



OBITUARY

# In Memoriam: C. M. Chantal Toporow (1956–2025)

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It is with profound sadness and deep respect that we mark the passing of Dr. C. M. Chantal Toporow, who left this world on August 18, 2025, at the age of 68. Throughout her professional life, Chantal interwove various scientific interests and passions, bridging the rigor of aerospace engineering and anomalies research, along with a commitment to ecological stewardship and the arts. In doing so, she embodied the kind of scientific synthesis that the Society for Scientific Exploration (SSE) has long aspired to nurture.

## EDUCATION AND TECHNICAL CAREER

Chantal earned the degrees of B.S., M.S., and Ph.D. from UCLA's Materials Science and Engineering Department, after which she embarked on a distinguished technical and academic path. She managed materials technology and development programs for space programs and served on the faculty in engineering and environmental courses at institutions including UCLA, California State University (Long Beach and Northridge), Loyola Marymount University, Santa Monica College, and the Otis Parsons School of Art & Design.

Her engineering career included significant roles in the aerospace sector, notably at Northrop Grumman, where she contributed to the development of advanced satellite technologies, space-based solar power systems, and other mission-critical systems. She also served as Chair of the Los Angeles Chapter of the IEEE Society for the Social Implications of Technology and Chair of the Education Committee for the IEEE Los Angeles Council.

Among her technical articles, she contributed to "*Results from an International Measurement Round Robin of III-V Triple-Junction Solar Cells Under Air Mass Zero*," part of an interlaboratory effort to benchmark high-efficiency solar cells under standardized conditions (Jenkins et al., 2006). Earlier in her career, she coauthored works on radiation damage (Srouf et al., 1998), space annealing, and degradation mechanisms in amorphous-silicon solar cells and related device structures (Huang et al., 1997).

During this time, her ecological concerns also became evident. In her engineering lectures and public talks, she frequently advocated for an "ecological engineering" paradigm—one that integrated technology with ecosystem thinking, incorporating biomimicry, cradle-to-grave lifecycle assessment, and ethical constraints on resource usage. In her essay *Values-LED Technologies* (1991), she argued for a decision-making framework in engineering that takes into account societal values, environmental ethics, and long-term stewardship - not just immediate technical payoffs. In that work, she urged her colleagues to ask: Should this be done? And can the consequences be managed?

<https://doi.org/10.31275/20253893>

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## TOWARD A SCIENCE OF THE SUBJECTIVE

A turning point in Chantal's intellectual life occurred in 1989, when she organized an IEEE conference titled "A Delicate Balance: Technics, Culture, and Consequences." There she invited Princeton Engineering Anomalies Research (PEAR) director Robert G. Jahn to present his laboratory's controversial data on human-machine interactions. The encounter catalyzed her long engagement with what Jahn and Brenda Dunne termed the *science of the subjective* - an approach to consciousness research that honors both objective measurement and first-person experience (Jahn & Dunne, 1997).

Chantal saw in Jahn's directive the "marching orders" he sometimes invoked, to "create a complementarity by nurturing the Science of the Subjective so that both objective and subjective perspective work alongside each other in such a way that it is acknowledging and utilizing the innate consciousness strategies of association and assimilation to achieve a unity of self and not-self, in its search for a participatory role in the mechanics of creation" (TheSSEChannel, 2019). Her own work and teaching strove to instantiate that ideal: expanding edge science methods to include first-person, intersubjective, and anomalous data streams.

Her presentations over the last decade reflect this synthesis, including "Developing a Science of the Subjective" (2023) and "Is Our Consciousness a Holographic Construct of Parallel Multiverses?" (2019). She also explored a Goethean scientific method - a phenomenological approach that seeks to understand phenomena through a process of deep, participatory observation, moving beyond simple cause-and-effect (2016). As she published on her website (Chantalique, n.d.):

Science, at present, is overwhelmingly driven by objective methodologies, causing a sort of myopia when looking at "inexplicable/anomalous/paranormal" events. I'm guided by Goethe's more subjective scientific methods, though pushed aside by the dominant Newtonian objective science, these are equally enduring and valid as we move forward in balancing our subjective and objective views of the world around us. Only through this amalgamation of apparently anomalous events, random, yet, synchronous, with those which are the standard "predictable and the repeatable", can we begin to fully develop our understanding of the inherent nature of the inter-connectivity of knowledge.

