

ALCOR LIFE EXTENSION FOUNDATION

CRYONICS

2ND QUARTER 2008 · VOLUME 29:2

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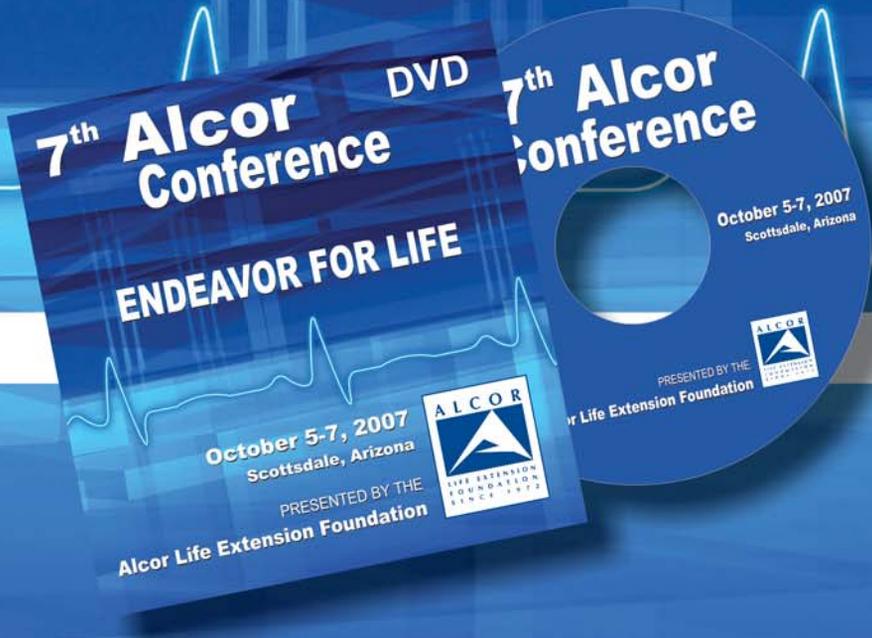
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CRYONICS

2ND QUARTER 2008 · VOLUME 29:2

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At the May 3, 2008, board meeting, Alcor welcomed Robert A. Freitas Jr., J.D. and Martine Rothblatt, Ph.D. to the Scientific Advisory Board.



Robert A. Freitas Jr., J.D., published the first ever detailed technical design study of a medical nanorobot in a peer-reviewed mainstream biomedical journal and is the author

of *Nanomedicine*, an innovative book-length technical discussion of the medical applications of nanotechnology and medical nanorobotics. Volume I was published in 1999 while Freitas was a Research Fellow at the Institute for Molecular Manufacturing (IMM) in Palo Alto, California. Volume IIA was published in 2003 while he served as a Research Scientist at Zyvex Corp., a nanotechnology company. Freitas is now completing *Nanomedicine* Volumes IIB and III and is also consulting on diamond mechanosynthesis, molecular assembler design, and nanofactory implementation as a Senior Research Fellow at IMM.



Martine Rothblatt, J.D., M.B.A., Ph.D. launched the Geostar, PanAmSat, WorldSpace, and Sirius satellite communications companies prior to leading the International Bar

Association's project to develop a draft Human Genome Treaty for the United Nations and founding a biotechnology company, United Therapeutics. She is an inventor on four patents and created the frequency bands used for mobile satellite communications and satellite radio. Dr. Rothblatt has authored several books: *Radiodetermination Satellite Services and Standards*, 1987; *Apartheid of Sex*, 1995; *Unzipped Genes*, 1997; *Your Life or Mine*, 2003; *Two Stars for Peace*, 2004. She also scripted and produced the pioneering cybermuseum, the World Against Racism Museum, www.endracism.org.



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LIBERATION BIOLOGY: THE SCIENTIFIC AND MORAL CASE FOR THE BIOTECH REVOLUTION

Author: Ronald Bailey (New York: Prometheus Books, 2005)

BOOK REVIEW BY R. MICHAEL PERRY, PH.D.

The ages-old dream of greatly lengthening human lifespan while maintaining a state of good health has seemed a fantasy to most until recent times. Now scientific and medical progress suggests that such an advance could occur within the lifetimes of some living today. Some are hopeful and optimistic about such prospects, including cryonicists, but many are not. Worried voices have been raised that radical life extension would be going “too far,” that we must respect “natural boundaries” and must not tamper with something so fundamental even if the results would seem, on the face of it, to be highly beneficial. Other human enhancements, such as genetic modifications that would make children healthier and smarter than nature has already provided, must similarly be nixed. Moreover, argue the naysayers, certain investigations must be stopped, notably embryonic stem cell research which “destroys human life” since human embryos at whatever stage of development are “fully human” even if they have no brain or consciousness.

Such thinking may be an understandable reaction to what are increasingly real possibilities that could radically change human life and even the meaning of life. To those of us in the immortalist camp, however, it seems tragically misguided to so resist the prospect of alleviating the mortal burden we have labored under for so long in this world. It is refreshing, then, to see a book such as *Liberation Biology* offer a firm rebuttal to fear-based, “deathist” thinking while reporting on exciting progress in the medical and biological fields.

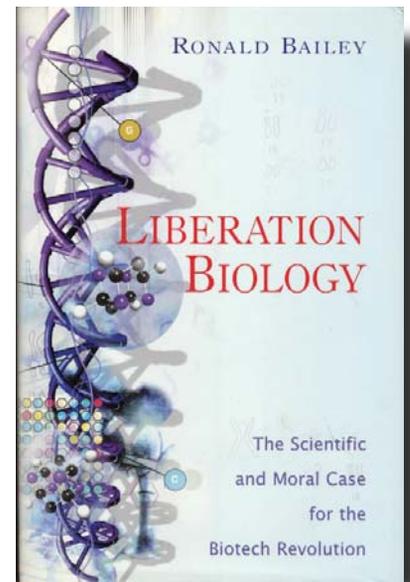
Engaging the reader from the start, the front flap opens with: “The defining political conflict of the twenty-first century will be the

battle over life and death. On one side stand the partisans of morality, who counsel humans to quietly accept our morbid fate and go gently into that good night. On the other is the party of life, who rage against the dying of the light and yearn to extend the enjoyment of healthy life to as many as possible for as long as possible.” Going from there, the Table of Contents suggests what will follow: “Biopolitics, fight of the century”; “Forever young: the biology and politics of immortality”; “Are stem cells babies? The ethics of making perfect transplants.”; “Hooray for designer babies!”; and so on.

No, says the author, stem cells are definitely not babies, nor are tiny embryos with no brain; both can rightfully serve as subjects of scientific experiments. More generally, the book offers a solid case that the drive to immortality through technology is a most natural part of our nature, a process that began when our distant ancestors first made their crude tools to help overcome whatever of life’s limitations they could start addressing.

Today we can address much more but the basic process continues, now at an ever-accelerating pace. Increasingly it extends into all facets of life, including our own biology. It is not denied that caution is called for; more than ever we must guard against the possibility of abuse as our powers and understanding develop. But (let us never forget!) we must also continue the advance.

As yet, despite the advances we’ve made the main problems are unsolved, as the author readily admits. Aging is still largely untreatable, designer babies are yet to make their appearance, and it is not at all clear just how the important advances will be achieved, despite what is now known. So



much of the book in fact is brave talk in need of more backing, and additionally is becoming dated as time passes and perspectives are altered by new discoveries. The talk could come across, particularly to the veteran immortalist, as “preaching to the choir” or otherwise lacking inspirational value, though I found it engaging.

It is encouraging that books are being written to counter the dreary views of those frightened by, yet accepting of death. However, we must also face the fact that so far each of us is slated to die pretty much on schedule, and we have to ask what can be done. Does *Liberation Biology* address this issue? Yes it does, albeit briefly. The case for cryonics is outlined and recent progress in vitrification is noted. This is saying a lot, for a writer who does not appear to be a cryonicist himself—though we who are could ask for more. ■

A BEGINNER'S GUIDE TO IMMORTALITY: EXTRAORDINARY PEOPLE, ALIEN BRAINS, AND QUANTUM RESURRECTION

Author: Clifford A. Pickover (New York: Thunder's Mouth Press, 2007)

BOOK REVIEW BY R. MICHAEL PERRY, PH.D.

The subject of “immortality” means different things to different people, and Clifford Pickover’s book considers many of them, starting with the more conservative. This may frustrate some readers—space is given early on to people, such as the writer Truman Capote, who achieve “immortality” through their works (though not by a strategy for personal survival). But heck, I thought, that is interesting, too, what with the weird problems and hang-ups of many of history’s geniuses, and I found myself drawn in. Capote, for example, could not so much as recite the alphabet though he had a tape-recorder-like memory and didn’t use notes or other memory aids for the interviews in his groundbreaking, nonfiction novel *In Cold Blood*.

At least it can be said that, in the smorgasbord of topics relating in some way to “immortality,” garden-variety immortalists who are just interested in physically defeating death are not ignored. There is a brief but basically favorable discussion of cryonics—though no mention of its important relatives, the attempted conquest of aging and radical life extension.

As for true physical immortality, the author is actually something of a fence-sitter if not naysayer, at one point invoking the well-known “dilution argument” which would apply if death is physically abolished. The growth of our gray matter or other mental substrate must continue indefinitely to accommodate new memories and experiences. If we lived long enough our earlier personalities, even if faithfully preserved informationally, must be totally swamped and form so small a fraction of the whole that we could no longer claim to be at all the “same person” we originally were. (There are counterarguments to this that the author does not consider.)

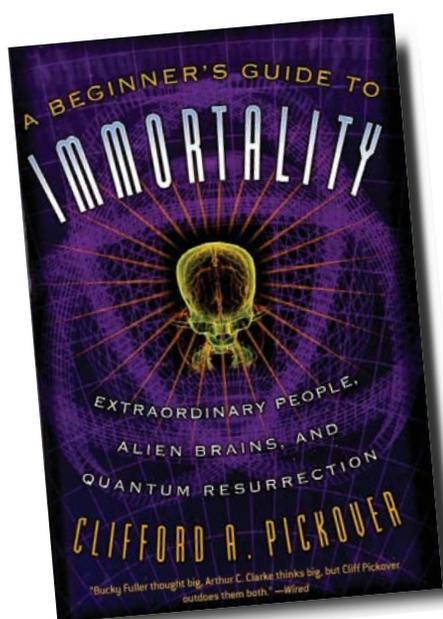
Noted on the other side of the ledger, however, is “quantum resurrection”, implying that, if we suppose the dilution problem can be worked around after all, immortality is not only possible but inevitable. Reality as a whole, not necessarily confined to the visible universe, should offer essentially all possible things going on at the quantum level which underlies all that happens. So copies of us must be generated over and over, and each one potentially can continue “our” consciousness and survival in one of numerous possible ways, at least some of which should be pleasing and rewarding. (Admittedly, this will

not be philosophically palatable to everybody, but it does have some interest and some advocates. It is, by the way, an old argument that can be traced all the way back to the ancient Greek atomists and also is echoed somewhat in Nietzsche’s idea of the Eternal Return.)

Another topic, “quantum immortality”, promises eternal existence another way via physics, again for those who are philosophically receptive. The idea is that reality is always splitting into parallel versions, in which sometimes, however improbably, we never die at all. (But we might not exactly prosper either—as, for example, if we grow older and older but just “get lucky” to the extent that our bodies and brains never completely stop working. Personally I find the quantum resurrection idea with its clear renewal option a more cheerful prospect.)

