

# Society for Scientific Exploration

33rd Annual Conference

“The Mysterious Universe”

June 5-7 2014

Hyatt Regency San Francisco Airport  
Burlingame, California

## Wednesday, June 4

9:30 AM–5:00 PM Council meeting (BOARDROOM IV)

6:00 PM–9:00 PM Opening Reception and Registration (SCALINI ROOM)

## Thursday, June 5, GRAND PENINSULA BALLROOM

8:00 Welcome and Introductions

8:10 Dinsdale Award Introduction

8:15 *Dinsdale Prize Award Presentation* — Gerald H. Pollack “The Fourth Phase of Water: Beyond Solid, Liquid, and Vapor”

*Theme 1A – The Conscious Lab: New Research in Consciousness*

9:25 George Williams "What can the psi data tell us about quantum mechanics?"

9:50 Charles Lear "Consciousness and the Quantum Field"

### **10:15 AM Morning Break**

10:40 *Invited Speaker* — Dean Radin "Mind-Matter Interaction Experiments Involving Light"

11:30 Bernard Haisch "Is the Universe a Vast, Consciousness-created Virtual Reality Simulation?"

11:55 Andrew Silverman "Here and Now: Thoughts on a unified view of space, time, mind and matter"

12:20 Richard Shoup "Anomalous Interactions Without Enshrining Consciousness"

### **12:45 PM Lunch Break**

**(The New Members and Young Investigators meeting will take place during lunch in the meeting room.)**

*Theme 1B – The Conscious Lab: Biomedical & Healing Research*

- 2:15 Mike Denny "Restrictive Worldviews and Biomedical Science"  
2:40 Yury Kronn "Effect of Subtle Energy Patterns on Cell Viability and Mitochondrial Membrane Potential"  
3:05 Jeremy Lins "Effect of Subtle Energy Patterns on Gene Regulation of Human Dermal Fibroblasts"  
3:25 Takeshi Shimizu "Examination of Random Number Generator output during non-contact Healing and macro psychokinesis"

**3:50 PM Afternoon Break**

- 4:15 Beverly Rubik "Ultraweak Light Emission from Humans and Other Organisms in Relation to Health and Healing"  
4:35 William Bengston "Gone Bananas: Some Replications and Extensions of Bernard Grad's Banana Mummification Experiments"  
5:00 Shanmugamurthy Lakshmanan "Unraveling the Ayurvedic Mystery"  
5:25 Business Meeting

**6:00 PM Dinner Break**

- 8:00– 9:30 Panel Discussion — Paul Revis, Vittorio Violante, Adam Curry, and others  
TBD "The TED Controversy, and Frontiers of SSE Research"

## **Friday, June 6, GRAND PENINSULA BALLROOM**

### *Theme 1C – The Conscious Lab: Radiesthesia*

- 9:00 Announcements & Introductions
- 9:10 Dominique Surel "Radiesthesia - The Ancient Science of Vibrational Physics"
- 9:35 Richard Blasband "Radiesthesia in Objectifying Subtle Energy Manifestations in Experiments with an Atmospheric Energy Device"

### **10:00 AM Morning Break**

### *Theme 2 – Future Energy: Horizons of Energy Research*

- 10:25 *Invited Speaker* – Vittorio Violante "Material Science Challenges to Define the Fleischmann and Pons Effect by Applying the Scientific Method"
- 11:15 Daniel Sheehan "Experimental Test of a Second Law Paradox"
- 11:40 Ryan S. Wood "The Mystery of Joe Papp's Noble Gas Engine"
- 12:05 Garret Moddel "New Energy Technologies: What Can We Believe?"

**12:45 PM—4:30 PM Friday afternoon outing (Busses leave at 12:45 for the Computer History Museum. Lunch will be provided.)**

### **6:00 PM Dinner Break**

### *Theme 3A: The Mysterious Universe: Linguistic Mysteries*

- 8:00 William Kautz "Xenoglossy: The Intuitive Recovery of Lost Language: Its Validation and Implications for the Survival of Consciousness"
- 8:25 Samuel Sandweiss "A Case Of Xenoglossy And The Nature Of Consciousness, part 2"
- 8:50 William Sarill "Precognitive Scientific Information in the Writing of Philip K. Dick"

## **Saturday, June 7, GRAND PENINSULA BALLROOM**

*Theme 3B – The Mysterious Universe: Earth & Beyond*

9:00 Announcements & Introduction

9:10 *Invited Speaker* – Gary Nolan "DNA Analysis of the Atacama Humanoid"

10:00 York Dobyns "A Maximum Likelihood Approach to the ETI Hypothesis"

10:25 Friedemann Freund "Rocks that Crackle and Glow – 10 years later"

### **10:50 AM Morning Break**

11:15 Rollin McCraty "The Dynamic Relationship Between People and Earth's Energetic Systems"

11:40 Erik Maddocks "Machine Mediated Remote Viewing"

12:05 Brennan Kersgaard "New Perspectives on the PseudoREG: Feasibility and Implications"

12:30 Sky Nelson "Demonstrating the Necessity of Relational Collapse in Viable Interpretations of Quantum Mechanics"

### **12:55 PM Lunch Break**

2:25 Stephan Braude "Investigation of the Felix Experimental Group: A Status Report"

2:50 John Alexander "Report of Firsthand Anomalous Experiences on Three Continents"

3:15 Dale Graff "Chasing the Mysteries of Precognition and Synchronicity"

### **3:40 PM Afternoon Break**

4:05 Charles Emmons "Moving Experiences and the Experience Movement"

4:25 Douglas Kinney "Evidence for and Model to Explain Unusual Consciousness Phenomena"

4:50 Luis Minero "Consciousness Research from the 1st, 2nd and 3rd Person Perspective"

5:15 CLOSING REMARKS AND ADJOURNMENT

**6:15 Cocktails**

**7:15 Banquet**

**Sunday, June 8, BAYSIDE ROOM**

9:30 – 5:00    Sunday Workshop: Using Randomness to Study Consciousness REGs and RNGs in Scientific Research Applications

Presented by Dr. Roger Nelson of the Global Consciousness Project

This is a workshop for people who have been intrigued but perhaps mystified by random number generator technology in consciousness research, or who want to dive in and do their own experiments. RNGs, also known as REGs, evidently can be affected by intention, and they are responsive to deep emotions and group coherence. We will work to reduce the mysteries and produce both scientific and practical clarity. It will be an opportunity to explore your questions in detail.

Dr. Roger Nelson was a member of the PEAR team from 1980 to 2002 when he retired from Princeton University. In 1997 he created the Global Consciousness Project, which he continues to direct. His experience with REG/RNG technology spans laboratory and field research, and his expertise reaches from design and calibration of the instruments to experimental and statistical design to analysis and interpretation of results. He is willing to step into the deep waters of explanatory theory, but with some necessary caveats.

## **Report of Firsthand Anomalous Experiences on Three Continents**

John B. Alexander, Ph.D.

SSE Full Member

This presentation covers direct observations of anomalous experiences made in the past year in Asia, Africa, and South America. Included is video evidence of events that appear to be impossible by the common understanding of human physiology. Of note is the direct exposure to flames without inflicting pain or physical damage to the skin of participants. The videos have been examined by both scientists and a master magician and acknowledged as real and unexplainable events. Nothing like them has appeared on the Internet. These video clips were taken by me in Togo and Benin in West Africa and cover Voodoo ceremonies rarely observed by Westerners.

Also documented are encounters with indigenous shamans in Mongolia and our adventures with the reindeer people who are nomads dwelling in the northernmost reaches near the Russian border. Their grazing area is so remote that it can only be accessed by horseback (or helicopter) and they live in isolation for the majority of the year. Though not under controlled conditions, events occurred that seem to defy our understanding. Detailed description of the environment surrounding the mysterious events will be provided including video clips of some of the ceremonies. This includes information about the shaman's selection, training and belief system for interacting with the spirit world.

Finally there is the experience with a Brazilian spiritual healer called John of God. Since we first visited him he has acquired more international notoriety. Located in Abadiânia in the central plains, among his most acclaimed feats was the apparent experience of the famous motivational speaker, Wayne Dyer who claims instant remission from diagnosed leukemia via remote psychic surgery. Reported will be the direct observation of various surgical procedures and the cross-cultural differences that seem to facilitate these anomalous events.

## **Gone Bananas: Some Replications and Extensions of Bernard Grad's Banana Mummification Experiments**

Bill Bengston and Don Murphy

Bernard Grad, arguably the father of modern healing research, discovered that some individuals could mummify bananas using techniques analogous to laying-on of hands. When successfully “treated,” picked bananas appear to bypass normal autolytic stages, accelerated weight loss relative to controls, and finally hardening to a permanent state of mummification.

We have done more than four dozen replications, testing conditions well beyond those attempted by Grad. We suggest that a single event leads to a cascade effect, altering the production or reception of ethylene (a plant hormone key to banana ripening) and amylase (responsible for conversion of starch to sugar during ripening), as well as modifying conversion of protopectin to soluble pectin.

Among our findings: mummification is contact dependent (different from “normal” hands-on healing data); takes place without regard to the intent or mental focus of the healer; is blocked with plastic and copper foil; cannot be done through healing surrogates (e.g. cotton); is dose dependent. Resonant bonding with controls may be occurring, though it is not consistent.

With further work, the physiology of this form of banana mummification can be clarified. The phenomenon may provide some clues to understanding patterns of anomalous healing.

## **Radiesthesia in Objectifying Subtle Energy Manifestations in Experiments with an Atmospheric Energy Device**

Richard A. Blasband, M.D.

