

EDITORIAL

Part 1

Science and Healing: From Bioelectromagnetics to the Medicine of Light. Implications, Phenomena, and Deep Transformation

*“The present is the product of the past but it is  
also the seed of the future.”*

—Satya Sai Baba

*“Where is the Wisdom we have lost in Knowledge?  
Where is the Knowledge we have lost in information?”*

—T.S. Eliot (The Rock, Part 1, 1934  
[cited in Warrawee’ a, pp. 9–11])

**S**cience and Healing: From Bioelectromagnetics to the Medicine of Light. A dramatic title for challenging times in science and medicine. A drama eloquently introduced and developed by a representative of the world’s oldest known extant healing tradition in the opening paper of the journal (Warrawee’ a, pp. 9–11). These are times in which it is evident that the current hegemony of the pharmaceutical industry and the inevitable limitations of the biomolecular paradigm as it currently manifests in medicine and health care, particularly in industrialized nations, is being challenged, and called to deepen, to go beyond the obviously material, by the very patients upon which the industry’s survival depends. Worldwide, people are seeking out forms of healing and health care for which proponents claim to be able to diminish peoples’ reliance on drugs and that are purported to empower their users with energies and therapeutics other than drugs, surgery, and psychology. Increasingly, patients, providers, and researchers are seeking for, investigating, and practicing with energies and therapeutics that involve, evoke and, depend upon concepts and principles of empowerment, self-motivation, sustainability, lifestyle, ecology, and locus of control. Energies, for example, such as that referred to generically in Oriental medicine as *qi* but which can be subdivided, classified, and manifested in a myriad of different forms (Curtis and Hurtak, pp. 27–39). Energies that can be known, felt, experienced, cultivated, nurtured, developed, and, most importantly, utilized but that nevertheless often defy simple explanation and definition (Chen and Turner,

pp. 159–162; Jonas and Chez, pp. 171–181; Sancier and Holman, pp. 163–165). Energies that can be consciously intended, evoked, and manipulated for particular tasks and that can be coherently imprinted into devices (Radin et al., pp. 103–112; Rein pp. 59–68; Tiller et al., pp. 145–157). Energies, the effects of which can be measured and tested scientifically and objectively in independently repeatable and verifiable ways (Rein pp. 59–68; Tiller et al., pp. 145–157).

The title of this special issue of the *Journal* is deliberately provocative, grasping with both hands the challenge that is implicit in the phenomena that are occurring daily in clinics and healing centers all around the world; in some places utilizing traditions and systems that have been in use for hundreds if not thousands of years in other cultures, where, for example, shamanism, psychic gifts, intuition, and innovation are an integral part of the warp and weft of the tapestry of everyday life. Consider the traditions of yoga (Shannahoff-Khalsa, pp. 91–101); Ayurveda with its profound, complex and subtle classifications of physiologic, psychologic, spiritual and energetic processes; the knowledge of *qi* in Oriental medicine, exemplified in the emerging literature documenting the results of *qigong* practice (Sancier and Holman, pp. 163–165), all rendered manifestly objective by, for example, the imagery of sophisticated structural and functional positron emission tomography and magnetic resonance imaging protocols. Consider, too, the processes and effects of what anthropologists consider to be the oldest extant systems of shamanism and healing, still clinging to a living tradition through their few remaining elders (Warrawee’ a, pp. 9–11.). We live at a time when the apparently nonmaterial can be visualized and measured by emergent technologies of breathtaking sophistication and simplicity (Korotkov et al., pp. 49–57; Smith, pp. 69–78).

