

**Readings and Memorial Address for
Dr. Sherri Lynn Rumer Cooper**

1/28/1956–11/23/2015

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December 5, 2015

Bryn Athyn Cathedral

Readings

[H]eaven is where the Lord is recognized, trusted, and loved. The different ways he is worshiped . . . do not cause harm but bring benefit, because they are a source of heaven's perfection. . . . Every perfect whole arises from a variety of elements, for a whole that is not composed of a variety of elements is not really anything. It has no form, and therefore no quality. However, when a whole does arise from a variety of elements, and the elements are in a perfected form in which each associates with the next in the series like a sympathetic friend, then it has a perfect quality. . . . We can see that this underlies all perfection from every instance of beauty, charm, and delight that moves both our senses and our spirits. Such instances arise and flow invariably from a harmonious agreement of many things that are in sympathetic concord. . . . They do not flow from a single unit that lacks plurality. . . . We can see from this, as though in a mirror, how perfection stems from variety in heaven as well, since things that happen in the natural world offer us a reflection of things in the spiritual world.

(Emanuel Swedenborg, *Heaven and Hell* §56)

O Lord, our Lord,
How excellent is Your name in all the earth,
You who set Your glory above the heavens! . . .
When I consider Your heavens, the work of Your fingers,
The moon and the stars, which You have ordained,
What is humankind that You are mindful of them,
And their children that You visit them?
For You have made them a little lower than the angels,
And You have crowned them with glory and honor.
You have made them to have dominion over the works of Your hands;
You have put all things under their feet,
All sheep and oxen—
Even the beasts of the field,
The birds of the air,
And the fish of the sea
That pass through the paths of the seas.
O Lord, our Lord,
How excellent is Your name in all the earth!

(Psalm 8:1, 3–9)

From many things in the world, enlightened reason can see the infinity of God. . . . In the entire created universe, no two things can possibly be the same. It is impossible for any two things to be identical at any given point in time, as human scholarship and reasoning have seen and verified. . . . Neither can the world have two identical situations over time. . . . This is also provable from human faces. In the whole world, not one face exists that is the same as another or similar in every way. Nor will there ever be two identical faces to eternity. Infinite variety like this could occur only as the result of God the Creator's infinity. . . . As an example [of infinity] from the animal kingdom, take fish in the ocean. If [all the fish that were born survived to adulthood], within twenty to fifty years fish would fill the ocean to the point where it contained nothing else. . . . To prevent this, God has provided that fish become food for other fish.

(Emanuel Swedenborg, *True Christianity* §32:1, 3)

Another parable [Jesus] put forth to them, saying: "The kingdom of heaven is like a man who sowed good seed in his field; but while men slept, his enemy came and sowed tares among the wheat and went his way. But when the grain had sprouted and produced a crop, then the tares also appeared. So the servants of the owner came and said to him, 'Sir, did you not sow good seed in your field? How then does it have tares?' He said to them, 'An enemy has done this.'"

(Matthew 13:24-28)

We know that there are internal organs [within us]. . . . There are also skin, membranes, tendons, cartilage, bones, nails, and teeth. . . . If there are to be all these elements in . . . heaven, it cannot be made up of the people of one religion only. It needs people from many religions; so all the people who make the two universal principles of the church central to their own lives have a place in . . . heaven.

(Emanuel Swedenborg, *Divine Providence* 326:10)

[Jesus said,] "Let not your heart be troubled; you believe in God, believe also in Me. In My Father's house are many mansions; if it were not so, I would have told you. I go to prepare a place for you. And if I go and prepare a place for you, I will come again and receive you to Myself; that where I am, there you may be also."

(John 14:1-3)

Address

On behalf of Dave, Zia, and Anji I would like to welcome you all to this service to celebrate the life of Dr. Sherri Lynn Rumer Cooper.

I would like to frame this talk in terms of four closely related qualities that were important to Sherri: *diversity, evenness, balance, and harmony.*

I think she learned a lot about these qualities by studying diatoms, so if you'll indulge me, I'd like to start by telling you some of what she discovered in her research about them.

Diatoms are single-celled, microscopic, plant-like creatures encased in clear, complex silica shells of astounding beauty and variety; they live in the water, but are in a sense closest to the sun in the food-chain. They do what no human chemist can do: they take sunlight and turn it into food. They are invisible to the naked eye, and so are easily underappreciated, but they supply about a quarter of the biomass, a quarter of the food, and almost a third of the oxygen on the planet; although most of us have never heard of them, their loss would be even more devastating (I'm told) than that of all the rainforest.

