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A Non-Profit Organization

CRYONICS

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Cryopreservations That Might Have Been

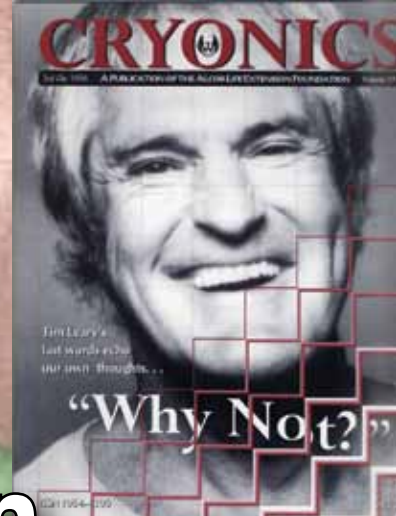
Page 6

Member Profile: William Eden

Page 15

Cryonics as an Employee Benefit

Page 5



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CRYONICS



COVER STORY: PAGE 6

Why Not? Cryopreservations That Might Have Been

This time we look at cryopreservations that might have been—but didn't happen for one reason or another. A painful issue to confront, especially when you knew some of these people, but we have to accept the bad with the good as in other parts of life and ask how we might do better in the future.

CONTENTS

- 5 QUOD INCEPIMUS CONFICIEMUS**
Cryonics as an Employee Benefit
 The introduction of Associate Membership has lowered the threshold to join Alcor. Is there anything we can do to lower the threshold for making actual cryonics arrangements? One approach in that direction, which would also introduce more people to cryonics, is for companies and organizations to offer cryonics as an employee benefit.
- 15 Member Profile: William Eden**
 Meet William Eden, a young, family- and community-focused Alcor member. From his earliest days as an economist for the Federal Reserve Bank of New York to stints at the Singularity Institute and in the startup world, Will brings a unique background to his current role at Thiel Capital, where he is at the forefront of the search for promising life-extending technologies.
- 20 Resuscitation Update**
 Mike Perry surveys the news and research to report on new developments that bring us closer to the resuscitation of cryonics patients.
- 24 Membership Statistics**
 How many members, associate members, and patients does Alcor have and where do they live?

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QUOD INCEPIMUS CONFICIEMUS



CRYONICS AS AN EMPLOYEE BENEFIT By Aschwin de Wolf

Since Alcor introduced Associate Membership in 2012 the results have been quite encouraging. There a lot of people who support our mission but are not able, or ready yet, to make cryonics arrangements themselves. For others, it is simply the first step towards making cryonics arrangements. Clearly, the threshold for becoming an Associate Member is substantially lower than the threshold for becoming a fully funded Alcor member. Is there anything we can do to lower the threshold for making cryonics arrangements with Alcor?

As much as some of us may like this idea, most people who have made cryonics arrangements did not come to this decision by reflecting on aging and death and then consulting the library or searching the internet for technological solutions. Most people were first introduced to cryonics when it was covered in the media (newspapers, radio, television, etc.) or through family, friends, or colleagues. What has not happened to date is that cryonics arrangements are offered to (potential) employees as part of an employee benefit package.

Many employers continue to offer employees a basic or enhanced benefits package as part of compensation. In fact, as times change, the kinds of benefits that organizations offer have evolved as well. Currently we are seeing an increased emphasis

on preventive care, more flexibility for parents, and self-directed retirement investments. To cater to the increasing number of women entering the labor market, and the increased preference to have children at a later age, some forward-looking companies are even offering to cryopreserve the eggs of their employees in order to facilitate this change.

Unfortunately, employee benefits are still largely driven by an attitude towards life that passively accepts aging and conforms to conventional, but outdated, notions of "death." We are encouraged to save money for "retirement," that point in life where our physiology starts to fall behind the needs of the labor market. We encourage people to provide for their families in case of "death." It would be a major step forward if companies did not just offer the tools to remain healthy but also provided a choice to be cryopreserved in case a person is afflicted with a critical illness for which contemporary medicine does not have an answer.

It is well established that cryonics draws a lot of people of extraordinary intelligence and ability. Not surprisingly, many of these people run successful businesses and organizations. If the life extension community can come together and persuade these companies to offer cryonics as an electable employee benefit, the interest in cryonics will most likely increase, even among those who do not elect to benefit

from these services. Not all companies may be in a position to offer such benefits for financial or public image reasons, but I suspect that a non-trivial number of Alcor members with companies should be able to do so. And as soon as some companies do, the threshold and administrative challenges for others will drop. We should at least expect this benefit to be offered at companies whose officials are public about their cryonics arrangements (like Alcor!)

Some companies already offer term- or whole life insurance as a benefit and it should not be too hard to tweak this benefit to transform this into a funding mechanism for cryonics. Employers then will also pick up (or partially pay) the annual membership dues (and CMS payments) for all employees who choose cryonics as a company benefit. Transferability is an important consideration if cryonics is offered as an employee benefit so that departing employees can take their arrangements with them without having to start the life insurance or funding process all over again.

Offering cryonics arrangements as a benefit should be as common as offering health insurance. No matter how much emphasis a company puts on preventive care, protection against critical illness and catastrophic accidents needs to be a part of that package if the concept of a long and healthy life is to be embraced. ■

WHY NOT? CRYOPRESERVATIONS THAT MIGHT HAVE BEEN

By R. Michael Perry



The cover of *Cryonics*, 3rd Quarter 1996, shows a picture of Timothy Leary starting to break apart with a caption at the bottom, “Why Not?”—among Leary’s reported last words. Leary was a celebrity who became interested in cryonics and joined Alcor. But in the end, he wasn’t cryopreserved. His decision to drop his cryonics arrangements came only a few weeks before his death in May 1996. A lot of us were dismayed and deeply saddened, and we wondered what had gone wrong. This sort of failure is a recurring theme in cryonics. To painfully underscore this, Ralph Whelan, who was editor of *Cryonics* when Leary died and also had served on Alcor’s board of directors, recently himself fell victim to a heart attack and was not cryopreserved. Here we take a brief look at cases of people who, like Leary and Whelan, raised hopes that their death might be defeated through cryopreservation—but in the end it didn’t happen. (As a technical matter and for reasons of space I’ve omitted cases in which low-temperature preservation did occur but later was terminated.) In a few instances where confidentiality is desired I’ve used pseudonyms and possibly changed other, inessential details. Also, for completeness I have included and abridged material from earlier columns, though the greater part here is new.

Dandridge M. Cole. Cole was a brilliant scientist and technological forecaster who had received a pre-publication copy of Ettinger’s cryonics landmark, *The Prospect*



Dandridge M. Cole
(Credit: http://upload.wikimedia.org/wikipedia/commons/thumb/f/fd/Dandridge_M._Cole.JPG/800px-Dandridge_M._Cole.JPG, accessed 4 Dec. 2014.)

of Immortality, in 1963, and had been deeply impressed. Cole’s own most recent book, *Beyond Tomorrow*, had devoted several pages to the subject of suspended animation. He expressed a wish to be frozen after clinical death to several friends and relatives, and had a long discussion on the subject with a close friend and colleague, Robert Prehoda. It was an unfortunate choice of a colleague. Prehoda was interested in cryobiology and wrote a book, *Suspended Animation*. He was, however, a determined opponent of

cryonics, although he would later take part, reluctantly, in the freezing of James Bedford.

Cole was only 44 when, in October 1965, he suffered a fatal heart attack. After some delay a call was placed to Ettinger, who later would write, “I was consulted by long-distance telephone several hours after he died, but in the end the family did what was to be expected—nothing.” Discussing the matter in *Suspended Animation*, Prehoda managed to rationalize that “Rational counsel prevailed, and Dan was given a dignified burial.”

Walt Disney. Disney’s cinematic empire was the delight of many of our childhoods, with such inimitable cartoon characters as Mickey Mouse and Donald Duck, and much besides which endeared him to persons of all ages and most walks of life. The great film legend, it has been said, was also interested in cryonics and maybe even got frozen in the end. Somewhere, carefully maintained by attendants well-paid from the Disney estate to both keep him cold and keep quiet, he still resides and will one day awaken—or so we would like to believe. Unfortunately, all this is urban legend, records showing he was cremated on schedule shortly after he died. So where did the legend come from?

The answer, it appears, has to do with an early cryonics organization in the area, the ill-fated Cryonics Society of California. According to Robert Nelson, CSC had just started up in December 1966 when he, the president and principal organizer, received a call from Disney Studios. The pleasant-



Disney on 1968 U.S. postage stamp.
(Credits: original stamp plus <http://postalmuseum.si.edu/artofthestamp/SubPage%20table%20images/artwork/arts/Walt%20Disney/BIGdisney.htm>, accessed 5 Dec. 2014.)

voiced woman on the other end wanted to know how many people were already frozen at CSC (none) and what facilities they had (also none). Though Nelson tried to explain that they did at least have advisors with scientific credentials (Dante Brunol, Robert Prehoda), there was no followup call, either to CSC or, it appears, to anyone else. If Disney was really at all interested it was too little too late. His death on December 15 (of lung cancer at age 65; Disney was a decades-long chain smoker) effectively ended the brief sortie before it could get going. One can speculate how cryonics might have developed had someone of Disney's stature and wealth backed it—carefully and shrewdly. Among other things the loss of most of the early cryonics patients, including nine of CSC's, might have been averted, and the practice might have grown much faster and be a major industry today. But all this is guessing. At least we do have a cryonics practice, small but hardy and growing, mostly not due to celebrity involvement.