If there is any one passage that I would say best captures the tone of the whole, it might be near the beginning where the author discusses current cultural shifts. The dominant role of techno-geeks is giving way increasingly, it appears, to the more holistically creative: “The hottest individuals will be those who are good at recognizing patterns in culture and belief, those who try to understand the forest and not just the trees.” These in turn will serve as social catalysts, helping others “become creative and dream daring dreams.”

Of course such a book will not please everybody—those it especially will not please can probably guess who you are. Otherwise, though, read and enjoy—you’ll find it entertaining if you approach it as the optimistic, mind-candy Christmas stocking-stuffer it is intended to be. ■



A THURSDAY EVENING DEBATE

By Regina Pancake

Photos by Regina Pancake

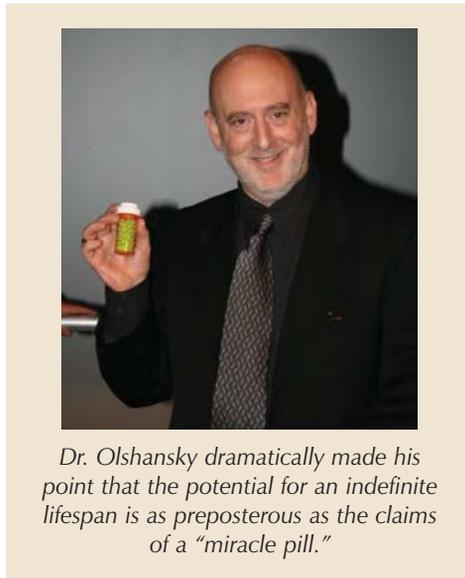


In early March, I learned of a free debate that had been advertised in many of the local Phoenix papers with the provocative tag line of: “Do you want to live forever?” It featured Dr. Aubrey de Grey, who would be verbally sparring with Dr. S. Jay Olshansky about the possibilities, and impossibilities, of life extension. I, like many Alcor members, am familiar with Dr. de Grey’s anti-aging work, so a group of us eagerly took our seats to bear witness to this enticing 90-minute debate held at the Arizona Science Center.

Dr. Olshansky was introduced as an American professor of epidemiology at the University of Illinois at Chicago School of Public Health. A biodemographer, biogerontologist and researcher on the upper limits of human aging and longevity, he works to educate the public about products that claim to reverse or halt the aging process. Dr. de Grey is a British biomedical gerontologist and the author of the *Mitochondrial Free Radical Theory of Aging* and *The End of Aging*. He is currently working to develop a tissue repair strategy to rejuvenate the human body and thereby allow an indefinite lifespan, a medical goal he calls “engineered negligible senescence.” We could see, right from the onset, the potential for clashing perspectives would be high.

Dr. Olshansky had the honor of speaking first. In his opening statement, the good doctor explained that we had probably already bought into the idea of life extension and grown accustomed to science pushing the envelope further and further within our own lifetimes. He then dramatically pulled out a Federal Express envelope. Opening it with flare, he placed a medicine bottle filled with bright green pills on the podium. He proceeded to read a press release disclosing the wondrous capabilities possessed by the little

green pills and didn’t stop until the audience groaned under the weight of the preposterous claims. The jig was up.



Dr. Olshansky dramatically made his point that the potential for an indefinite lifespan is as preposterous as the claims of a “miracle pill.”

So went my first introduction to Dr. Olshansky and his little demonstration, which he would later refer to as our “inoculation.” His demonstration was meant to prime us for arguments against his opponent’s claim that an indefinite lifespan is possible. He asserted that we had been exposed to a complete fabrication insufficiently supported by data.

In response, Dr. de Grey calmly took the microphone and commended Dr. Olshansky on setting the modest goal of adding seven more years of healthy life to the average human lifespan. De Grey couldn’t resist pointing out that Dr. Olshansky, or Jay as he called him, had not provided any data whatsoever to support his own case, yet opposed de Grey’s ideas on that very basis.

Dr. de Grey proceeded to give the reasoning behind his ideas. “Aging is a process of decay,” he said, “a by-product of being alive in the first place.” He feels it happens despite our genetic heritage, not because of it. The process of metabolism leads to the life long accumulation of damage, initially harmless, but eventually becoming deadly as it grows sufficiently abundant within the body.

He explained some key issues sure to peak the interest of anyone with an inquisitive mind. He began with his proposed “Engineering Approach” to eliminating aging (removing damage as it occurs), which is not as complex as the “Gerontological Approach” (slowing the damage caused by metabolism). “We don’t need to understand the metabolism nearly as much if we use the engineering approach,” he proclaimed. “Robust Human Rejuvenation” involves reversing the damage that has accumulated in people already in middle age. To be successful in the long run, however, the development of more and more sophisticated rejuvenation therapies must outpace the accumulation of future cellular damage, a concept called “Longevity Escape Velocity.”

As we listened to the exchange, it became apparent that these two men, as different as they were in their viewpoints about scientific potential, were actually very similar in their quest for longevity. And they appeared to be good friends who shared a passion for “health extension,” rather than strictly life extension.

In the end, this was but an introduction to the concepts being hotly debated in our time, a glimpse into the profound issues at play. As I left the auditorium that night, I was hopeful that the event had opened some of the attendees’ minds to ideas not previously conceived of, and I felt lucky that mine was one of them. ■

EXECUTIVE DIRECTOR'S REPORT

By Tanya Jones

We have had a busy year at Alcor so far. In addition to performing five cryopreservations, one including a two-week standby, we have continued to work hard on the technical projects we hope will greatly improve the quality of cryopreservations for all members. We intend for these projects to address shortcomings in stabilization readiness, perfusion capability, and training protocols.

Improving the stabilization capability is a critical task, and our teams need the appropriate equipment and supplies to carry out a complex protocol involving surface cooling, medication administration, airway management, and blood washout. What happens in the minutes following cardiac arrest will often determine how well a patient is vitrified, or even, if a patient can be vitrified at all.

Because of the complexity associated with replacing entire stabilization kits in all the regions, we chose to break this project into slightly smaller parts. Our ice bath design (for the application of surface cooling) is stable and complete, and we are in the process of building the first six for deployment to our existing regions. Simultaneously, we are building new medication kits for those same

regions. The medication kits represent an improvement in ease of use and clarity for our team members, and we have processes in place to ensure that the medications will be maintained with respect to expiration dates. These first six kits have been deployed to northern and southern California, Nevada, Florida, New England, and the United Kingdom.

Deploying additional kits will require the establishment of new regions and a search for regional coordinators. As we get farther along in this process, we will be contacting members in several high-density areas, like the Pacific Northwest, Texas, and the Midwest to search for volunteers who wish to become involved. We also intend to recruit in other countries, like Canada, where having a stabilization kit pre-positioned will save time trying to get one through customs in an emergency.

By the time we complete our recruiting process, we should also have an improved training regimen for team members, training that goes beyond lectures and mannequins to actual hands-on skills practice. Furthermore, we intend to extend the training program from the stabilization portion of the procedure (which is mostly what we teach now) to include vitrification protocols, even cooling.

The vitrification system we are building will be particularly well-suited for training team members in whole-body perfusion, as we can program it with any number of scenarios designed to teach team members what to do when something goes wrong. With its extensive automation and more logical layout, we expect to train several more personnel to assist with the perfusions.

We're excited to report that our new whole-body system is nearing the alpha-testing phase, after more than two years of development. We are in the process of finalizing the user interface and note-taking capabilities; and we hope to begin the rigorous testing needed to validate the basic system sometime in September. Few features remain to be added, like bubble-sensing capability and the patient enclosure temperature control. We also need to finish the documentation necessary to operating and trouble-shooting the system. We have added three-point sensor calibration for the refractometers (which measure the patient's cryoprotectant uptake);



customized note-taking capability for each of the steps in the vitrification process; and multi-layered alarm systems.

As we begin testing the new whole-body system, we are also prepared to start testing the portable perfusion system we use in patient stabilizations. The controller problems mentioned in the article "2007 Annual Review" (*Cryonics 29:1*) have been resolved, and we are eager to see if everything works as intended. Though the design modifications we made to this device were relatively minor, the impact on the time it will take a team member to set up for the blood washout portion of a stabilization will be significantly reduced as will many of the practical training requirements. Of course, learning to perfuse a patient is not a small task, but anything we can do to simplify or speed up the procedure is likely to help.

Continuing our technical development to improve the procedures and getting more people trained in cryonics procedures are currently two of our highest priorities. With our expanding membership, there will eventually come a time where our network is stretched too thin to provide quality care to all members. By anticipating these needs now, we can prevent some obvious – and ultimately avoidable – failure modes.

For more on issues facing the organization and recent changes that have taken place, I encourage you to read Board Director Brian Wowk's article titled "Strategic Board Meeting" starting on page 7. We are all hopeful that the recent management restructuring will allow greater focus on the many technical projects we have queued up to improve member cryopreservations. ■



Alcor's redesigned medication kits include individually-packaged and vacuum-sealed medications, each accompanied by the supplies and written instructions necessary for preparation.

Strategic Board Meeting

By Brian Wowk, Ph.D.



Over the weekend of June 7th and 8th, 2008, the Alcor board and management team held a 2-day strategic meeting at the Alcor facility in Scottsdale, Arizona. Planning for the meeting began in January as it became apparent that there were many issues that needed more discussion than was possible during regular monthly board meetings. More than 30 items were set on the meeting agenda. The formal portion of the meeting consisted of 9 hours of discussion on Saturday, and 3 hours on Sunday. Former CEO, Dr. Jerry Lemler, served as Chair for the weekend. The regular monthly board meeting for June was rolled into the Saturday session.

LEF/Miller/Thorp Readiness Grant

Four days before the Strategic Meeting, board member Saul Kent communicated to the board and management details concerning a large grant to improve Alcor operations that he had just secured in the form of a proposal from three donors. The grant was to consist of donations of \$150,000 per year for three years from each of the Life Extension Foundation (LEF), the Miller family, and Edward and Vivian Thorp, pro-

LEF/MILLER/THORP READINESS GRANT DETAILS

During the Saturday portion of the Strategic Meeting, the Alcor board approved the resolutions below to meet the terms of the LEF/Miller/Thorp grant proposal.

In response to a proposal by three major benefactors delivered to the Alcor board of directors by Saul Kent on June 7, 2008, we adopted these resolutions solely with respect to the use of \$150,000 per donor per year for three years, totaling \$1,350,000:

1. A comprehensive search for a new Executive Director* will be undertaken.
2. A comprehensive search for a full-time Standby Coordinator* will be initiated. In addition to managing standbys, this person would be responsible for working with others at Alcor to improve readiness for cases and would write detailed case reports for every Alcor cryopreservation patient in a timely manner.
3. Donations are to be accepted for improving readiness capability at Alcor for cryopreservation cases. In order to encourage donors to support this development, the following procedure will be followed:

First, written proposals, including budgets, will be submitted to the Alcor R&D committee for approval.

If the proposal involves developing new equipment, the next steps will be building and testing a prototype of this new equipment. Only after this prototype has been approved by the R&D committee will money be provided to construct or purchase additional units. The R&D committee is charged with evaluating all available options before making decisions regarding readiness equipment.
4. Upon payment by the donors of the needed funds, Alcor will give a 10% raise to all staff members.
5. All parts of the plan shall be implemented in a timely fashion.
6. Alcor will seek candidates for both positions who are mutually agreeable to the Alcor board of directors and the donors.
7. Alcor will develop a comprehensive fundraising and revenue-generation plan. Saul Kent will undertake to develop a first draft.

