 2-hour session)

Barbara Smuts

Buddhist meditative practice is a method of developing what different teachers refer to variously as "non-conceptual awareness," "thoughtless awareness," "basic awareness," "beginner's mind," or "big mind." These descriptions point to the possibility of experiencing a very alert, relaxed, open state of mind that is free of "thought." "Thought" in this context refers especially to the familiar experience of linguistically-mediated thought that fills our minds much of the time (variously referred to by Buddhist teachers as "discursive mind," "small mind," or "busy mind"). In this workshop, we will consider the hypothesis that the shift to thoughtless awareness that occurs with meditative practice involves a return to a state of mind experienced routinely by intelligent nonhuman animals and by our ancestors prior to the development of language. Scientists tend to emphasize the obvious benefits of linguistically-mediated thought, such as, for example, a greatly enhanced ability to reflect on the past and plan for the future. In this workshop we'll explore the notion that the development of language interferes with the ability to attain and maintain thoughtless awareness and thus involves costs as well as benefits. In presenting this hypothesis, I will draw on research on the physiology of different states of consciousness in humans and other animals, and on my own experience observing, and meditating with, members of other species. The workshop will also include an experiential component consisting of a guided meditation (so that we may all have an opportunity to experience thoughtless awareness) followed by group discussion about the nature of this experience and how it differs from, and is complementary to, our normal thought-based consciousness.

BIOSKETCH

Barb Smuts is Professor of Biopsychology and Biological Anthropology at University of Michigan. Over the last 25 years, she has communed with wild baboons, chimpanzees, gorillas, and dolphins. Her publications include two books (*Primate Societies* and *Sex And Friendship In Baboons*) as well as numerous scientific articles on social relationships in both humans and other animals. She studies hatha yoga and insight meditation, and has learned much about both practices from nonhuman, as well as human, teachers (slides of wild baboons engaged in spiritual practice will be included in this workshop). She has recently begun to explore in greater depth her long-standing interest in integrating evolutionary and spiritual perspectives on human behavior and consciousness.

Robert Sorensen

Humor plays a role in the lives of everyone who knowingly and unknowingly both cultivates and resists it. Religion, science, justice, sex, and politics are the primary subject matter of wit, satire, bathos, farce, and puns. Subjects to be discussed include: (1) What is humor, and can one recognize it? (2) Are the roots of humor in hurt and tragedy? (3) Some psychological and psychoanalytic theories of humor. (4) Participants' beliefs of what is and is not funny. (5) The cheapening of humor by Internet. Examples of various modes of humor will abound, with special attention paid to the mordant, compulsive, obsessive, power, put-down, self-deprecating and ad hominem.

BIOSKETCH

Dr. Robert Sorensen, who some people think occasionally shows a sense of humor, is a longtime member of IRAS and attendee at IRAS conferences. He co-chaired a Star Island IRAS conference on free will and determinism and, with Viggo Mortensen, edited a book of contributions to the same subject made in a conference they co-chaired in Denmark. He is an applied social psychologist and survey researcher, long specializing in situational conflict: marketing, litigation, and political warfare.

STAR STONES

(2 sessions)

Philemon Sturges

I've been pondering how to get left-brained people to deal with things other than explanations or arguments about "facts" and really experience the act of instilling meaning into something. I think that to do this you must, first of all, get to know that something well. Once you do, it can resonate with those quiet things deep within your mind. It's then that your mind hears whispers of things it didn't think it knew or understood. The something is able to give you an intuition, a path, a way. Then the just-something becomes something very special, and sometimes it can become important to your understanding of all sorts of other things.

Participants will be asked, as soon as they can, to find a stone, any stone. It should be a stone about the size of an egg -- a stone that you can easily carry with you. That stone will be with you for your every waking hour, and under your pillow when you sleep. You should hold it whenever you can, observe it carefully, and think about it often. You should make sketches of it instead of doodling during dull lectures. You should taste it, smell it, feel it, ponder it. It should become your "worry stone", your rosary, your security blanket.

At the first formal session we will each talk about our stones. Why is it special, what makes it different from every other stone, what makes it especially suitable for me, why did I choose it from among the billions of other Star

Stones? At the end of the session everyone will be asked to draw at least three life-size pictures of their stone with a pencil, the purpose being to describe the stone as accurately as possible. Artistic merit will be given no consideration. At the second session each person will come having created something special about his/her stone: a song, a poem, a story, a sermon, a long joke, more drawings, artistic merit again irrelevant. The point is to connect!