There are hundreds of thousands of species of them, all different, but they fall into two basic categories; so called "benthic" or bottom-dwelling diatoms, which are generally shaped like a feather and so are called "pennate"; and "planktonic" or floating diatoms, which tend to be round, at least seen from one angle, and are therefore called "centric."

Sherri devoted a lot of time to studying diatoms in the Chesapeake Bay. She found that they tell a very precise story year by year about ecological conditions in the distant past. And what she found was that for thousands of years there was a stable balance in the bay; the bottom was covered in hundreds of species of diatoms that happily coexisted and thrived through their diversity; there was plenty of sunlight for all, streaming through the clear water. Then in the eighteenth century the human land use inadvertently drove up the levels of nitrogen and phosphorus in the water, with the result that one or two species of planktonic or floating, centric diatoms became dominant. In what is rather kindly called a "bloom," these floating diatoms reproduced wildly and upset the balance in the bay; they hogged the sunlight, killing all the benthic diatoms at the bottom; then ran out of silica and nutrients, died, sank to the bottom, and in the course of rotting, sucked all the remaining oxygen out of areas of the bay, creating what is called "anoxia," or lack of oxygen, which affects everything in the food chain. It is not an irreversible condition, but an extremely dire one nonetheless.

To Sherri I think the contrast between the *heavenliness* of a stable, longstanding condition of diversity, evenness, and balance, and a *deadness* because just one species on land changed the land use, and just one or two others in the water

became devastatingly dominant as a result, was highly instructive and attention-getting.

And what about *evenness*? Even non-scientists know that diversity is important for a rich, vibrant ecosystem, but not as many of us are aware that it is not just the *number* of different species present, but how *evenly* they are distributed that matters. In formulas used by scientists to determine diversity, the evenness of each species is part of the equation. Having a hundred or even a thousand different species in a given environment does not supply much stability or balance if just one of those species hogs 75 percent of the space and controls 95 percent of the nutrients.

Is this an issue among humans as well? Do humans sometimes want to exercise their will on each other, and dictate how others should be? Do some take more than their fair share? It seems we sometimes do!

I say this at the outset because understanding how crucial *diversity*, *evenness*, and *balance* were to Sherri helps us understand choices she made, and values she strove mightily to achieve and uphold in her life.

Let's take *faith* and *science* as key examples. Now, in many ways it seems as though faith and science are hardly on speaking terms in our world. Although they quietly get along in some areas, they are widely seen as incompatible. And some scientists even despise people of faith and some people of faith despise scientists. Yet Sherri was strong in both faith and science.

Let's take her *faith* first: She grew up a Methodist, went to Sunday school, got confirmed; asked her ministers many questions and carefully pondered whether the answers made sense to her or not (most of them did!); she read the Bible; and as a teenager attended a youth camp, and gave her life to Jesus. And she meant it and stuck with it. For evidence of the strength of her faith we need look no further than the way she carried herself during her terminal illness. She had a poise and calm, even an inner peace, and took all kinds of troubles in stride. When her doctors marveled at her attitude, she told them that she knew that no matter how bad a given day was, a good day was coming soon; and she would focus on that.

Her faith was beautifully and elegantly simple at its core, but it was no wooden or static thing; at the end of her life, after gaining much wisdom and experience, she was still actively pondering many deep questions.

Yet she was also utterly devoted to *science*, deeply wedded to the scientific method, and delighted by the kinds of truth that could be unearthed from careful, disciplined study. And her hard work and stellar results made her a respected contributor to the field of science.

To touch on an issue of balance within science itself, Sherri cared about gender-balance; there is much concern these days about the need for more women to participate in fields called STEM: science, technology, engineering, and

mathematics. The desired goal is surely not a flip from one dominant gender to another, but evenness, and mutual cooperation and respect. She saw it as important for the good of the whole that she and other women make contributions to the field of science, and that took a great deal of hard work on her part, and considerable support from her husband and children as well.

To get a glimpse of her work in science, let's review her Curriculum Vitae for a moment. Her full C.V. from 2012 is an impressive 17 pages long. I will merely summarize.