* The Standby Coordinator and Executive Director search committees established pursuant to the grant have renamed the positions to be advertised as Transport Coordinator and Chief Executive Officer.

viding a total of \$1,350,000. This \$450,000 per year was to be used to fund improvements in cryopreservation case readiness, a new Standby Coordinator staff position, an Executive Director search and compensation, and staff salary support.

The grant proposal was a major topic of discussion on Saturday. Board members Steve Van Sickle and Carlos Mondragon were concerned that potential withdrawal of the grant if mutual agreement was not achieved between donors and the board during an Executive Director search gave the donors too much influence over Alcor. They were particularly concerned that Saul Kent, a principal of LEF, had a conflict-of-interest because of LEF's financial support of Suspended Animation, Inc., a company that supplies cryonics services to other cryonics organizations. Other directors felt that the mutual agreeability provision was not unreasonable, and that Alcor would benefit even in the unlikely event that agreement could not be reached. They also believed that turning down such a generous donation from three wealthy benefactors would set a bad precedent. After long discussion, the grant proposal was accepted by the board, with 6 in favor, and 2 against. The two directors that opposed the proposal, Steve Van Sickle and Carlos Mondragon, resigned from the board in protest later in the meeting.

Officer Changes

Also on Saturday, Tanya Jones was moved from the Chief Operating Officer post to Executive Director, Jennifer Chapman was moved from Chief Administrative Officer to Chief Operating Officer, and Steve Van Sickle was moved from Executive Director to Chief Technical Officer. These changes were the product of discussions earlier in the year, and reflect preferences of the management team with concurrence of the board. The motion to appoint Tanya Jones as the new Executive Director was made by Steve Van Sickle.

Patient Care Trust Board Changes

Carlos Mondragon's resignation from the Alcor board was accompanied by his resignation as board representative and Chair of the Alcor Patient Care Trust (PCT) board. Michael Riskin was chosen by the Alcor board to take Carlos' place as board representative on the PCT board.

Finances

Organization finances were discussed. As detailed in the January 18, 2008, Alcor News blog report, "Update on Recent Progress," Alcor currently spends approximately \$1.4 million per year. Approximately \$200,000 of this is paid for by regular donations, and \$300,000 by bequests and other extraordinary income events. The unpredictable nature of extraordinary income means that some years are deficit years. This has necessitated drawing from and then replenishing Alcor's half-million-dollar endowment fund on several occasions, making the endowment fund a de-facto reserve fund.

The board agreed that it would be beneficial to build a financial floor under the current level of operations so that they could be sustained even without extraordinary income. Establishing an endowment fund to supply regular income equal to the operating deficit would be a natural way to do this.

Concern was expressed that Alcor lacks credibility in fundraising for endowments because past endowments have been spent or handled as reserve funds. To overcome this, it was proposed that an endowment be established that is legally structured to preserve capital. It was agreed that this would be investigated, likely in conjunction with a fundraising plan being assembled by board member Saul Kent to meet the conditions of the LEF/Miller/Thorp Readiness Grant.

Patient Care Trust Finances

Patient care at Alcor is funded by a legally segregated Patient Care Trust (PCT) that currently has assets valued at \$3.2 million. PCT assets consist of \$1.7 million in liquid investment accounts, plus majority ownership of the company (Cryonics Properties, LLC) that owns the building Alcor occupies, plus ownership of the mortgage on the building. The value of the PCT grows with Alcor's patient population as money is set aside in the PCT for each new patient to fund long-term care.

Concern has recently been expressed by the Alcor board and some Alcor members that more clarity is needed in PCT accounting. The complexity of PCT assets and internal cash flows makes it difficult to determine the investment performance of the illiquid portion of the PCT in a transparent way. It was decided that an effort would be made in cooperation with the PCT board to improve reporting of PCT finances to the Alcor board and membership.

Performance of the PCT as an investment is important because Alcor charges the PCT approximately \$150,000 per year to pay for patient care. This amount is composed of direct patient care costs, such as liquid nitrogen and capital expenses, plus a portion of Alcor general expenses that are considered attributable to patient care. The Alcor board agreed during discussions at the Strategic Meeting that the charge to the PCT should be considerably less than 5% of the PCT value per annum to ensure long-term growth and security of the Trust.

Patient care costs, both overhead costs and marginal costs of new patients, are key. There has not been a detailed analysis of patient care costs at Alcor in 15 years. The desirability of such a study was expressed.

Membership Growth

Membership growth was discussed. Annual growth was approximately 3% in 2006 and 2007. Various changes implemented in the Membership Department have increased monthly membership growth to a 7% annual rate in 2008, with 865 members at the end of May. The target of 1000 members before or during 2010 may be within reach.

Member Democracy

Early this year long-time Alcor activist and benefactor David Pizer issued a public plea to change Alcor's board from being self-perpetuating to member-elected. A lengthy explanation of the present system written by Ralph Merkle entitled, "Alcor's Self Perpetuating Board," was placed on the Alcor website. The board took the opportunity of the Strategic Meeting to further discuss the issue. While appreciating the stability that a self-perpetuating board can offer, some board members noted that a self-perpetuating board can become insular and unresponsive as internal assets grow and an organization becomes less dependent upon member support. Possible ways of increasing member feedback without changing the Bylaws were discussed, such as allowing members to elect an individual that the board would voluntarily place on the board. Many details would have to be worked out to implement such a plan. It was agreed that there were more urgent projects that needed attention, both at the meeting and after the meeting. The issue will likely continue to be discussed in the future.

Organization Priorities

There has been some tension between the board and management about attention paid to research and equipment development vs. clinical readiness to perform cryonics cases and case reporting. For the past couple of years management has been implementing an ambitious plan to redesign transport kits and equipment to better facilitate replication and wider kit distribution. This has taken longer than expected. In addition, a highly advanced whole body cryoprotective perfusion system is being built, and animal research infrastructure had been put in place, funded by the Bina and Martine Rothblatt Whole Body Vitrification Research Matching Grant of 2006. Management emphasized to the board that effort has primarily focused on research and development because members have funded it and expect results. Member interest in funding improvements to the ability to respond to actual cryonics cases (clinical readiness) has been comparatively low. With the advent of the large LEF/Miller/Thorp Readiness Grant, all agreed that the time had come to put a stronger focus on clinical readiness and service delivery.

Wealth Preservation Trust

Alcor's Wealth Preservation Trust has been in the development process for more

than two years with the intention of providing a vehicle for members to set aside funds for personal use after revival. Progress has been stalled for approximately a year due to difficulty finding a new attorney to work on the trust after the firm that Alcor had been working with lost interest. At the Strategic Meeting it was agreed that an attorney with experience preparing individual revival trusts for some of Alcor's wealthiest members would be contacted. Since the Strategic Meeting, there have been fruitful conversations with this attorney. In particular, there was a recommendation that Alcor develop a template trust to facilitate establishing individual revival trusts for members rather than a master trust that could become a large target for litigation. The arguments for doing so are strong, and this recommendation is being seriously considered.

Other Topics

Many other topics were discussed over the weekend. They included facility security, personnel issues, regional readiness, metrics for case performance, Alcor's aging information technology infrastructure, and the timing of the next Alcor conference (likely late 2009 or 2010). The meeting concluded with a general understanding that it would be beneficial

for directors to visit the facility and attend meetings in person more often.

Acknowledgements

The board wishes to thank the Life Extension Foundation, the Miller family, and Edward and Vivian Thorp for their generous grant, and Bina and Martine Rothblatt and their matching donors for funding much technical progress at Alcor over the past two years. Special thanks must also be given to the Miller family for their regular generous support of Alcor in addition to the new readiness grant. The board is grateful to Carlos Mondragon for his many years of service on the board and invaluable work during times of crisis, including serving as Alcor's chief executive from 1988 to 1993. The board is also grateful to Steve Van Sickle and Tanya Jones for heading Alcor for the past three years, and looks forward to continuing to work with both of them in their new leadership roles. The board thanks Jennifer Chapman and the Alcor staff for their hard work and dedication, and the many other donors, advisors, volunteers, and members that keep Alcor going. Thanks also to Jerry Lemler for chairing the Strategic Meeting. ■

Photos by R. Michael Perry, Ph.D.

Take a look at the **ALCOR BLOG**

www.alcornews.org/weblog

Your source for news about:

Cryonics technology

Cryopreservation cases

Television programs about cryonics

Speaking events and meetings

Employment opportunities



COMPANY ANNOUNCEMENT

A non-profit,
Tax-exempt, 501(c)(3)
California Corporation

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ALCOR LIFE EXTENSION FOUNDATION

7895 E. Acoma Dr. #110, Scottsdale, AZ 85260-6916
(480) 905-1906 or (877) 462-5267 (877-GO ALCOR) • Fax (480) 922-9027 • www.alcor.org



Alcor's Mission: The Preservation of Individual Lives

Dear Alcor Member,

On June 7th and 8th, 2008, the Alcor board and management held a 2-day strategic planning meeting at the Alcor facility in Scottsdale, Arizona. At that meeting a funding offer brought forward by board member Saul Kent was accepted by the Alcor Board after considerable discussion.

The funding offer was made by three donors: the Life Extension Foundation, the Miller family, and Edward and Vivian Thorp, who will each contribute \$150,000 a year to Alcor for three years, totaling \$1,350,000. The funding provides for searches and three years of salary support for a CEO and a Transport Coordinator, who will be responsible for the early stages of the cryopreservation of Alcor patients. The funding will also pay to improve readiness for cases at Alcor and provide a 10% raise in salary for three years for the entire Alcor staff.

The position announcements for the CEO and Transport Coordinator positions follow. Information about how to apply for these positions is included. Those who wish to apply can do so immediately.

Sincerely,

Jennifer Chapman, Chief Operating Officer
Alcor Life Extension Foundation

Cryonics

The cryopreservation of patients for possible future revival is known as cryonics. It is based upon the fact that cells, tissues, organs, and entire organisms maintained at very low (cryogenic) temperatures will not suffer any significant further damage for centuries; and the premises that advances in cryobiology make it possible today to preserve the brains of patients well enough to enable future scientists to restore individual identity; and that future advances in fields such as gerontology, genetic engineering, regenerative medicine, and nanotechnology may someday make it possible to restore cryopreserved patients to life, health, and youthful vigor.

The practice of cryonics is controversial because today's methods of cryopreservation cannot be reversed by today's technology and because today's laws require that patients be cryopreserved after they are legally "dead." As a result, Alcor has to deal with and counter skepticism at times. The CEO should have the knowledge and presence to deal effectively with negative attitudes towards Alcor and the practice of cryonics.

For more information about Alcor and cryonics please see our website at <http://www.alcor.org>.

POSITION: Alcor Chief Executive Officer

Effective Date July 20, 2008

Salary \$125,000 per year plus the benefits described below

The Alcor Life Extension Foundation (Alcor) invites applications for the position of Chief Executive Officer (CEO). Alcor is a non-profit, tax-exempt membership organization in Scottsdale, Arizona, that is the world leader in cryonics, cryonics research, and cryonics technology. The Alcor CEO will be in charge of all operations including the management of Alcor's staff, which currently consists of 10 people in Scottsdale and consultants in other areas. This includes management of administrative activities, research and development projects, cryopreservation cases, and long-term patient care operations. The position will likely require periodic travel.