In June of 2013, Dr. Dominique Surel and I explored the use of a pendulum in objectifying the flow of a perceived “subtle energy” effect when experimenting with a Wilhelm Reich “cloudbuster”. The device, which we call an atmospheric energy engineering device or AEED, was set-up in a park near Evergreen, CO in order to train students in its operation in anticipation of drought in Colorado and the Mid-West. Since Dr. Surel was expert in the use of the pendulum to detect subtle energy frequencies we thought it might be useful in detecting possible such “energies” in our training demonstrations of the AEED.

The device consists of an array of maneuverable metal pipes which are “grounded” into running water. For training purposes the pipes were aimed at cumulus clouds in order to demonstrate cloud disruption. Within minutes of raising the grounded pipes to near-zenith we both experienced sensations of heavy overall “pressure” in the body, nausea, and “pulling” in the diaphragm. We backed away from the device and Dr. Surel, having recovered from the acute noxious effects, approached the device from several angles using the pendulum to detect changes in what we hypothesized was the outer edge of a “field” of subtle energy. The outline of the outer edge of the field was staked, measured, and photographed. The field extended up to several dozen feet from the device in an unexpected pattern.

I will present details and photographs of the operation and a brief confirmatory report of a follow-up study conducted four months later. We hypothesize that the noxious effects were due to what Reich called “oranur” and the ancient Egyptians called “negative electric green” frequency.



## **Investigation of the Felix Experimental Group: A Status Report**

Stephen E. Braude  
Emeritus Professor of Philosophy  
University of Maryland Baltimore County  
Editor-in-Chief, *JSE*

This talk summarizes and reports the latest developments of my investigation of the Felix Experimental Group (FEG) and its exhibitions of classical physical mediumship. It's been nearly a century since investigators have had the opportunity to carefully study standard spiritistic phenomena, including the extruding of ectoplasm, and the FEG is the only current physical mediumistic circle permitting any serious controls.

At last year's SSE conference I reported the progressively stringent séances I supervised with the FEG, culminating in some very careful experiments with video documentation in a secure and private location in Austria belonging to one of the investigators. These latter séances yielded videos of a full table levitation, and also the medium apparently extruding a large quantity of ectoplasm from his mouth, which then accumulated in an apparently animated heap on the floor in front of him. The ectoplasm was produced despite numerous controls, including a careful strip search of the medium, examination of the medium's clothes, and inspection of the cabinet in which he sat.

Recently, evidence has surfaced from séances other than those I've conducted suggesting strongly that the FEG medium, Kai Muegge, may have resorted to fraud on several of those occasions. Although this has clearly tarnished the case as a whole, it remains unclear whether (or to what extent) the hypothesis of fraud can be deployed successfully with respect to all the FEG phenomena, and my investigations in particular. Thus, it remains unclear whether Kai's mediumship deserves being classified charitably as a case of "mixed" mediumship (combining both fraudulent and genuine phenomena). By contrast, in several other, well-known, cases of mixed mediumship—for example that of Eusapia Palladino, some phenomena seem quite clearly to be genuine. However, that conclusion is warranted because Palladino (and others) produced phenomena under much more stringent controls than Kai Muegge has so far allowed.

In this talk I'll summarize the arguments both for and against the paranormality of the FEG phenomena generally, and I'll discuss what steps Kai must take to dispel the cloud of suspicion currently hanging over all his phenomena.

## Restrictive Worldviews and Biomedical Science

Mike (Myron K) Denney, MD, PhD

After the scientific revolution had reached its pinnacle with the Positivists in Vienna in the late 19<sup>th</sup> century, the year of 1900 heralded fantastic and paradoxical discoveries that challenged the worldview that knowledge of nature could come about only through the rigorous application of logical mathematics and empirical science. The discovery in 1900 of the recursive paradox in mathematics by Bertrand Russell, and in the same year the use of a constant  $h$  to solve the electromagnetic black body problem by Max Planck, opened the door to two trains of thought that led respectively to complexity theory and quantum mechanics.

During the 20<sup>th</sup> century, complexity theory was heralded by Kurt Godel's Incompleteness Theorem, which verified that the recursive paradox would never go away. That led the way to complex adaptive systems and complexity theory, in which unpredictable events spontaneously emerge from chaos. In parallel, quantum mechanics was realized through extremely reliable observations about the nature of reality—quantum particles do not exist until they are observed, can be in two places at the same time, are here and then appear over there without traversing the intervening space, and can affect one another instantaneously at-a-distance.

Such counterintuitive dynamics have not yet been applied to empirical biomedical science, in which objective, cause-and-effect studies with statistical analyses are the strict standard of research and treatment of disease. But, is it possible that complexity and quantum could be applied to the empirical methodology of ordinary biomedical science? After all, the human body is the most complex entity we know of in the universe. Moreover, human physiology is powered by chemical “transport” proteins, which exchange subatomic particles within human cells, and neuropeptides which constantly transport subatomic particles within neuronal synapses and at neuroreceptors throughout the body.

The goals of SSE include bringing improved understanding to those restrictive worldviews that limit scientific inquiry. Is it possible that in a kind of recursive paradox our culture's rigid commitment to ordinary biomedical science is one of those restrictive worldviews?

How might one design a biomedical research project that included spontaneous emergence out of chaos and the existence of a quantum particle in two places at the same time? To begin with we might consider: qualities as well as quantities, the subjective as well as objective, wholeness as well as fragmentation, and the imaginary numbers in Mandelbrot's fractals.

What paths might we take, what discussions might we engage in, what conferences might we participate in to bring about a union of ordinary biomedical science with the new sciences of the 21<sup>st</sup> century?

## **A Maximum Likelihood Approach to the ETI Hypothesis**

York Dobyns, PhD

Maximum likelihood methods are usually developed as part of a rigorous mathematical formulation for a problem domain involving exact quantitative measurements and models. The same concept, however, can be applied to less well-quantified situations. The only essential requirement for such a semi-quantitative approach is that it must be possible to identify distinct hypotheses as being either more or less likely than others. If, at every possible decision point in a hypothesis evaluation, one chooses the formulation that is more likely than every competing alternative, one will emerge with the most likely hypothesis, even if the degree of relative likelihood is impossible to evaluate.

A popular hypothesis, frequently examined by numerous SSE members, is that Earth has been (and perhaps is being) visited by spacecraft containing extra-terrestrial intelligences (ETI). The primary evidence presented in favor of this hypothesis consists of eyewitness reports, and occasional corroboration such as photographs or instrument records, of objects that appear to be artificial vehicles and cannot be identified with any known human vehicles or technology. A subset of this witness testimony and other documentation indicates that at least some of these vehicles seem to have occupants, usually approximately humanoid, who are able to operate (possibly with protection) in a human-compatible environment as regards temperature, atmospheric chemistry, gravitation, and so forth.

The current presentation does not attempt to evaluate the quality of this body of evidence but simply stipulates its existence and attempts to construct a maximum likelihood version of an ETI model consistent with observation. Evaluation of likelihood is based on the premise that what is known to be possible is more likely than what has merely not yet been proven impossible. Thus, for example, technologies already implemented by human beings are more likely than technologies based on known physics but not yet successfully implemented by humans, and these in turn are more likely than technologies based on speculative physics not yet confirmed to be real. Similar, though looser, constraints apply in other sciences such as biology. Background knowledge, such as the fact that we are not presently engaged in widely known, public communication with any ETI species, will sometimes be invoked as well.

The conclusions can be summarized briefly by saying that the ETI model of highest likelihood, given the data, is that a substantial ETI civilization is present in the Solar System exploiting deep-space resources (such as minerals in the asteroid belt and volatiles in the Kuiper belt) in ways we have not yet managed to observe. Inferences from this basic model include the conclusions that the main civilization is deliberately pursuing a policy of concealment (perhaps not primarily from us) and those individuals who have allowed their vehicles or even themselves to be observed by humans have been violating the behavioral norms of their culture of origin.

## **Moving Experiences and the Experience Movement**

Charles F. Emmons  
Professor of Sociology  
Gettysburg College

What is the importance of subjective experience in the study of anomalous or “paranormal” phenomena? Although Greeley found that “the paranormal is normal,” or widely experienced even in American society, subjective experience is typically dismissed as “anecdotal evidence” in mainstream normal science. This rejection of the subjective is strongest in laboratory science that depends upon objective observation external to the experimenter. Thus the behavioral psychologist Watson could say in the 1920s that “there can be no such thing as consciousness.” With the revival of interest in consciousness due in part to modern neuroscience, we can still not observe consciousness objectively or even know whether it is located entirely in the brain. Indeed there are persistent reports suggesting that consciousness may be nonlocally connected to distant objects or intelligences. Studies of subjective experience in combination with neuroscience (as in lucid dreaming studies) may be a way to get beyond the impasse.

However, researchers willing to admit subjective evidence of paranormal consciousness risk being labeled deviant scientists. Typically paranormal researchers have had their own anomalous experiences that motivate them to run the risk. Especially some anthropologists and other social scientists who have been trained in scientific methodologies for studying subjective human experience have contributed to an intellectual movement that is taking subjective paranormal experiences more seriously as ontological clues instead of merely bracketing them as cultural beliefs. Experiential source theory (vs. cultural source theory) is indicative of this approach. Abandoning the myth of scientific objectivity and exploring the insights provided by subjective experience can contribute to a holistic approach in the study of consciousness and of other scientific anomalies (e.g. UFO sightings) that have a human experiential component.