Evan Cooper. Next to Bob Ettinger there is no one more central to the beginnings of cryonics than Ev Cooper. Like Ettinger, he authored a book explaining the idea, but then in December 1963 took the additional, unprecedented step of organizing the first cryonics promotional group, the Life Extension Society, operating out of his home in Washington, D.C. For several years LES served as a forum for exchanging ideas through its newsletter *Freeze-Wait-Reanimate* and further encouraged group participation and growth of the movement through annual conferences. It was a fine send-off but there were problems. Mainly, there was much talk but little action of the sort that mattered most, aiding the dying through cryopreservation. Cooper with his autocratic, secretive nature was in no small part responsible yet was also aware of the problem and tried in his own way to remedy it. Property was acquired in Maryland with an old farmhouse and some rustic scenery and interesting wildlife. A modest building was constructed to serve as a laboratory, with the hope that cryopreservations with long-term patient storage would eventually follow and accompany the cryobiological research to be done. But by this time (1968) human freezings had started elsewhere. LES was increasingly marginalized and would not conduct any freezings or do any lab work. Around the end of 1969 Cooper left the movement, never to return.

The reasons LES failed are a combination of the complex character of the founder, Cooper (at once encouraging and autocratic, revolutionary and reactionary, daring and retiring) and the difficulty of the main mission of cryonics, to cryopreserve people and keep them that way for an indefinite period. Cooper, despite his firmness and dedication, could not bring off such an undertaking single-handedly, nor could he delegate authority and otherwise loosen the reins enough to allow substantial decision making and creative initiative by others while still giving guidance. Instead he was bypassed, the initiative seized by other, breakaway groups, notably cryonics societies in California and New York which (however imperfectly) did most of the early freezings. Cooper meanwhile was criticized

and disparaged, which must have added to the burnout which drove him out of the movement.

Reportedly Cooper had a small inheritance which covered basic expenses and left him with leisure time. In addition to life extension he had another great passion, sailing. He was an experienced boat carpenter and expert in navigating watercraft under wind power. In later years, after leaving cryonics (and his wife), he plied the Eastern Seaboard in his 38-foot Herreschoff sloop, *Pelican*, enjoying the cuisine and the company of admiring acquaintances along the way. It must have seemed a far more carefree and happy existence than the turbulent, strange world of body freezing he had left behind. But there was a downside. In the fateful summer of 1982 he stopped at Nantucket, Massachusetts, to help a friend build his own sailboat. There was a severe storm in early October in which many boats were damaged, including *Pelican*. Cooper, expecting a harsh winter, wanted to head south to Beaufort, North Carolina rather than spend the season in Nantucket as his friend hoped he would. So he made makeshift repairs which he thought would be adequate and set sail October 17, using a new, elaborate steering gear as a fill-in for the sailing companion he had been unable to find. On October 21 he was hailed by a Coast Guard patrol vessel off Woods Hole,



Ev Cooper in later years.
(Photo courtesy of Forrest Halsey.)

Massachusetts. All was well, he told them, his next stop Block Island, Rhode Island, via Vineyard Sound, some fifty or sixty kilometers west and south. He was never heard from again. It seems likely that the boat with its occupant perished in another violent storm that soon swept the area.

Dante Brunol. For cryonics to actually happen, something more than a discussion group was needed. Some early freezings were of a cosmetic, straight-freeze sort, but more than that too was desired, since straight freezing was highly damaging to tissues. A much better cryopreservation could be had if the blood was replaced by a cryoprotective agent—a kind of antifreeze—which would be pumped into the body while the blood and other body fluids drained out. Dante Brunol (full name: Mario Dante Bruno-Lena), biophysicist and M.D., was the first to develop a protocol for this cryoprotective perfusion, and the first to attempt its use, in the case of James Bedford, January 1967. (Due to technical difficulties only a crude approximation of the protocol was actually used, though the Bedford case is still regarded as the first “true” cryonics preservation.)

In its published form Brunol’s protocol is a landmark of early cryonics literature, worth studying both for its philosophical and its technical features, both of which have served as guidelines or at least food for thought ever since. In particular there were critics who thought that “freeze now” advocates were going too far and their proposed freezing should be postponed “until the process is perfected.” Brunol’s rebuttal is touching. “How can I tell a dying man, begging for life, ‘I cannot do anything for you ... it would be unscientific to attempt to send your body to future generations ... I am sorry, but I do not want to ruin my reputation?’” Instead he advocates proceeding with the preservation, with the hope “that future generations will be able to repair the damages produced by my method.”

In fact, though, Brunol was very concerned about his scientific reputation, particularly after the Bedford freezing when he had to explain his involvement to his employer, the University of Southern California. He had hoped that this

involvement would generate research funds which he could use to further validate and refine his method, but this didn’t happen and he soon dropped out of active participation in cryopreservations though remaining sympathetic. In a 1970 article in the New York cryonics society newsletter he bravely concludes: “We must be frozen so we can reach salvation.” In January 1978, however, at age 51, he died in his native Italy, and was not frozen.



Dante Brunol (left) and Robert Nelson at James Bedford freezing in 1967. (Credit: Robert Nelson, personal communication (email), 1 Oct. 2014, reprinted in Freezing People Is (Not) Easy, 49.)

Beverly Greenberg. As a youngster, Beverly saw Bob Ettinger on TV and found cryonics interesting but hadn’t considered it urgent to be actively involved. That changed dramatically when, in the spring of 1970, her father, Herman, aged 42, suffered a fatal heart attack. A very bright and talented seventeen-year-old, she was working in Florida as a camera girl on the movie “The Beguiled” (which starred the young Clint Eastwood). Though the family’s main residence was in Philadelphia, the death occurred at their other home, in Atlantic City, New Jersey. Beverly’s mother, who had no interest in cryonics, arranged for burial in a cemetery near Philadelphia. But Beverly refused to give up, and

contacted Curtis Henderson, president of the Cryonics Society of New York, based in Long Island. Her father’s recently buried body was retrieved from the ground and cryopreserved at CSNY’s facility. In the words of her friend Mike Darwin, “Beverly hated death, she hated the terrible imposition it was on her freedom to be with her father, and she took the action she did because she didn’t believe in giving up—not ever.” Beverly herself said, “I simply could not go on with my own normal existence thinking of my father decomposing in the ground.”

Mike was especially intrigued by pictures Beverly made of the cryopreservation, including a short movie, *The Ice Men Cometh*. “The photographs and slides were beautiful, simply beautiful in the artistic sense. Others were awesome, such as the picture of her father immersed in liquid nitrogen; obviously requiring many hours of labor, careful thought and technical perfection.” Appropriately, the film concludes not with “The End” but “The Beginning.”

Beverly’s cryonics activities and antics continued off and on, including a Henderson-backed spy mission to Robert Nelson’s rival facility in Chatsworth, California. Then came the fateful November of 1973. She was back in Long Island, and had obtained a part-time job, ironically, with an ice cream truck (the company name was “Circus Man”). She was trying to finish a sound track for her cryonics film. At this time the CSNY patients were being stored in a facility in West Babylon close to Sayville, with part of the building also rented to tenants. (Technically the facility was operated by CryoSpan, a for-profit sister organization to the non-profit CSNY.) Beverly would come there two or three times a week, drive her car inside, and stay overnight. (Curtis’s wife had by then forbidden Beverly to stay at their home.) Just a few feet away loomed the tall capsule with Beverly’s father back-to-back with another patient.

On November 16 police, on a tip from a tenant, found Beverly’s lifeless body in the front seat of her car, in the CSNY facility. The keys were in the ignition and the gas tank read empty, suggesting she had been running the engine to keep



Beverly (left) with Curtis Henderson, July, 1972, in the West Babylon facility. The capsule in the background contains her father, Herman Greenberg. It is here that she died 15 months later. (Credit: photo by Mike Darwin.)

warm in the autumn chill and suffocated from carbon monoxide that built up in the enclosed space. The police affirmed that her death was due to carbon monoxide, but to Mike Darwin who would soon see the body, her chalky-white features seemed to rule this out since carbon monoxide poisoning leaves a characteristic, flushed or rosy appearance. In any case, by law, all suspicious or unattended deaths required investigation, including autopsy. Mike and a friend in cryobiology, both now in Georgia, rushed out with perfusate chemicals, trying to save Beverly from the dissecting blade and get her frozen—but to no avail. At the time she had neither written arrangements nor funding for cryopreservation, despite serious involvement now stretching back several years. In such situations, next of kin had legal standing; the day after the autopsy, her unfrozen remains were cremated.

“Richard Leibee.” Richard had a long career on the New York stage and was well-acquainted with celebrities there in the 1930s and ’40s. In the 1960s he heard about cryonics through publicity over Ettinger’s *Prospect of Immortality*, and

became an advocate. For years he had a weekly column published in several newspapers where, from time to time, he would put in a good word for cryonics, noting that it was something he had chosen for himself. By 1990 he had been an Alcor member for several years. Unfortunately, by then he had also suffered several strokes and showed signs of mental deterioration, becoming paranoid, abusive, and hard to deal with. At one point he made an airplane trip of thousands of miles to Los Angeles then became disoriented and needed help getting back home. He would make trips to stay with “close friends” who hardly knew him, and reportedly gave away his automobile and large sums of money, on the other hand complaining that people, including cryonicists, were trying to take his money. He finally dropped his cryonics arrangements and died (1994) without preservation.