Qualifications

It is preferred that candidates for the CEO position have the following qualifications:

1. Experience in successfully managing small or medium-sized companies that offer scientific and/or medical products and services. CEO candidates should possess an effective management approach that is consistent with Alcor's mission statement and includes strategic planning, the development of a structured organizational system, setting and enforcing project deadlines, and effective tactics for conflict resolution. Those who only have experience in managing companies that do not offer technical products and services can also apply if they have a strong interest in and commitment to cryonics;
2. A good working knowledge of cryonics, cryonics practice, and the scientific evidence in support of cryonics. This includes some knowledge of the equipment, medications, and supplies used in the practice of cryonics, such as the portable ice bath (PIB), the air transportable perfusion system (ATP), anti-ischemia medications, portable cardiac compression devices, vitrification circuits, and the cryogenic dewars used to care for cryopreserved patients. Extensive knowledge of cryonics and cryonics practice is not a mandatory qualification for the position, however it is critically important that CEO candidates be strongly committed to the long-term care of Alcor patients who have been cryopreserved and the ongoing improvement of the methods by which new Alcor patients are cryopreserved;
3. The ability to work well and manage others well under ordinary circumstances and under pressure. Alcor performs cryopreservations about 2-8 times a year. These can involve rapid decisions with health, emotional, financial, organizational, and legal ramifications, especially when the patient and family have not made prior arrangements for the patient to be cryopre-

served and are seeking to do so under considerable time pressure. The CEO will need to interact diplomatically with and educate patients, relatives, medical personnel, hospital administrators, and government officials. The CEO will need to know the legal basis for cryonics and be able to explain both the promise and limitations of cryonics in a credible manner. The CEO will need to have a commanding presence during emergencies and when coping with the everyday pressures of running the organization;

4. The ability to work well with the Alcor Board of Directors, which will be overseeing the CEO's performance and the progress of the organization as a whole, and to work well with the other members of the Alcor management team;
5. Strong communication skills to help facilitate a positive public perception of Alcor and cryonics and to help increase Alcor's rate of membership growth. This includes the ability and willingness to speak effectively in public, be interviewed by the media, offer tours of the Alcor facility to the public, and write articles for Alcor's publications;
6. Fiscal management skills, including the ability to oversee Alcor's budget, oversee annual accounting reviews, implement controls, communicate financial affairs to the board and membership, foresee and deal with cash flow challenges, and implement fundraising ideas to obtain both unrestricted and restricted donations and bequests to improve Alcor's financial status on an ongoing basis.

Salary and Benefits

The salary for the CEO position will be \$125,000 per year plus health insurance, paid sick leave, paid vacation time, and other benefits as specified in Alcor's policies or otherwise negotiated. Alcor will pay all the costs of relocation for any successful candidate who doesn't already reside in the Scottsdale area.

Applying for the CEO Position

In order to apply for the CEO position, please send a resume and a cover letter describing your interest in and qualifications for the CEO position to Jennifer Chapman at the following email address:

Jennifer@alcor.org

or, if by mail, to:

**Jennifer Chapman, Chief Operating Officer
Alcor Life Extension Foundation
7895 East Acoma Drive, Suite 110
Scottsdale, Arizona 85260**

POSITION: Transport Coordinator

The Alcor Life Extension Foundation currently has an immediate opening for a Transport Coordinator at our Scottsdale, Arizona, facility. The Transport Coordinator is responsible for the stabilization and transport phases of cryonics. Cryonics is the experimental practice of using ultra-cold temperatures to preserve human life in a state that may be recoverable by future medicine. For four decades Alcor has developed and implemented innovative techniques in the field of human cryopreservation. These techniques involve a combination of experimental interventions and conventional medical skills.

At Alcor, we believe that intelligence, memories, and personality are determined primarily by the structure and chemistry of the human brain. Our aim is to preserve the brain and the unique identity within it so well that advanced future technology can restore the individual to health. The stabilization and transport phases of cryonics ideally consist of rapid cooling, administration of medications, and cardiopulmonary support to protect the brain following cardiac arrest prior to transport to Alcor. For more information about cryonics and Alcor please see our website at <http://www.alcor.org>.

Job Description

The Transport Coordinator will be responsible for the post-mortem stabilization and transport of Alcor patients to Alcor's cryopreservation facility in Scottsdale Arizona. The Transport Coordinator will work with the Readiness Coordinator on the maintenance of Alcor's existing patient stabilization and transport processes, ensuring that equipment is properly maintained for emergency deployment, field personnel are adequately trained, and that the highest quality of care is delivered to our patients. The Transport Coordinator will ensure that appropriate data is collected during stabilization and transport, and write detailed timely case reports. Once suitably experienced in our procedures, the Transport Coordinator will be responsible for improving our existing training regimen, updating documentation, extending regular training sessions for regional groups within the United States and overseas, and supervising the certification process for our technicians. The Transport Coordinator will work with personnel at Alcor and with external physicians, scientists and consultants to ensure that procedures reflect the best available medical and scientific knowledge. The Transport Coordinator will also perform the following specific tasks:

Premortem Responsibilities

1. Establish contact with Alcor member's physician or medical facility upon terminal diagnosis.
2. Track and assess member's condition without participating in treatment. Tracking may continue on an intermittent basis, in person or by phone.
3. Decide when the member's condition warrants deployment of a stabilization team.
4. Organize and maintain a Standby, often in a remote location, in which cryonics transport technicians wait to perform post-mortem stabilization procedures.

5. Establish contact with local funeral homes to assist in transport preparations.
6. Interact with patients, their family and local medical personnel to ensure the timely application of Alcor's protocol after pronouncement of legal death.

Postmortem Responsibilities

1. Ensure the timely application of Alcor's stabilization protocol, which includes surface cooling, medication administration, cardiopulmonary support, airway management, and blood washout.
2. The Transport Coordinator will then supervise the transport of the patient to our facility in Scottsdale, Arizona, and possibly continue participation in the case in the operating room.
3. The Transport Coordinator will be responsible for the timely preparation of detailed technical reports on the care provided to each patient, once each transport is concluded.

This position requires out of town travel approximately 6 to 8 weeks per year. The Transport Coordinator is to be on call on a 24-hour basis for emergencies that may occur up to ten times per year. Otherwise, normal business working hours are required.

The person we are looking for will be self-motivating, and creative, but stable and reliable in challenging situations. Our Transport Coordinator must have good people skills to interact successfully with our member's families and hospital personnel. Most of all, the individual must share our vision that cryonics patients require the same conscientious dedication to patient welfare as conventional medicine, even though cryonics procedures are still experimental.

This is an exciting opportunity to participate at the edges of current knowledge and feasibility, in the hope that cryopreservation of human beings will enable future resuscitation by radically advanced medicine. You will be part of one of the most difficult and ambitious scientific endeavors ever pursued.

Qualifications

- Paramedic, CCP, RN, NP, PA, or MD.
- Equivalent experience in a health field will be considered.
- A minimum of five (5) years experience is preferred.
- Experience in an emergency room or critical care setting is highly desirable.
- Experience in cryonics is desirable but not essential.
- Experience in tissue recovery is a plus.
- Excellent communication skills, both verbal and written, are required.

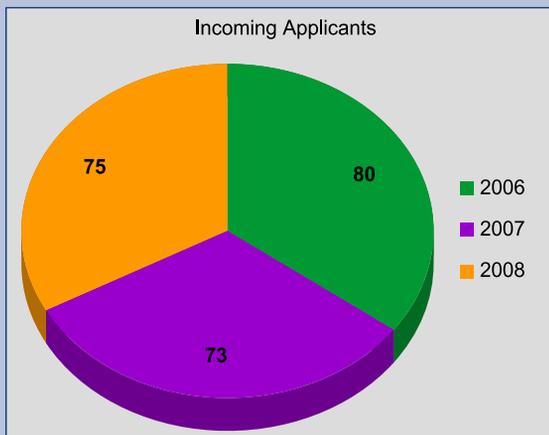
Alcor offers a competitive salary and comprehensive benefits package. Employees must reside in the greater Phoenix area, or be willing to relocate to Phoenix. We will pay relocation expenses. Qualified applicants should email their resume, salary requirements, and a cover letter describing their interest and attitude toward cryonics to Tanya Jones (tanya@alcor.org).

Membership Report

As of July 31, 2008

Applicants

Following an influx of 22 applications last December, the year started with 54 people in the process of applying for membership with the Alcor Foundation. During the course of the year, the queue has grown by 24% to 67 applicants. Seventy-five applications (and counting) have been submitted, an average of over 10 per month, and 48 applicants proceeded to become members. Fourteen applications have been withdrawn by the applicant or cancelled by Alcor. People give all kinds of reasons for deciding to apply, from being inspired by talking with Alcor members to a growing belief in technology and an unwavering love of life.



Prospects

Several new efforts to increase membership, largely revolving around improving personal contact with prospective applicants and extending them promotional offers, have significantly increased the typical number of incoming applicants per month. More applications for membership have been received through July 2008 than the total number of applications received in all of 2007.

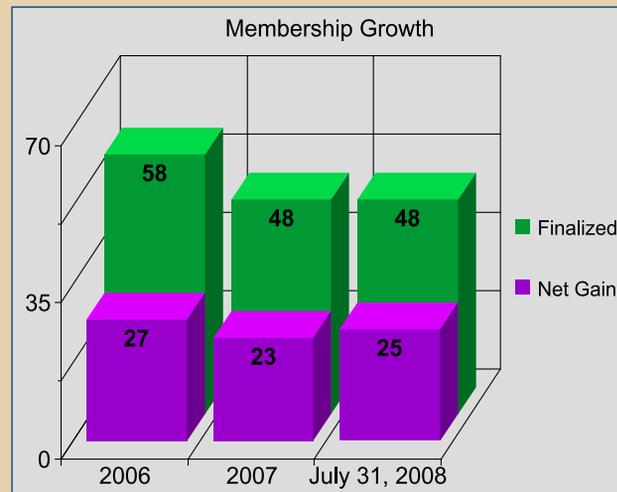
Subscription to *Cryonics Magazine* has more than doubled this year. This is largely due to Alcor proactively offering complimentary 1-year trial subscriptions to those interested in learning more about Alcor. A free subscription can be requested by simply filling out the Feedback Form on the Alcor website.

Alcor members are encouraged to do their part to increase membership growth. Referral by existing members is the primary source of membership growth for Alcor, so members can simply contact Alcor if they are interested in being put in contact with prospective clients who request further discourse after speaking with Alcor representatives.

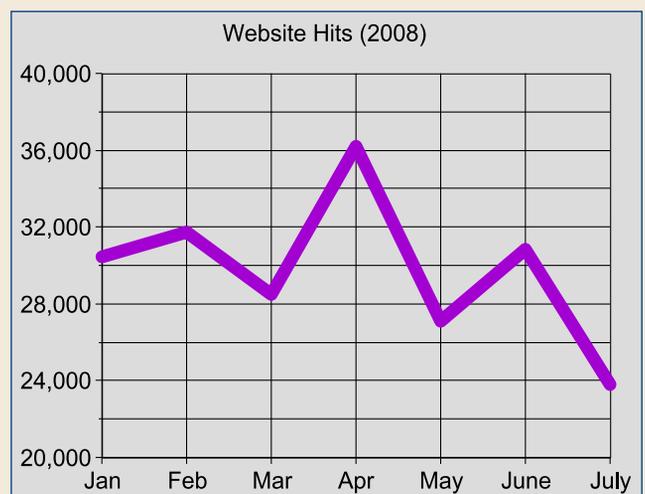
Members

Membership in the Alcor Foundation has grown 3% thus far this year resulting in a membership roster of 863 people worldwide. In the past seven months, there have been 48 membership approvals, 1 membership reinstatement, 19 cancellations and 5 cryopreservations.