## **Rocks that Crackle and Glow – 10 years later**

Friedemann Freund

10 years ago I reported in the *J. Sci. Exploration*, 17, 37-71, 2003 about pre-earthquake signals, which the Earth produces prior to major seismic activity. Some of these signals have been reported for centuries, even millennia. The list is long and diverse: changing well water levels, changing water chemistry, ground-hugging fog, low frequency electromagnetic emission, earthquake lights from ridges and mountain tops, magnetic field anomalies, transient anomalous radiant temperature anomalies over wide areas as seen in satellite images, changes in the plasma density of the ionosphere, and strange animal behavior. There still is great confusion, how these pre-EQ phenomena are generated, how they are interconnected, and whether they are even real. Today, 10 years later, we know that these pre-EQ phenomena can be traced to a single process: the stress-activation of electronic charge carriers in rocks, positive holes, which consist of defect electrons associated with energy levels as the upper edge of the valence band, chemically  $O^-$  in a matrix of  $O^{2-}$ . Lying normally dormant, when the positive holes wake up, they have the amazing ability to spread out of the stressed rock volumes, traverse tens of kilometers of rocks from deep in the Earth crust all the way to the surface. When they arrive, the Earth surface begins to sparkle and glow. On the basis of insight into the fundamental solid state processes involved, we can now begin implementing a Global Earthquake Forecasting System – a momentous task that will need a broad collaboration across many scientific disciplines and a healthy dose of political will.

## Chasing the Mysteries of Precognition and Synchronicity

Dale E. Graff, MS Physics  
PSI-SEMINARS-INITIATIVES

I examine the mysteries of precognition and synchronicity primarily from an experiential perspective. They can be considered mysterious since there is no conventional explanation for them but are not mysteries from a natural occurrence point-of-view. Some individuals experience them frequently. Statistical evidence of a general class of effects referred to as psi phenomenon supports their validity.

I review recent spontaneous occurrences of precognition of emerging future incidents; and synchronistic experiences that seem random but have unique significance. These experiences were intuitions and dreams for practical and important situations. Two of them were life threatening. The circumstances related to them provide insight into the underlying principles involved. They also provide evidence for how, at a subconscious level, we can interact with others and potentially the physical universe. Illustrations of psi/precognitive experiments explore the differences between the spontaneous events and the controlled experiments.

The controlled experiments were for psi/precognition projects developed, monitored and evaluated by colleagues. The precognitive experiments had psi targets selected randomly three days in the future from the time of the recorded perceptions. Several of the psi dreams were lucid; i.e., becoming aware or conscious of being in a dream.

I conclude by examining the potential role of precognition and synchronicity for safety, helping others and for personal assistance. The psi/precognitive projects provide insight on the role of goal focus and objective repetition for achieving accuracy. I suggest that precognition and synchronicity result from the same phenomenon, and that precognition may be the primary mode of psi perception. Information may be perceived precognitively but remain subconscious, manifesting through impulses to action and by orchestrating synchronicities. Frequently reviewing previous personal psi/precognitive and synchronistic experiences maintains an ever-ready attitude and facilitates the natural occurrence of this seemingly mysterious phenomenon. I suggest concepts for how this phenomenon occurs.

**Bio:** Dale E. Graff is a researcher, writer, and speaker internationally known for his insights into the processes of the mind. He was a director of STARGATE, the government's program for research and applications of remote viewing—an aspect of extrasensory perception (ESP). He coined the name STARGATE to symbolize an innovative effort of exploration that expanded the range of human potential. He began formal research into psychic or psi phenomenon in the early 1970s and is one of the country's experts in psi phenomena. He is recognized for his understanding of our natural psi talents as being a spectrum available while awake, Conscious State Psi, (CSP) and while asleep and dreaming, Dream State Psi (DSP). His books, *Tracks in the Psychic Wilderness* and *RIVER DREAMS* have brought him international recognition as he describes his personal evolution from scientific doubter—degrees in aeronautical engineering and physics—to that of accepting the reality of psi abilities. His books have been praised for their honesty and for the way he presents psychic experiences in a neutral perspective, free of dogma and belief systems. He has appeared on several national and international TV programs, including Good Morning America, Larry King Live, The Crier Report, CNN Sunday Morning News, and several documentaries for the A & E and History Channel. In 2013, he participated in the ABC 20/20 TV production on *Precognition* and was part of a series on *The Paranormal*, produced by the National Geographic Channel. He facilitates seminars and workshops, performs psi investigations and publishing articles. Web Site: [www.dalegraff.com](http://www.dalegraff.com)

## Is the Universe a Vast, Consciousness-created Virtual Reality Simulation?

Bernard Haisch  
astro@calphysics.org

Two luminaries of 20th century astrophysics were Sir James Jeans and Sir Arthur Eddington. Both took seriously the view that there is more to reality than the physical universe and more to consciousness than simply brain activity. In his *Science and the Unseen World* (1929) Eddington speculated about a spiritual world and that "conscious is not wholly, nor even primarily a device for receiving sense impressions." Jeans also speculated on the existence of a universal mind and a non-mechanical reality, writing in his *The Mysterious Universe* (1932) "Š the universe begins to look more like a great thought than like a great machine."

In his book *QED* Feynman discusses the situation of photons being partially transmitted and partially reflected by a sheet of glass: reflection amounting to four percent. In other words one out of every 25 photons will be reflected on average, and this holds true even for a "one at a time" flux. The four percent cannot be explained by statistical differences of the photons (they are identical) nor by random variations in the glass. Something is "telling" every 25th photon on average that it should be reflected back instead of being transmitted.

Other quantum experiments lead to similar paradoxes. To explain how a single photon in the two-slit experiment can "know" whether there is one slit or two, Hawking and Mlodonow write:

“In the double-slit experiment Feynman's ideas mean the particles take paths that thread through the first slit, back out though the second slit, and then through the first again; paths that visit the restaurant that serves that great curried shrimp, and then circle Jupiter a few times before heading home; even paths that go across the universe and back. This, in Feynman's view, explains how the particle acquires the information about which slits are open.”

It is hard to imagine a more absurd physical explanation. We can think of no way to hardwire the behavior of photons in the glass reflection or the two-slit experiments into a physical law. On the other hand, writing a software algorithm that would yield the desired result is really simple.

A digital reality whose laws are software is an idea that has started to gain traction in large part thanks to an influential paper in *Philosophical Quarterly* by Oxford professor Nick Bostrom.

Writing in the *New York Times* John Tierney had this to say:

“Until I talked to Nick Bostrom, a philosopher at Oxford University it never occurred to me that our universe might be somebody else's hobby. But now it seems quite possible. In fact, if you accept a pretty reasonable assumption of Dr. Bostrom's, it is almost a mathematical certainty that we are living in someone else's computer simulation.”

Instead of a future simulation nerd, I suggest that there exists a great consciousness whose mind is the hardware, and whose thoughts are the software creating a virtual universe in which we as beings of consciousness live.

## **Xenoglossy: The Intuitive Recovery Of Lost Language: Its Validation And Implications For The Survival Of Consciousness**

William H. Kautz

Intuitive inquiry has been shown to be a powerful means for acquiring totally new knowledge, including lost history and highly factual information subsequently verifiable by scientific means (JSE 26(3):505-550; JTP 42(2):171-191). *Xenoglossy*, the phenomenon of speaking a language never learned, has the potential for generating the strongest evidence yet for the survival of human consciousness beyond bodily death.

We examine here a particular example of foreign sounding language, spoken by a British medium in the 1930s-50s, and verify that it could never have been learned by its speaker and is a valid spoken version of the written language of the time period claimed for it (1350 BC). ... This case is unique because (1) the documented record of this speech is well recorded and large—nearly 5000 phrases—(2) the language spoken (Ancient Egyptian) is old, very dead, last spoken 1600 years ago, and (3) its written counterpart is known and well understood but *contains no vowels*. This example of evidential intuitive recovery establishes the survival of human consciousness for a very long period of time (3400 years), and the capacity of the method of intuitive inquiry to access information as complex as a human language.

More recently obtained intuitive information describes the unique characteristics of very old languages in general, relative to those spoken today, and how these features relate to ongoing consciousness studies.



## **New Perspectives on the PseudoREG: Feasibility and Implications**

Brennan Kersgaard  
Young Investigators Prize Submission

The present study seeks to reach a more in-depth understanding of pseudoREG operation with an emphasis on feasibility, an elucidation of the relevant psychological parameters, as well as the role of run length on effect size. Many important philosophical, technical and theoretical questions are raised by the present study. Of central importance to all three of the parameters listed above, the present study will address the very important question of whether it is the source of the randomness which matters most or the belief and expectations of the operator regarding said source. Three experimental conditions are utilized to best answer these questions. The first condition, which serves to address the role of belief in successful operation, consists of a single-operator database in which data are generated from a pseudorandom source but the operator is under the false belief that the data is from a truly random, microelectronic noise source. The final two conditions are meant to provide a more general understanding of how the effect is manifested and differ only by the run lengths used. One condition utilizes the 100- trial run length while the other utilizes the 1000-trial run length. A comparison of these two conditions could help us understand if the effect manifests itself only at the initialization of each run or if the situation is more complex. The investigation of PseudoREGs is crucial for many reasons, understanding them better will shed much light on the entire repertoire of experimental apparatus developed by the Princeton Engineering Anomalies Research laboratory

## Evidence for and Model to Explain Unusual Consciousness Phenomena

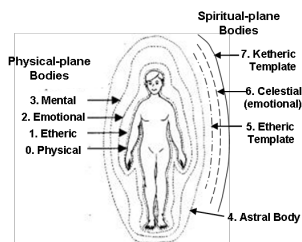
Douglas Kinney, Applied Physics Laboratory,  
John Hopkins University (dougkinney@msn.com)  
Sponsored by Yury Kronn

It is clear that unusual consciousness phenomena such as near-death out-of-body experiences (OBEs), reincarnation remembrances of children, and strange psychophysiological phenomena such as the placebo effect and stigmata cannot be explained with existing scientific theories and concepts. They provide strong evidence for the existence of mechanisms not included within our current mainstream-scientific worldview and theories. I hypothesize that the “mechanism” through which these strange phenomena can occur is the human subtle-energy system with its multiple, interpenetrating subtle dimensional bodies.