“Robert Walberg.” As a youngster Robert was fascinated by the cinema, and had produced several well-received, amateur films by the time he graduated from high school. Continuing this interest

and related studies through college, he graduated and began working his way toward a moviemaking career. Then, still in his early twenties, he was diagnosed with HIV, and the focus of his life shifted. At the time very little was known about this sometimes slow but almost invariable killer. The medical mainstream did not seem particularly interested in researching or treating the odd, “gay” malady, and progress was slow. Robert became involved in underground efforts to obtain and test possible promising drugs that had not received FDA approval.

For over ten years Robert battled his ailment, conducting research, encouraging others, and writing a book about his experiences. At some point he heard about cryonics, and filled out paperwork to sign up with Alcor. By then he was living with his mother in Florida. There was a problem with his funding arrangements that seemed relatively minor and he was approved as a member in 1991, contingent on rectifying the matter soon (making sure Alcor would be the sole beneficiary of a trust to be used for his cryopreservation, rather than his mother being named also). In early 1993 with the matter still unresolved there was a medical crisis and a standby team was deployed to Florida. A conflict developed between a Florida doctor who reportedly thought the man was terminal and refused to treat him, and Alcor’s physician, who insisted otherwise. The man was finally treated and recovered but problems remained. The mother didn’t seem to understand cryonics and had been particularly upset when the Alcor team seemed to be “waiting for her son to die,” thus on the side of the bad doctor. (The team had brought with them a portable ice bath, in case it would be needed, which she saw as a “coffin.”) Though efforts were made to heal the breach between Alcor and the family they were unsuccessful and the man, thinking he still had years of life left and “no longer needed Alcor,” cancelled his arrangements. When the end came the following year he was not cryopreserved.

Robert Michels. Born and raised in southern California, Rob was brought up as a Mormon and loved his family but rejected their religion as he grew to

adulthood. First he embraced nihilism, thinking that, without a Creator and divine Lawmaker there could be no purpose or value to life nor any right or wrong. (He remained a decent, kind-hearted person however.) He made friends with Max More and Tom Bell, who explained why they didn't think that relinquishing belief in a deity meant nihilism. Instead they placed their hopes in a rational, scientific pursuit of transcendence of human limits including mortality. Rob soon embraced their thinking, including a positive view of cryonics, and signed up with Alcor in 1991. As Max put it: "His passion for knowledge and his admirable capacity for good will now combined with an optimistic outlook on life to make life once again a grand adventure, a vast and glorious tale in which he would be a major character."

Rob married and, while the marriage didn't last, the ex-wife remained on friendly terms, with frequent contact. By November 1995 the now 29-year-old Rob had become a Ph.D. student in philosophy at the University of North Carolina in Chapel Hill. Around the middle of the month he stopped answering phone calls from his ex; after some delay she called police. On entering his apartment they found his body in an advanced state of decomposition; he had been dead an estimated 5-7 days, cause of death apparently an overuse of pain killers (he had recently suffered burns in a house fire) and possibly alcohol abuse.

The ex-wife told police about his cryonics arrangements but they decided on their own that the body was too decomposed for cryonics *and did not call Alcor*, nor was Alcor contacted by the Medical Examiner. None of these people knew that an anatomical donation to Alcor was involved, only just enough to make the wrong assumptions. As a consequence, Alcor was not notified until after Rob's body had been shipped back to his family in California and a funeral had occurred. The police in Chapel Hill said they had destroyed the decomposed brain except for a small sample they retained for further investigation. Rob, who had chosen the neuro option, had specified in his paperwork that any portion of his brain that could be recovered should be preserved by Alcor. Alcor accordingly

requested the sample be sent to them, but records say it never was. Rob's brainless body was buried by his family and remains so today.



Rob Michels in 1989.
(Credit: Cryonics 1st Quarter 1996, 24.)

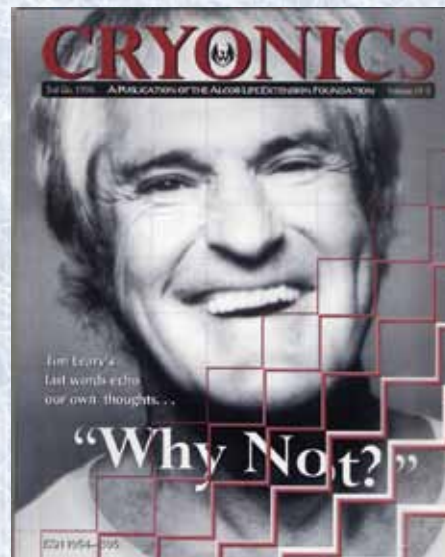
Timothy Leary. In the 1960s Leary, a Ph.D. psychologist at Harvard, became a counterculture icon with his experiments with hallucinogenic drugs and his appeal to "turn on, tune in, drop out." Leary lost his job over the drugs but was not deterred by public disapproval or legal restrictions on what he felt was his right to engage in practices involving only himself and other consenting adults. During the 1960s and '70s he was arrested enough times to see the insides of 29 prisons.

Another of his interests, life extension, seemed to reach a safe haven when he signed up with Alcor in 1988. For years after that Leary was friendly to cryonics, among other things sometimes hosting Alcor's annual Thanksgiving "turkey roast" in his Beverly Hills, California home. A problem developed in the 1990s when there was a split in Alcor and a new organization, CryoCare, formed. Leary wanted to be friendly to both sides to the point of being a member of both, but was forced to choose and chose CryoCare since his physician was also with that organization. Meanwhile he was diagnosed with inoperable prostate cancer.

As the end approached in 1996, Mike

Darwin and Charles Platt, also with CryoCare, came to the Leary home for a standby. It appears that they were not well-received by visitors whom Leary respected, and he also had other issues with the two and their efforts. In the end he announced that he would be cremated, quipping flippantly even with time running out that he didn't want to come back surrounded by people with clipboards. Among his last words were, "Why not?"

The cremation was carried out leaving cryonics acquaintances aghast and wondering brokenly, *Why not, indeed! Why not cryonics? What went wrong that made you choose this horrible alternative? How could you do this to us?* Some of the ashes, along with those of two dozen other celebrities, were placed aboard a Pegasus rocket and launched in 1997. The rocket remained in orbit for six years then burned up in the atmosphere, more or less according to plan. Leary had said that he did not want to end up as permanent space debris.



Leary on Cryonics cover, 3rd Quarter 1996

Robert Anton Wilson. In the November 1978 issue of *Future* magazine, noted science fiction author and philosophical gadfly Wilson has an article, "Next Stop: Immortality." Most of it is devoted to life extension through treatment of aging and diseases. Promising research apparently was being done and great progress might soon be expected. Though

cryonics is not emphasized he does touch on it also: “Even cryonic freezing—the long-range gambler’s approach to longevity, when it started in the 60s—is advancing by leaps and quantum jumps. An October 1975 McGraw-Hill poll found the majority of experts in the field believed cryonic freezing would be perfected and perfectly safe by 2000.” As evidence of the “leaps and quantum jumps” Wilson cites recent work of Dr. Paul Segall in reviving partially frozen hamsters, apparently not realizing the animals were not stored at cryogenic temperatures nor could they have remained indefinitely in their chilled state but must soon be warmed to survive.

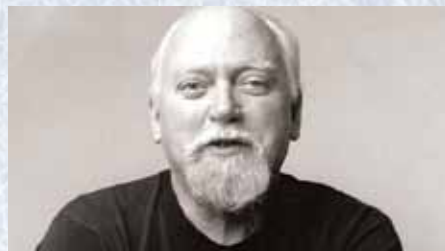
By 2000, of course, aging was still far from cured and cryopreservation was not “perfected” though advances had been made in both fields (discovery of telomerase’s role in partly reversing aging, for example, and development of vitrification in cryonics). Wilson, on the other hand, had little time left. In 2006, with his legs weakened by post-polio syndrome, he suffered a fall which left him bedridden until his death the following January at age 74. A few days before, in a final post on his personal blog, he said: “I look forward without dogmatic optimism, but without dread. I love you all and I deeply implore you to keep the lasagna flying.” (He had earlier said that one should never rule out any possibility, even that lasagna might fly.) He then added, “I don’t see how to take death seriously. It seems absurd.” He was cremated.

It was some 30 years earlier that Wilson did take death seriously. On October 2, 1976 his 15-year-old daughter, Patricia Luna Wilson, was beaten to death in an apparent robbery, where she worked part-time in a clothing store. A small amount of cash was pilfered by the assailant who fled and was never apprehended. Her grief-stricken father had her brain cryopreserved and stored by Bay Area Cryonics Society (now American Cryonics Society). His eloquent statement to the press reads in part:

“Above all, by this scientific endeavor we express and commemorate our faith in life and our total rejection of death and violence. By this attempt to preserve life, we say ‘No’ to the dealers in death and

violence. We say ‘No’ to the governments that use mass murder as policy. We say ‘No’ to an entertainment industry based on the pornography of violence and the prurience of sadism. And we say ‘No’ to the creature who, in his blind ignorance of the value of life, killed Luna to steal a few dollars.”

Today Luna Wilson (she used her middle name) remains in cryostasis. It is a pity that her father did not join her when it was time for him to face his own mortality, after he had so firmly and touchingly contested hers.



Robert Anton Wilson
(Credit: <http://www.brainsturbator.com/posts/236/strange-loops-and-disinformation-readings-from-robert-anton-wilson>, accessed 4 Dec. 2014.)