Growth was lower than desired in 2006 and 2007, but the number of finalizations and net gain in 2008 has nearly surpassed those years with five months left to go.



The number of cancellations is on par with historical norms. Alcor has nearly completed its internal review of each member's funding and has established more stringent procedures for collection of membership dues, both of which tend to result in some membership losses. The reasons for cancellation are consistent with past years.



MEMBER PROFILE:



STEPHANE AND MAGALI BEAUREGARD

By Chana de Wolf

“The future belongs to those who believe

in the beauty of their dreams!”

In 2005, the Beauregards enjoyed the Christmas holiday in scenic Auberge du Lac Taureau (Quebec)

If you spend any time perusing the Alcor United web forums, you will undoubtedly run into posts by Magali and Stephane Beauregard, who always end their correspondence with the above quote. Such a bold and hopeful statement instantaneously paints a picture of two eager, forward-looking people – the kind of people whose dreams of the future are uplifting, if idealistic...the type of people who are always willing to share the beauty of their dreams with others and who continually strive to bring their hazy, beautiful dreams into sharper focus.

And that picture would be accurate. Magali, a native of Amboise, France, credits her supportive parents and maternal grandparents, as well as a traditional education, with instilling the values that she now finds useful in her life. In high school, Magali began having horrible headaches. An MRI scan revealed a hypophyseal tumor that was so large the doctors recommended immediate surgical removal. Eventually, after two operations, two radiotherapy treatments, and a long course of medication, the tumor was stabilized. Rather than dwell on the negative, though, Magali prefers to recall that, in 2001, she met “the person who would become my best friend and the man of my life: Stephane.”

Stephane grew up in LaSalle, Quebec, the French province of Canada. At age eleven, his parents divorced and were thereafter not always present in his life. Instead, he attributes the shaping of his mind and personality to the

extraordinary love and care of his paternal grandparents and an early education in the value of money gained as a newspaper street peddler from the age of thirteen. With temperatures ranging from 30°C (86°F) in summer to -35°C (-31°F) in winter, Stephane rose at 5:00 in the morning, seven days a week, before going to school. Later on, after a few different jobs in the adult working world, Stephane decided to create his own import/export business of collectible music items.

It was on a trip to France for a convention that he met Magali. “I had to buy a return ticket for Montreal and she worked in the travel agency,” says Stephane. After communicating by email and phone, they decided to take a trip to Reunion and Mauritius Islands in the Indian Ocean to get to know each other better. Though Stephane was 32 years old and unsure about the idea of “true love,” as Magali walked in front of him one day he found himself wondering if perhaps she might be the woman for him. Throughout the remainder of the trip they developed such respect for one another that Stephane knew the answer. Several weeks later, he decided to prove his love and sincerity by moving to France to be with Magali. Consequently, they were engaged in 2002 at the top of the Eiffel Tower and married in 2003 at Beauregard Castle – a series of events that Stephane regards as very much “like a fairy tale.”

So how did this fairy tale couple become involved in cryonics? Strangely

enough, Stephane first learned of cryonics in a public restroom in France, where in 1993 he discovered a magazine article about Alcor. “I was very captivated but I hadn’t any pen and paper on me to note the address and phone number,” he recalls. “So I wanted to remember [the name] of Alcor in Scottsdale.” Many years later, he and Magali were at home watching Vanilla Sky and Forever Young – two movies that talk a little about cryonics, which reminded Stephane of Alcor. He and Magali then found the Alcor website, which they found so interesting that they decided to contact Jennifer Chapman to learn more about Alcor membership.

In 2005, Magali and Stephane traveled to Scottsdale to tour the Alcor facility and



This happy couple wed five years ago at Beauregard Castle in France (August 2003)

finalize their membership applications. They reasoned that cryonics is their “only chance to come back in the future” and that’s a chance they are willing to take. Like most cryonicists, Stephane and Magali express a deep love of living and feel that life as we know it today is too short to realize all their dreams and ambitions. Furthermore, they both feel that the hope of seeing each other again and continuing their journey together will lessen the pain of losing one’s beloved life partner. This is a psychological benefit that may be encouraging an increasing number of couples and families to join Alcor together.



Magali and Stephane pose with Alcor membership coordinator Diane Cremeens in the Alcor patient care bay.

Of course, Magali and Stephane have big dreams for Alcor, too. They envision an Alcor with offices in all the big cities of the world, with a team of researchers presenting groundbreaking scientific findings at medical and technology conferences, and a better-developed marketing department that will attract more publicity and sponsorship. More immediately, they would like to see Alcor automate the membership sign-up process and payment functions online and to investigate newly-developed global satellite messenger systems as a means of alerting Alcor to member health emergencies. They are also interested in the feasibility of implementing a software system that would allow cryonicists to upload as much information about themselves as possible in order to assist in stimulating memories and personalities upon resuscitation.

Beautiful dreams aside, Magali and Stephane realize that cryonics suffers from a

lack of popularity and, as a result, a want of members. Aside from the obvious challenge of reviving and rejuvenating its patients, they feel that the next most important goal for Alcor is to grow a more substantial membership base. To that end, Stephane and Magali do their best to increase positive awareness of cryonics. Today they work together in publicity, having created a phone directory in the area where they live. Stephane reports that in this line of business, where they constantly interact with many different people, they are asked about their Alcor bracelets every day. “So we explain the truth and we take a few minutes to talk about cryonics with them,” he says.

Because they feel that it is interesting and important for cryonicists to know and learn about one another, Stephane and Magali also go out of their way to meet and stay in touch with other Alcor members. They were very happy to meet “extraordinary people of various countries” at the last two Alcor conferences (2006 and 2007), but were disappointed to learn that some Alcor members find it too difficult to keep in contact afterward. Stephane and Magali traveled back to Scottsdale in March of 2008, where they were delighted to attend the monthly Phoenix Cryonics Meetup. For Stephane, such meetings are a “great opportunity to talk about cryonics and meet other Alcor members.”

Being Francophones themselves, Magali and Stephane understand the necessity of publishing information in a variety of languages. Thanks to their recent efforts in securing translations of Alcor documents, Stephane reports that “now French speakers around the world will be able to find information about cryonics directly on the Alcor website.” Taking it a step further, they also anticipate acting as volunteers to communicate with French-speaking prospective members and to write articles about cryonics in order to inform others and find new members.

Stephane and Magali’s enthusiasm for cryonics is so apparent that even their friends and parents are infected by it. In fact, Stephane’s mother and some friends are beginning the application process because of their sincere efforts. Stephane affirms that by talking openly about cryonics they set a good example and are generally surprised by the positive reaction they receive from others. He also notes that oftentimes the people they talk to “did not know that this alternative exists.” It is this zeal for introducing others to their options, and the possibilities of the future, that drives Magali and Stephane.



Stephane steals a picture of Magali while enjoying a nature walk in Quebec, where the pair was celebrating their 3rd wedding anniversary (2006).

Their vivacity is expressed through a number of other interests, as well. Magali likes to swim, take nature walks, make videos and photos, and draw. Stephane enjoys composing music, playing drums, and singing, as well as a variety of physical activities including swimming, walking, diving and skating. Having already visited more than thirty countries together, Magali and Stephane also maintain an active travel itinerary and visited Japan for their 5th anniversary in August 2008, where we know they continued to engage others in positive dialog about cryonics! ■

*Contact Stephane and Magali Beauregard:
alcor.2197@gmail.com*



Stephane and Magali celebrated their 5th wedding anniversary in Kyoto, Japan in August 2008.

MEMBER PROFILE:

RICHARD LEIS, JR.

By Jerad Kaliher

Richard Leis, Jr. has his eyes fixed on space. His pursuit of science has led him on a journey that is out of this world, Mars to be exact. At 35 years old he works as an Operations Specialist at the HiRISE Operations Center located at the University of Arizona in Tucson. The project plans to take approximately 10,000 images of the surface of Mars

with hopes to obtain high resolution images of less than one percent of the planet's surface. The job demands detailed methodology and scrutiny of complex scientific data. He applied the same mindset to cryonics from the start.

As an adult Richard has been an active member of the transhumanist movement. He is the Treasurer of the Immortality Institute, whose mission is "to conquer the blight of involuntary death." In 2006 he founded h+, or "humans plus," a transhumanist club with roots in Tucson. Originally, he wanted to meet people who identified themselves as immortalists. They began meeting for lunch once a week. That trend eventually developed into a journal club. The club has grown to include



Richard enjoys visiting his family near the Oregon coast.

twenty active members with an additional chapter in Phoenix, as well as over 100 participants on Facebook. Through the club he met several employees of Alcor and toured the facility for the first time in December 2007. He was impressed with what he was shown.

After extensive investigation, meeting other Alcor members and touring the facility, Richard was ready to become an Alcor member. Expense was the first concern that came to mind. Yet he found how reasonable and viable the costs could be with proper insurance coverage. He signed up on the spot.

Increasing Alcor membership is always on his mind. The best way, according to Richard, is to bring people who have an interest in cryonics together frequently and face-to-face. It's what he was drawn to, the human element. To attract new members to his h+ club, the group has tried multiple experiments to capture interest. Attempts include posters with taglines like, "Do YOU want to DIE, neither do we." They have elicited a wide range of responses, from glaring eyes to outright anger and finally, curiosity. It's been one of his main challenges when facing loved ones with the option of cryonics. "People often dismiss you." That doesn't deter him from spreading the word.

Richard's wish is to extend what it is to be human. "With a whole universe to explore,



Richard describes the HiRISE project to a live audience. He is speaking with the public as high resolution imaging systems are inserted into orbit.

I couldn't imagine undertaking much of it within an average lifespan." This type of wide eyed wonder is what brought him to cryonics in the first place.

Although his family has not expressed interest in membership, some of them have been fascinated by his enthusiasm for the subject. His passion for science, planetary systems and cryonics radiate from him. "After reading an article about the latest discovery I have the urge to tell everyone. Family and friends were often overwhelmed with the technical aspects of what I'd find." So he found a more conventional way to share breakthroughs – he started a blog (www.frontierchannel.com). Writing began as an outlet for factual news. His aspirations have grown and he hopes to try his hand at fiction.

One thing is sure; he needs all the time that science can muster. Mapping Mars, finding life elsewhere in the universe and writing about it may sound ambitious. Good thing Richard is well on his way. To him it was a simple choice, oblivion or a chance to be brought back. "There is such wonder to explore and experience, I'd just really hate to miss it." ■

Contact Richard Leis, Jr.: rleisjr@gmail.com

Visit Richard's Blog www.frontierchannel.com



The symposium was held at the Royce Hall auditorium at UCLA

Methuselah Foundation Seminar Champions California's Regenerative Medicine Initiatives

By Drew Reynolds

California has been an established center of regenerative medicine research since before the California Stem Cell Initiative passed in November of 2004. As an example of the public stepping forward to ensure scientific funding in the face of political opposition, it marked a unique occasion in the unfolding history of the science of life extension. In recognition of California's vocal public support of stem cell technology, the Methuselah Foundation held a three-day conference at the end of June at the University of California Los Angeles.