First consider the scope of the evidence. Cumulative evidence for the reality of NDEs and children who remember their immediate past lives has been well documented in JSE publications and books. Recently, Edward and Emily Kelly with their coauthors produced a huge book, *Irreducible Minds*, in which they document the full spectrum of other unusual mind-body phenomena. To their treatment, I would add the amazing descriptions from thousands of between-lives regression cases of souls (nonphysical consciousness) in a spiritual realm that are almost in complete alignment with rich NDE accounts. I consider the cumulative accounts from both these sources provide us with a preliminary outline of this realms sociology.

As the Kellys emphasize in their book, mainstream psychology and medical sciences with their mechanistic view of life deny the reality of these phenomena. They write that an important step in the expansion of science is the development of models explaining how these unusual phenomena can be occurring. In discussion stigmata, Emily Kelly quotes two researchers about the specific processes required to create this phenomena:

- Are . . . a mystery of the profoundest sort, with all sorts of implications for the so-called mind-body problem
- [require a] “kind of superintelligence”



In my research for possible explanations, I found that the human subtle-energy system with its multiple, interpenetrating subtle-energy bodies (see Figure 1) provides the elements that can explain all of the unusual phenomena.

In this model, the etheric subtle body operates similar to a “computer program” directing the development, and maintenance of the physical body plus its response to external and internal stimuli. It is affected (programmed) by human emotions and beliefs present in the second and third bodies respectively—providing answers to the “how” of unusual psychophysical (mind-body) phenomenon such as stigmata.

This distributed, nonphysical model of consciousness (mind) is how all the near-death OBEs of our human consciousness can occur in both earth and nonearthly realms. The concept of a nonphysical, holographic distributed mind can also explain the accounts of the donor’s memories and personality traits being transplanted in some organ-replacement surgeries.

Lastly, I want to mention the strange phenomenon that Walter Semkiw has discovered in the similarity of physical appearances and personality traits between present-day individuals and their past-life humans. The human subtle body model with its spiritual-plane bodies provides the input to explain this and many other anomalies.

## **Effect of Subtle Energy Patterns on Cell Viability and Mitochondrial Membrane Potential**

Linda Klimaviciusa Kaspars Jekabsons (1), John McMichael (2), Jeremy Lins (2), Yury Kronn (3)

An in-vitro experiment with human dermal fibroblast (HDF) cells was conducted to compare the influences of various subtle energy patterns, created with Vital Force Technology, on cells' viability and longevity while in the condition of "food deprivation." To create this condition, a growth medium was not replenished throughout the entire course of the experiment. That is, at first, cells grew normally, but once the food ran out, they began to die. Control cells were grown in a standard growth medium, while the experimental cells were grown in the same medium, but infused with different subtle energy patterns. The growth rate of cells grown in energy-infused media was dramatically higher during the growth stage, up to 82% more than in the control group. The best result was demonstrated by the subtle energy pattern that was created specifically for the support of cells' functioning. Also, cells in energy-infused media died much more slowly than the control cells: on the 9th day, there were between 50% - 83% more live cells in the energy-infused medium.

Another series of experiments was conducted using the human embryonic kidney cell line (HEK-293). To create a food deprivation condition cells were grown in a standard growth medium without the addition of fetal bovine serum (FBS), which is usually used for growing cells. In addition to the absence of FBS, mitochondrial toxins - MMP+, causing symptoms of Parkinson disease, or Rotenone - were added to the experimental samples and half of the control samples. Growth media of the experimental samples were infused with the two subtle energy patterns that produced the best results in the first experiment (described above). After 3 days, the viability of the cells and the mitochondrial membrane potential were compared, using the MMT colorimetric assay, JC-1 dye, and Tecan spectrometer. Measurements showed that both the viability and mitochondrial membrane potential of the experimental cells were significantly better, not only in comparison with the control containing mitochondrial poison, but even in comparison with the non-poisoned control.

Presented experimental results show that subtle energy patterns technologically created to support human cells can effectively provide high viability of cells and protect their mitochondrial functions, even in the presence of poisonous substances.

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## Unravelling the Ayurvedic Mystery

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In Ancient India various scientific techniques and methodologies were well established, parallelly, by two indigenous groups of highly civilized cultures. One well-known such established technique is Ayurveda-an Ancient Medical Science and Technology that has been practiced in India for more than 3000 years and still remains part of the mainstream medicine for over 60 per cent of the population in the country. Ayurveda is slowly expanding all over the world as a complementary/alternative approach to modern medicine. Today a number of research articles on Ayurveda are out there published in the main stream medical journals as well as explicit alternative medical journals devoted exclusively to Ayurveda and also other medical technologies of ancient India. However, none of these published works so far uncovers the paradigm dimension of Ayurveda, rather they often viewed Ayurveda under the lens of mainstream medical system; characterization and analysis were carried out without valuing it for its own authenticity. It has to be understood that unlike traditional medicine as it is practiced today Ayurveda has always possessed a personalized medicine approach. Personalized medicine is indeed a growing field of interest in modern medicine system in recent years. From a modern science perspective the fundamentals of Ayurveda cannot be explained on a cellular level using current nanotechnology because of the very nature of its axiomatic construct, though the indirect efficacy of some of the Ayurvedic components can be obtained in labs to a certain extent. However, a classical approach from a physics perspective on the fundamental using atomic and molecular transitions states can be carried out as an analogous study without breaking the authenticity and originality of the Ayurvedic axioms. By carrying out such a study a need for the step to characterize and analyze the effects of treatment using a modern medical approach can be eliminated, albeit the fundamentals reasons that cause the symptoms of certain disease can be understood using modern equivalent terms in physics without breaking the its validity. Here a novel yet ancient approach using mathematical equations and analysis will be presented. The role of energy levels transitions using the fundamentals of physics concept will be incorporated to classically explain the underlying scientific phenomena that lay as the basis for the identified symptomatic disease. This approach is called as the Veda-model. An extensive literature review is carried out on ancient Indian texts to substantiate this model in order to break the unsolved mysteries of Ayurveda that remained dormant for several centuries.

## Consciousness And The Quantum Field

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Sponsored by Dean Radin

At the 2012 SSE Annual Meeting we introduced an integrated set of hypotheses showing how quantum mechanics, and other relevant physics, may form a basis for consciousness and emergent self-awareness. None of the hypotheses are original, but their integration is. In the present work we seek to expand and sharpen this paradigm based on recent investigations of quantum field theory. We will overview the original work and strengthen and expand some of the shallower explanations with an eye to making a stronger case for the original hypotheses. We will merely touch upon some of the supporting physics that remains unchanged. The original fundamental principles were five-fold. (1) We first replace the classical wave-particle duality with a wave-event complementarity in which persistent objects are instead seen as transitory events. Such events may be characterized as raising and lowering operations on a field which add or subtract quanta of potential for spin or momentum. They may be regarded as events in consciousness. (2) We then suggest that time reversal of cause and effect allows a measurement to affect the prior state of a system. Retrocausality in nature is a major sticking point in the Wheeler-Feynman absorber theory, which requires that every electromagnetic interaction forward in time (retarded wave) is accompanied by a time reversed causal advance wave. We have proposed a way out of the cosmologically based dilemma. Retrocausality supports the event hypothesis and also supports déjà vu type consciousness. (3) We then call on wave phase coherence and “indistinguishability of identical particles” as a basis for emergent integration of such events into self-identity. The quantum field aspect here is that to support coherence in photonic wave functions there needs to be a formal equivalence of the Dirac equation for electrons and the Maxwell equation for photons. We have identified a potential equivalence. (4) Next, the emergent quantum state of a system depends on how it is measured or observed. Such observation may be conscious, leading to what we call conscious observational causality. This was covered in the previous work. Finally, also unchanged from previous work, (5) local decreases in system entropy allow highly ordered states to emerge as a result of the conscious observation process. These five principles result in an orderly integration of consciousness and material processes. We show how wave-event complementarity may be represented by a mathematical device in the form of binary exchange operators which allow combinations of two types of events fitting an elementary definition of bipolar conscious interaction in living nature (yin-yang, etc). Combinations of bipolar events lead to more complex interactions, including a mathematical description of the quantum spin matrices and thence to models of spacetime and momentum space. Phase coherence and conscious observational causality show how self-identity emerges and results in high level ordering of living systems.

## **Effect of Subtle Energy Patterns on Gene Regulation of Human Dermal Fibroblasts**

Jeremy Lins (1), John McMichael (1) , Yury Kronn (2)

The aim of this study was to test if subtle energy infused-PBS causes alterations in gene expression. In-vitro studies were conducted at Beech Tree Labs using human dermal fibroblasts (HDF) to examine the influences of various subtle energy patterns, manufactured by Vital Force Technology, on gene regulation.

The first experiment was to see if the subtle energy of Pain or Anti-inflammation formula could regulate the genes associated with pain. HDF cells were treated with PBS infused with the formulas for 24 hours. Total mRNA from the cells was extracted for qPCR array analysis. Human Pain qPCR array was used to screen 84 genes associated with pathology of pain. The results show that gene regulation was modest with Tachykinin receptor 1 showing -2.14 folds down-regulation. A second experiment was to test the subtle energy of anti-aging formula. HDF cells were treated with Vital Force Technology formulation AALF and AA Ultimate individually, an anti-aging formula produced by Beech Tree Labs (M2) alone, and M2 and Swiss cell formula in combination. The results show that subtle energy can enhance the gene expression when used in conjunction with the Beech Tree Formula (M2). Multiple genes associated with aging were up or down regulated when M2 formula was used in combination with Swiss Cell, a subtle energy infused PBS formula. Future studies are underway to document the role of each component in gene regulation. We believe that this is the first objective data demonstrating the effect of subtle energy at the gene level.