In some of these practices and traditions, such as *qigong* and yoga, the phenomenal realities of ancient cultures are seen withstanding the test of time and emerging into the realms of biomedicine because, not only does anecdote testify to these practices’ benefit to patients, but increasingly

emerging technology can demonstrate objective effectiveness according to the constraints and formulations of the current criteria for what constitutes scientific evidence. However, what medicine seems so often to forget is that scientists (most often physicists, biophysicists, and mathematicians as well as physicians and therapists) in laboratories and clinics all around the world, often in some of the poorer nations such as Eastern Europe, Russia, and India, are discovering and demonstrating that physical matter is but a sea of energy, the density and perception of which is both a fluid and subtle matter, governed by laws of manifestation in time and space that indicate a biophysical reality in which thought, feeling, intention, and intuition can simultaneously influence matter over vast distances from one side of the world to another. Furthermore, some scientists even offer evidence that suggests such things can act retroactively (Olshansky and Dossey, 2003). But as Curtis and Hurtak (pp. 27–39), Smith (pp. 69–78), Radin et al. (pp. 103–112), Liboff (pp. 41–42), Becker (pp. 17–18), and Hankey (pp. 83–86) note, some of what we are only now waking up to, was known and experimented with many years ago in the early part of this century; medicine moves and evolves a long time after the scientists.

What then is meant by a medicine of light? This is a challenging formulation when, as a culture, the West has been used to the idea of pills and potions, manipulations, and potentially surgical interventions. Yet, increasingly, devices and gadgets are emerging that use color, the energy of light, to transform and make an impact upon cellular and organ health, quite apart from harnessing light's laser potential in surgery and cellular healing. Witness, for example, the growth of cytoluminescent therapy in cancer care, dermatology, and other diseases (see [www.clttherapy.com/](http://www.clttherapy.com/) for examples and information); of therapy using monochromatic infrared light energy to heal peripheral neuropathy and the microcirculation through the release of nitric oxide (see, for example, *Current Treatments and Evidence in the Treatment of Diabetic Neuropathies* at [www.anodynetherapy.com/](http://www.anodynetherapy.com/)); and, of course, the well-known impact of light on the psyche and its critical significance for the treatment of seasonal affective disorder. All of these systems utilize the specific bioelectromagnetic and cellular effects of light; all using subtle, yet measurable, energies to switch on and off biochemical and biophysical processes that can change the lives of the recipients.

This issue of the *Journal* is dedicated to work exploring the science and phenomena of energies (Curtis and Hurtak, pp. 27–39; Liboff, pp. 41–47; Hankey, pp. 83–86; Rein, pp. 59–68; Tiller et al., pp. 145–157); energy in healing (Cassidy pp. 79–81; Chen and Turner, pp. 159–162; Handoll, pp. 87–89; Sutherland and Ritenbaugh, pp. 13–15); energies in cellular interaction (Creath and Schwartz, pp. 112–121; Radin et al., pp. 103–112); the effects and impacts of energy as intention (Radin et al., pp. 103–112; Tiller et al., pp. 145–157); energy in intuition (McCarty et al., pp. 133–143); the effects of en-

ergy as states of mind or consciousness on molecular, cellular, organ, and whole-body systems (Smith, pp. 69–78; Tiller et al., pp. 145–157), both directly *in situ* within the organism or within the immediate confines of an experimental container, and, more extraordinarily perhaps, also at a distance, sometimes a very long distance (Tiller et al., pp. 145–157). There is robust evidence here of results that defy the simplistic, mechanistic understanding of the models of physics and chemistry on which most of us were trained. Medicine, science, and understanding is evolving in remarkable ways.

The recent paper by Olshansky and Dossey (Olshansky and Dossey, 2003), on retroactive prayer and its implications, serves to raise questions concerning simultaneity in causation and effect, to address the documentation of non-local healing effects, and to explore the possibility that our time-space continuum may not be the linear phenomenon that it is ordinarily thought to be. Such work challenges our concepts of space, time, and relationship right to the very core of our being. How on earth can a person or persons praying some years after an event has taken place have any impact on that event? Surely this is an absurd notion? And yet, as the sage Satya Sai Baba has said: “The present is the product of the past but it is also the seed of the future.” Thus, one can glimpse the inescapable and, by moments, patently obvious conclusion that everything not only hinges upon, but exists only in the present, this extraordinary moment, derived from the past and yet holding infinite potential for the future. Even the past exists only as memory in the present moment. So what is it that determines that future? It is, of course, consciousness. And this, in terms of the biomedical experimentation we seek to address and to understand, is what determines the way in which we comprehend, design, conduct, monitor, analyze, interpret, and ultimately understand any experiment. Consciousness determines how things are seen and experienced and how everything existing and happening around us is reacted to. Consciousness is fundamental to everything. That is the essence of all that is contained in this extraordinary issue of the *Journal*.