The life extension organization has previously led three scientific conferences on the subject of engineering radical life extension, which took place at Queens College, Cambridge in the United Kingdom. The UCLA conference informally began with a free symposium open to the public, entitled "Aging: The Cure, The Disease, The Implications." The event aimed at putting the postponement of aging more firmly on the political and social map by including the participation of leaders in stem cell technology science and policy. The conference was organized by biomedical gerontologist Aubrey de Grey, the chief science officer of the Methuselah Foundation. Dr. de Grey also edits the periodical *Rejuvenation Research*, the only international, peer-reviewed journal of its kind.

He was joined by Michael West, chief executive officer of the stem cell research and development company BioTime. Advocates of cryonics, both scientists previously spoke at the 7th Alcor Conference in Scottsdale, Arizona. Also participating at the symposium

was Gregory Stock, UCLA's director of medical research, who has on various occasions debated prominent opponents of life extension research. These speakers were joined by biochemistry and molecular biology professor Bruce Ames, pharmaceutical company chairman William Haseltine, and policy experts in the field of stem cell technology Daniel Perry and Bernard Siegel.

Presiding over the event, Aubrey de Grey introduced the scientific segment of the symposium. He began by arguing that because age-related illness is the root cause of most human debility, aging itself should be the foremost target of regenerative medicine. Diverging from the standard approach in medicine today, which seeks to compress the period of morbidity in human lifespan without a concrete plan for accomplishing such a goal, the approach that the speaker outlined seeks to postpone age-related pathology altogether. This outcome would be engineered by reversing cellular and molecular damage caused by the natural processes of aging. Stem cell technology is seen by the Methuselah Foundation to be a vital component in the process of making inroads into repairing cell loss and atrophy, the side products of metabolism that are caused by aging.

Michael West began his presentation by addressing critics of regenerative medicine, arguing that the actual progress in stem cell technology should be measured against the immense complexity of cell types arising out of embryonic stem cells. In order to address the difficulties of deciphering the wealth of information gleaned from studying cell differentiation, a problem he likened to the

sequencing of the human genome, a concerted effort is currently being embarked upon by scientists in interdisciplinary fields. Dr. West took the opportunity to unveil the embryome (www.embryome.com) an open source online database of information on embryogenesis. He believes, based on his vantage point as a leading advisor in the field of stem cell research, that scientists are well on the way toward taking control of the human life cycle by collecting and appropriately applying this information, through which it may be possible to capture the central mechanisms of immortality.

Bruce Ames, whose concern is for forwarding the field of preventative medicine, spoke on the subject of two areas of research he has been conducting, both of which intend to investigate methods of delaying the aging process. The first area deals with the problem of mitochondrial decay. Conducting tests on rats in his laboratory at the University of Berkeley, Dr. Ames has provided evidence that as dietary supplements the organic compounds acetyl carnitine (ALC) and lipoic acid (LA) prevent mitochondrial decay. Administering elevated levels of these compounds to aging rats restores lost mitochondrial function. Because age-related illnesses such as Alzheimer's and Parkinson's can be traced back to mitochondrial decay, evidence suggesting that this degenerative process can be slowed through the use of nutritional supplementation is an encouraging discovery in support of affordable preventative medicine.

The other area of research Dr. Ames spoke on related to the importance of micronutrients to healthy diet. About forty



Jonathan El-Bizri and Aubrey de Grey prepare slides for the night's presentations.

essential micronutrients are required for the function of the body, including roughly fifteen minerals, fifteen vitamins, two fatty acids and two amino acids. While scurvy, beriberi and rickets, three diseases related to vitamin deficiencies, have largely been eliminated, Dr. Ames believes that even today shortages in micronutrients are responsible for the early onset of age-related illnesses. Because there is no pathology associated with failing to meet the recommended dietary allowances of essential micronutrients, they are too often ignored. Simply put, being low in one of these micronutrients ages you faster, while overdoing it can be harmful as well. "Mac West said, "Too much of a good thing was wonderful," Dr Ames stated in his talk. "But I think she was thinking of sex, not micronutrients." In concluding his presentation, Dr. Ames stated that dedicating himself to addressing the problem of micronutrient shortage and thwarting its deleterious effects is currently at the center of his focus in preventative medicine.

Bernard Siegel spoke on the topic of the public perception of stem cell research. In his talk, he related his astonishment in the year 2002 with the success of the Raellian UFO cult in managing to testify in congress, appearing before the National Academy of Sciences and thereby impacting public perception about stem cell research by claiming to have cloned a human being. Upon learning of Dr. Boisselier's claim that Clonaid had cloned a baby, and knowing based on the precedent of Dolly the sheep that this was an unsafe practice, the speaker submitted a petition seeking a temporary guardian for the infant. The following night he and his wife were watching CNN and, much to their surprise, saw a news flash appear on the ticker at the bottom of the screen reporting, "Florida

twenty-two stem cell lines that had previously been created. The National Institute of Health has been called the greatest engine of scientific advancement in history, but due to only \$16 million of its \$24 billion budget being allotted to stem cell research, the institute has been sidelined in the field of regenerative medicine. As a survivor of cancer himself, Mr. Siegel noted that the Clonaid incident was a troublesome indication of the apprehensive public perception toward stem cell research, a core technology for anti-aging. It was in recognition of this situation that he founded the nonprofit Genetics Policy Institute in an effort to defend stem cell research and inform the public on its potential benefits.

Daniel Perry, Executive Director of the Alliance for Aging Research in Washington, D.C., noted that for all of the potential good that could come from Dr. de Grey's field of biogerontology, it has been examined and analyzed less than almost any other field of medicine by policymakers and the media. By contrast, there are signs of tremendous optimism within the scientific community regarding the potential of longevity research. Citing the commemorative 125th year-anniversary edition of *Science*, the academic journal of the American Association for the Advancement of Science, Mr. Perry noted that when polled on what crucial scientific questions would likely be answered in the next 25 years, the editors of the journal chose as number six on their list the discovery of just how much human lifespan can be

attorney Bernard Siegel seeks custody of cloned baby." Soon after he was on Connie Chung Live debating Dr. Boisselier on the ethics of using present-day technology to clone a human child.

Preceding the Clonaid investigation, the Bush Administration limited funding for embryonic stem cells, restricting research to the

extended. Implicit in the ability to answer the question of how long health be preserved, if it were ever to be answered with some finality, would be the determination that through certain means healthy life can be preserved indefinitely. William Haseltine mirrored this assertion with his claim that the nature of life, its ability to reproduce itself over time, to renew itself from generation to generation, is a testament to the possibility of one-day attaching an individual life to that fundamental immortality of DNA.

During his presentation, Gregory Stock argued for a publicly funded initiative toward the goal of eliminating the aging process, an effort he described as easily justifying a large-scale effort comparable to the Manhattan Project in scope. He related his belief that were the current generation to forgo such an investigation into ending age-related suffering and infirmity, this hesitation would be interpreted by posterity as blindness to a noble cause. It was Dr. Stock's determination that whether to embrace the challenges of emerging technologies or to defy them, or merely to pretend they never existed, is a choice we all must face. He ended by noting what an extraordinary historical moment we live in, where research into telecommunications, biomedical technology and artificial intelligence are all taking shape. ■

Videos of the symposium *Aging: The Disease, The Cure, The Implications* can be viewed online: www.mfoundation.org/ADCI/video



From left to right: Daniel Perry, Bernard Siegel, Gregory Stock, Aubrey de Grey, Michael West, Bruce Ames

Silicon Chips Stretch into Shape

Normally fragile and brittle silicon chips have been made to bend and fold, paving the way for a new generation of flexible electronic devices. The stretchy circuits could be used to build advanced brain implants, health monitors or smart clothing. The complex devices consist of concertina-like folds of ultra-thin silicon bonded to sheets of rubber. Writing in the journal *Science*, the US researchers say the chip's performance is similar to conventional electronics. "In many cases you'd like to integrate electronics conformably in a variety of ways in the human body—but the human body does not have the shape of a silicon wafer," said Professor John Rogers of the University of Illinois at Urbana-Champaign, one of the authors of the paper. "We had to figure out how to make the entire circuit in an ultra-thin format." Professor Zhenqiang Ma of the University of Wisconsin-Madison, who also works on flexible silicon circuitry, said the new research was an important step. "Completely integrated, extremely bendable circuits have been talked about for many years but have not been demonstrated before. This is the first one."

BBC News
3/27/08

<http://news.bbc.co.uk/1/hi/technology/7313203.stm>

Scientists Grow Rat Heart in the Lab

Researchers seeking new treatments for heart disease managed to grow a rat heart in the lab and start it beating. "While it still sounds like science fiction, we've hopefully opened a new door in the notion that we can build these tissues and one day provide options for patients with end-stage disease," said Dr. Doris Taylor, director of the Center for Cardiovascular Repair at the University of Minnesota. "We're not there yet, but at least now we have another tool in our tool belt." Taylor led the team whose research appeared in Sunday's online edition of the journal *Nature Medicine*. Scientists have worked for years for ways to grow body parts. Many efforts have focused on heart valves as an alternative to the plastic or animal valves that wear out after being implanted in humans. An estimated 5 million people live with heart failure and about 550,000 new cases are diagnosed each year in the United States. Approximately 50,000 die annually waiting for a heart donor.

MSNBC
1/13/08

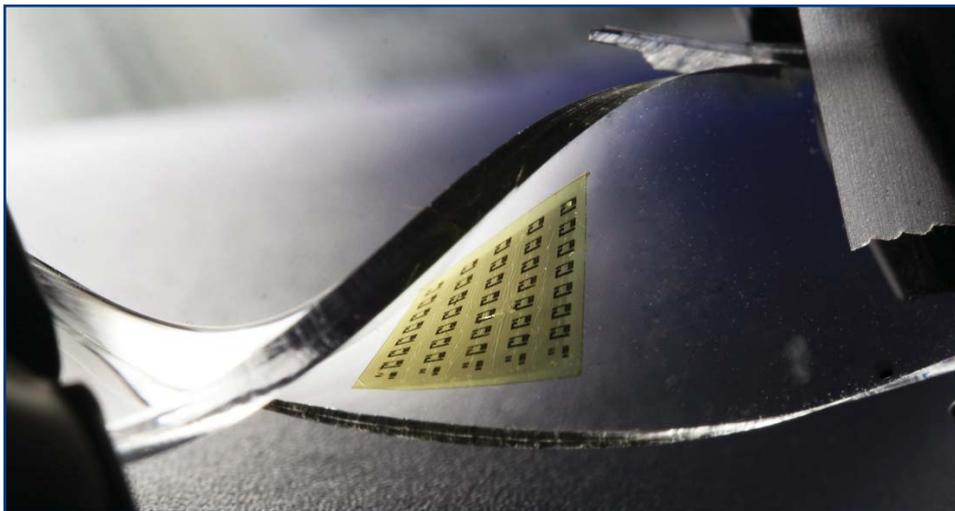
<http://www.msnbc.msn.com/id/22635550/>

Gene Therapy Treats Parkinson's

An experimental form of gene therapy for Parkinson's disease has been shown to produce promising results. US scientists treated 12 patients with a virus genetically modified to carry a human gene which dampens down the nerve cells over-excited by Parkinson's. Now brain scans have revealed significant improvements—which were still present a year later. The Feinstein Institute for Medical Research study features in *Proceedings of the National Academy of Sciences*. This study is important as it suggests that it was the therapy itself, rather than a placebo effect, that was having a positive impact on patients' symptoms. However, the work is still at an early stage. The main aim was to test whether the therapy was safe. Scientists delivered the gene only to one side of the brain—that which controls movement on the side of the body most affected by Parkinson's—to reduce the potential risk. It makes an inhibitory chemical called GABA that turns down the activity in a key part of the pathway which controls movement.