She received a Bachelor of Science degree in Botany in 1978 from Duke University; a Master of Science degree in Marine Sciences from the University of Delaware in 1982, and a Ph.D. in Paleoecology from Johns Hopkins University in 1993, working with palynologist Grace Brush. Sherri was Assistant Director of the Mid-Atlantic Regional Marine Research Program from 1993–1995 and a research professor at the Duke University Wetland Center from 1995–1999. Then she became an associate professor at Bryn Athyn College, head of its mathematics and science division, director of its biology program, fundraiser and codesigner of its Doering Center, chair of its research committee, a researcher, teacher, and mentor, and a member of 17 different committees at various times.

We also learn from her C.V. that she was certified as a Senior Ecologist by the Ecological Society of America.

Her C.V. lists

- 12 papers in refereed journals, including an article published in *Science* in 1991 when she was a mere graduate student, which is still being cited
- 10 refereed reports or chapters in books
- 45 published abstracts of presentations at conferences
- 13 technical reports she authored
- 8 grants she was awarded, some for hundreds of thousands of dollars
- 40 seminars and presentations she gave, 13 workshops she participated in, and 2 symposia she organized
- 4 professional societies in which she was an active member
- 11 honors and awards she received
- 8 graduate committees on which she served for Master's and Ph.D. students in Finland, Canada, and the U.S.
- 2 boards on which she served: for the Pennypack Ecological Restoration Trust, and for the Atlantic Estuarine Research Society.

And as part of the system of peer review, she reviewed 28 articles by others for a variety of professional journals, 12 grant or book proposals for publishers including *National Geographic* and the National Oceanic and Atmospheric Administration

(NOAA), and 1 White House committee report on environment and natural resources.

And even this list doesn't do full justice to her impact; she did figuratively and literally groundbreaking work taking core samples in estuarine sediment—areas so richly diverse that other scholars generally avoided them as too complex. The work she did has already become scientific bedrock on which much other work has been done around the world.

If we picture the land as a wedge coming to a point from left to right, and the ocean as a wedge coming to a point from right to left, the intersecting point of balance would be the estuaries in which she was studying—some of the richest and most diverse areas on earth.

Yet all that was to her just one element of her life, albeit a very significant one; that was her work. To strive for balance, it should not be allowed to overwhelm everything else in her life. She worked to have it balanced with a home-life, with family and friends. These connections of the heart were very important to her.

If I may be so bold, you, dear friends who are gathered here today, are a diverse group, are you not, with a fairly even representation of science and of faith (in fact, of several different faiths, and also widely different approaches to the same faiths). And you are all connected, in one way or another, with Sherri; and she valued you and your role in her life.

So let's look for a moment at her life story among her loved ones.

She was born on January 28, 1956, to Ralph and Shirley Haynes Rumer, a couple that had met at Duke University in Durham, North Carolina (an institution that figures largely in Sherri's story later on). Sherri was the first of four girls: she was followed by Sue, Sandy, and Sarah. Although her sisters were blond-haired and blue-eyed, Sherri was dark-haired and had dark, rather exotic eyes. She told me once that because of this, she thought of herself in childhood as the "China baby" and always felt an affinity for things Chinese.

Her sisters admired her greatly for her excellence in school, and for being "a model citizen." Hardworking, intelligent, and fun—she was, they say, "a hard act to follow"!

Sherri was exposed to the joys of water in several ways in her childhood. She and her family would go to Core Point, North Carolina, to a summer place shared by members of her extended family going back to around 1740. Their properties graced the south shore of the mighty Pamlico river, a great estuary where the descending freshwater river meets the incoming saltwater tide. The Pamlico runs roughly eastward into Pamlico Bay, which extends further until it brushes up against the back of the Outer Banks. She developed a deep love of the water and nature there.

She has been there more or less every year of her life. In fact, just this past summer she went back again to visit family there.

In her childhood she also discovered that water was a subject of *scholarly* fun as well. Her father, who had a Ph.D. from MIT, taught civil engineering especially as it relates to water, and conducted research for many years at the State University of New York at Buffalo. He did some unique experimentation there in a rotating laboratory he had constructed to simulate the effect of the earth's rotation on the motion of large water bodies, such as the Great Lakes. It was quite a large structure, fifteen by seven feet. His students used it to investigate circulation and pollutant distribution in a model of Lake Erie and also in a model of Lake Ontario. It is not hard to imagine that this amazing device made an impression on Sherri in terms of the fun to be had in the scientific study of water.