Consider, for example, an event, be it personal, experimental, or cosmologic, that has given rise to a particular result or impact, perhaps, for argument's sake, a negative one, which has left the subject angry, saddened, dejected, and hurt. All of this is the result of the consciousness of that subject at that moment in time. Now consider, in the evolving present, that that subject is prayed for or begins to pray. In the act of prayer, of reflection, of intercession, meditation, relaxation, however one wishes to name the status of the energy of the individual engaged in it, consciousness is deployed in a particular way. The result may be a change in understanding. Consciousness alters, energies are changed and move, flow, operate, or manifest in a different way, beginning to alter neuronal, chemical, molecular, cellular, and other frameworks. The event, initially perceived so negatively, is then seen and understood in a new way, *in the present*. The past is seen and

experienced anew. The result is altered. The evolving future is altered! It is no longer now, what it was in the previous “now.” Moment by moment by moment, all is dependent upon the consciousness of the perceiver (Jobst et al., 1999).

These matters are not solely the domain of the mystical philosopher debating the nature of reality. These are matters upon which the world’s most highly trained and highly regarded scientists are focused, researching phenomena and ideas with highly sophisticated equipment, theorems, and hypotheses, involving and invoking forces, potentials, and frequencies that might be strong, weak, electromagnetic (Liboff, pp. 41–47), vector, Hertzian, or non-Hertzian, among many others (Hankey, pp. 83–86; Korotkov et al., pp. 49–57; Rein, pp. 59–68; Smith, pp. 69–78).

What are the implications of these phenomena and discoveries in the clinic and in the laboratory? Why is it that obvious responses to the weak electromagnetic forces that surround us all the time are not obvious if, as the authors of the work in this issue of the *Journal* suggest, these forces are such potent influences on physiologic systems? Why is it that the intentions of many people do not seem to manifest in more obvious ways? Those who are working with such energies will tell you that, when the conscious decision to do so is made, when the ordinary intellectual mind function that has hitherto accompanied the therapeutic encounter is silenced, (i.e., when the therapist is present yet figuratively “stands out of the way”), physiologic, and psychologic changes take place that were undreamed of (Cassidy, pp. 79–81; Chen and Turner, pp. 159–162; Handoll, pp. 87–89; Sancier and Holman pp. 163–165; Sutherland and Ritenbaugh, pp. 13–15; Warrawee’a, pp. 9–11).

The extraordinary thing, as Handoll (pp. 87–89) has so courageously articulated in his paper, is that once this energetic and subtle alignment happens, once the ego aspect stands aside, palpable and measurable changes take place in

tissues and structures that would previously have been thought impossible. An analogy is perhaps to be found in the images of electricity and light bulbs. If the electricity is not switched on, the bulb connected to it can not be illuminated and the light can not shine. Once turned on, however, that light then might enable a critical transformation in understanding through the illumination of a word that can now be read and that might change a life or many lives, or that light might stimulate a critical transformation in structure through a chemical reaction, or make possible a lifesaving movement through the illumination of an immediate threat in the environment. No matter then that the force be weak, imperceptible, or even intangible (just as the electricity in the wire).

The fact that consciousness becomes aware of it whether that be (energy, thought or feeling, entertains it, or evokes it, renders the system coherent in a totally new way, evoking similar change in the patient or system upon which it is operating and thereby giving rise to consequences that were previously impossible, because the “current had simply not been switched on.” Such moments are sometimes referred to as spontaneous healing, transformation, or even chance. What this issue of the *Journal* makes clear is that there is a science for such things, a science that is critically dependent upon observation, involvement, and integrity. We hope that this issue of the *Journal* will provoke, inspire, and enable currents to be activated in our readers so that there might be light to illuminate and enlighten their futures.