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## **Machine Mediated Remote Viewing**

Erik Maddocks, Sean Flodberg, and Garret Moddel  
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Remote viewing is well established using human subjects drawing or describing perceived information about a location or object, without ever having directly observed it. Psychokinesis is well established using humans to affect a random event generator (REG) output. If these concepts are combined, remote viewing can be carried out using human subjects unconsciously producing images via a local REG.

Exploitation of the capability to influence a completely automated REG output might allow for the further removal of the experimenter from the psi experiment. This may mitigate the psi “experimenter effect”, so long as the experiment is designed in such a way as to minimize the experimenter contact with the subject and the subject’s experimental data.

An experimental setup was developed that allowed for the combining of remote viewing and psychokinetic influence of REG outputs. The experiment consisted of two collections of data. In one case subjects were instructed to remote view hidden targets randomly selected by the subjects themselves while data were collected from a local REG device. The other consisted of psychokinesis data where the subjects were instructed to focus or concentrate on visible targets randomly selected by the subjects themselves while data were collected from a local REG.

The experiment employed a forced-choice protocol to simplify the judging of the experimentally produced data. A fixed set of targets was used and all machine-created images were judged against those fixed targets. In the judging procedure, the experimenters were given a set of possible targets, and ranked the targets from most like the machine-created image to least like it. There were always four decoys along with the target, giving a 20% hit rate by chance, over all trials.

This experiment was run in two separate groups. The first group, from a class experiment, had a total of 60 trials, producing a z-score of 2.33 for a p-value of 0.01 (1 tailed), and 0.02 (2 tailed). The second group, from an expanded follow-up experiment, had a total of 128 trials producing a z-score of 1.68 for a p-value of 0.05(1 tailed), and 0.09 (2 tailed). The first group of 60 trials showed statistically significant results while the second group of 128 trials only showed a 1 tailed significance.

The results provide evidence that remote viewing information can be captured with an inanimate system that samples noise. The first experiment was carried out in Edges of Science, a course on the science of psi at the University of Colorado.

Erik Maddocks is an RF Engineer with FIRST RF Corporation, where he designs antennas and antenna systems for the U.S. Department of Defense. Erik was a graduate student at the University of Colorado at Boulder studying electromagnetics, where he investigated the characterization of the atmosphere for millimeter wave SATCOM links. Erik received his bachelors of Science degree in Physics from Southern Oregon University in 2008 and MS in Electrical Engineering from University of Colorado at Boulder in 2014. erik.maddocks@colorado.edu

Sean Flodberg earned his BSEE from the University of Colorado at Boulder in 2013.

Garret Moddel is a professor of Electrical, Computer, and Energy Engineering at the University of Colorado. Along with quantum engineering of new energy conversion technologies, his research group investigates psi phenomena. Recently he served as president of the SSE, and prior to that, president & CEO of Phiar Corporation, a high-tech start-up company. Garret earned a BSEE degree from Stanford and MS and PhD degrees in Applied Physics from Harvard. moddel@colorado.edu.

## **The Dynamic Relationship Between People and Earth's Energetic Systems**

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The convergence of several lines of evidence provides strong support for the existence of a global information field that connects all living systems and contributes to a type of global consciousness. Every cell in our body is bathed in an external and internal environment of fluctuating invisible magnetic forces that can affect virtually every cell and circuit in biological systems. Numerous physiological rhythms and global collective behaviors can become synchronized with solar and geomagnetic activity and disruptions in these fields can create adverse effects on human health and behavior. The most likely mechanism for explaining how solar and geomagnetic influences affect human health and behavior are a coupling between the human nervous system and resonating geomagnetic frequencies (Alven Waves), and resonances in the earth-ionosphere resonant cavity (Schumann resonances) and other very low frequency waves.

The Global Coherence Initiative (GCI) was launched by the Institute of HeartMath in 2008. GCI has designed and is installing a Global Coherence Monitoring System at strategic locations around the planet to measure the fluctuations and resonances in the earth's magnetic fields to conduct research on the mechanisms of how the earth's fields affect mental and emotional processes, health, collective behavior and social unrest. This globally connected network of GPS time stamped detectors continuously measures magnetic signals that occur in the same range as human physiological frequencies such as the brain and cardiovascular systems. Each site includes a random number generator (RNG) that is part of the Global Consciousness Project (GCP) network.

This presentation will report on a collaborative study with the Prince Sultan Cardiac Center in Al Ahsa, Saudi Arabia where we obtained a total of 960 24-hour heart rate variability (HRV) recordings from a group of 16 women (mean age 31, 24-49) over a five month period between March and August of 2012. The solar activity and magnetic variables were: solar wind speed, Kp and Ap index, PC(N), sunspot number, solar radio flux (f10.7), cosmic rays, Schumann resonance integral (area under the curve around 7.8 Hz) and the mean and Standard Deviation (SD) of the time varying magnetic field data collected at the GCI sites located in Boulder Creek, CA and Saudi Arabia.

For each of the study participants, a correlation matrix was calculated between each environmental and HRV variable. Overall, the study strongly confirms that autonomic nervous system activity is affected by solar and geomagnetic influences. All of the HRV measures, with the exception of IBIs, were negatively correlated with solar wind speed and some measures were negatively correlated with the magnetic field data from the local site in Saudi Arabia, but not the site in California, suggesting that local measurements are important. Surprisingly, there were also a number of positive correlations. For example, the f10.7, cosmic rays and Schumann resonance power was positively correlated with a number of increases in HRV variables. Although there were a number of global correlations, at the individual level, the HRV responses varied and in some cases different individuals showed different responses to the same environmental variable.



## **Consciousness Research from the 1st, 2nd and 3rd Person Perspective**

Luis Minero

IAC - International Academy of Consciousness

This work presents the case for studying consciousness beyond the conventional 3rd person perspective, used mainly in current conventional materialistic approaches. Upon studying thousands of cases of paranormal phenomena across the world and throughout centuries, such as out-of-body experiences (OBEs), remote viewing, near-death experiences (NDEs) and others, it becomes imperative to design and incorporate new research methods to study such occurrences. Thus, this work introduces the consciential paradigm, and the methodology of researching consciousness also through subjective experiences (the development of ones own skills for producing paranormal events), or 1st person research; and the interpersonal experiences (measuring and developing in other individuals their own abilities to promote such anomalous events).

The universality of several paranormal phenomena will be presented, including the broad range of cultures, countries, religions and schools of thought which have reported these phenomena and developed methods for their production. Phenomena, in which, individual consciousnesses have a manifestation outside the current boundaries of their physical body. Just like microbes could not be directly observed before the invention of the microscope, there is currently no physical technology to detect what appear to be a non-physical consciousness. Therefore, a new paradigm, called the consciential paradigm, for the study and understanding of these events is needed.

In this work, several types of current 1st person research methodologies will be presented, where individuals develop their own skills and become both the subject and the researcher of the phenomena produced. As the number of cases from different individuals accumulates, consensus and refutation among these researchers allows for more solid conclusions and cross-verifications. Likewise, techniques for the production of paranormal phenomena can also be taught to other individuals, and their progress can be tracked by senior researchers. Helping in the consensus and the refinement of the methods. Furthermore, this work will also present new and 3rd person research initiatives with more classic instruments and methods, including studies using fMRI and double-blind experiments. These 3rd person experiments have already yielded positive and promising results which support the 1st and 2nd perspective research.

These 3-pronged approach (subjective, intersubjective, and objective) towards the study of consciousness aims to further the understanding of Reality, without limiting it unnecessarily to only the 3rd person perspective.

Bio: Luis Minero graduated in Chemistry with honors and the author of the book “Demystifying the Out-of-Body Experience”. He has lectured across Europe, Australia, North and South America on consciousness and OBEs, has had countless OBEs in his lifetime starting since his early teens (1st person), has helped thousands of individuals to develop their paranormal skills (2nd person), and has participated and helped to design several double-blind research activities (3rd person) on this subjects. Minero has been an IAC researcher and instructor since 1995, and is currently the Executive Director of the IAC California center and the Education Director of IAC globally.

## New Energy Technologies: What Can We Believe?

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According to YouTube and elsewhere on the Internet:

- Cold fusion, currently known as low energy nuclear reactions (LENR), is well established. The successful operation of a system developed by Rossi in Italy has been independently verified, and Defkalion, a Greek company, has demonstrated a system.
- A self-powered Bedini generator can charge and restore batteries.
- Tesla's scalar waves travels faster than light, and can provide limitless energy.
- A Papp engine produces months of power with a single charge of a mixture of gases.
- Intense nuclear fusion has been produced by cavitation that results in the rapid collapse of gas bubbles.
- Blacklight Power has demonstrated power production using a low-energy form of hydrogen.
- The Searl effect uses an set of rotors to produce energy and an anti-gravity force.
- T. Henry Moray invented and repeatedly demonstrated a device for extracting radiant energy from the atmosphere.
- Orbo permanent magnetic generators produce energy with no other apparent input.
- Brown's gas (HHO) can be formed from water to provide fuel to run an engine.
- Kenneth Shoulders' charge clusters can be used to provide much more energy than is required to form them.
- Meyer and Mace patented a magnetic circuit in France that produces a large energy gain.
- Zero-point energy fills the quantum vacuum and Haisch and Moddel patented a method to harvest it.

According to Wikipedia:

- New energy technologies are pseudoscience.
- When real scientists examine over unity systems, they have always been disproven.

Where is the truth?

The answer involves a combination of the closed-minded certainty of established scientists versus measurement errors and self-delusion of inventors, spiced with suppression and conspiracy.