Luna Wilson
(Credit: The Immortalist, Nov.-Dec. 1976, 14.)

Marcelon Johnson. Marce was in her late thirties when she started involvement in cryonics in the 1960s, as a housewife and mother of six in southern California. Even though her family didn’t share her enthusiasm she continued her involvement with loyalty and tenacity for decades. In January 1967 James Bedford was frozen by the Cryonics Society of California, the first cryonics freezing under controlled conditions. By March Marce was secretary-

treasurer of that organization, and remained an officer for over a decade.

A 1970 newspaper report describes how Marce performed heroically behind the scenes in the cryopreservation of Russ Stanley in 1968. Others who might have stepped in, including the organization president, Robert Nelson, were unavailable. She called Robert Ettinger, who gave instructions, and also called a local mortician, and the freezing was accomplished. On her involvement in cryonics she had this to say: “Personally, it has been a great help in giving me the feeling that there is hope for a longer life; and it has brought me into contact with interesting and active people who share this feeling. And I think it has opened new doors for my children—caused them to re-evaluate how they feel about things.”

When her organization eventually failed and patients were lost (including Russ Stanley) many others gave up their involvement, but not Marce. Instead, in 1981, she joined Alcor. “Over the next ten years,” Mike Darwin remembers, “Marce hosted more Alcor meetings than anyone else has before or since. She and her husband Walt were a dependable source of contributions, and Marce would often make the 2-hour drive (each way) from Huntington Beach to Fullerton to help with various volunteer activities at Alcor. Her gentle, intellectual decency served as a welcome beacon of normality and warmth at cryonics get-togethers that were often marred by partisanship and extremes. Marce’s home was one of the least conveniently located in Southern California, but the meetings she hosted there were among the best attended.”

When, in 1987, Alcor had to move from its Fullerton location to a new site in Riverside due to escalating costs, a \$5,000 contribution from Marce and Walt was essential.

A little later Marce, who attended a Unitarian-Universalist church, became interested in and joined the cryonics-promoting Society for Venturism which was recognized by the IRS as a religious organization. One simple but useful contribution she made was to suggest adapting a wedding ceremony from a

minister's handbook used in her church—and so it was done for Venturist marriages.

For nearly another decade Marce remained loyal to cryonics and maintained her arrangements despite financial hardship. During this time there was a split in Alcor and some of the members, including Marce's friend Mike Darwin, formed another organization, CryoCare, which Marce like Tim Leary joined. Eventually the two organizations would heal their differences and most of the CryoCare members would return to Alcor. Unfortunately Marce, again like Leary, would not be part of this. Stricken with Alzheimer's disease, she became confused, and her non-cryonics family members refused to commit the necessary funds to continue her arrangements. A funding drive was started by the Venturists. Many cryonicists contributed, and the outlook seemed hopeful. But then Walt, himself aging and ailing but still in control, informed Mike Darwin that the decision had been made not to pursue cryonics arrangements, period. In January 2009 she arrested and was cremated.



Marce Johnson about 1967
(Credit: courtesy of Mike Darwin (cropped)).

Allen Lopp. Born in 1954, Al got his start in cryonics in Indiana, in the mid-1970s, touching base with the group in Michigan. Within a few years he had joined Mike Darwin, Steve Bridge, and other young activists in the Indianapolis area. They created an organization, the Institute for Advanced Biological Studies, started a newsletter, and, through a sister



Al Lopp about 1977.
(Credit: photo by Mike Darwin.)

organization, Soma, Inc., created by Mike Darwin, froze a pet, Mike's dog, Mitzi. (Mike and Al were also a gay couple for a few years around this time, then parted but remained friends.) In 1982 IABS and Soma would join forces with Alcor and lose their separate identities. (IABS's newsletter, *Cryonics*, became Alcor's newsletter that you are reading today.)

Al's contribution in all this was considerable, his boundless generosity helped by his employment in computer programming which provided much-needed income. In all he put tens of thousands of dollars into cryonics in the 1970s and '80s, equivalent to several times that amount today. He was the major source of funding for IABS and Soma, then relocated with Mike to the Los Angeles area for the merger with Alcor. Al paid half the cost of this move plus was in charge of planning, logistics, and driving the truck carrying equipment. Once in his new location, he typed every issue of *Cryonics* magazine until Alcor got its first computer. He also had major editorial input and proofread each issue, along with other Alcor documents.

The change in venue took its toll, however. "He hated life in LA," Mike Darwin remembers, "and he had a 2-hour commute each way to his job. He was completely worn down by this. But he persevered largely because of cryonics." Mike is sure that without Al, there would have been no cryonics facilities in Indiana and it is doubtful Mike himself would have migrated to California, to collaborate with Alcor researcher Jerry Leaf.



At gay-activist friend's memorial, 2011.
(Credit: photo by Michael Bedwell,
provided by Mike Darwin.)

Al also founded a lobbying organization for cryonics, Citizens for an Extended Lifespan, which didn't accomplish much on its own, but may have helped sensitize and better equip Alcor for its later, successful efforts. During the crisis over Dora Kent that started in December 1987 Al opened his home at great personal risk to this fugitive neuropatient, the target of a coroner's investigation, until better lodgings could be found. (A neighbor of Jerry Leaf then stored Mrs. Kent in his garage for more than two years until she was finally moved back to Alcor's facility, after favorable court rulings.) He also served as an Alcor Board member.

Steve Bridge remembers other important items. "In spite of having his own temper, Al was good at not only providing some cushioning for Mike Darwin's hair trigger reactions, he was good at getting other people to cooperate and think sensibly. ... he was a very good Board member for the comparatively short time he was on the Board, and he was definitely an important Board Advisor (no official title, perhaps) for a long time."

In the mid-1980s Al was diagnosed with AIDS, and fought a long, ultimately losing battle. With declining health he dropped out of Alcor, and became increasingly impoverished. When he died in 2013 he was cremated, like many others on this list. Mike Darwin had a long discussion with him as the end approached but could not get him to change his mind. Finances were a problem, but there were friends prepared to help. (And he had an odd, unexpected turn

of fortune via inheritance a week before his death.) Instead the insurmountable barrier appears to have been a combination of attitude and mental state. He was resentful of Alcor, and lacked confidence in cryonics organizations more generally to provide high-quality service and last long enough to resuscitate him. Overarching this was a general state of depression and low sense of self-worth. No doubt these issues were aggravated by an illness noted for its impairment of cognitive functions as it runs its course. Al did not think the end was close, and also did not think people cared about him. He was surprised to see the outpouring of sympathy that some of us showed, including pledges of financial support. Unfortunately this well-intended gesture was not enough.

Ralph Whelan. When he was seven years old, Ralph resolved to become rich enough someday to hire a team of scientists to keep him alive indefinitely. By age 22 in 1990 he was a soldier on duty in Germany who had heard of Alcor as a result of a lawsuit filed by a member who wanted a premortem cryopreservation. (The member, cancer patient Thomas Donaldson, lost the case but it generated lots of favorable publicity for cryonics and the right to end-of-life choices.) By August Ralph had signed up with Alcor and joined the Alcor staff. An article in the September 1990 *Cryonics* speaks well:

“We’re glad to have Ralph. He’s versatile: he’s an expert grammarian (notice the improvement in *Cryonics*) capable of installing splashboards on sinks, washing ambulances, doing medium duty car repair, creative writing, he’s M-60, M-16, and 40mm grenade launcher qualified, well-versed in hand-to-hand combat, an accomplished musician (he played the sax for the Army band, and has a personal preference for New-Age jazz), and [can hold] his own in arguments with Mike Darwin and Hugh Hixon. A real Renaissance man. And best of all, he’s young. ...”

Ralph advanced rapidly, becoming Managing Editor of *Cryonics* magazine, then Membership Administrator, then a director of Alcor, in less than two years. During this time he also took Alcor’s Transport Training Course under Mike

Darwin, and went on to be perfusionist or assistant perfusionist for many of Alcor’s cases. (It was also Ralph’s idea to start the “For the Record” column which I have been writing now for many years, the first one appearing in November 1990.) One more milestone during Ralph’s tenure was the unfortunate case of Tim Leary, noted earlier. (Ralph was editing the magazine but Steve Bridge wrote the article on Leary that appeared in *Cryonics*.)

For a few years Ralph was active in Alcor but then wound down his cryonics work and was no longer a Board member or editor. In 1999 he suffered a financial reverse and dropped his arrangements. Though he recovered he never again signed up, either with Alcor or another cryonics organization. As the years went by he seemingly forgot about cryonics, though never disparaging it or professing any profound change in views such as a religious conversion. In September 2014 at age 46 he was seemingly in good health and working hard at his computer terminal when he suffered a fatal heart attack. His parents were Catholic and he received a Catholic funeral and burial.



Ralph Whelan

(Credit: <https://www.facebook.com/photo.php?fbid=10204478472469505&set=a.1589382502134.2080707.1462990971&type=1&theater>, accessed 4 Dec. 2014; cropped.)

Final Thoughts. This has been a painful article to write; some of these people were my personal friends, and I feel for the others too. There are still others like them, who have had to drop their arrangements and might well end up in the same predicament. When it happens you find yourself thinking and hoping somehow that death, even physical disintegration, isn’t really the absolute end. The destruction of lives in any case is not a good thing. Nature herself seems at war with what is good and right, and you find yourself thinking hard about what it all means and what should be your stance and response, both short- and long-term. This is not the place for a lengthy philosophical discussion. In closing I will just quote from Steve Bridge’s 1996 article on the Tim Leary case:

“Cryonics isn’t simple and it isn’t easy. If you want the opportunity to get to the future, it may not be enough to just sign-up and buy insurance. You have to set up your life so that the people around you support your desire to be frozen, to buck you up when you’re ready to give up, to remind you that you want to stay alive enough to keep trying even if it takes a lot more work, to support you even when you’re upset with the very people trying to save you.”