BBC News

11/20/07 <http://news.bbc.co.uk/1/hi/health/7103127.stm>



Stretchy silicon chips could have many applications, such as for wearable health monitors and biomedical implants. (Credit: John A. Rogers)

Drugs to Grow Your Brain

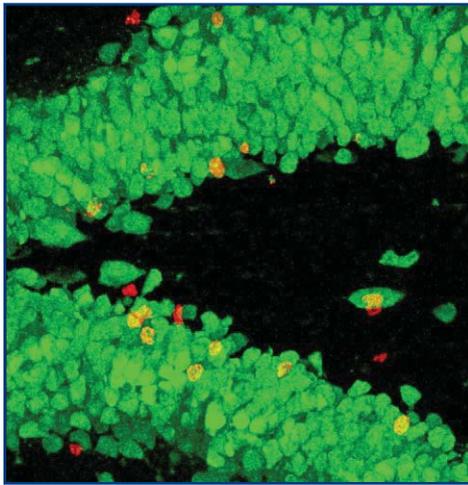
Drugs that encourage the growth of new neurons in the brain are now headed for clinical trials. The drugs, which have already shown success in alleviating symptoms of depression and boosting memory in animal models, are being developed by BrainCells, a San Diego-based start-up that screens drugs for their brain-growing power. The company hopes the compounds will provide an alternative to existing antidepressants and says they may also prove effective in treating cognitive disorders, such as Alzheimer's. "The fact that you might be able to take small molecules to stimulate specific cells to regenerate in the brain is paradigm-shifting," says Christopher Eckman, a neuroscientist at the Mayo Clinic in Jacksonville, Florida. "[This approach] takes advantage of the body's innate ability to

correct itself when given appropriate cues.” Eckman studies compounds that boost brain cell growth in models of neurodegenerative disease and is not involved with BrainCells. In the last ten years, scientists have discovered that new neurons are born in the adult brain and that increases or decreases in this cell growth, known as neurogenesis, may be involved in myriad brain diseases, including depression, schizophrenia and stroke.

Technology Review

6/2/08

<http://www.technologyreview.com/Biotech/20845/>



Newborn neurons: This image shows a section of the hippocampus, the part of the brain important for learning and memory. Mature neurons are shown in green, while newborn neurons are orange, and neural stem cells are red. (Credit: BrainCells Inc.)

Researchers Target Tumors with Tiny “Nanoworms”

Scientists at UC San Diego, UC Santa Barbara and MIT have developed nanometer-sized “nanoworms” that can cruise through the bloodstream without significant interference from the body’s immune defense system and—like tiny anti-cancer missiles—home in on tumors. Their discovery, detailed in this week’s issue of the journal *Advanced Materials*, is reminiscent of the 1966 science fiction movie, *Fantastic Voyage*, in which a submarine is shrunk to microscopic dimensions, then injected into the bloodstream to remove a blood clot from a diplomat’s brain. Using nanoworms, doctors should eventually be able to target and reveal the location of developing tumors that are too small to detect by conventional methods. Carrying payloads targeted to specific features on tumors, these

microscopic vehicles could also one day provide the means to more effectively deliver toxic anti-cancer drugs to these tumors in high concentrations. “The reason these worms work so well is due to a combination of their shape and to a polymer coating on their surfaces that allows the nanoworms to evade these natural elimination processes,” said Michael Sailor, a professor of chemistry and biochemistry at UC San Diego who headed the research team.

UCSanDiego News Center

5/6/08

<http://ucsdnews.ucsd.edu/newsrel/science/05-08Nanoworms.asp>

Five-Seat Concept Car Runs on Air

An engineer has promised that within a year he will start selling a car that runs on compressed air, producing no emissions at all. The OneCAT will be a five-seater with a fiberglass body, weighing just 350kg (~772 lbs) and could cost about \$5,000. It will be driven by compressed air stored in carbon-fiber tanks built into the chassis. The tanks can be filled with air from a compressor in just three minutes—much quicker than a battery car. Alternatively, it can be plugged into an electrical outlet for four hours and an on-board compressor will do the job. For long journeys the compressed air driving the pistons can be boosted by a fuel burner which heats the air so it expands and increases the pressure on the pistons. The burner will use all kinds of liquid fuel. The designers say on long journeys the car will do the equivalent of 120 mpg.

BBC News

2/13/08

<http://news.bbc.co.uk/2/hi/science/nature/7241909.stm>

Grass Biofuels “Cut CO2 By 94 Percent”

Producing biofuels from a fast-growing grass delivers vast savings of carbon dioxide emissions compared with gasoline, a large-scale study has suggested. A team of US researchers also found that switchgrass-derived ethanol produced 540% more energy than was required to manufacture the fuel. One acre (0.4 hectares) of the grassland could, on average, deliver 320

gallons of bioethanol. Their paper appears in the *Proceedings of the National Academy of Sciences*. The five-year study, involving 10 farms ranging in size from three to nine hectares, was described as the largest study of its kind by the paper’s authors. Co-author Ken Vogel of the US Department of Agriculture’s Agriculture Research Service, based at the University of Nebraska, Lincoln, said that all previous energy analyses had been based on data from research plots and estimated inputs. The team also calculated that the production and consumption of switchgrass-derived ethanol cut CO2 emissions by about 94% when compared with an equivalent volume of gasoline.

BBC News

1/8/08

<http://news.bbc.co.uk/1/hi/sci/tech/7175397.stm>



Interest in growing switchgrass—a native prairie grass—for ethanol is growing lately as Agricultural Research Service studies led by geneticist Ken Vogel confirm its feasibility. (Photo: U. S. Department of Agriculture)

Tinkering Extends Life of Organism by 10-Fold

Scientists have extended the lifespan of yeast, microbes responsible for creating bread and beer, by 10-fold. That’s twice the previous record for life extension in an organism. The breakthrough could ultimately inform efforts to extend human lives. Instead of one week, the yeast lived for about 10 weeks through genetic tinkering and a low-calorie diet. “We’ve reprogrammed the healthy life of an organism,” said Valter Longo, a biologist at the University of Southern California in Los Angeles who led the life-prolonging experiments. Longo and his colleagues detail their findings in two upcoming studies; one in the

Jan. 25 issue of the journal PLoS Genetics and another in the Jan. 14 issue of the Journal of Cell Biology. To find out how the age-defying treatment works in humans, Longo and his group are now studying Ecuadorians who have similar mutations in age-controlling genes used in the yeast.

MSNBC
1/14/08

<http://www.msnbc.msn.com/id/22651648/>

Electronics “Missing Link” Found

Details of an entirely new kind of electronic device, which could make chips smaller and far more efficient, have been outlined by scientists. The new components, described by scientists at Hewlett-Packard, are known as “memristors.” The devices were proposed 40 years ago but have only recently been fabricated, the team wrote in the journal Nature. They have already been used to build novel transistors—tiny switches that are the building blocks of all chips. “Now we have this type of device we have a broader palette with which to paint our circuits,” Professor Stan Williams, one of the team, told the BBC last year. Memristors were first proposed in 1971 by Professor Leon Chua, a scientist at the University of California, Berkeley. They are the “fourth” basic building block of circuits, after capacitors, resistors and inductors. The memristors are so-called because they have the ability to “remember” the amount of charge that has flowed through them after the power has been switched off. This could allow researchers to build new kinds of computer memory that would not require powering up.

BBC News
5/1/08
<http://news.bbc.co.uk/2/hi/technology/7377063.stm>

Samsung Electronics Unveils New SSD

Samsung Electronics Co, the world’s largest computer chip maker, said May 26 it has developed a new solid-state drive (SSD) which is expected to replace hard disk drives in laptop computers. (Unlike traditional computer hard drives, SSDs lack moving parts.) Samsung said its 256-gigabyte SSD for data storage is 2.4 times faster than traditional hard drives. The company plans to begin produc-

tion this year. The new SSD “represents a bold step in the shift to notebooks with significantly improved performance and larger storage capacities,” the company said in a statement. Samsung described the new SSD, 2.5 inches long and 9.5 millimeters thick, as the world’s smallest of its kind. It can read up to 200 megabytes of data per second. It said, citing market research agency iSuppli, that 35 percent of notebook computers would use the SSD by 2012.

Physorg.com
5/26/08
<http://www.physorg.com/news131006716.html>

Tasmanian Tiger DNA “Resurrected”

A fragment of DNA from the Tasmanian tiger has been brought back to life, says a University of Melbourne team. Australian scientists extracted genetic material from a 100-year-old museum specimen, and put it into a mouse embryo to study how it worked. The study, published online by the Public Library of Science (PLoS), suggests the marsupial’s genetic biodiversity may not be lost. Starting with extracted DNA, the team injected a gene involved in cartilage formation into developing mouse embryos. The DNA functioned in a similar way to the equivalent gene in mice, giving information about the genetic makeup of the extinct marsupial. Dr Andrew Pask, of the Department of Zoology, who led the

research, said it was the first time that DNA from an extinct species had been used to carry out a function in a living organism.

BBC News
5/20/08
<http://news.bbc.co.uk/2/hi/science/nature/7408840.stm>

Automated Mind Reading Now Possible

A computer can tell with 78 percent accuracy when someone is thinking about a hammer and not pliers. To detect patterns of brain activity, a subject must lie still in a neuro-imaging device, such as a functional magnetic resonance imaging (fMRI) tube. Just a year ago, neuroscientists couldn’t do much better than distinguish thoughts of faces from thoughts of places (the brain has distinct regions that process images of each). “All we could do was tell which brain region was active,” says neuroscientist John-Dylan Haynes of the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig, Germany. “There were real limits on our ability to read the content of that activity.” No longer. “The new realization is that every thought is associated with a pattern of brain activity,” says Haynes, “and you can train a computer to recognize the pattern associated with a particular thought.”

Newsweek.com
1/21/08
<http://www.newsweek.com/id/91688>



The Tasmanian tiger, a carnivorous marsupial, is thought to have gone extinct in 1936. This pair lived at the US National Zoological Park in Washington DC from 1902 to 1905.

Monkey's Brain Controls Robot Arm

Monkeys have been able to control robotic limbs using only their thoughts, scientists report. The animals were able to feed themselves using prosthetic arms, which were controlled by brain activity. Small probes, the width of a human hair, were inserted into the monkeys' primary motor cortex—the region of the brain that controls movement. Writing in *Nature* journal, the authors said their work could eventually help amputees and people who are paralyzed. Lead researcher Dr. Andrew Schwartz, who is based at the University of Pittsburgh School of Medicine, said: "We are beginning to understand how the brain works using brain-machine interface technology. The more we understand about the brain, the better we'll be able to treat a wide range of brain disorders, everything from Parkinson's disease and paralysis to, eventually, Alzheimer's disease and perhaps even mental illness." With the probes inserted into the monkeys' motor cortices, computer software was used to interpret the brain's electrical impulses and translate them into movement through the robotic arm. The monkeys were able to use their brains to continuously change the speed and direction of the arm and the gripper, suggesting that the monkeys had come to regard the robotic arm as a part of their own bodies.

