Dr. Forrest Hall:
As Donald Rumsfeld once remarked, “There are no ‘knowns.’ There are things we know that we know. There are known unknowns. That is to say there are things that we now know we don’t know. But there are also unknown unknowns. There are things we do not know we don't know. So when we do the best we can and we pull all this information together, and we then say well that's basically what we see as the situation, that is really only the known knowns and the known unknowns. And each year, we discover a few more of those unknown unknowns. What Donald left out was the domain of the unknowable. The domain of true mystery. Mystery is not what we do not yet know. Mystery is the unknowable. Mystery lies forever beyond the reach of science. As Rabbi Abraham Joshua Heschel remarked, beyond the shores of the knowable glides the ineffable.

The claims of science and religion overlap in the domain of the knowable. The province of religion is the unknowable. In between, is where religion and science have traditionally clashed and still do. Astronomy and biology vs creationism. Biological understanding of fetal development vs “right to lifers”. Modern genetics’ of sexual preferences vs “gay recovery therapy”. Love the sinner but not the sin.

An important function of religion historically, at least for some, has been to provide explanations of the unknown. For example, the need to explain natural phenomena in terms of higher powers; Thunder and lightning, typhoons, hurricanes. Thunder is named after Thor, the hammer-wielding God. Lightening is associated with Zeus, a God who rumbled through the heavens hurling bolts of lightning at his enemies. Typhoons are named after the God Typhon. Hurricanes after the Mayan God HuriKan.

The function of science from its beginnings has been to reveal the as yet unrevealed. The unknown. Every new revelation, every new discovery has understandably encroached on the realms of religion. In astronomy there is the well-known conflict between the Roman Catholic’s medieval belief in and doctrine of the geocentric theory of the universe that held that the Earth was immovable and was the center of all creation. This doctrine has its earliest documented roots in both Greek astronomy and in Hebrew scripture. Both philosophers and priests perceived that the Earth did not move while, obviously, the stars and planets did. The Hebrews were perhaps the first to record a geocentric theory. The book of Joshua in the Hebrew Bible proclaims “And the sun stood still, and the moon stayed, until the nation took vengeance on their enemies.” But the Greeks made the same mistake. The misperception is understandable. Lacking no instruments of perception beyond the unaided senses, the universe seemed a small, cozy place. The Earth appeared to be its center, immovable with the stars moving on crystalline spheres just above.

It is hard to appreciate - in retrospect - how big a revolution in human thought and imagination it took to move beyond a geocentric theory. To realize that the Earth is as enormous as it is –
and it is spinning slowly through space -- and it is orbiting about the sun once per year -- while the sun itself is orbiting about the center of the milky-way galaxy at 500,000 mph. And our galaxy is moving relative to the trillion other galaxies in the universe at a million mph . . . What is also perhaps understandable, but most unfortunate, is that there is always a human segment of society that feels threatened by new revelation. In that regard, religion often has had a retarding effect on the progress of science, even today as legislators try to retard the use of fetal materials in research, so vital to developing cures to many of the horrible genetic diseases leading to the deaths of thousands of children each year.

We often think of science as foreign to religion. But in my view, science is simply continuing revelation, the unveiling of a mysterious cosmos. Science has taken us a long way from the Greeks and the Hebrews, revealing the Universes’ unbelievable and incomprehensible majesty. Revealing that our universe was born 13.75 billion years ago by the emergence of all its space-time-mass and energy from a tiny tear in an eternal vacuum; all the mass and energy of its trillion galaxies, each with a billion stars, some similar to our own. And if we have trouble wrapping our limited human minds around that, we can add that perhaps there may be infinitely many other universes like ours. Such is the physics of the infinite nature of being.

These revelations have had a huge impact on the theological understanding of scripture. With Big Bang cosmology, no longer can the creation story told in the first chapter of Genesis be understood as literal. Yet in that story, we see parallels with the modern creation story. “In the beginning, the Earth was without form and void, and darkness was upon the face of the waters...” In the Genesis story, creation also plays out gradually over time. Took nearly a week! With the theory of biological evolution, no longer can the second story of creation in Genesis, the creation of Adam and Eve be understood as literal. If Adam came first, where did he get his x chromosome? Yet we also see parallels. Adam and Eve are sculpted from dust. Star dust perhaps?

In my personal view, God has revealed through human endeavor, a universe grander than we can imagine, certainly grander than we can see. A universe made of tiny point particles, so small as to be nearly immeasurable; quarks, electrons, neutrinos all dancing to a cosmic choreography; electromagnetic forces whirl electrons about atoms, quarks dance in a ménage à trois to form protons and neutrons, bound by the strong nuclear force. Planets and solar systems spin through the cosmos gently guided by gravity.