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WILLIAM EDEN

By Chana Phaedra

Cryonics seems to attract a number of intelligent and accomplished young people and the subject of this month's member profile, William Eden, is no exception. If his face looks familiar, it's because Will, his wife Divia, and daughter Lydia were recently featured on the cover of the family-themed issue of *Cryonics* magazine. As we will find out, Will is not only focused on bringing about big change in the world through his professional efforts, he's also personally involved in developing an intentional community of like-minded people to provide an optimal environment for raising kids.

But first, a little history. Will was born 27 years ago in the suburbs of Chicago and describes himself as a very curious, inquisitive, and pragmatic child. "I was never malicious, but that combination



William and Divia are proud of their family's Alcor membership.

of traits got me into a lot of trouble and got me out of a lot of trouble," he chuckles. "My parents had two nicknames for me as a child—Sweet William and El Destructo." An avid fan of getting away, he remembers that he was always trying to dart outside when his parents weren't looking. Eventually, his parents installed a security system—not to keep others out, but to keep Will in.

Will's parents divorced when he was quite young, but both moved separately to Hawaii when he was 7, where they continued to raise him. They moved to the island of Kauai, which had a small population of less than 60,000 at the time. The "locals" (as they are called) were largely a mix of Hawaiian, Portuguese, East Asian, and Pacific Islander who had claimed inheritance of the island and expressed ill will towards the white minority there for "stealing" it from them, so Will had the unusual experience of facing considerable discrimination as a white person in the U.S. He also felt like a big fish in a small pond—he had friends, but not really a peer group that challenged him on an intellectual level. The rise of the internet was a vitally important part of his development, giving him the chance to find those peers around the world, and to freely indulge his curiosity with self-directed learning.

Will had gone to a gifted and talented school in Illinois and wound up skipping Kindergarten and 2nd grade. He enjoyed his education experience at that school, but when his parents split he wound up going to a public school for 4th grade, which he describes as "one of the worst experiences of my life." When he started public school he was 2 years younger than his classmates. He got picked on and came home crying



William Eden joined Alcor with his wife and daughter in 2013.

every day, but the adults he complained to at school did nothing to alleviate the issue. Eventually Will took matters into his own hands, and after that they never bothered him again. Will remembers this as the first time he realized that those in authority were not there to protect him, and was influential in his becoming a libertarian later in life.

Will was transferred to another school in 5th grade, but didn't feel he was learning anything. At this point, his mother, who has a master's degree in education specializing in gifted and talented education, founded a small school on the island where Will spent 6th grade through high school. Even so, he still felt he wasn't getting much out of his high school education, so he graduated another year early, at the age of 15. Though he longed for greater challenge, he also didn't feel like he was ready for college, so he took a year to explore his options. Interestingly, Will had been practicing to be a dancer and was accepted into a professional dance troupe in Honolulu. He considered that as a career path, but ultimately spent the year working as a construction contractor because his dad wanted him to pursue a vocational path.

After some time getting his hands dirty,

Will decided to visit Dartmouth where he immersed himself in the environment and decided college was a good idea. He was accepted to Dartmouth in 2004 at the age of 16, where he majored in economics. “At the time we were in the height of the finance bubble,” he recalls. “I was totally on the finance track. I didn’t know what else to do, so I just did the lucrative thing.” He graduated with a B.A. in economics from Dartmouth in 2008 (with honors and cum laude), moved to New York City during the financial crisis, and ultimately utilized his degree by working as an economist at the Federal Reserve Bank of New York during the financial crisis.

“During this time my thinking was beginning to change dramatically,” Will states, “in ways that have now shaped the course of my life forever after.” In the beginning of his senior year he had become very interested in cognitive science, from how receptor sites in synapses worked to the heuristics our brains use for decision making. “I realized there was an entire literature about how human brains work by default, and sure enough when I introspected it was clear that my mind functioned in much the same way. I felt like someone had just given me an instruction manual for my own brain.”



Will and Divia were married in October 2012 by Eliezer Yudkowsky.

Will decided to use this profound information to optimize his life. He started spending a lot of time on self-improvement. “In addition to overhauling my cognitive processes, I also studied metabolism and completely changed my diet, lost about 50

pounds, started weightlifting and sprinting and added muscle, revamped my wardrobe, learned to read microexpressions and nonverbal communication, learned psychology and a huge range of useful mental hacks, learned how to program...the list goes on, and continues to this day.”

What Will also found was that there was a well-developed community of people built around the idea of using cognitive science to influence our own thinking, originally organized around the blog *Overcoming Bias* (now known as *Less Wrong*) where economist and futurist Robin Hanson and AI researcher Eliezer Yudkowsky were blogging together. When Robin Hanson hosted an in-person meetup in NYC in April 2009, Will met him and other “rationalists” and felt he had more in common with them than anyone in his life up to that point.

Will was so excited by this that he wound up starting the *Overcoming Bias NYC* meetup group shortly thereafter. He learned a lot about how to organize groups during this period, culminating in writing a post about it that “spawned several dozen new rationality groups to form across five continents.”

It was during this time, too, that Will met Divia Melwani, who also wanted to start a meetup group. After some email correspondence, Will and Divia started spending most of their time together. “Despite starting with very different backgrounds, we had converged on the same values and ideas. I did not ever think I would meet someone who confirmed my entire worldview so completely. Just a few months prior I had made a list of everything I wanted in a partner, and I truly believed that the intersection of those sets was empty. She was the most surprising thing that ever happened to me. I knew that I wanted to spend my life with Divia from almost the very beginning.”

But Divia lived in the Bay Area and had to return after a prolonged holiday in New York. Realizing that maintaining a cross-country relationship was unsustainable, Will ultimately uprooted his life, leaving his job at the Fed to move to San Francisco and take a job at the Singularity Institute, largely working on community-building



Will with his daughter Lydia when she was just an infant.

and developing and teaching rationality training seminars. When the Singularity Institute sold their name and split into two new organizations (the Machine Intelligence Research Institute and the Center for Applied Rationality), Will made the jump into the startup world as Chief Analytics Officer of a mobile health app company called Azumio, where he enjoyed the flexible hours and the ability to work with big data sets.

“Today, Will has taken on another role for Thiel Capital, investigating and prioritizing promising life extension research and technologies.” “What may be my most distinguishing feature is my interest in community. We are ultimately still humans, and not much changed from our early hunter-gatherer days.”

Meanwhile, Will and Divia had continued to grow closer and decided to get married and have children. They were married on May 27, 2012, and chose a new last name (Eden) together. Their daughter, Lydia,



Will and Divia with friends at Ephemerisle in 2012.

was born on October 10, 2012. Soon after, Azumio told Will they were scaling back to just a handful of developers, so he began considering his next career move. He was put in touch with Peter Thiel directly at this point, and he ultimately took on a role as Director of Communications at Thiel Capital, where he is still employed today. In this position he was in charge of media strategy, writing, and planning for Peter's recent book release.

Today, Will has taken on another role for Thiel Capital, investigating and prioritizing promising life extension research and technologies. "Peter wants high leverage opportunities," Will explains. "We want to find ways to radically accelerate progress towards life extension. My job is to survey the landscape of potential technologies...to do a preliminary sweep to find out where the opportunities might be. We're looking at everything from basic research to applied therapeutics. There are bottlenecks in each of these areas, and in translation between them. The question is how we can target our efforts to produce the biggest impact possible."

In line with his interest in investigating these issues, Will became interested in cryonics several years ago. "I identify myself as a transhumanist, a rationalist, and a futurist," Will states. "I believe that

technology can hold incredible potential. It may be artificial intelligence, whole brain emulation, nanotechnology, artificial biology...or something we haven't yet imagined. I hope with advances in science, along with taking care of myself, that I can reach escape velocity. I think this is within our reach. Cryonics is my insurance policy to see the future. I also realize that not everyone is young enough to reach that tipping point, and I see cryonics as a humane alternative to give them access to the incredible future that I know is possible. I would love to see universal adoption."

Will joined Alcor along with his wife Divia and daughter Lydia in 2013. "We knew we wanted to be signed up for cryonics for many years at that point, so the motivation was mostly about timing. We wanted to wait until we were making a bit more money before signing up, and that was when we finally crossed the threshold." Will says his cryonics arrangements haven't changed his lifestyle very much, though he does attempt to ensure an optimal cryopreservation by not acting in more risky ways and he thinks it does give him an increased sense of safety.

"The two areas I think I could most easily contribute to cryonics would be either helping to direct funding into research and development, or outreach—

improving our image and branding, making the idea seem more mainstream and commonplace, and ultimately getting more people involved," Will says. "What may be my most distinguishing feature is my interest in community. We are ultimately still humans, and not much changed from our early hunter-gatherer days. The experience of tribe, of togetherness, of shared understanding, these are fundamental human needs that I think people like us tend to ignore—to our own detriment. I have built or contributed to several communities over the years, and I intend to create more."