Garret Moddel is a professor of Electrical, Computer, and Energy Engineering at the University of Colorado. Along with developing new energy conversion technologies, his research group investigates psi phenomena. He is working on an initiative to investigate exotic energy technologies, such as those described here, at the University. Recently he served as president of the SSE, and prior to that, president & CEO of Phiar Corporation, a high-tech start-up company. Garret earned a BSEE degree from Stanford and MS and PhD degrees in Applied Physics from Harvard.

# **Demonstrating the Necessity of Relational Collapse in Viable Interpretations of Quantum Mechanics**

Sky Nelson, PhD  
Independent Researcher in Physics

Wikipedia lists fourteen different “interpretations” of quantum mechanics, all based upon (mostly) the same mathematical axioms. A major unresolved problem in physics is to provide a rigorous reason for choosing one interpretation over the others. This paper shows that any quantum theory which is to be compatible with the basic postulates of special relativity must contain relational collapse of the wavefunction. This effectively rules out about half of the available options, including, notably, the Von Neumann and Copenhagen Interpretations.

Quantum theory limits what we are allowed to say about the “true” state of a quantum system if that system is unobserved. But special relativity relies fundamentally on a universal assumption about what a light particle is doing at ALL times (namely, traveling at speed  $c$  relative to any inertial observer, regardless of being observed). This fundamental conceptual gap between the theories is the starting point of the proof.

In resolving this impasse we show that the existence of light (and hence space and time) is not continuous. Since time dilation and length contraction become infinite for a photon, light can have no temporal or spatial interactions ( $\Delta t' = 0$ ,  $\Delta x' = 0$ ). To describe an interaction, the principle of simultaneity can be applied between an inertial observer and a light particle. Although light would register no separation between events, the Lorentz transform implies that the inertial observer measures a separation between those same events of exactly  $\Delta t = \Delta L/c$ , a light-like separation. In other words, although light has no passage of time or space itself, light will always be measured by an observer at a position and time exactly as if it had travelled at speed  $c$  continuously through the medium. This fits nicely within the limitations set above by quantum mechanics, and leads to the necessary conclusion of relative states.

The author’s preferred interpretations of relational quantum mechanics and consistent histories quantum mechanics will be discussed. It will be pointed out that the relative state interpretation that is proven here is far more friendly to the possible existence of consciousness than its competing interpretations.

## **DNA Analysis of the Atacama “Humanoid”**

Garry Nolan (Invited Speaker)  
Nolan Lab  
Stanford University School of Medicine

The genetic provenance of the Atacama mummy was recently raised. The complexity of the case concerns the unusual morphologic features of the specimen balanced against the size of the specimen. Radiographic analysis of the specimen by a renowned expert in pediatric bone disorders showed features consistent with an age of 6-7 years, which is at obvious variance with the size of the specimen. DNA was prepared from a bone marrow specimen taken under controlled conditions with chain of custody specimen control. DNA sizing showed an average 200 base pairs, consistent with a “young” age of the specimen (likely less than 100 years leading to minimal degradation of DNA), and not “ancient” (where the DNA size could be as small as 35-50 base pairs). Whole genome analysis was undertaken with two successive genome runs for a total of ~30 fold over sequencing of the genome. Each run gave statistically identical variant calls, with the combined genomes matching well against the human reference genome (hg19\_refGene). Phenotype-genotype analysis was undertaken on causal variants after standard population filtering. 54 potentially deleterious gene mutations were found, but after phenotype enrichment using the Human Phenotype Ontology system, 3 gene mutations of these 54 were found that are referenced in the known databases as correlated with short stature, abnormalities in bone ossification, and 10 ribs. Thus, the observed phenotype in the visual and radiographic analysis matches the genetic abnormalities found to a remarkable degree of accuracy. The conclusion can be suggested that the genetics of the specimen matches the observed morphology, and that explanations of misidentified diagnosis are likely incorrect. The genetic analysis undertaken does not allow us to conclude age at time of death.

## The Fourth Phase of Water: Beyond Solid, Liquid, and Vapor

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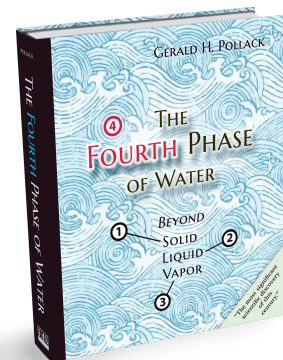
School children learn that water has three phases: solid, liquid and vapor. But we have recently uncovered a *fourth* phase. This phase occurs next to water-loving (hydrophilic) surfaces. It is surprisingly extensive, projecting out from the surface by up to millions of molecular layers. And, its properties differ substantially from those of bulk water.

Of particular significance is the observation that this fourth phase is charged; and, the water just beyond is oppositely charged, creating a battery that can produce current. We found that light charges this battery. Thus, water can receive and process electromagnetic energy drawn from the environment in much the same way as plants. Absorbed electromagnetic (light) energy can then be exploited for performing work, including electrical and mechanical work. Recent experiments confirm the reality of such energy conversion.

The energy-conversion framework implied above seems rich with implication. Not only does it provide an understanding of how water processes solar and other energies, but also it may provide a foundation for simpler understanding natural phenomena ranging from weather and green energy all the way to biological issues such as the origin of life, transport, and osmosis.

The lecture will present evidence for the presence of this novel phase of water, and will consider the potentially broad implications of this phase for physics, chemistry and biology, as well as some practical applications for health and technology.

The new book dealing with this subject is now available at [www.ebnerandsons.com](http://www.ebnerandsons.com).



## **Mind-Matter Interaction Experiments Involving Light**

Dean Radin (Invited Speaker)

Institute of Noetic Sciences

Many types of physical systems have been used in experiments investigating mind-matter interactions (MMI). A smaller number of studies have used light as the target of mental influence. Studies involving light are especially useful for studying MMI because light reveals behavior that is distinctively quantum in nature. In particular, it displays wave-like or particle-like behavior depending on how the light is observed. In physics, “observation” is generally regarded as an irreversible amplification of a microscopic event, but there are other forms of observation, including subjective awareness. This observation-dependent effect provides a unique opportunity for studying the meaning of observation and the possible role of consciousness in the physical world.

This talk briefly reviews the relevant literature on MMI experiments using optical systems. Then it focuses on a series of 15 experiments conducted in our laboratory over the past 5 years, all involving optical interferometers. The first study involved a Michelson interferometer, the next ten used a continuous beam Young-style double-slit interferometer, and the last four involved a single-photon double-slit system. The cumulative evidence from these studies suggests that mental attention acts in a manner analogous to an inefficient physical detector; that is, when the detector is operating it causes light to slightly shift from wave- to particle-like behavior. But unlike a physical detector, the mind has the capacity to turn this "detector" on or off through the modulation and direction of attention. I will speculate on this and other interpretations of the experimental results.

## **Ultraweak Light Emission from Humans and Other Organisms in Relation to Health and Healing**

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We designed and built a custom photon counting detector system with a walk-in dark closet that can sit 3 persons comfortably. This system measures the ultraweak light emission from humans and other organisms either alone or during human interaction. Our experiments show that various regions of the human body, including the palm of the hand, forehead, heart, and abdominal regions, emit photons in the visible spectrum at an extremely low rate (less than 100 counts per min), in line with published values. We measured the light emitted from mind-body practitioners of qigong, meditation, yoga, and various types of energy healing, such as Reiki, external qi, and other forms, who offer energy therapy to clients. In some cases, these energy practitioners were able to alter their own energy emission dramatically, for example by “opening” and “closing” the “third eye” region. In other experiments, we examined the light emission before, during, and after energy therapy sessions with both patients and practitioners in the chamber. The results of 8 such sessions show that each energy therapy session was unique in terms of the pattern of light emission. Moreover, light emission diminished in all subjects after energy therapy.

In another study, we examined 3 patients pre-post energy therapy that was conducted by an energy practitioner outside of the photon counting chamber. We found that the photon count rate from the patients’ forehead, heart, and abdominal regions became more balanced immediately post-therapy.

In a study comparing cucumbers grown by several different agricultural methods, we found that organically grown cucumbers emitted considerably less light than commercially grown ones. Moreover, sweeter, more pleasant-tasting cucumbers emitted much less light than bitter or tasteless ones.

This ultraweak light emitted from organisms, which has been called “biophoton emission” by those who hypothesize that it is bio-informational, bio-regulatory, and not just a waste product of metabolism, may provide insight into extraordinary states of health and healing in the case of humans. In foodstuff, it may provide information on freshness and plant stress. The biofield hypothesis, which views life from an energy field viewpoint in which energy-with-information is key to the state of an organism’s physiology and regulation, will be offered as an explanatory model.

## A Case Of Xenoglossy And The Nature Of Consciousness (Part 2)

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Discussant Jon Lieff M.D

Is consciousness an outgrowth of the physical brain -- is it the primary substance of reality – or, as is *in* the view of panpsychism, is there a middle ground where energy, mind, and matter all exist in a continuum as parts of basic nature? And how does this case of xenoglossy relate to the growing information about mind from various disciplines including the *neuronal connectome, brain waves, chemical synapses, astrocyte networks, cytokine communication with immune cells, extracellular space actions, quantum biological effects, and information theory?*

I will be joined in this talk/video presentation by Dr. Jon Lieff, past-president of the American Association for Geriatric Psychiatry (AAGP), consulting editor of the American Journal of Geriatric Psychiatry for 10 years, an expert in psychopharmacology, who has kept abreast of the latest research related to mind, summarized in his blog, “Searching for the mind.” Along with my presentation, Dr. Lieff will discuss how current theories about mind relate to the following case of xenoglossy.