The ultimate test will be to put all the stones in a bag and then let each person find his or hers, take it home, and have it become a sacred paper weight. Adolescents and adults welcome.

BIOSKETCH

Philemon (PHI-leemon or Phil-EE-mon, or Phil, take your pick) has an MFA in Architecture from a small college in central New Jersey. He practiced architecture in Providence and Boston for fifty odd years. Some of you may have seen his work at the Boat Basin and waterfront on Nantucket, or the Gateway Center in Newport. He now writes children's books and is currently working on a version of the Epic for ten year olds. He lived in Japan for three years in the late fifties and in Rome for three years in the early eighties and is sometimes heard mumbling stuff in Japanese or Italian. His muses (A-muse and B-muse) are large wuzzy Italian truffle hounds (Tarquin and Rufina) who will not participate in this workshop.

TREE & ME
(1 session)

Elizabeth White

Kenneth Boulding, one of the founders of the International Society for General Systems Research in 1954 [now the International Society for the Systems Sciences], expressed his hope, in the Ludwig von Bertalanffy Memorial Lecture in the mid-1970's, that there might be a way, someday, that poetry and science could marry, could be seen and understood as equally generative of human insight toward understanding the mystery that always moves ahead of any current level of generally accepted knowledge.

Poetry and science can marry, I feel, if we understand both poetry and the intuitive leap as emanating from an individual's "bigger" personal mind and seen equally as access points to a deeper, more fundamental knowledge of the way things work in relationship to each other in our universe.

I suggested, in a '95 ISSS [see above] presentation to one of the Spirituality sessions, that human spirituality could be seen as the potential "to wonder," i.e. "to wonder why," as well as, "to wonder at"-- that is, to stand in awe. I further suggested that, using this perspective, one could begin to explore the idea that science, philosophy, art, and religion are equally manifestations of innate human spirituality. For example:

The Tree and Me

I breathe the tree.
The tree breathes me.

- ew

This small poem, to me, is science, is poetry, represents a philosophy of wholeness, and illustrates a personal "religion" because my experience of God has only to do with a state of being. It is through that state that both my poetry and theory appear. This workshop will be an exploration through my own work -- mostly poetry !! -- and a theoretical model or two, of how this has been true for me.

BIOSKETCH

Elizabeth White, MBA, Ph.D.: Management Science, is a poet and behavioral theorist whose special interest is Human System Theory: where our minds, our daily lives, come from, and how it all fits with everything else. She currently works for Texas Instruments in Dallas, Texas as an internal consultant in Leadership Development. But, "I don't write poems. They write me!"

CHAPEL AND CANDLELIGHT SERVICES

Activities of the day begin right after breakfast each morning with chapel, from 9:00 to 9:45 a.m. . Scheduled activities of the day end with a candlelight service conducted by a member of IRAS.

CHAPEL SERVICES

Ursula Goodenough will serve as chaplain of the week, and Reverend Marjorie Davis will serve as minister of the week. Ursula was President of IRAS from 1992-1996 and is a cell biologist who studies molecular evolution. Marjorie was President of IRAS from 1989-1992 and has a practice in psychological and spiritual counseling.

In the morning chapel services, Ursula will explore the Interweaving metaphor of the conference, an echo of William James' question a century ago: "And why, after all, may not the world be so complex as to consist of many interpenetrating spheres of reality?" She will suggest that we have three astonishing and apparently limitless resources from which to fashion our spiritual responses to existence -- our scientific understanding of Nature, the beauty of Nature itself, and the ways that we structure and expand our experience in the forms we call art. She will offer in this context meditations on five religious themes: the self, love, fellowship, mortality, and ultimacy.

Sunday: The Warp and Weft of Religion

Monday: The Self

Tuesday: Love

Wednesday: Fellowship

Thursday: Mortality

Friday: Ultimacy

CANDLELIGHT SERVICES

Saturday, July 25: **Billy Grassie**, "Gathering"

Sunday, July 26: **Eugene d'Aquili**, Memorial

Monday, July 27: **Katharine Houk**, "Living Artfully"

Tuesday, July 28: **Paula Murray**, "Celebration of Life"

Wednesday, July 29: **Jennifer Whitten and the Children's Program Staff**

Thursday, July 30: **Frank Toppa**, "Musician's Measurement of Time"

Friday, JULY 31: **Elizabeth White**, "Spiritual Paths: Maintaining our Fragrant Envelopes"