To other members, Will has the following to say: "First of all, I would like to offer encouragement and inspiration to everyone thinking about and working on these problems. There are few enough of us, and much work yet to be done. The potential of cryonics is enormous, on both a technological and a humanitarian level. We are undertaking something incredibly important, and we are all in this together. Second, I would encourage anyone who is reading this to get in touch with me if any of this speaks to you. I am always willing to talk to people, and I am happy to help in any way that I can. I want to see us making progress, and that is so much easier to do when we are helping and supporting one another. If I can help you, or you can help me, or you just want to chat and swap ideas, please don't hesitate to reach out!" ■

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The Sixth Annual Young Cryonicists Gathering

Teens & Twenties 6 2015: Getting to Know You - You Getting to Know Each Other - All While Being Updated On the Latest Scientific Research

Fri-Sun; April 24-26, '15 Las Vegas NV Host: Life Extension Foundation SCHOLARSHIPS AVAILABLE



Greetings to *Young Cryonicists*,

You are receiving this invitation because you are among the future leaders in cryonics.

All attention will be focused on:

our getting to know you and
you getting to know each other.

PLUS: an update on the latest emergency
response technologies and revival strategies.

Who is Eligible?

Fully signed up young cryonicists from all
cryonics organizations aged 13-30 as of
April 26, 2015 - may apply to attend.
Cryonicists aged 13-17 must be accompa-
nied by their parent(s) or guardian. In
Vegas those under 21 must room with
someone over 21.

Parents/guardians of attendees aged 18-19
are also encouraged to accompany their
child. All attending parents will be put in
touch with each other should they choose
to have their own "get together" during the
"young cryonicists" gathering.

Program

Some individuals are social butterflies.
This is not so for everyone. And we want
everyone to meet everyone. There-
fore, I have designed a diverse range of
"getting to know you" activities. If you
would enjoy participating in these vari-
ous getting acquainted activities, all
while being updated on the latest scien-
tific research, then this is for you.

Enjoy this exciting & fulfilling weekend.

SCHOLARSHIPS:

Life Extension Foundation, through a gener-
ous education grant, is offering 40 scholar-
ships that pay for ALL of the following:

- ◆ U.S. airfare to/from Las Vegas (or up to
\$1000 for origin outside the U.S., \$1350 for
Australia)
- ◆ Hotel accommodations for Friday and
Saturday nights. Plus Thursday and
Sunday for attendees who room together.
- ◆ Meals and beverages on Friday night, all
day Saturday, & Sunday breakfast & lunch
- ◆ Registration fee - \$350 - also covered

Please click on this website for a full
packet with details & application forms.

http://www.alcor.org/T2_6_2015_details.pdf

Forever,

Cairn Erfreuliche Idun
Founder/Director: T2

Bill Faloon: The Life Extension Foundation

Some attendees to T2 enjoy spending extra
time in Las Vegas - especially since their
flight is already paid for via their scholarship.

This is at their own expense for
additional food and lodging.

We look forward to getting to know you.

New Device Could Make Large Biological Circuits Practical

Researchers have made great progress in recent years in the design and creation of biological circuits – systems that, like electronic circuits, can take a number of different inputs and deliver a particular kind of output. But while individual components of such biological circuits can have precise and predictable responses, those outcomes become less predictable as more such elements are combined. A team of researchers at MIT has now come up with a way of greatly reducing that unpredictability, introducing a device that could ultimately allow such circuits to behave nearly as predictably as their electronic counterparts. The findings are published this week in the journal *Nature Biotechnology*, in a paper whose lead author is Deepak Mishra, an MIT graduate student in biological engineering. There are many potential uses for such synthetic biological circuits. “One specific one we’re working on is biosensing—cells that can detect specific molecules in the environment and produce a specific output in response,” co-author Domitilla Del Vecchio says, such as detecting and fighting cancer.

David L. Chandler, MIT News Office
24 Nov. 2014

<http://newsoffice.mit.edu/2014/predictable-biological-circuits-1124>

Ultrafast, Low-Cost DNA Sequencing a Step Closer to Reality

A team of scientists from Arizona State University’s Biodesign Institute and IBM’s T.J. Watson Research Center have developed a prototype DNA reader that could make whole genome profiling an everyday practice in medicine. “Our goal is to put cheap, simple and powerful DNA and protein diagnostic devices into every single doctor’s office,” said Stuart Lindsay,

an ASU physics professor and director of Biodesign’s Center for Single Molecule Biophysics. Such technology could help usher in the age of personalized medicine, where information from an individual’s complete DNA and protein profiles could be used to design treatments specific to their individual makeup. Such game-changing technology is needed to make genome sequencing a reality. The current hurdle is to do so for less than \$1,000. In their latest research breakthrough, the team fashioned a tiny, DNA reading device thousands of times smaller than the width of a human hair. The device is sensitive enough to distinguish the individual chemical bases of DNA (A, C, T or G) when they are pumped past the reading head.

ASU / Eurekalert!
24 Nov. 2014

http://www.eurekalert.org/pub_releases/2014-11/asu-aim112114.php

New Tool for Exploring Cells in 3D

Researchers can now explore viruses, bacteria and components of the human body in more detail than ever before with software developed at The Scripps Research Institute (TSRI). In a study published online ahead of print December 1 by the journal *Nature Methods*, the researchers demonstrated how the software, called cellPACK, can be used to model viruses such as HIV. “We hope to ultimately increase scientists’ ability to target any disease,” said Art Olson, professor at TSRI who is senior author of the new study. The cellPACK software solves a major problem in structural biology. Although scientists have developed techniques to study relatively large structures, such as cells, and very small structures, such as proteins, it has been harder to visualize structures in the medium “mesoscale” range. With cellPACK, researchers can quickly and efficiently process the data they’ve collected on smaller structures to assemble models in

this mid-size range. Previously, researchers had to create these models by hand, which took weeks or months compared with just hours in cellPACK.

The Scripps Research Institute
1 Dec. 2014

<http://www.scripps.edu/news/press/2014/20141201olson.html>

Synthetic Enzymes Hint at Life without DNA or RNA

Enzymes that don’t exist in nature have been made from genetic material that doesn’t exist in nature either, called XNA, or xeno nucleic acid. It’s the first time this has been done and the results reinforce the possibility that life could evolve without DNA or RNA, the two self-replicating molecules considered indispensable for life on Earth. “Our work with XNA shows that there’s no fundamental imperative for RNA and DNA to be prerequisites for life,” says Philipp Holliger of the Laboratory of Molecular Biology in Cambridge, UK, the same laboratory where the structure of DNA was discovered in 1953 by Francis Crick and James Watson. It’s not all about the base. Holliger’s team has made XNAs before. Their unnatural XNA contains the same bases—adenine, thymine, guanine, cytosine and uracil—on which DNA and RNA rely for coding hereditary information. What’s different is the sugar to which each base is attached. In DNA and RNA, the sugars are deoxyribose and ribose, respectively. Holliger made new types of genetic material by replacing these with different sugars or other molecules.

Andy Coghlan, New Scientist
1 Dec. 2014

<http://www.newscientist.com/article/dn26641-synthetic-enzymes-hint-at-life-without-dna-or-rna.html?cmpid=RSS|NSNS|2012-GLOBAL|online-news#.VIsdVzFkQg9>

Yale Initiative in 3D Organ Printing to Transform Transplants

Researchers at Yale School of Medicine's Department of Surgery and Yale School of Engineering & Applied Science have joined forces with a leading three-dimensional biology company to develop 3D printed tissues for transplant research. As the number of donors decreases worldwide and the demand for transplants increases, 3D bioprinting technology offers a solution to a long-standing and growing problem. "This field may provide a unique and new opportunity where we can print 3D organs that can supplement or replace the shortage of organs out there worldwide," said Dr. John Geibel, vice chair and director of surgical research at Yale School of Medicine. Research in 3D organ printing, also known as tissue engineering, is designed to address key challenges to tissue and organ transplantation. Three-dimensional

organs could shorten the amount of time patients have to wait for much-needed organs, such as the liver and kidneys, as well as transplantable tissues, including blood vessels, lung and bone. The collaboration is supported by the Methuselah Foundation.

Ziba Kashef, Yale News
3 Dec. 2014

<http://news.yale.edu/2014/12/03/yale-joins-leader-3d-organ-printing-transform-transplants>

Wireless Brain Sensor Could Unchain Neuroscience from Cables

Neuroscience research has been constrained by the cables required to connect brain sensors to computers for analysis. In the journal *Neuron*, scientists in a collaboration led by Brown University describe a wireless brain-sensing system to acquire high-fidelity neural data during animal behavior

experiments. The technology is designed to enable neuroscience research that cannot be accomplished with current sensors that tether subjects with cabled connections. The results show that the technology transmitted rich, neuroscientifically meaningful signals from animal models as they slept and woke or exercised. "We view this as a platform device for tapping into the richness of electrical signals from the brain among animal models where their neural circuit activity reflects entirely volitional and naturalistic behavior, not constrained to particular space," said Brown Institute for Brain Science affiliate Arto Nurmikko, the paper's senior and corresponding author. "This enables new types of neuroscience experiments with vast amounts of brain data wirelessly and continuously streamed from brain microcircuits."