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## Part 2

### Ringling in Editorial Changes for the *Journal*: Our Executive Editor, New Associate-Section Editors, New Managing Editor, Senior Editor, Deputy Editor, and Editorial Advisor

Our erstwhile Executive Editor, **Richard C. Niemtzow**, M.D., Ph.D., M.P.H., who has diligently and meticulously served the *Journal* for the last 2½ years, while, at the same time fulfilling his role as Editor-in-Chief of *Medical Acupuncture*, (the official journal of the American Association for Medical Acupuncture), has recently been awarded two very substantial grants by the U.S. Air Force to conduct the first major intensive clinical trials of acupuncture in clin-

ical practice in the U.S. Armed Forces. He will be researching the effectiveness of acupuncture for the treatment of acute pain in the emergency room setting and also pursuing research on preliminary intriguing clinical findings showing the effectiveness of acupuncture in adult macular degeneration. The first of these studies may have far-reaching implications for the management of pain on the battlefield, which could transform the nature of immediate pain control in the acute

care setting. These are seminal trials and many people will be watching with keen anticipation for the results of these innovative and exciting investigations. Dr. Niemtow's practice is remarkable in many ways, not least for the compassionate healing and succor that he has provided to countless patients with acute and chronic pain but also those with postradiation xerostomia, a condition for which, prior to Dr. Niemtow's remarkable discoveries, there had been no truly effective treatment (see [www.n5ev.com](http://www.n5ev.com)).

These new clinical academic responsibilities, coupled with the ever-increasing educational role that he will be playing in the U.S. Armed Forces, mean that Dr. Niemtow will be developing a new role to play on the *Journal*. He and Richard Hammerschlag, Ph.D., president of the Society for Acupuncture Research, will assume responsibility for the triage and initial screening of acupuncture submissions to the journal. This marks the beginning of a new development for the journal, which will see the establishment of Associate-Section Editors responsible for various major areas of research and development and clinical and academic expertise in the field of integrative medicine. This will enable streamlining through the new managing editorial office and will enable us to better attend to the special needs and interests of authors submitting work across the wide range of topics embraced by the term complementary and alternative medicine.

We are immensely grateful to Dr. Niemtow for the unique qualities, skills, and energy that he has brought to the journal in his tenure as Executive Editor and we wish him every possible success as he embarks on this new phase of his professional life. There is absolutely no doubt that his work will make a significant impact on the lives of countless patients worldwide and we look forward to reporting on his results in due course.

I am immensely fortunate now to be joined by **Professor Mitchell W. Krucoff** (M.D., F.A.C.C., F.C.C.P.) as Senior Editor, **Professor Richard Liebowitz** (M.D.) as Deputy Editor, **Professor Tracy W. Gaudet** (M.D.) as a member of the Advisory Board and **Mrs. Patricia Hodgson** (B.A.) as Managing Editor. All are currently at Duke University and bring to the journal clinical, academic, and innovative expertise that will enable us to serve the evolving field of integrative medicine better, at a time when rigorous peer review and high-quality publishing is more important than ever to help ascertain fact from fiction, and when debate, hypothesis generation, and communication is essential to serve health care better globally. Each of these individuals has particular qualities that will be evident in their biographies, which follow.

**Dr. Mitchell W. Krucoff** is an associate professor of medicine/cardiology with tenure at Duke University Medical Center in Durham, North Carolina, where he practices as an interventional cardiologist. He is a Fellow of the American College of Cardiology, a Fellow of the College of Chest Physicians, and a member of the Circulatory Devices Advisory Panel to the U.S. Food and Drug Administration. Dr. Krucoff received his bachelor's degree *Magna Cum Laude* from Yale University in 1976 and his M.D. from George Washington

University in 1980 with election to the Alpha Omega Alpha medical honor society. He completed his residency in internal medicine at George Washington University in 1983 and his cardiology training at Georgetown University in 1985, where he stayed on as a faculty member and as director of the Cardiovascular Intensive Care Unit until moving to Duke in 1988.