PEOPLE

Conference Planning Committee

Ursula Goodenough	Cochair
Robert Schaible	Cochair
Elizabeth Bjorkman	
Ted Laurenson	
Loyal Rue	

Conference Officials

Conference Coordinator	Nancy Anschuetz
Registrar	Bonnie Falla

Conference Facilitators

Announcements	Ruth Bruns
Book Table	Marjorie Young
Candlelight Coordinator	Betty Lau
Children's Program	
	Sandra Woodworth, Coordinator
IRAS/Zygon Reception	Nancy Anschuetz
Program Pamphlet	Tom Gilbert
Social Hour Coordinator	Sara Sturges
<i>Star Beacon</i> Editor	Jilana Ordman
Talent Show	Barbara Avakian
Workshop and Free University Coordinator	Nancy Anschuetz

Most of the facilitators are recruited on the Island. A more complete list of facilitators will be prepared and distributed later, after we know who they are.

The successful functioning of the conference is utterly dependent on the facilitators. If you would like to become actively involved in the functioning of the conference and meet and work with new and old friends, the conference chairpersons and coordinator, choir director, and *Star Beacon* editor and production manager would like to hear from you.

IRAS Scholars

Amanda Ellenwood
Emily Taylor
Jason Keune
Mladen Turk

IRAS Officers

Karl Peters	President
Ursula Goodenough	Immediate Past President
Christopher Corbally	Vice President, Science
Billy Grassie	Vice President, Interdisciplinary Affairs
Loyal Rue	Vice President, Conferences
Thomas Gilbert	Vice President, Development
Joan Goodwin	Secretary
Thomas Fangman	Treasurer

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Christopher Corbally	William Orme-Johnson
Lawrence Fagg	Ann Pederson
William Grassie	Karl Peters
Rodney Holmes	Robert Schaible
Nancy Houk	Mary Evelyn Tucker
Edwin Laurenson	Barbara Whittaker-Johns
Sharon Stein McNamara	Neil Wollman
Bruce Naylor	

Other Council Members (Ex Officio)

Philip Hefner	<i>Zygon</i> Editor
Solomon Katz	CASIRAS Representative

Others with Official Responsibilities

Marjorie Davis	Historian/Parliamentarian
Paula Fangman	Membership Coordinator
Kevin Sharpe	<i>Science and Spirit</i> Editor
Douglas Burton	Webmaster

Honorary Officers

Donald Harrington	Honorary Vice President
George Riggan	Honorary Vice President
Macolm Sutherland	Honorary Vice President

Committee Chairs

Archives	Philip Hefner
Awards	Marjorie Davis
Development	Thomas Gilbert
Finance	Thomas Fangman
Long-Range Conference Planning	Loyal Rue
Membership	Nancy Anschuetz
Newsletter	Loyal Rue
Nominating	Paula Fangman
Publicity	Marion Griswold
Scholarship	William Falla
Internet Committee	William Grassie

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ART AND RELIGION*

Something holy, that's what it is. That's the kind of word you ought to be able to use, only people would get it wrong, give it a meaning it doesn't possess. You ought to be able to say that such and such a picture is what it is, with all its latent potentialities, because it has been touched by God. But people would take your words in another sense. Yet that's what comes nearest to the truth.

---- Pablo Picasso

The wonder and mystery of art, as indeed of religion in the last resort, is the revelation of something "wholly other" by which the inexpressible loneliness of thinking is broken and enriched...a reality that forces itself upon our consciousness and refuses to be managed and mastered. It is here that the affinity of art and religion is most evident today.

---- Wallace Stevens

Chosen are those artists who penetrate to the region of that secret place where primeval power nurtures all evolution. There, where the power-house of all time and space -- call it brain or heart of creation -- activates every function; who is the artist who would not dwell there?

---- Paul Klee

Art is the grandchild of God.

---- Dante Alighieri

Art is a lie that makes us realize the truth.

---- Pablo Picasso

Form, even if it is quite abstract and geometrical, has an inward clang... The impact of the acute angle of a triangle on a circle is actually as overwhelming in effect as the finger of God touching the finger of Adam in Michelangelo.

---- Vasili Kandinsky

During the modern period...you can expect art to be more religious the less it has to do with the subject matter of religion...Much of the work of modern artists in pursuit of religious understanding has been based upon two very diverse attitudes not toward art but toward religion. The first of these is the notion that religion is best understood as the individual identification with the sense of the universal harmony (Blake, Mondrian, Kandinsky, Newman, Albers). The other principle is that the religious experience is a matter of human compassion and human brotherhood...(Van Gogh, Nolde, deKooning)...But the religious values are not simply differently described means to the same end. They are two different means serving two differently religiously described ends.