Brown University
4 Dec. 2014
<https://news.brown.edu/articles/2014/12/sensor>

A Roadmap to Resuscitation

Successful rejuvenation of cryonics patients will require three distinct technologies: (1) A cure for the disease that put the patient in a critical condition prior to cryopreservation; (2) biological or mechanical cell repair technologies that can reverse any injury associated with the cryopreservation process and long-term care at low temperatures; (3) rejuvenation biotechnologies that restore the patient to good health prior to resuscitation. OR it will require some entirely new approach such as (1) mapping the ultrastructure of cryopreserved brain tissue using nanotechnology, and (2) using this information to deduce the original structure and repairing, replicating or simulating tissue or structure in some viable form so the person "comes back."

The following list is a list of landmark papers and books that reflect ongoing progress towards the resuscitation of cryonics patients:

Jerome B. White, "Viral-Induced Repair of Damaged Neurons with Preservation of Long-Term Information Content," Second Annual Conference of the Cryonics Societies of America, University of Michigan at Ann Arbor, April 11-12, 1969, by J. B. White reprinted in *Cryonics* 35:10 (October 2014), 8-17.

Michael G. Darwin, "The Anabolocyte: A Biological Approach to Repairing Cryoinjury," *Life Extension*

Magazine (July-August 1977):80-83. Reprinted in *Cryonics* 29:4 (4th Quarter 2008),14-17.

Corey Noble, "A 'Realistic' Scenario for Nanotechnological Repair of the Frozen Human Brain," in Brian Wowk, Michael Darwin, eds., *Cryonics: Reaching for Tomorrow*, Alcor Life Extension Foundation, 1991.

Ralph C. Merkle, "The Molecular Repair of the Brain," *Cryonics* 15(January 1994):16-31 (Part I) & *Cryonics* 15(April 1994):20-32 (Part II).

Ralph C. Merkle, "Cryonics, Cryptography, and Maximum Likelihood Estimation," First Extropy Institute Conference, Sunnyvale CA, 1994.

Aubrey de Grey & Michael Rae, "Ending Aging: The Rejuvenation Breakthroughs That Could Reverse Human Aging in Our Lifetime." St. Martin's Press, 2007

Robert A. Freitas Jr., "Comprehensive Nanorobotic Control of Human Morbidity and Aging," in Gregory M. Fahy, Michael D. West, L. Stephen Coles, and Steven B. Harris, eds, *The Future of Aging: Pathways to Human Life Extension*, Springer, New York, 2010, pp. 685-805.

Chana de Wolf (now Phaedra), "Reconstructive Connectomics," *Cryonics* 34:7 (July 2013), 26-28.



Advanced Defense Against Cellular Aging The all-new **Optimized Resveratrol with NAD+ Cell Regenerator™**

Over 6,000 studies have been published on **resveratrol**, a compound shown to favorably alter genes that help slow the aging process. In fact, resveratrol triggers some of the same beneficial youthful gene expression activated by **calorie restriction**.¹

The all-new **Optimized Resveratrol with NAD+ Cell Regenerator™** now contains NIAGEN® **nicotinamide riboside**, a novel nutrient shown to support mitochondrial health and promote longevity pathways. This new formula provides **100 mg** of NIAGEN® **nicotinamide riboside** — an amount equivalent to almost 667 cups of milk!²

The updated **Optimized Resveratrol with NAD+ Cell Regenerator™** also contains specific compounds in berries, such as **pterostilbene** and **fisetin**, which researchers say work in synergy with resveratrol to “turn on” the body’s own longevity genes.

A bottle of 30 **Optimized Resveratrol with NAD+ Cell Regenerator™** vegetarian capsules (**Item# 01930**)

retails for **\$42**. If a member buys four bottles during **Super Sale**, the price is reduced to **\$24.30** per bottle. The suggested dose is **one** capsule daily of this “optimized” resveratrol formula.

NIAGEN® is a registered trademark of ChromaDex, Inc., Patents see: www.ChromaDexPatents.com.

References

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2. Available at: https://chromadex.com/wpresources/Upload/Article/Literature/Ingredient/IngredientSaleSheets_NIAGEN_V0114b_pw.pdf. Accessed July 15, 2014.

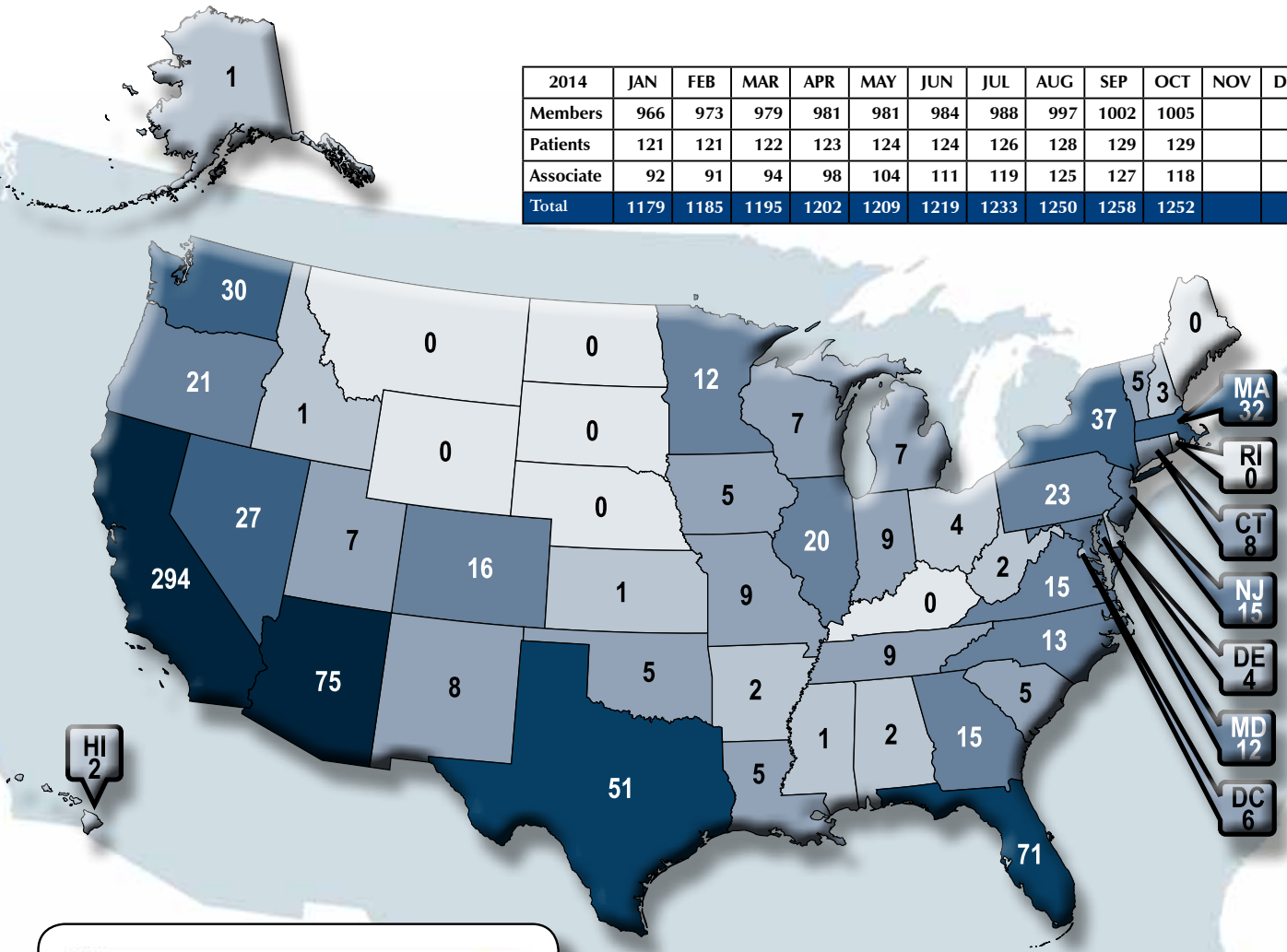
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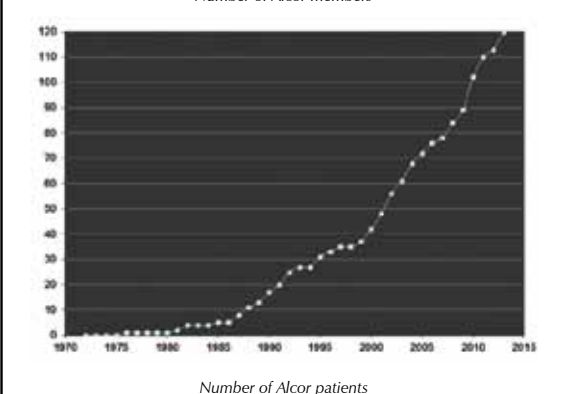
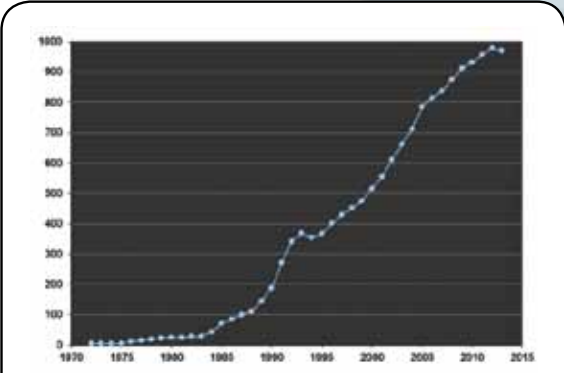
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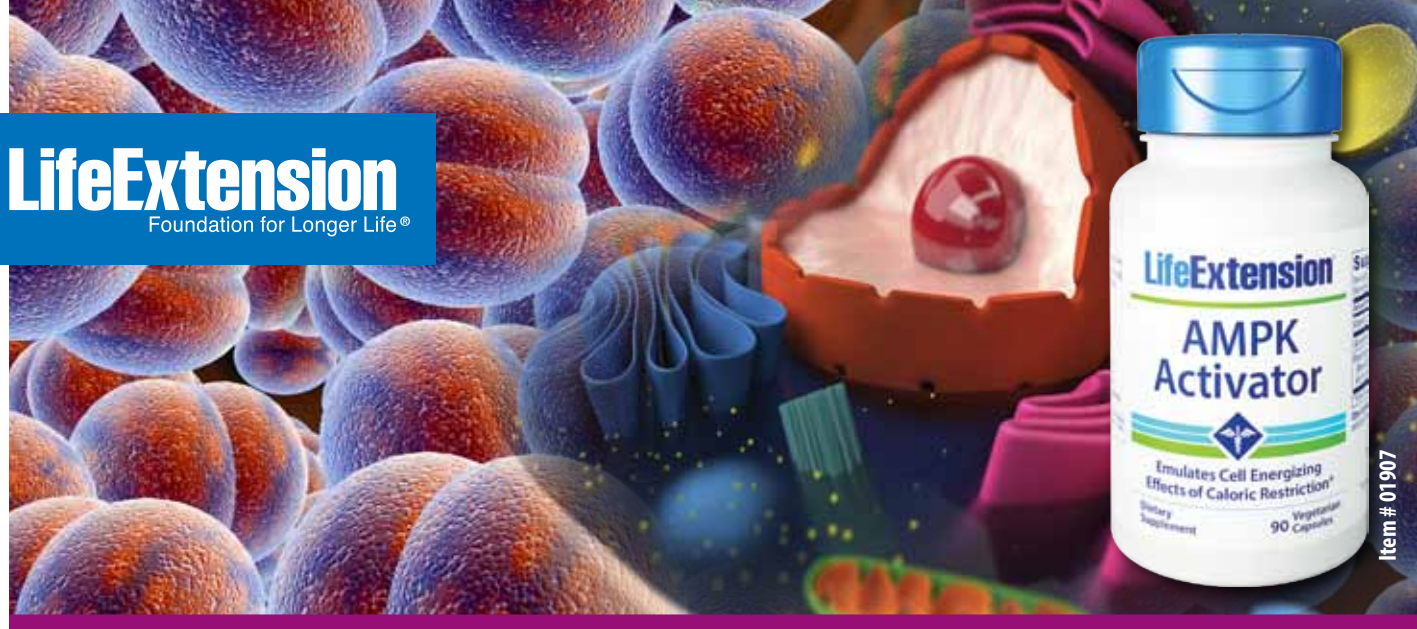
Membership Statistics