BBC News
5/28/08

<http://news.bbc.co.uk/2/hi/science/nature/7423184.stm>

Universal Flu Shot Works in People

A single shot that could give lifelong protection against all types of flu has produced promising results in human trials. The vaccine, made by Acambis, should protect against all strains of influenza A—the cause of pandemics. Currently, winter flu shots have to be regularly redesigned because the flu virus keeps changing. The new vaccine would overcome this and could be stockpiled in advance of a bird flu outbreak, say experts. Globally, between 500,000 and one million people die each year from influenza. But a pandemic of the human form of bird flu, which experts believe is inevitable, could kill as many as 50 million people worldwide. The US trials show that the shot is safe and it works fast to make the body immune against flu. It could be stockpiled in

advance of a pandemic. Nine out of 10 of those who had two doses of the shot ACAM-FLU-A developed antibodies against flu virus.

BBC News
1/4/08

<http://news.bbc.co.uk/1/hi/health/7171118.stm>

Nano Switch Hints at Future Chips

Researchers have built the world's smallest transistor—one atom thick and 10 atoms wide—out of a material that could one day replace silicon. The transistor, essentially an on/off switch, has been made using graphene, a two-dimensional material first discovered only four years ago. Graphene is a single layer of graphite, which is found in the humble pencil. The transistor is the key building block of microchips and the basis for almost all electronics. Dr Kostya Novoselov and Professor Andre Geim from The School of Physics and Astronomy at The University of Manchester have been leading research into the potential application of graphene in electronics and were the first to separate a sheet of the material from graphite. Graphene has been hailed as a super material because it has many potential applications. It is a flat molecule, with only the thickness of an atom, and both very stable and robust. The researchers are also looking at its use in display technology—because it is transparent. The Manchester, UK-based scientists have shown that graphene can be carved into tiny electronic circuits with individual transistors not much larger than a molecule.

BBC News
4/17/08

<http://news.bbc.co.uk/2/hi/technology/7352464.stm>

Scientists Image a Single HIV Particle Being Born

A virologist and a biophysicist at Rockefeller University are making history. By using a specialized microscope that only illuminates a cell's surface, they have become the first to see, in real time and in plain view, hundreds of thousands of molecules coming together in a living cell to form a single particle of the virus that has, in less than 25 years, claimed more than 25 million lives: HIV. This work, published in the

May 25 advanced online issue of *Nature*, may not only prove useful in developing treatments for the millions around the globe still living with the lethal virus but, the technique created to image its assembly may also change the way scientists think about and approach their own research. "The use of this technique is almost unlimited," says Nolwenn Jouvenet, a postdoc who spearheaded this project under the direction of HIV expert Paul Bieniasz and cellular biophysicist Sandy Simon, who has been developing the imaging technique since 1992. "Now that we can actually see a virus being born, it gives us the opportunity to answer previously unanswered questions, not only in virology but in biology in general."

ScienceDaily
5/26/08

<http://www.sciencedaily.com/releases/2008/05/080525132345.htm>

Food Freezing Technique Offers Hope for Organ Preservation

Norio Owada's freezing method can keep milk fresh for months. Livers, too. About a decade ago Owada, 64, brought to market an invention called the cells alive system. Not since Clarence Birdseye's fast-freeze method came along in the 1920s has there been a chiller technology with this much potential to change the world. Birdseye was able to freeze food with minimal cell damage; Owada has eliminated harm from the process. It works like a microwave oven but in reverse. Inside the freezer the object being frozen is zapped with a strong magnetic field and, Owada says, other kinds of energy. The field keeps the cream or beef's water molecules swirling in liquid form even as their temperature plummets. When the field is switched off, the object is instantly frozen, without time for the formation of ice crystals. These crystals normally rip apart organic cells, which degrades the texture and taste of food. Forty-seven researchers are experimenting with Owada's technology to preserve human organs. A group at Tokyo University is freezing mouse hearts with a technology similar to Owada's. Another group at Keio University is preserving nerve fibers. Owada predicts that the first defrosted organ transplant could happen within a decade.

Forbes
6/2/08

<http://www.forbes.com/global/2008/0602/053.html>

MEETINGS

About the Alcor Foundation

The Alcor Life Extension Foundation is a nonprofit tax-exempt scientific and educational organization dedicated to advancing the science of cryopreservation and promoting it as a rational option. Being an Alcor member means knowing that—should the worst happen—Alcor's Emergency Response Team is ready to respond for you, 24 hours a day, 365 days a year.

Alcor's Emergency Response capability includes specially trained technicians and customized equipment in Arizona, northern California, southern California, and south Florida, as well as many additional certified technicians on-call around the United States. Alcor's Arizona facility includes a full-time staff, and the Patient Care Bay is personally monitored 24 hours a day.

ARIZONA

Scottsdale:

This group meets the third Friday of each month and gatherings are hosted by Alcor employee Regina Pancake. To RSVP, visit <http://cryonics.meetup.com/45/> or email regina@alcor.org.

At Alcor:

Alcor Board of Directors Meetings and Facility Tours – Alcor business meetings are generally held on the first Saturday of every month starting at 11:00 am MST. Guests are welcome. Facility tours are held every Tuesday and Friday at 2:00 pm. For more information or to schedule a tour, call D'Bora Tarrant at (877) 462-5267 x 101 or email dbora@alcor.org.

NEVADA

Las Vegas:

There are many Alcor members in the Las Vegas area. If you wish to meet and socialize, contact Katie Kars at (702) 251-1975. This group wants to get to know you!

CALIFORNIA

Los Angeles:

Alcor Southern California Meetings— For information, call Peter Voss at (310) 822-4533 or e-mail him at peter@optimal.org. Although monthly meetings are not held regularly, you can meet Los Angeles Alcor members by contacting Peter.

San Francisco Bay:

Alcor Northern California Meetings are held quarterly in January, April, July, and October. A CryoFeast is held once a year. For information on Northern California meetings, call Marek (Mark) Galecki at (408)245-4928 or email Mark_galeck@pacbell.net.

WASHINGTON

Seattle:

For information on Northwest meetings, call Richard Gillman at (425) 641-5136 or join the e-mail group CryonicsNW at <http://groups.yahoo.com/group/CryonicsNW>

DISTRICT OF COLUMBIA

Life Extension Society, Inc. is a cryonics and life extension group with members from Washington, D.C., Virginia, and Maryland. Meetings are held monthly. Contact Secretary Keith Lynch at kfl@keithlynch.net. For information on LES, see our web site at www.keithlynch.net/les

MASSACHUSETTS

Boston:

A cryonics discussion group meets the second Sunday of each month. For more information, contact David Greenstein at (508) 879-3234, e-mail: davegre2000@yahoo.com.

TEXAS

Dallas:

North Texas Cryonauts, please sign up for our announcements list for meetings (<http://groups.yahoo.com/group/cryonauts-announce>) or contact David Wallace Croft at (214) 636-3790 for details of upcoming meetings.

UNITED KINGDOM

There is an Alcor chapter in England. Its members are working diligently to build solid emergency response, transport, and cryopreservation capability. For information about meetings, contact Alan Sinclair at cryoservices@yahoo.co.uk. See the web site at www.alcor-uk.org.

NEW ENGLAND

A New England area group meets regularly. For meeting dates and to be included in the group email list please contact either David Greenstein at 508-879-3234 or davegre2000@yahoo.com or Bret Kulakovich at 508-946-4626 (8am-8pm EST) or alcor@bonfireproductions.com.

Host a Meeting in your area.

If you are interested in hosting regular meetings in your area, contact Alcor at 877-462-5267 ext. 113. Meetings are a great way to learn about cryonics, meet others with similar interests, and introduce your friends and family to Alcor members!

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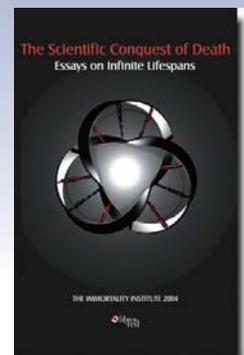
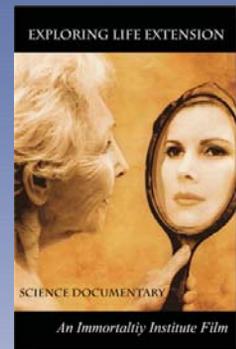


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WWW.ALCORUNITED.ORG
The Alcor Members Forum

We share a lifelong common interest.

Alcor United is a meeting place for members to share thoughts and ideas. Created by a long time Alcor member who felt disconnected from the Cryonics community, the goal of the forum is to strengthen Alcor, its community and allow the public to participate with members in the hope that someday they will join us.

What can members do to help strengthen Alcor? We can speak up. Educate your friends and neighbors so that they become aware of the benefits of Cryonics. Take a more active role in communicating with the people who share your desire to see the future. I invite you to participate in the forum.

WHAT IS CRYONICS?

Cryonics is an attempt to preserve and protect the gift of human life, not reverse death. It is the speculative practice of using extreme cold to preserve the life of a person who can no longer be supported by today's medicine. Will future medicine, including mature nanotechnology, have the ability to heal at the cellular and molecular levels? Can cryonics successfully carry the cryopreserved person forward through time, for however many decades or centuries might be necessary, until the cryopreservation process can be reversed and the person restored to full health? While cryonics may sound like science fiction, there is a basis for it in real science. The complete scientific story of cryonics is seldom told in media reports, leaving cryonics widely misunderstood. We invite you to reach your own conclusions.

HOW DO I FIND OUT MORE?

The Alcor Life Extension Foundation is the world leader in cryonics research and technology. Alcor is a non-profit organization located in Scottsdale, Arizona, founded in 1972. Our website is one of the best sources of detailed introductory information about Alcor and cryopreservation (www.alcor.org). We also invite you to request our **FREE** information package on the "Free Information" section of our website. It includes:

- A 30-minute DVD documentary "The Limitless Future"
- A fully illustrated color brochure
- A sample of our magazine
- An application for membership and brochure explaining how to join
- And more!

Your free package should arrive in 1-2 weeks.

(The complete package will be sent free in the U.S., Canada, and the United Kingdom.)

HOW DO I ENROLL?

Signing up for a cryopreservation is easy!

- Step 1:** Fill out an application and submit it with your \$150 application fee.
Step 2: You will then be sent a set of contracts to review and sign.
Step 3: Fund your cryopreservation. While most people use life insurance to fund their cryopreservation, other forms of prepayment are also accepted. Alcor's Membership Coordinator can provide you with a list of insurance agents familiar with satisfying Alcor's current funding requirements.
- Finally:** After enrolling, you will wear emergency alert tags or carry a special card in your wallet. This is your confirmation that Alcor will respond immediately to an emergency call on your behalf.

Call toll-free today to start your application:

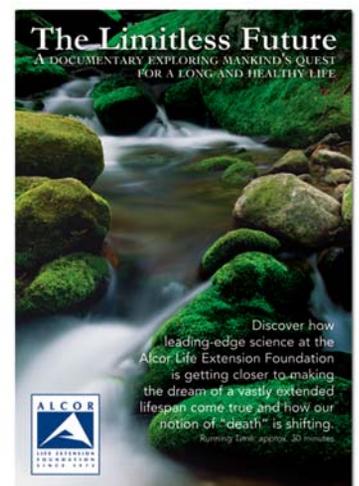
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The Limitless Future
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And the **Life Extension Foundation** can be your passport to the future. As the largest anti-aging organization in the world, we are dedicated to finding scientific ways to prevent disease, slow aging, and eventually stop death.

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