

Sunrise in Gagliato

H.S. Wald PhD*

Science is a beautiful story.
— Ennio Tasciotti PhD

Sunrise in Gagliato, a small village nestled at the side of a mountain in Calabria. This is the southernmost region of Italy, the “toe” of the boot. I stand on the small balcony of my room in the quaint B&B and gaze with childlike awe and wonder at terraces sloping down toward the sea, earth-toned terracotta roofs blending into the landscape, fruit orchards, the natural beauty of the terrain. “Italy Heaven” they call it. I am too excited to sleep.

Vivid images of the prior evening’s festive welcome come to mind. I can still hear the traditional melodies as I danced in a circle with strangers, soon to be friends. Warmly embraced by the community upon arrival with live music, a community banquet, and an art installation featuring local artists for view, we danced and celebrated the moment together—scientists and physicians, townsfolk, children. Scientists feeling like “rock stars” amid cheers and applause—not exactly your typical opening conference plenary ... anything but ordinary.

NanoGagliato 2015 has come to town: a small international nanotechnology research conference gathering scientists, clinicians, entrepreneurs, and artists—an invited group. And this year, that group includes medical educator and psychologist, writer, reflective-practice-and-humanities-in-med-ed advocate me.

Strange bedfellows, perhaps? Not at all. Nanotechnology, I learned, focuses on the engineering of functional systems at the molecular level (targeted drug delivery, for example), and the conference title this year is apt for integrating my interests and my being: *Nanoexpansions: Interfaces That Drive Innovation*.

Within this multidisciplinary think tank of nanomedicine (the medical application of nanotechnology), aimed at creative solutions to crucial problems in public health and health care, there is a remarkably seamless integration of humanities, spirituality, and medicine; of the arts (visual art, film, dance) and science; of a cancer caregiver (me) and scientists on the front line. Plus yoga insights to start a mindful day. It is a template for the lived experience of translating current buzz words into action—that is, walking the talk of bringing scientific knowledge to the public, promoting patient engagement, and improving science literacy (including elementary science education). Music to my ears and Gatorade for the soul. There is a story to tell.

I met Dr. Mauro Ferrari, an internationally recognized expert in nanomedicine and biomedical nanotechnology, when I presented at a conference in Houston. He is truly a

Renaissance man: born in Italy; educated in mathematics, engineering, and medicine; and now leader of the Houston Methodist Research Institute. I was immediately struck by his passion for and openness to multidisciplinary approaches, his deep spirituality, his humble nature. Casually referring to himself, with a twinkle in his eye, as the “spaghetti western scientist,” he opens our first challenge session (aka panel), and we begin to immerse ourselves in the creative process of hearing and integrating various perspectives, asking the challenging questions, “thinking outside the box.”

Dr. Ferrari and his wife Paola Ferrari, now conference director, had a vision several years ago of a multidisciplinary approach to stimulate creative thinking within nanomedicine (which includes applications to cancer research) and NanoGagliato was born. Calabria may be a small, underdeveloped region of the Italian peninsula, but it translates as “fertile earth.” Fertile earth for the growth of ideas, for a dynamic *in vivo* process of expanding boundaries and bridging artificial divides. “Takin’ it to the streets”—classic Doobie Brothers lyrics—comes to mind.

Conference participants and their families are graciously hosted in the homes of Gagliato townsfolk and challenge sessions are held in the one (!) restaurant in town. At Galatos, there is food for thought, and there is food of the highest quality. Scientists need to eat, too. The freshest pizza and pasta (this is Italy after all)—a feast of the senses. Some sessions are held near the beach, where I gaze at the turquoise Ionian Sea and inhale the sea breeze while engaging in thoughtful discussions. PhD scholarship awardees are invited to join in the discussions, and I receive a warm hug from a medical student visiting from a nearby town as I promise to send articles of interest. Topics emerging from the conference theme include the interfacing of nanomedicine (technology) with surgery, science, regeneration, health, business pragmatics, and bioethics and community.

I thought a lot about a topic to present as a member of the Bioethics panel. The growing importance of media visibility, as well as the increased presence of patient and research advocates from the general public on grant review panels, with significant ramifications for funding support, influenced my choice: “Reflecting on Hype, Hope, and Reality in Crafting the Nano Research Story.” I highlighted how reflective awareness can temper the “nano” research narrative as that narrative is crafted in understandable format for the public, prudently. I spoke also of emotional and ethical resilience, finding that this concept resonated with participant interest in and concern about “biomedical burnout.”

And the personal informs the professional. I brought the backstory ... The story of “I’ve looked at life from both

sides now” (Joni Mitchell lyrics) as a cancer caregiver for my neurologist husband, diagnosed with a glioblastoma in 2012¹. There’s the statistic I shared—only roughly 3% of all U.S. cancer patients ever agree to a clinical trial²—and there’s our own story of sitting with reams of information about a clinical trial and having that same tough decision to make.

“How are you telling the story?” I challenged those researchers. Take-home message? Your work matters beyond the lab, with significant and direct implications for patient care, though you might not be at the bedside. And yes, it matters in the way in which you obtain informed consent for a clinical trial.

We grappled with topics such as nanotechnology and clinical practice, engaging the immune system, streamlining drug development and delivery within challenging regulatory frameworks, nano explosion at a time of scientific recession, training physician-scientists, increasing access to health care, and more. “In the trenches,” first-person narratives such as mine, as well as stories shared of tough treatment decisions in caring for a beloved father with Alzheimer’s dementia (“You treat the family, too”) and of the cancer care work of a Milan priest panelist, emphasizing the importance of care relationships for fostering hope, helped to ground us in the very real for patients and their families. As Dr. Ferrari noted, exercising (and educating) our minds this way (and hearts, I would add) within research and clinical practice cultivates a “prepared mind for the value of serendipity.” And for the energy of hope.