---- Joshua Taylor

* Quotations compiled by Robert Elinor

45th Annual IRAS Conference, "Interweaving Art, Science, and Spirituality," Saturday, July 25, thru Friday, July 31, 1998

PERIOD	ACTIVITY	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:00 a	Breakfast							
		Morning Activities: Chapel and Plenary Lectures						
9:00-9:45 a	Chapel	Ursula Goodenough, Conference Chaplain						
10:00-10:55 a	Lectures (Elliott Hall)	Andrew Newberg	Randolph Nesse	Ellen Dissanayake	John Grim	Carl Smith	Phillip Hefer	
10:55-11:15 a	Break							
11:15-12:15 p	Discussion							
12:30-1:30 p	Lunch							
		Afternoon Activities: Recreation¹, Seminar, Workshops, Free University², and Socializing						
1:40-2:40 p	Session I Annual Meeting IRAS Seminar Free University	ARRIVING, GETTING SETTLED, GREETING FRIENDS, EXPLORING	Matthews (NF) Rockwell (AB) Smuts E (2 hr) Sorensen (PP)	Fried (EI) Goodwin (NF) Rockwell (AB) Sorensen (PP)	Fried (EI) Goodwin (NF) McLaughlin (SP) Rockwell (AB)	Fried (EI) Goodwin (NF) McLaughlin (SP) Sturges (PP)	IRAS Annual Meeting Starts at 1:40 pm ⁴	Smith (EI)
2:50-3:50 p	Session II Workshops		Schaible (PP) Sherman-drum (AB) Smuts (EI) (cont.)	Katz (EI) Nesse (NF) Potter (AB) Schaible (PP)	Nesse (NF) Potter (AB) Schaible (PP) Shafer (EI)	Everett (PP) Nesse (NF) Shafer (EI) White (SP)	Everett (PP) Shafer (EI) Sherman-medit. (NF)	Everett (PP) Shafer (EI) Sherman-medit. (NF)
4:00-5:00 p	Session III Workshops	Star Island Orientation (MANDATORY ⁵)		Sherman-drum (FL)	Sherman-drum (FL)			
5:30-6:30 p	Social Hour (Newton Centre)							
6:30-7:30 p	Dinner					Lobster Dinner ⁷		Banquet
		Evening Activities: Plenary Lectures, Candlelight Services, Snacks, Shows, and Owl Sessions						
7:30-9:30 p	Lectures and Discussion	Robert Schaible	Eugene d'Aquili	Merlin Donald	Stephanie Raynor	Jensine Andersen	Robert Elinor Pelican Show ⁸	Talent Show
9:45-10:15 p	Candlelight (Chapel)	Billy Grassie	Eugene d'Aquili	Katharine Houk	Paula Murray	Jennifer Whitten & Children's Staff	Frank Toppa	Elizabeth White
10:15 p - 7								Farewell Party (Newton)

¹Room abbreviations are: AB = Art Barn; EI = Elliott; FL = Front Lawn; LW = Lawrence; NB = Newton back; NF = Newton front; PK = Parker; PP = Pink Parlor; SP = Sandpiper.

²There will be an excursion to Appledore Island on Monday afternoon. Please sign up on Sunday.

³Free University² and other activities organized by conferees will be announced on the island and scheduled for the 1:40 to 2:40 period.

⁴The Annual IRAS Meeting will start at 1:40 pm and probably be over by 2:40 pm. It will be followed immediately by a meeting of the new IRAS Council, which may last until 5 pm.

⁵Council meetings are open, observers are welcome.

⁶The Star Island Orientation, conducted by the Star Island staff starting at 4 pm, is the one and only scheduled activity that is mandatory for all conferees.

⁷The IRAS/Zygon reception starts at 5:10 pm and merges into the social hour. All are invited; we urge you to join us.

⁸There will be a lobster dinner on Wednesday. Tickets are \$5.50 per person and must be purchased by Monday noon. Lobster diners should be seated by 6:15 pm.

⁹On Thursday evening, the plenary session discussion will end at 9 pm and the Candlelight Service will begin as soon as the Pelican Show is over.

¹⁰The snack bar closes at 11 pm. Socializing and informal discussions can continue until dawn. There will be dancing in Brookfield after Candlelight.