At school Sherri made great friends, and managed somehow to keep in touch with them quite actively through the years; one group of researcher friends of hers in particular has had regular reunions over the decades, including a get together in a beach house some time after Sherri's diagnosis.

When she was living and working in Maryland she met Dave Cooper and they became friends. In 1986 she decided to take a job in Charleston, South Carolina, an eight hours' drive to the south, but was on a shoestring budget and didn't know how she could move down there. Dave had a truck and offered to borrow a trailer and help her move. This act of old-fashioned chivalry made an impression on Sherri; and she must have made an impression on him: during the fourteen months that she was down there, Dave made that long drive several more times just to visit.

Dave himself was and is a man of faith, and talked to her about the particular brand of Christianity to which he belongs, known as Swedenborgianism or "the New Church." The person whose books started it, Emanuel Swedenborg, was himself a well-known scientist in 18th-century Sweden. Sherri was intrigued to find a form of Christianity that was particularly "science-friendly"; for instance, because it reads the Bible as having a deeper, more psychological level of meaning, the New Church does not espouse creationism and has no problem with evolution.

Three other teachings of Swedenborgian Christianity in particular were attractive to Sherri: One was that people of all faiths can be saved. Like the tolerant and mutually supportive attitude reflected in the lives of her benthic diatoms, the New Church actually celebrates the existence of a diversity of religions. Swedenborg even says the variety of religions is important, and anyone who actually practices the teachings of a given system is doing what is needed to be saved.

Another teaching that was important to her was the idea that we should put faith only in teachings that make sense to us. True faith is defined in this tradition as an inner recognition of the truth of something because it makes sense to us, rather than

a decision to endorse something someone else tells us to believe even though we can't quite get it to work in our minds.

And a third teaching she liked a great deal was the idea of correspondences. Swedenborg says that beyond the physical world of matter, there is another world, a world of what he calls substance, and of the two, the spiritual world is actually the more real. So this opens up a way of looking at something like microscopic diatoms as echoing what goes on in human society and even in heaven.

Here, for example, is a statement she made at the dedication of the Doering Center:

It is probably well known and perhaps obvious that the study of science teaches us to think analytically. But it also teaches us to think creatively. It can inspire as well as educate. As scientists delve deeper into the nature of our universe, and of ourselves, we learn the incredible complexity of interactions as well as the astounding elegance inherent in all of nature. We learn about creation and by correspondence, the Creator.

Another example of her thinking in terms of correspondences is captured in this exchange, related by Dave:

Her students would ask her about the hot-button issue of evolution—something creationism does not espouse. Sherri would respond by asking the students to reflect on their own development. “You were an egg; then a multicelled creature with a heartbeat but no breath; then you became a breather; then your senses developed; then you developed a rational mind. Are you not evolving? Evolution is natural and happens on multiple levels. It is a consistent story.”

Sherri didn't see her embrace of the New Church as a *conversion*, but rather as a *clarification* of the faith of her youth.

She moved back to Maryland, and Dave and Sherri decided to get married, and did so in 1988; and Sherri immediately started work on her Ph.D. at Johns Hopkins, finishing up in 1993.

In 1995 she and Dave moved to Durham, North Carolina, where she took a position as an assistant professor at the Duke University Wetland Center. Tragically, that very same year her mother Shirley passed away suddenly.

During this time Sherri had visits from professors at Bryn Athyn College (a Swedenborgian college in Bryn Athyn, Pa.) in the hopes that she would join their science division. Now, she had a long history at Duke, and she was a devoted fan of the Duke Blue Devils, and Duke is a large, well established and respected research center, while Bryn Athyn College is small and less well known; but she knew that at Bryn Athyn College she and her colleagues could dive fully into issues of both science and faith, and how the two inform each other.

If we again picture a wedge of land meeting a wedge of sea, but this time the wedge of land stands for religion as a whole, and the wedge of sea stands for science, then Bryn Athyn College is right at the point where they meet. It is a center, a spiritual estuary, and somewhere she could pursue a broad range of interests.

Dave and Sherri were in the process of adopting their first daughter, Zia, from China when they decided to move to Bryn Athyn.