2014	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Members	966	973	979	981	981	984	988	997	1002	1005		
Patients	121	121	122	123	124	124	126	128	129	129		
Associate	92	91	94	98	104	111	119	125	127	118		
Total	1179	1185	1195	1202	1209	1219	1233	1250	1258	1252		



Country	International	
	Members	Patients
Australia	10	3
Canada	43	2
Germany	4	0
Hong Kong	1	0
Israel	1	1
Italy	3	0
Japan	2	0
Lebanon	1	0
Mexico	4	0
Monaco	1	0
Netherlands	2	0
New Zealand	3	0
Norway	1	0
Portugal	4	0
Singapore	1	0
Spain	3	1
Thailand	3	0
United Arab Emirates	1	0
United Kingdom	23	2
TOTAL	111	9





Item # 01907

AMPK Activator

A New Paradigm in Controlling Aging

AMPK is an *enzyme* that serves as the body's "**master regulating switch**." It inhibits multiple degenerative factors by *revitalizing* aging cells.¹

Found in every cell,^{2,3} **AMPK** promotes *longevity factors* that have been shown to extend life span in numerous organisms.^{1,4} Increasing AMPK signaling "turns off" many destructive effects of aging, thus enabling cells to return to their youthful vitality.⁵

Life Extension® scientists have compiled years of research to create **AMPK Activator**, a specialized *dual-extract formulation* that supports AMPK activation for health optimization. This natural formula supports AMPK enzymatic activities required to safely support a more youthful cellular environment.

Importance of AMPK

Greater **AMPK** (*adenosine monophosphate-activated protein kinase*) activation has been shown to help target damaging factors of aging.⁵ Studies show **increased** AMPK activity supports reduced fat storage,⁶ new mitochondria production,⁷ and the promotion of healthy blood glucose and lipids already within normal range.⁴

Gynostemma Pentaphyllum

An extract of the plant *Gynostemma pentaphyllum* was traditionally used in Asian medicine to promote longevity and scientists now know why — *G. pentaphyllum* promotes **AMPK** activation!⁸⁻¹⁰ In one of many studies showing a wide variety of benefits, researchers documented a one-inch reduction in **abdominal circumference** in overweight individuals who took **450 mg** daily of *G. pentaphyllum* extract for 12 weeks.¹¹

Trans-Tilioside

Trans-tilioside, extracted from plants such as **rose hips**, also boosts **AMPK** activation, but triggers different downstream metabolic benefits

References

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15. *Bioorg Med Chem Lett*. 2007;17(11):3059-64.

than *G. pentaphyllum*.¹²⁻¹⁴ Among its many benefits, a low equivalent dose of **56 mg** daily *trans*-tilioside has been shown by researchers in preclinical studies to promote healthy blood glucose levels and body weight already within normal range.¹⁵

The suggested daily dosage of **AMPK Activator** is to take two capsules with the first meal of the day and one capsule with the second meal. Three capsules provide:

Gynostemma pentaphyllum extract	450 mg
Rose hip extract	1,120 mg
Standardized to <i>trans</i> -tilioside	56 mg

Anti-Aging Discovery That Cannot Be Overlooked

Scientists uncovered the cell-energizing effect of **AMPK** in the 1970s. Since then, an exponential volume of data (over 7,500 published studies) documents the critical role that **activated AMPK** plays in maintaining life-sustaining cellular functions.

Those seeking to meaningfully extend their healthy life span should ensure they optimally **activate** their cellular **AMPK**. The reason this is so important is that in response to aging, excess calorie consumption, and/or low levels of physical activity, AMPK activity markedly **declines**.

A targeted way of **reversing** cellular depletion of this critical enzyme is to take the **new AMPK Activator** formula that comprises a dual-extract, plant-based formulation.

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Be sure to use Discount Code PIM401X to get these savings.

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 cryonics 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

FLAGSTAFF:

Arizona without the inferno. Cryonics group in beautiful, high-altitude Flagstaff. Two-hour drive to Alcor. Contact eric@flagstaffcryo.com for more information.

PHOENIX

VALLEY OF THE SUN:

This group meets monthly, usually in the third week of the month. Dates are determined by the activity or event planned. For more information or to RSVP, visit <http://cryonics.meetup.com/45/> or email Lisa Shock at lisa@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 to attend the fully-public board meetings on odd-numbered months. Facility tours are held every Tuesday and Friday at 2:00 PM. For more information or to schedule a tour, call Marji Klima at (877) 462-5267 x101 or email marji@alcor.org.

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 Mark Galeck at (650) 969-1671, (650) 534-6409 or email Mark_galeck@pacbell.net.

FLORIDA

Central Florida Life Extension group meets once a month in the Tampa Bay area (Tampa and St. Petersburg) for discussion and socializing. The group has been active since 2007. Email arcturus12453@yahoo.com for more information.

NEW ENGLAND

CAMBRIDGE:

The New England regional group strives to meet monthly in Cambridge, MA—for information or to be added to the Alcor NE mailing list, please contact Bret Kulakovich at 617-824-8982, alcor@bonfireproductions.com, or on FACEBOOK via the Cryonics Special Interest Group.

PACIFIC NORTHWEST

A Yahoo mailing list is also maintained for cryonicists in the Pacific Northwest at <http://tech.groups.yahoo.com/group/CryonicsNW/>.

BRITISH COLUMBIA (CANADA):

The contact person for meetings in the Vancouver area is Keegan Macintosh: keegan.macintosh@me.com.

OREGON:

The contact person for meetings in the Portland area is Aschwin de Wolf: aschwin@alcor.org

See also: <https://www.facebook.com/portland.life.extension>

ALCOR PORTUGAL

Alcor Portugal is working to have good stabilization and transport capabilities. The group meets every Saturday for two hours. For information about meetings, contact Nuno Martins at n-martins@n-martins.com. The Alcor Portugal website is: www.alcorportugal.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.

AUSTIN/CENTRAL TEXAS:

We meet at least quarterly for training, transport kit updates, and discussion. For information: Steve Jackson, 512-447-7866, sj@sjgames.com.

UNITED KINGDOM

There is an Alcor chapter in England. For information about meetings, contact Alan Sinclair at cryoservices@yahoo.co.uk. See the web site at www.alcor-uk.org.

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!

WHAT IS CRYONICS?

Cryonics is an attempt to preserve and protect human life, not reverse death. It is the practice of using extreme cold to attempt 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 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 \$90 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.

Not ready to make full arrangements for cryopreservation? Then **become an Associate Member** for \$10/month (or \$30/quarter or \$120 annually). Associate Members will receive:

- *Cryonics* magazine by mail
- Discounts on Alcor conferences
- Access to post in the Alcor Member Forums
- A dollar-for-dollar credit toward full membership sign-up fees for any dues paid for Associate Membership

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