Dr. Krucoff currently serves as director of the Ischemia Monitoring Laboratory, the world's oldest and largest ECG Core Laboratory; as director of Interventional Clinical Devices Trials for the Duke Clinical Research Institute (DCRI); as a senior staff member in the Interventional Cardiac Catheterization Laboratories at Duke Medical Center; and as Director of the Cardiovascular Laboratories at the Durham Veterans Administration (VA) Medical Center. He has published more than 100 scientific articles and book chapters on various aspects of cardiology and coronary care and on spiritual interventions and new paradigms of healing. He is the principal investigator of the Monitoring and Actualization of Noetic Trainings (MANTRA) Study Project at the DCRI. Since 1990, Dr. Krucoff has served as a member of the Board of Directors of the Sri Satya Sai Institute of Higher Medical Sciences in Puttaparthi, India. Dr. Krucoff works with the RAMA Foundation, the Bial Foundation, the Samueli Foundation, and the Institute of Noetic Sciences in exploring complementary therapies in conjunction with modern high-tech medical practices. In 2001, Dr. Krucoff was appointed to the writing committee of the American College of Cardiology's consensus paper on complementary and alternative medicine therapies in cardiovascular disease.

**Dr. Richard Liebowitz** is an assistant clinical professor in the Division of General Internal Medicine, and the executive medical director of the Duke Center for Living Campus. Dr. Liebowitz was elected Phi Beta Kappa and received a B.A. degree with distinction in biochemistry from Rutgers University. Graduating from Rutgers Medical School (now known as the Robert Wood Johnson Medical School), in 1980, Dr. Liebowitz completed his residency in internal medicine at the University of Massachusetts Medical Center and was appointed to the faculty there. From 1989 to 1991, Dr. Liebowitz served as assistant medical director for the Fallon Clinic, a large multispecialty group practice and independent health plan employing more than 250 physicians in Worcester, Massachusetts. In 1995, Dr. Liebowitz was recruited to join the faculty at the University of Arizona and was appointed medical director of the University department of medicine's outpatient clinics. Following 3 years in this position, he was appointed as medical director of the Patient Care Center, responsible for all medical inpatient units. Dr. Liebowitz has been honored on seven separate occasions for excellence in education and for teaching medical students and residents. Dr. Liebowitz assumed the role of director of education for the Program in Integrative Medicine at the University of Arizona in July of 1999 through June of 2000. During that time, he was directly responsible for the ongoing development and implementation of the Fellowship, Associate Fellowship, and the Continuing Professional Education components of the Pro-

gram. In July of 2000, he returned to the Section of General Medicine in the capacity of section chief.

In November of 2000, Dr. Liebowitz relocated to Duke University, where he assumed the role of medical director for the Duke Center for Integrative Medicine. In September of 2003, Dr. Liebowitz was appointed as the executive medical director for the Duke Center for Living Campus. He has maintained prominence in the conventional medical world, serving first in the role of deputy editor of the journal *Archives of Internal Medicine* and is currently on its editorial board. He has extensive consulting experience in health care education, including Web based learning.