Her hope, often voiced in SSE committee discussions and public lectures, was that a mature science of the subjective would help normalize inquiry into anomalous cognition, psi, subtle energies, and related phenomena - not relegated to the fringes, but as endogenous to human consciousness and nature. In that sense, her life's work was a step toward a more integrative science of mind, matter, and meaning:

To reach this goal, we must do more than "observe" as is so common in the objective science paradigm, we need to "experience" and put ourselves within the experiment itself. By being a rigorous student of various anomalous modalities, including out-of-body experiences, dowsing, remote viewing, introspective counseling, communication with the deceased, telekinesis, etc., one can truly begin to open up to new realities unattainable in the four dimensions and five sense perceptions. (Chantalique, n.d.)

## ECOLOGICAL LEADERSHIP

Parallel to her engineering and consciousness work, Chantal demonstrated an enduring commitment to ecological stewardship. Living in Southern California, she cultivated a biodynamic orchard and research garden encompassing more than 300 species of fruit, including 28 varieties of figs and numerous rare heritage cultivars.

For 24 years, she served on the Board of Directors of the California Rare Fruit Growers, Inc., promoting preservation of genetic diversity and education in sustainable horticulture. She also served on the Board of the Felix Gillet Institute, dedicated to rediscovering and propagating fruit and nut varieties introduced during California's Gold Rush that have since proven resilient to drought and pests (Toporow, 2018).

Her biodynamic commitment was evident: she attended Ecological Farming Conferences, became a lifetime member of the Biodynamic Farming Association, and studied the core curriculum of biodynamics. In her later teaching, particularly as an instructor at the Rhine Education Center, she explored how the energetic and spiritual dimensions of nature might be allies in cultivating more resilient ecosystems—and how human consciousness is embedded in a living Earth.

For Chantal, ecological stewardship and consciousness research were inseparable. She often remarked that the

Earth itself participates in consciousness and that to heal the planet, we must first notice it. Her later lectures - such as *Increasing the Beauty and Bounty of Your Farm and Garden with the Help of Nature Spirits* (2024) - extended this idea toward practical co-creativity with natural intelligence.

### SERVICE TO THE SSE COMMUNITY

Perhaps one of her most visible contributions to the edge sciences was her long-standing service to the Society for Scientific Exploration. Over the years, she served on the SSE Scholarship Committee, was elected to the SSE Council, and eventually became the SSE Education Chair. In that capacity, she brought enormous enthusiasm to SSE's educational mission, helping to organize Aspiring Explorers meetings and encouraging younger researchers to cross disciplinary boundaries, advocating for the integration of edge sciences into broader curricular and institutional contexts.

In 2016, she was a co-Program Chair of the combined conferences of the SSE and the Parapsychological Association. She also served on the SSE Program Committee in the years 2009, 2017, 2019, 2021, 2022, and 2023, and led the organization of conference panels and educational forums. Her manner in service was hands-on and with great energy.

She also hosted a science salon in her Redondo Beach home - an SSE regional group - cultivating interdisciplinary discussions around mind-matter interactions, nurturing scientific exploration of anomalous phenomena, and promoting investigation of subtle energies in the experience of consciousness, bioenergetics, and human potential. Through these salons, she fostered spaces where seasoned and emerging researchers could engage in conversations beyond the formal constraints of conferences.

### A LEGACY

Chantal's legacy is multifaceted. To some, she will be remembered as a formidable engineer who lent credibility to frontier research; to others, she will be cherished as a gardener, biodynamic steward, and an Earth lover; to many, she will be regarded as an advocate who sought to bring subjective and objective inquiry into mutual respect.

Because so much of her work lay at liminal interstices - of consciousness and matter, of science and spirituality, of objective and subjective methods, of technology and ecology - her influence was not always visible. However, to the students and researchers whom she advised, encouraged, nudged, and inspired, as well as the communities that she served, she was a star that always shone brightly.

For the SSE and *JSE*, her passing is a reminder of why these institutions exist: to give refuge and support to scientific questions that do not fit comfortably elsewhere. Dr. C.M. Chantal Toporow exemplified the Society's founding aspirations by exploring approaches that challenge the boundaries of conventional science, without abandoning the scientific method or the Self.

Her gardens will continue to bear fruit, her colleagues and protégés will continue to explore, and the archive of her talks, articles, and salons will remain a seedbed for future scientists and scholars. We mourn her absence, but we also celebrate her life - its reach, its boldness, and its hope that we might cultivate a more capacious science. May she rest in clarity, and may her vision continue to guide generations of boundary-pushing explorers.

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