



with Mark Hanf
Friday, April 11, 2014
New York City
Academy of Sacred Geometry

Leonardo DaVinci has been revered around the world as one of history's greatest minds. This Renaissance Man, in the truest sense of the term, combined geometry, science, engineering, and architecture into his prolific art. His work is some of the most recognizable in all the world and yet still holds many secrets consciously embedded by the master for us to find over 500 years later.

I invite you to join us for **Leonardo's Mind: The Geometry of the Renaissance** for a fascinating journey through the imagination of the genius. We will explore 2D and 3D models of the geometries that the Renaissance artists used to create their masterpieces and learn how we can incorporate them in our own work. Through animated analysis of the paintings and architecture of the Renaissance we will discover how Leonardo and his colleagues encoded this geometry to literally point at our profound and mysterious connection to the Universe.

*As an artist, as well as a geometer,
I assure you that this workshop is perfect
for those who love Mathematics, as well as those who are intimidated by it;
for those who love Art and Art History, as well as those who are intimidated by it,
and everyone in between...*

Please join us!

Mark

Leonardo's Mind: The Geometry of the Renaissance



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Becoming familiar with the myriad ways the Geometry of Nature is revealed through fractal patterns, harmonic ratios, and sacred cycles allows one to experience a profound sense of interconnection from the subatomic to the galactic level and to design and align in accordance with this elemental flow. This multi-faceted workshop invites participants to experience the elemental structures of Sacred Geometry through exquisite multimedia, individual instruction in hands-on drawing with the classic geometer's tools of architectural compass and straight edge, and collaborative construction of 3-D geometric models.

Mysteries From Antiquity

Geometry, one of the world's oldest sciences literally means "earth measurement", and in the wider sense, concerns itself with the measurement of all Space. Deep within this study lies a beautiful and mysterious system of Living Wisdom with its vibrant, archetypal forms that have fascinated philosophers and sages from all spiritual traditions since antiquity. Beginning with a comprehensive multi-media presentation, we trace this lineage and explore clues from Ancient Egypt, Persia, Greece and the British Isles. Master Geometers such as Pythagoras, Plato, Euclid, Leonardo and others show us how this wisdom is applied to all aspects of human culture through Sacred measure, Sacred Space, Sacred Number, Astronomy, navigation, architecture, dance, music and art.



Revealing the Jewels of the Ancient Elements

Like a master jeweler cuts a stone with precision to create a sparkling gem, the geometry of the sphere can be divided into the perfect solids in which every angle and facet are exactly equal. Mysteriously, there are only 5 forms in the Universe that fulfill these requirements and they have been known for thousands of years. These forms are so fundamental to the architecture of Nature, ancient philosophers regarded them as the five elements themselves. Modern scientists are discovering that these forms hold the key to many riddles in fields such as Chemistry, Physics, and Biology. In this session we will explore these 5 Platonic solids using Leonardo's own illustrations and a 3-dimensional hands-on modeling system called Zometools. Kinesthetically exploring the angles, faces and "feel" of each form is a revelation in itself. We will also examine the symbolic significance of each form through a multimedia presentation that weaves together ancient art, architecture, and history, as well as contemporary science.

Golden Proportions

Nature's Architecture within the symphony that we call Universe integrates distinct relationships that are beautifully harmonic and resound on every scale of creation. We will discover how Artists and Architects throughout history, but especially during the Renaissance, have consciously integrated these proportions into their compositions so that they become vibrant and resonate with the greater whole. Nearly 500 years ago, Leonardo illustrated the first book on the "Divine Proportion." We will investigate this mysterious "golden" proportion and practice constructing it in a number of different ways so that all participants become very comfortable implementing these methods in future artwork and designs. Our examination of the Golden Ratio will conclude with a multimedia finale that expresses how this profound relationship is not an abstract mathematical concept, but rather a dynamic pattern of growth and movement that manifests in myriad forms throughout the cosmos.

Participants will need a notebook, drawing compass and straightedge.

About Mark



Mark Hanf is an artist and educator who has been exploring the nexus of science and art his entire life. In 1995, he was nominated to attend the NC Governor's School in Science, Art, and Mathematics, and ultimately chose to study Fractal and Non-Euclidean Geometry. Mark went on to attend Davidson College, where he continued to study Math and Science through astronomy, chemistry, and physics, and integrated these topics into his art. He received a BA in Visual Arts from Davidson College in 2000, with a special focus on Science, Religion, and Environmental Architecture. While still in school, he researched, designed, and drew blueprints for a passive solar, off-grid, earth-sheltered home that incorporates key elements of geometric design like the golden ratio, as well as rain water cisterns, recycled materials, solar panels, and a bio-diesel generator. After graduating, Mark interned with Michael Reynolds at Earthship Biotecture in Taos, New Mexico and then returned to western North Carolina to build that home with his family.

From 2001-2007, Mark taught at the Rainbow Mountain Children's School in Asheville, NC, where Multiple Intelligence theory and a holistic approach are blended to create an interdisciplinary, experiential, life-long learning environment. He taught middle school math and science and developed a unique curriculum that integrated environmental science, astronomy, cosmology, synergetic and ancient geometry.

In 2006, he was a participant in the Design Science Lab in Asheville, a ten-day international think-tank sponsored by The Buckminster Fuller Institute and the United Nations that addressed global sustainability with an emphasis on energy, environmental, health, and educational issues. Since then he has worked with the Buckminster Fuller Institute (BFI) and a team of educators and multimedia artists to produce Aboard Spaceship Earth (ASE), a 21st Century Global Studies program that integrates Geography, Science, and Geometry. For the past 3 years he has served as director for ASE and has been designing the curriculum, as well as producing tools and

materials. He has presented Aboard Spaceship Earth programs locally and regionally to a wide range of groups including elementary and middle schools, college students, and adults. He has also produced a range of events in collaboration with the Black Mountain College Museum + Arts Center and The Education Committee of the BFI, sharing the work of Buckminster Fuller with "design scientists" of all ages.

In 2008, Mark co-founded Geometry of Nature, LLC, and has served as its creative director ever since. He has presented numerous lectures, classes, and hands-on workshops in collaboration with a variety of schools and organizations including Sidwell Friends School, The National Association of Independent Schools (NAIS), the Washington DC Public School System (DCPS), UNC Chapel Hill-World View, Davidson College, The Global Institute for Sustainable Technologies, (NCCAT) and the American Institute of Architects (AIA). Mark is on the faculty of the Academy of Sacred Geometry along with some of the world's leading teachers in the field. He is also on the faculty of the New York School of Feng Shui, where he regularly teaches a course entitled The Tao of Geometry that explores the relationships of Chinese sacred symbols and fractal geometry.

Since 2010, Mark has been partnering with MuseCycle Media to produce a range of digital educational products including STEM animation and videos (science, technology, engineering and mathematics), multimedia lesson plans, and iTextbooks for iPad.

Mark is also a professional artist and creates work that weaves together his wide range of interests including science, math, and history. His paintings examine Nature's architecture and symmetry and recently he has been using CNC (Computer Numeric Controlled) routers and lasers to create a body of sculpture and prints that explore fractal Geometry. His studio is part of Marshall High Studios, a complex located on a tiny island in the French Broad River in the Mountains of NC.