Ralph, Sherri's father, had by then married Sallie, a member of Shirley's extended family who herself had a lifelong connection to Core Point. Ralph and Sallie were very gracious to Dave and Sherri, renting Dave and Sherri's home so they could move but keep a fixed mailing address for the adoption paperwork, and even selling the house for them.

In 2002 Dave and Sherri adopted another daughter from China, Anji. Sherri's professional duties were demanding, and she had to do a lot of traveling to attend all those conferences and give all those papers; yet she loved to spend time helping Zia and Anji with their homework, and took long walks with family and friends by the Pennypack, the ancient creek that meanders through this part of the Delaware Valley.

On every part of her journey on this planet Sherri made lifelong friends. For just one example, the cellist this afternoon, Tom Rosenberg, is someone she met in second grade and they have been devoted friends ever since. Many of you here today have known her for decades. She also somehow found time to go on holidays and vacations several times a year with members of her own extended family of origin and members of her husband's family. She made it work.

This balance was not easy for her to achieve. Sometimes the stress and exhaustion of being pulled in umpteen directions would be momentarily too much and she couldn't see how she could go on. But then she'd think of others, and find the strength to keep going. And the tremendous support she received from her husband (not to mention her many friends as well) sustained her throughout her career. Dave went with her to international conferences as far away as Perth, Australia, read drafts of her work, and supported her in countless ways.

Sherri was diagnosed with breast cancer in 2009, which went into remission with treatment. In August 2013 she was diagnosed with an unrelated Stage IV pancreatic cancer that had metastasized to her lungs and liver. Her devotion to science was so deep that she participated in not one but three clinical trials, in the hopes, of course, of a cure, but if not, at least of contributing even then to the furthering of knowledge.

At the time of her diagnosis Sherri and Dave invited me over for a visit, and then another. It soon became a regular thing every other weekend for the two and a half years of her illness. I mention this only because it allowed me to see how Dave

stepped up (and how supportive his business, Antech, was of his devotion to his family). Dave maintained an informative and even entertaining blog to keep friends near and far in the know. And I saw how family and friends from near and far rallied support and made countless meals and sent so much love and prayers. Zia and Anji, too, were amazingly supportive and affectionate and understanding. Dave and Sherri both talked to me often about how grateful they were to everyone and how much it all helped to sustain them.

Like many of you, I had the privilege of witnessing the beauty of Dave and Sherri's friendship, their marriage, and their collaboration together, and admired the balance, outward focus, and spiritual depth they had achieved. I also saw her unwavering faith in the life to come. A couple of weeks before she passed, she told me that in moments when she was physically alone, she had been sensing a warm, comforting presence in the room with her.

Scientific truth was extremely important to Sherri, but was enhanced by being in balance with spiritual truth; and both kinds of truth shone the most in the presence of love.

Diversity is important; the evenness of each individual component of the diversity is important; and balance between them is important.

But I think what Sherri was seeking was something perhaps even beyond these three; it was *harmony*. Harmony between faith and science; work and home; truth and love; harmony among people, and harmony among species. Her learning to play the violin as a child taught her about how things work together to create harmony, and so did the diatoms in the Chesapeake Bay.

And to keep things in balance and harmony you need to find their *center*. To Sherri, that center was what she had found as a teenager. Keeping the Lord at the center helped her find a harmony of love and truth, religion and science, home and work. Now she, as the good benthic diatom she was, would never insist that others share her views. But her belief in one Creator led her to believe that all of creation, including humankind, and all creatures great and small, even this world and the next, have a lot in common.

In the sparkling diatoms under her microscope, in their selfless, angelic service to the planet, in the balance in which so many of them lived, in their variety and sheer beauty and amazingness, she saw divine and heavenly qualities reflected. All around her, in her husband and children, in faculty and students, in her friends, in the mud of the Pamlico river with its shells and stones and shark-teeth treasures, in that richest of locations where the flowing fresh water meets the undulating salt tide, in simple sunlight and life-sustaining water, she saw the face of God.

When it was time to go, she went peacefully. On Monday, November 23rd, although she had been somewhat agitated earlier in the evening, her breathing became calmer, then quieter, then intermittent. Dave and Zia and Anji by her side realized at 11:23 P.M. on 11/23 that she was no longer breathing. When the hour met the day and the day met eternity, she lay gazing steadily into a high corner of the room, with a peaceful expression and an inextinguishable light in her eye.