THE CASE: In June – July, 1983, in San Diego, CA, I observed and videotaped remarkable phenomena in the course of treating a 32-year-old female Caucasian patient who suffered from a severe headache disorder. Without having had prior knowledge of Sanskrit, my patient spontaneously began to speak Sanskrit fluidly, write it down phonetically, and translate it into English. About 30 such “messages” were collected. Two Sanskrit scholars verified that most of the words were clearly Sanskrit. They felt that it would be impossible for the patient to have learned this complicated language while being debilitated and without anyone observing her in the process – let alone be able to express such foreign spiritually sophisticated ideas from both Buddhist and Vedantic traditions expressed in the notes. This case provides compelling information about the possibility that consciousness extends beyond our physical brain and personal life experience.

I have created a 21 min video describing this case, including showing raw footage of the patient speaking Sanskrit, describing her experience and the meaning of the notes as well as her background and upbringing -- and including discussions with 2 Sanskrit experts about the validity and meaning of the notes.

Addendum – Over the past 40 years I have traveled to India about 80 times and written 3 books about my experiences with Sathya Sai Baba and their relevance to Western science. My first book, “Sai Baba: The Holy Man and the Psychiatrist,” has been translated into about 40 languages.



## Precognitive Scientific Information in the Fiction of Philip K. Dick: Will the Real Ubik Please Stand Up?

William Sarill

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Science fiction is a literature of technological and societal speculation. Not surprisingly, some of its prognostications have proved remarkably accurate, particularly in works of “hard” science fiction, a genre that strives for technical accuracy. Authors of hard science fiction typically have backgrounds in the hard sciences. The late Philip K. Dick – arguably the foremost science fiction author of the past 50 years – was not a member of this club. Dick was an autodidact with no training in science, who wrote speculative fiction focusing on altered states of consciousness, metaphysics, and even theology. From his writing it is evident that he had a layman’s familiarity with some concepts of physics, neuroscience, and psychiatry, but not chemistry. It is therefore all the more astonishing to find accurate biochemical detail, on a subject about which Dick almost certainly knew nothing, embedded in one of his most renowned novels, *Ubik*. In *Ubik*, written in late 1966, some characters exist in a state halfway between life and death. When their world begins deteriorating, they are subjected to accelerated aging, fatigue, and loss of muscular strength; all that can reverse their deterioration is a mysterious substance named Ubik. Later in the text, it is revealed that the name derives from the Latin word *ubique*, meaning *everywhere*. But this description of Ubik closely matches that of ubiquinone, a substance more familiar to the public as CoQ10. Ubiquinone was named in 1957 by one of its discoverers, R.A. Morton of the University of Liverpool, who established the nomenclature by combining the Latin word *ubique* with the chemical term *quinone*; the name thus means omnipresent quinone. Ubiquinone occupies a key locus in the mitochondrial electron transport chain and is vital for energy generation. It also functions as a lipid-soluble antioxidant and free radical quencher. In recent years ubiquinone has shown promise for retarding senescence. Genetic deficiencies in the ubiquinone pathway typically manifest in muscle weakness; there is also evidence for ubiquinone deficiency in chronic fatigue syndrome. Thus, the description of Ubik provided in Dick’s eponymous novel bears a striking resemblance to the known properties of ubiquinone. The first trials of ubiquinone for human disease were begun in 1967, after Dick had already submitted the novel to his literary agency, and its role in aging was not elucidated until a decade later. Ubiquinone remained solely the province of biochemists until the mid-1980s, a few years after Dick’s untimely death, when it finally began acquiring widespread public recognition as CoQ10. Given this timing and the lack of any knowledge of cellular energetics on Dick’s part, it is exceedingly unlikely that Philip K. Dick had ever heard of ubiquinone before writing his novel. Instead, given his well known history of precognitive experiences and mystical visions, it is likely that Dick simply intuited the name and its properties; he unwittingly became a channel for scientific information. Although there are predictive elements throughout his writing, his description of Ubik stands out as an example of intuitive gnosis for which no conventional explanation can suffice.

## Experimental Test of a Second Law Paradox

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In 2000, Duncan proposed a simple thermodynamic paradox: a sealed blackbody cavity contains a diatomic gas and a radiometer whose opposing vane surfaces dissociate the dimer and recombine the monomers to different degrees [1,2]. Owing to differing desorption rates of the dimers and monomers, there arise between the vane faces permanent pressure and temperature differences, either of which can be harnessed to perform work, in conflict with the second law of thermodynamics [3]. This paper reports on the first experimental realization of this paradox [4], involving the dissociation of low-pressure hydrogen gas on high-temperature refractory metals (tungsten and rhenium). The results, corroborated by other laboratory studies [5] and supported by theory [6,7], confirm Duncan's paradoxical temperature difference and point to physics beyond the traditional understanding of the second law. Potential applications of these results and current research to extend them to room temperature will be discussed.

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## **Examination of Random Number Generator output during non-contact Healing and Macro Psychokinesis**

Shimizu, T. & Kokubo, H.

Using expert healers as participants, recent experiments by Kokubo et al. (2010, 2011, 2012, and 2013) reported that non-contact healers exhibited good healing effects using pieces of plants as biosensors. Notably their effects were measured by gas or fluorescence emissions from pieces of cucumber, showing a distribution of bio-psychokinetic (PK) effects, not only for the nearest target in front of the participant, but also other targets set within around a few meters around the participant. These results showed high reproducibility. If these kinds of healing energy are distributed around healers without their awareness, we can consider that biosensors and Random Number Generators can be used as detectors of these anomalistic phenomena; as sensors of field consciousness.

A Random Number Generator (RNG) is an instrument that produces bit sequences (0 or 1) at high speed through physical means. Many previous studies for PK or field consciousness have reported that these RNG outputs become statistically biased under certain circumstances. In case of typical PK experiments, one of the most important factors is the intent of the participant, whereas field RNG studies have demonstrated statistical biases in the absence of anyone who might intend to influence the output of the RNG or in the presence of subjects who are unaware or have no knowledge about the presence of the RNG. In any case, these kinds of anomalies can be interpreted as the consequence of micro PK.

The purpose of the current study was to examine possibility that RNG outputs would be affected by experimental PK tasks. To this end, we employed two PK tasks. The first was the bio-PK task designed by Kokubo et al., in which participants would try to heal cucumber pieces. The other involved a varying weight task using metal nails. While the participants' attention would be focused on the targets (sensor) alone, we hypothesized that the output of the RNG, which were not known to be located near the participant, would be influenced by a certain state of consciousness if the energy affected space entropy without specific intent.

Results found no biases in the RNG outputs during the PK tasks. Unfortunately, the findings did not support our hypothesis. Although the current analysis focused on the value of the end event, it may be easier to observe bias if we focus on all the processes of the SS transition for each period. The results were different between healers. An RNG outputs showed an increase of variance over all periods in the nail-weight increasing task, whereas another results of the weight decrease task showed small variances over all intervals. Since this was a pilot study, the sample size was not sufficient. When we consider that the wavelet was not able to detect any difference, the current results suggest that anomalies of RNG are not merely physical signals, but need to be explained by other frameworks.

## **Anomalous Interactions Without Enshrining Consciousness**

Richard Shoup  
Boundary Institute

A simple model is presented for certain anomalous interactions including Radin's recent two-slit optical experiments. The model does not contradict existing quantum theories, and is based on the time symmetry of paths of potential influence. Human consciousness, Mind, Self are shown to play a non-central role, and do not require or possess magical qualities.

## **“Here And Now” - Thoughts On A Unified View Of Space, Time, Mind And Matter**

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We are all arguably 'here and now'. It is my contention that if we understand 'here and now' we will better understand Mind and the material Universe as well as the connection between the two.

Schrödinger (1) pointed out that "Mind is always NOW" (my emphasis). I will discuss how he derived from this the argument that mind is eternal and that at the fundamental level all Mind is One.

Professor Roger Penrose (2) has suggested that we will understand Consciousness better once we have arrived at a unification between Quantum Theory and Relativity.

Professor Lee Smolin (3) has pointed out that the Laws of Physics as currently understood don't imply in themselves either the existence of the 'Now' or what we experience as the 'flow' of time.

He also cautioned (3) against the logical flaws inherent in seeing space and time as a 'given'- as simply the 'when and where' of substance and events.

I suggest that in considering the relationship between these four concepts of space and time, mind and matter we would do well to acknowledge an 'elephant in the room'.

If there is such a thing as freedom of will then this could perhaps be a clue to the nature and properties of all four.

The role of consciousness in the 'measurement' problem of quantum theory is discussed particularly in the context of the 'delayed choice' experiment. It is suggested that if we may consider an explanation beyond materialism or dualism then it might be conceivable that mind and matter form part of a continuum with mind being the 'prime mover' and that considering certain characteristics of awareness and will as they relate to time, space and matter might enhance our understanding of humanity as sentient beings, of the nature of physical reality and our relation to it and to each other.

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## **Radiesthesia – The Ancient Science of Vibrational Physics**

Dr. Dominique Surel

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As quantum physicists slowly discover the dynamics of how our universe functions, their findings are revealing concepts that are reflected in the ancient science of Radiesthesia. The major difference between the concepts in modern conventional science and radiesthesia is the human element. In the latter, the human body is considered an instrument and a critical component.

Radiesthesia comes from the Latin word *radius*, or ray, and the Greek word *aesthesis* or sensitivity. It can be traced back to 6,000 BC in China, Europe, and Egypt. While the general population was taught how to use dowsing rods, the knowledge of the science of Radiesthesia using the pendulum was limited to special individuals, priests, or top leaders. To acquire this knowledge was to develop the human mind, body, heart, and soul, in a way that established direct connection with the Universe or the Divine.