There’s a relatively steep climb up a winding path through alleyways to the Piccola Accademia di Gagliato of NanoSciences, the children’s science learning academy. Begun in 2009, an annual “NanoPiccola” children’s conference, including educational activities about science and meeting with us (!) is now part of the event. The sun beats down, and I’m glad I’ve brought a hat. Trees are in bloom, and the hues are vibrant. The children are too. They’ve prepared some stripped-down-to-the-bare-essence questions for the scientists on their trading cards. Indeed, they each have a set of such cards—like baseball cards (or my Beatles cards, back in the day): our photos with funky graphic design features and the text of our responses about where we’re from, our education and research interests, “why I became a scientist,” “my dream about nano,” and our favorite food, color, animal, and hobbies (reproduced on this page). There’s a sweet message here: Scientist as person. (Easier to relate to, perhaps, this way?) The aura and the salt of the earth combined. It’s working. The children know those cards and are ready for us. The question becomes “Are we ready for them?” They keep us on our toes. Translated from Italian in the moment, we are enchanted by the children’s spot-on queries, by the simple that is profound. We are reminded of how crucial the crafting of an understandable story within public engagement can be, the need for science literacy. As we autographed their t-shirts and trading cards, bridging language divides with smiles, I thought of Eleanor Roosevelt’s oft-cited quote about curiosity being the most useful gift, and I felt so connected to this place. “Reciprocal illumination” for effective, meaningful public engagement³ indeed.

Blessings from various faiths open the grand serata in the piazza (evening in the public square). The twinkling



My NanoGagliato 2015 scientist trading card.

of lights, a cool summer breeze, the laughter of children. Several hundred people from Gagliato and nearby towns have gathered for a nanomedicine “update.” Each of us is introduced, and our remarks about current work are translated into Italian. I’m so impressed with one of our surgeon–medical educators, who embraces this opportunity for a “public service” announcement, encouraging the women assembled there to have their mammograms and encouraging all to report health concerns for early cancer detection. After all, anyone out there in the community could become a patient at any time, and she communicated how much we care. The raucous applause after each presentation does not ebb. I take so many pictures because I do not know how I can possibly describe the euphoria of this moment to my fans at home: the generosity of spirit and the sense of belonging to Gagliato.

Proof positive: I’m invited by the locals for karaoke Italian style at Galatos after the serata. It’s the wee hours of the morning, but I’m intoxicated by life and cannot refuse. I am singing in Italian, and I don’t even know Italian. Never, ever underestimate the importance of having fun⁴.

There are plans ... New scientific questions to tackle, new collaborations to consider, and more. Expanding this paradigm beyond nanotechnology to help science meet the people. And to be more accessible to patients and their families. Plans to grow the science film festival. Plans for “environmental rescue” of neglected town areas (“Nano-Borgo”), a yoga center, cultivating funding support. With so much current emphasis on the need for “patient and public engagement” within clinical and research work, it inspires the imagination for implementing a NanoGagliato template in our own communities. Why not?

Sunset in Tropea and toasts over fine wine conclude the sessions and encourage next steps for making a difference in this work, for expanding the frontiers of knowledge in diagnostics and therapeutics, for helping the suffering. I came to Gagliato to contribute to an international

nanotechnology conference as a medical educator and as a cancer caregiver. It brought out the best in me and made me feel whole, validating my thoughts and feelings about the integration of the humanities and science, and about the benefits of tending to the mind, body, and spirit in all that we do. And about engaging with and bringing science to the public in an understandable, culturally sensitive way. Living the questions⁵ and searching for answers. Together.

When in Rome, I learned that, as a sculptor, Michelangelo believed that he released the art from the marble. It was there all along. "I saw the angel in the marble and carved until I set him free" is a quote attributed to him. The interfaces of NanoGagliato released the art from the scientists, clinicians, townsfolk, and me. It is a work in progress. My gratitude knows no bounds.

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I have read and understood *Current Oncology's* policy on disclosing conflicts of interest, and I declare that I have none.

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REFERENCES

1. Wald HS. Poised at the abyss: A wife faces her neurologist husband's brain cancer [Web article]. n.l.: KevinMD.com; 2016. [Available at: <http://www.kevinmd.com/blog/2016/07/poised-abyss-wife-faces-neurologist-husbands-brain-cancer.html>; cited 18 August 2016]
2. Collender S. Clinical Trials Need Cancer Patients. *The New York Times* [New York edition] 2015; June 19: A27. [Available online at: http://www.nytimes.com/2015/06/19/opinion/clinical-trials-need-cancer-patients.html?_r=0; cited 5 April 2016]
3. Carr J. What does the word "engagement" mean to you? An interview with Roger Kneebone, National Teaching Fellow [Web article]. Heslington, U.K.: Higher Education Academy; 2015. [Available at: <https://www.heacademy.ac.uk/blog/what-does-word-%E2%80%98engagement%E2%80%99-mean-you-interview-roger-kneebone-national-teaching-fellow>; cited 5 April 2016]
4. Pausch R. *The Last Lecture*. New York, NY: Hyperion Books; 2008.
5. Leach DC. Transcendent professionalism: keeping promises and living the questions. *Acad Med* 2014;89:699–701.