**Dr. Tracy W. Gaudet** is currently director of the Duke Center for Integrative Medicine and is also an assistant professor of obstetrics and gynecology at Duke University Medical Center. Dr. Gaudet has been recognized as a leader in the emerging field of integrative medicine and has served on the editorial boards of *Clinical Acupuncture and Oriental Medicine*, *Integrative Medicine Journal*, and *Seminars in Integrative Medicine*. She is the author of a new book on integrative medicine and women's health, *Consciously Female*, which will be published by Bantam Books in 2004. Under her leadership, the Duke Center of Integrative Medicine has initiatives in medical student and resident education, research, and creating innovative models of health care. Dr. Gaudet is currently a lead investigator researching a new model of individualized prospective health care, funded by the Centers for Medicare and Medicaid Services. Dr. Gaudet joined the faculty at Duke University in November of 2000. After a short stint as associate director of the Duke Center for Integrative Medicine ([www.dcim.org](http://www.dcim.org)), she assumed the position of Director in April of 2001. She has been active in making the Duke Center for Integrative Medicine one of the leaders in the field, helping to co-found The Consortium of Academic Health Centers for Integrative Medicine and chairing the Membership Committee, as well as serving on the Steering and Education Committees. Dr. Gaudet has also been active in discussing integrative medicine with members of both the medical and lay communities, giving talks on integrative approaches to menopause and other women's health issues. She was instrumental in developing the highly successful "Women, Wellness, and the Transformation of Healthcare" conference in the Fall of 2002, and has been instrumental in the development of the personalized wellness plan for patients attending the Duke Center for Integrative Medicine.

Prior to coming to Duke, Dr. Gaudet was the founding executive director of the University of Arizona Program in Integrative Medicine and an assistant professor of clinical medicine in the departments of medicine and obstetrics and gynecology. She led the development of the Program in its four domains: academic medical education; continuing professional education; research; and encouraging progress the field of integrative medicine nationally. Under her direction, the Program designed the country's first comprehensive curriculum in this new field and launched a 2-year fellowship, which seeks to produce physician leaders and foster the redesign of medical education. Dr. Gaudet also

coordinated the successful establishment of the integrative medicine teaching clinic. The Program's continuing education program offers educational opportunities for the clinician in practice and has reached more than 4500 health care professionals to date. Her joining the editorial Advisory board of the *Journal* will make a significant contribution to the evolving clinical content of the journal and we greatly welcome her involvement and commitment.

**Ms. Patricia Hodgson** received her Bachelor of Arts in History from Manhattanville College, Purchase, New York, and has held numerous senior publishing and communications posts. Since 1995, she has served as managing editor for the *American Heart Journal* and, since 1992, has been director of communications at the Duke Clinical Research Institute, prior to that acting as director of communications of the North Carolina Medical Society. She has also held the office of managing editor for the *North Carolina Medical Journal*, working also on the journals *Financial Management and Circulation*. Her extensive editorial management skills were honed when she was editorial assistant on the journals of *Molecular Pharmacology*, *Kidney International*, the *Southern Economic Journal*, and the *Midwest Journal of Political Science*. Penny, as she is known to her colleagues, has a wealth of writing and editing experience, mostly in the technical and medical fields, and this makes her unusually understanding of, and responsive to, the needs of medical journalism, from the report of an original scientific investigation to a sophisticated meta-analysis or a simple review article destined for publication in a peer-reviewed journal. For the past 10 years, her work has been concentrated in the clinical research area, writing and editing manuscripts that result from pharmaceutical and device clinical trials. The last 15 years have included considerable management and supervisory responsibilities, currently including 10 editors, seven writers, five graphic designers, five event planners, two peer-review coordinators, two project managers, two accounting personnel, and four production managers as well as several support personnel! Ms. Hodgson is, furthermore, a significantly published individual with edited books and original manuscript contributions to the literature in cardiology, medical education, Internet and conventional publishing, and policy matters in medicine. We welcome Ms. Hodgson to the editorial team of the journal with enthusiasm and gratitude, knowing that her wealth of experience will serve to enhance the fields of integrative medicine and health care further.

The editorial team at the journal will continue to change and grow over the coming months as the editorial office establishes itself at Duke University. This will inevitably mean some retirements and some additions. We welcome this collaboration and are confident that these partnerships will enable us to serve the clinical, research and health care delivery and policy agendas worldwide with ever greater humility and effectiveness.

—Kim A. Jobst, M.A., D.M., M.R.C.P., M.F.Hom.  
Editor-in-Chief

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