Radiesthesia is based on the concept that all things, living, inert, shapes, materials, etc. emit some type of wave form, or frequencies. Humans can develop their sensory with their mental capacities to learn, by using intention, how to enter into resonance with the different waves or rays in order to detect, measure, and manage these forces or energies. It is believed that the Egyptians used Radiesthesia to build their pyramids.

For thousands of years, knowledge of Radiesthesia was passed on by word-of-mouth and as the modern world evolved into the more mechanistic and industrial epoch, the concepts of the ancient science were ignored. Still today mechanistic scientists scoff at using the human being as an instrument because they have difficulty proving, through conventional instruments and research designs, that this human potential exists. The problem is that conventional scientific instruments and research designs were not created to explore the nonlocal realm.

In the 1940s, two French colleagues, de Belizal, a physician, and Chaumery, an engineer, rediscovered the lost knowledge while visiting the Pyramids in Egypt. They dedicated years researching the different invisible rays and frequencies, seeking scientific explanations. One of their findings was a specific ray emitting energy of a *negative electric green* frequency which the Egyptians used to mummify and protect the tombs from intruders. While conducting experiments with this ray, Chaumery died of over-exposure.

Some European surgeons realized, with good training in Radiesthesia, that they could accurately identify the ideal spot to make a surgical incision; but they were quickly thrown out of the medical profession. In the 1990s Professor Etienne Guille (PhD in physio-biochemistry) from the University of Paris conducted research on DNA using Radiesthesia and published his findings in the book *Vibrational Language of Life*. Homeopaths in the early 1900s used Radiesthesia for diagnoses and tailoring the dosages for each individual. The applications of this science are limited only by our creativity on how to use it.

This lecture will explain the concepts of Radiesthesia and how the training to learn this science taps into an area of human potential that is being overlooked today.

# Material Science Challenges to Define the Fleischmann and Pons Effect by Applying the Scientific Method

Vittorio Violante (Invited Speaker)  
Rome Tor Vergata University

The Fleischmann and Pons Effect is the appearance of excess energy when a Pd cathode is electrolyzed in heavy water ( $D_2O$ ). Results with signals well above the measurement uncertainties confirm the anomalous production of excess of power during electrochemical loading of palladium with deuterium.

The excess power has the following features:

Threshold effect (loading  $D/Pd > 0.9$ )

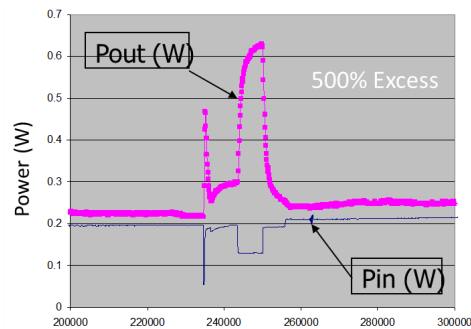
Unobserved with hydrogen

Unexplainable as a chemical effect

Occurs only if materials shows specific characteristics

The figure shows a mass flow calorimetry result giving 500% excess power. Material science is the key to understand it, since some material characteristics support some processes rather than others. Future work, by applying the scientific method, will have to be oriented towards the definition of the effect rather than its demonstration.

Mass flow calorimetry excess power: output power becomes 5 times larger than the input.



Professor Violante earned a Masters Degree in Chemical Engineering Naples University in 1979. PhD in New Materials in 1992. ENEA (Italian Agency for Energy and Economic Development, ex CNEN) Graduate Fellowship (1980-1983) studying hydrogen metal hydrides interactions for energy storage and liquid membranes for metals separation. Associate researcher at Argonne National Laboratory, Chicago (USA) (1983) working on liquid membrane processes studying distributed parameters modeling. Permanent position researcher at ENEA Laboratories (1984). Working on simulations codes for fusion reactors fuel cycle for tritium control into breeding materials and plasma facing components, and isotopic separation. 1987 and 1988 visiting scientist at Max Planck Institute in Garching (Germany) working with the ITER nuclear engineering team. Since 1989 has been involved in the ENEA program on thermal anomalous effects in deuterated palladium, including calorimetry, transport phenomena and hydrogen isotopes interaction within the metallic lattice, laser triggering and interface electrostatics. The studies on material science allowed to increase the deuterium loading reproducibility in Pd cathodes. Adjunct professor of Transport Phenomena at Calabria University (1992-1995). Responsible for the ENEA Section of Special Nuclear Technologies for Fusion (1996-2002). Adjunct professor of Physics for Advanced Energy Conversion at Rome Tor Vergata University (2001-2010). Adjunct professor of Physics of Nuclear Energy at Rome Tor Vergata University (since 2010). Visiting scientist at GW University (2009) working on metal hydrogen systems. Chair of ICCF 15 (2009) in Rome. Responsible for the ENEA Task Force for Energy from Metal Hydrogen Systems (since 2011) and ENEA Coordinator for LENR Research.

## What Can The Psi Data Tell Us About Quantum Mechanics?

George Williams

While successful in many respects, quantum mechanics remains deeply puzzling and suggests radical departures from classical theories of physics. Further, there is no consensus explanation from the various widely differing theoretical attempts to explain it. Given the strong fit between the orthodox (Copenhagen) framework and the data, as well as the absence of anomalies, some have expressed pessimism that this issue can be resolved. However, I will argue that there is a set of anomalous data that can be exploited to make progress: psi data.

Some interpretations such as Wigner (1967) suggest that consciousness plays a role in determining the outcome of quantum events. Most physicists have strongly resisted such explanations, which imply some type of mind-matter interaction. For a number of reasons, I will argue that this resistance is mistaken. First, while most scientists embrace the idea that consciousness is solely a product of brain processes, there is currently no consensus theory on how consciousness emerges. In fact, consciousness is not congruent within classical theories of physics at all. Second, the alternative attempts to explain quantum mechanics—which include parallel universes or quantum superposition—do not appear any less radical than the existence of mind-matter interaction. Third, and perhaps most important, there is substantial data that imply the existence of mind-matter links, as well as other psi data that suggest non-local connections between minds.

A brief review of the literature demonstrates strong evidence for psi in a number of different categories. There is also substantial evidence in telekinesis or mind-matter interaction experiments, some of which test mental intentions on random number generators based in quantum mechanical processes. While there appears to be a replication issue, differing test results may be accounted for through experimenter effects. This likelihood appears stronger given the evidence from large-scale mind-matter experiments such as the Global Coherence Project, which arguably reduces the importance of experimenter effects.

What can the psi data suggest about alternate explanations of quantum mechanics? First, the evidence from telekinesis or mind-matter experiments suggests that that minds can influence the intrinsic probabilities underlying physical processes. This casts serious doubt on the Everett or many worlds theory, where all possible worlds suggested from the quantum framework exist simultaneously. Second, waveform collapse theories that do not involve consciousness also appear to be inconsistent with the psi data. Most categories of psi appear to be consistent with two classes of explanations: 1) waveform collapse theories that involve consciousness and 2) theories that suggest a deeper underlying stratum of reality, such as Bohm and Hiley (1993). However, the experimental evidence from the Global Coherence Project, which suggests shifts in the emotions of large groups can influence random processes, is arguably inconsistent with waveform collapse theories, which require a conscious observer. Thus the overall psi evidence favors some versions of the frameworks explored by Bohm and Hiley's (1993) as well as some work by Stapp (2011).



**The Mystery of Joe Papp's Noble Gas Engine:  
Does spark-initiated pulsed plasma of a hydrogen, chlorine, and noble gas soup in  
the presence radioactive metals indicate novel energy?**

Ryan S. Wood  
Sponsored by Dr. Garret Modell

The talk will cover the history of the inventor Joseph Papp from his education and early work experience in Hungary under Alexander Szalay, founder at ATOMKI, the Institute of Nuclear Research of the Hungarian Academy of Sciences, to his immigration to Canada, and creation and alleged demonstration of a 300 mph submarine with novel engine propulsion. He then moved to California where three separate demonstrations and explosions occurred of the noble gas technology: one with the Naval Undersea Warfare Laboratory and the other in the Environetics parking lot (Los Angeles County) and at TRW in the presence of many witnesses including Dr. Richard Feynman. A forensic content analysis of the patents and lawsuits will be presented along with a psychological profile of Papp. Both TRW and General Dynamics expressed interest and worked with Papp in varying degrees to reduce his technology to practice and further understand the noble gas internal engine demonstrations and explosions. A timeline of the technology development from the beginning in Hungary to Papp's death in 1989 will be presented. Many official sources are used in this preparation, from Royal Canadian Mounted Police, French Gendarmerie interviews, and FBI interviews, newspaper articles, police files, court documents, corner reports and living witness interviews with participants. Legal counsel responsible for managing the court-ordered settlement for Papp and Environetics was interviewed. A summary of technical claims and sources will be presented and analyzed.

The results of the technical data investigation shows that a reasonable man would conclude that there is novel energy. This is accomplished by tapping of (nuclear?) energy in a low temperature method not fully understood (or forgotten) by modern physics. A gaseous photochlorination chain reaction in the presence of hydrogen and subsequent recombination appears to be a key aspect of the Papp Engine. Walter Nernst was awarded a Nobel Prize in Chemistry in 1920 in part for work in this area and R.G.W. Norrish's science in photochemistry showed that chlorine & hydrogen have sharp limits of pressure, varying markedly with temperature, below which the chain reaction is slow and above which it becomes explosive. This may be what is happening in the Papp Engine. This conclusion is based on the, historical science, witness testimony, film evidence, patents, official interviews and one historical certified power-in power-out controlled test. However, to date this technology although allegedly replicated by several independent groups has failed to create a working engine system for high quality 3<sup>rd</sup> party validation testing.