And together, humans continue to co-create reality on spatial scales ranging over 60 orders of magnitude, from the smallest possible observable, 10^-35 meters, the Planck length, to the largest observable part of the universe, 10^+26 meters.

If the scriptures were re-written today, incorporating the last 300 years of scientific revelation, then were once again lost, then rediscovered generations hence - those writings would seem even more fantastic to that future generation, even harder to believe than those of Genesis written nearly 4000 years ago!
Rev. Gabi Parks
Clearly, science and religion have influenced each other throughout the centuries. But what about art and science? Well, for one, artists help communicate scientific facts to people who are not familiar with them. Story:
One of those “coincidences” in life brought me downstairs last week, just as I was starting to write this sermon, to the Children’s Religious Education area. And there, on a table, was this book: Born with a Bang. How would YOU explain the big bang, or the concept of particles and anti-particles, or galaxies, to a child? The ONLY way I can imagine is by drawing a picture, something this artist, Dana Andersen, did in a phenomenal way. On the painting of the Cosmic Christ which we will share with you later, there is a depiction of Isaac Newton, sitting under an apple tree, with an apple falling from the tree. What a good illustration of gravity! --- Of course for Newton the observation of the falling apple led to the realization that what made the apple fall was the same force that makes the moon fall towards the earth. Definitely, artists serve as a great partner in the communication of science. (I’m sure you can come up with dozens of examples for the way art makes science approachable to non-scientists.)

In a different area, all the healing sciences have been helped tremendously by art. Just look at the support music therapy can give a traumatized person. And how a child’s drawings can help diagnose a condition without the use of words. In a class I took for my doctorate, we learned about ministry to people who had experienced trauma. One of the techniques mentioned was to make people tell and re-tell their stories; if they couldn’t talk about it, they were encouraged to write poems or songs about it, or draw and paint. Artistic expression can step in when cognitive or behavioral therapy, or pharmaceuticals, won’t work.

Dr. Forrest Hall
Science perhaps has its origins in Art. Art is the first recorded expression of advanced human intelligence and consciousness. Perhaps there was also religion, but the only evidence of this is expressed in art, animal-shaped sculptures that may have represented deities. Mathematics arose in the human mind roughly 10,000 years later in Sumeria. Science followed much later, arising barely 300 years ago, during the renaissance. Art of course has many dimensions, but as Gabi pointed out with the children’s book “Born With A Bang,” representational art has been profoundly affected by these revelations of science over the past 300 years. And perhaps that is demonstrated most recently in the painting here, the Cosmic Christ, where we see first of all, the interconnectedness of creation, the great web of being that links us to the very beginning of the cosmos, 13.75 billions of years ago. And how that interconnectedness evolved, obeying the laws of physics, the cosmic dance, to form elementary particles, and from them, stars and galaxies, and from those, billions of solar systems, many similar to our own, and finally the unbelievable miracle of star dust evolving to create a self-
aware universe, capable of staring out onto itself, its twinkling necklaces of stars and proclaiming, WOW!

There is a book called the “Dictionary of Science”. Its purpose is to list and describe the major scientific discoveries in physics, chemistry, biology, and so on. But it is not until we see all this knowledge as an interconnected whole that we begin to realize its spiritual nature, in my view, the Divine nature of the cosmos, the Divine Other that lies forever beyond science. As Rabbi Heschel puts it, the ineffable. And here is where Art reaches back to influence science. Makes science more than just amoral -- uncaring revelation, but infuses scientific knowledge with the Divine.

Rev. Gabi Parks

Perhaps the most obvious connection is the relationship between art and religion. Religion clearly influences art: Even the earliest paintings we know include religious imagery. Forrest once told me about touring the cave of Lascaux in Southern France -- Lascaux was painted roughly 15,000 years ago by homo sapiens, a human perhaps not too unlike modern humans. Maybe nearly identical to us in many ways.

As Forrest walked through the grand chamber of Lascaux, he was stunned by the paintings that soared above him in the grand hall of the bulls. He told me that within Lascaux there are over 2000 images, bulls, horses, stags, cattle, bison, a bear and even a rhinoceros. All those animals were painted in an amazing pallet of colors, possibly paying homage to the earliest awakening of human consciousness to the majesty and mystery of creation. Interestingly, only a single human form appears.

Nobody knows for sure the meaning of those spectacular paintings, or what the artist or artists intended. What we do know is that 15,000 years later, thousands of these artists’ ancestors still stream through Lascaux each year, experiencing profound feelings of awe and reverence. Lascaux is indeed the Sistine Chapel of the prehistoric world.

The artist John Robinson wrote after a visit to the Chauvet Cave in France: “I believe that the genesis of art is religion. I don’t believe that these paintings were just a one off miracle of creativity. The beginnings of the long path of evolution that led up to these paintings must have been rooted in the ancient religion of Homo sapiens.”

Early Hellenistic art found its expression in the Temples and statues dedicated to Gods and Goddesses. The oldest surviving depiction of Jesus dates back to 70 CE; Russian icons were painted starting in the 10th century; Persian Muslims have created priceless miniatures representing Allah; and then there is the world’s most famous burial chamber – the Taj Mahal. Buddhist believers have created for more than 2000 years, and still create statues of the Buddha as well as beautiful Mandalas; and I’m sure you all have seen the beautiful exotic paintings of the Hindu gods and goddesses, with their pale blue skin and big, dark eyes; or statues of Ganesh, depicted as an elephant with 8 arms.

Most visible today are the churches, temples, synagogues and shrines that have been built throughout the centuries. The artwork in the stained-glass windows, the objects used in
worship and during special rituals made of silver and gold are elaborately painted and decorated. So yes, it’s obvious how religion has influenced art, might even have been an essential root.

But what about the other way around? Does art influence religion? Oh yes! In the sense that, as with science, artists draw, paint and sculpt religious images according to their understanding of the Divine. People who look at such artwork will in turn be influenced, through the artist’s interpretations.

Let me share with you a key experience that I had while in my first year of seminary: with a group of students I had travelled to Washington to the National Gallery of Art. Unexpectedly, when turning a corner, I was confronted with Dalí’s painting of the Last Supper: On a canvass 2 x 3 yards big, I saw Jesus as a good looking young man. My instinctive reaction was, “Yes, he is human!” I saw a man who had dinner with his friends, friends who did not worship him, but rather were focused on their own thoughts. And I was okay with this image!

This was a very important acknowledgement for me because I had struggled so long with the doctrine of the Divinity of Jesus, it had kept me away from all the other aspects of Christianity. It was the beginning of a new spiritual journey that eventually brought me here to State College.

This is but one example of how art influences religious thinking.

And how about church music? Haven’t most of you, at one time or the other, been uplifted by a hymn, felt a sense of awe for the immensity of an organ recital?

Thousands of young people from all over the world travel to Taizè in France to experience religious feelings brought on by chanting sacred chants, and I know a lot of people who have been calmed by chanting.

For Native Americans, chanting is a spirited communication with their Divine; also their drawings reflect the belief that animals they hunt are not prey, but rather friends and co-creatures who give of themselves to feed the humans.

Forrest and I have now explored the inter–relationships between art and science, art and religion, and religion and science. But it gets even better – I have an example of all three fields inter-relating: Researchers from Princeton as well as Harvard discovered that in the 13th century, sets of tiles inspired artisans to use complex mathematics to create fantastic geometric patterns which adorn many mosques in the Islamic world. Cool, isn’t it?

Dr. Forrest Hall

Let me tell you at the end of our ramblings, what got us started writing this sermon in the first place. This (pull out the poster) painting by Alex Grey combines art with science and religion in a unique and captivating way. For example, Grey tells the story of the evolution of consciousness by linking it to the theme of overcoming or mastering gravity: there is Newton with the apple, airplanes, rockets, starships, eventually aliens and beginning of a relationship with them.

The painting is also about how we are made up of stories, for examples scenes of the Nativity, Christ’s ascension, etc). Grey points out that human history is our collective story: there are
pictures of St. Augustine, Einstein, Francis of Assisi, Marie Curie, people reading Tarot cards, Greenpeace stopping whale hunters. Paintings below are different scales of awareness (galaxies, comet, sunburst, etc). Grey shows that there are of millions and millions of realities are going on at the same time all over the world, and that we are enmeshed in that.

He shows how we have never been at this stage of evolution, and that problems are to be expected. We are waking up to our inter-connectedness, while becoming aware that we are destroying the web of life.

Grey is sure that is possible that humanity can mature, and become responsible for the way we treat each other, the planet. And - we are blessed by many spirit beings, and above the earth there is the cosmic mother.

So here we come full-circle. Homo Sapiens was the first human capable of Art. Then mathematics, and finally physics giving rise to chemistry, biology, ecology -- their revelations in turn showing forth the true nature of Divinity -- Which now we hope, will further guide human evolution to a shining city on a hill, where justice will flow like water. Without that guidance, our power and our knowledge, now a force of nature stronger than the ancient Gods of thunder and lightning, are capable of destroying the Earth herself. Through the revelations of science we are aware that we possess the ability to return the earth to the smoldering ball of fire that it first was, 4 billion years ago.

But really, that is up to us . . .

The Cosmic Christ, by Alex Grey