

Cryonics



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Alcor's Next Home?

See Article by Alcor C.E.O. Stephen Bridge

Cryonics is. . .

Cryonic suspension is the application of low-temperature preservation technology to today's terminal patients. The goal of cryonic suspension and the technology of cryonics is the transport of today's terminal patients to a time in the future when cell/tissue repair technology is available, and restoration to full function and health is possible--a time when freezing damage is a fully reversible injury and cures exist for virtually all of today's diseases, including aging. As human knowledge and medical technology continue to expand in scope, people who would incorrectly be considered dead by today's medicine will commonly be restored to life and health. This coming control over living systems should allow us to fabricate new organisms and sub-cell-sized devices for repair and resuscitation of patients waiting in cryonic suspension.

Alcor is. . .

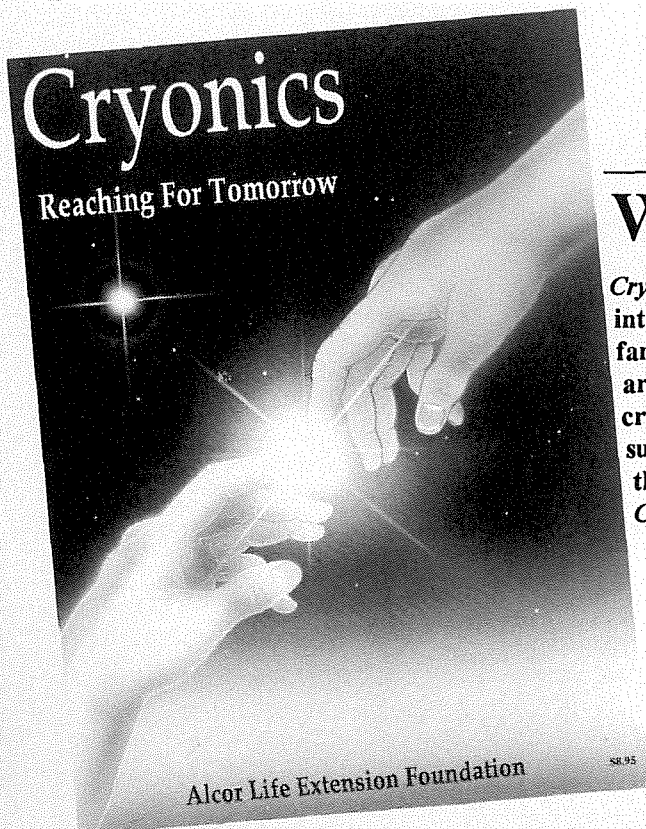
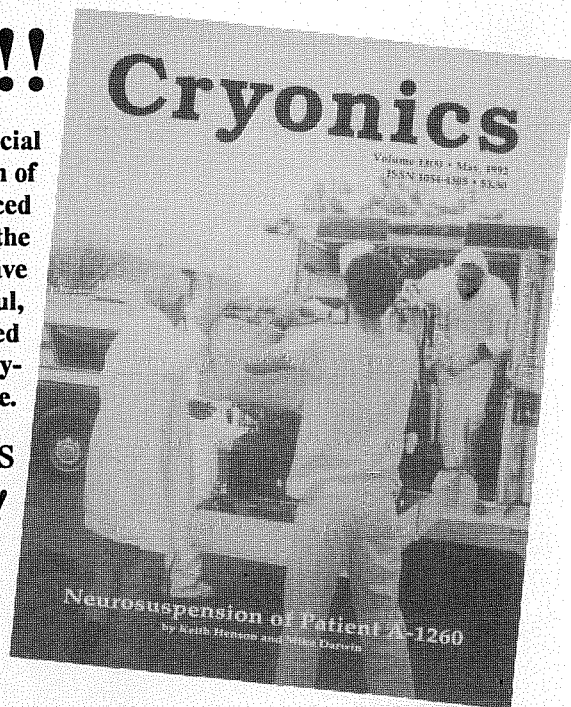
The Alcor Life Extension Foundation is a non-profit tax-exempt scientific and educational organization. Alcor currently has 27 members in cryonic suspension, hundreds of Suspension Members--people who have arrangements to be suspended--and hundreds more in the process of becoming Suspension Members. Our Emergency Response capability includes equipment and trained technicians in New York, Canada, Indiana, North California, and England, and a cool-down and perfusion facility in Florida.

The Alcor facility, located in Southern California, includes a full-time staff with employees present 24 hours a day. The facility also has a fully equipped and operational research laboratory, an ambulance for local response, an operating room, and a patient storage facility consisting of several stainless steel, state-of-the-art storage vessels.

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Cryonics magazine explores and promotes the practical, scientific, and social aspects of ultra-low temperature preservation of humans. As the publication of the Alcor Life Extension Foundation--the world's largest and most advanced cryonics organization--*Cryonics* takes a realistic, real-world approach to the challenge of maintaining in a biologically unchanging state patients who have reached the limitations of modern medicine. *Cryonics* contains thoughtful, provocative discussions of cryonic suspensions performed by Alcor, related research, nanotechnology and molecular engineering, book reviews, the physical format of memory and personality, the nature of identity, and more.

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Cryonics

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Not A Double Issue

The detail-oriented among you already will have noticed that this is the "July/August" issue of *Cryonics*, the first to have two months on the cover. This is not a "double issue," and we're not changing our production schedule. (At least, not intentionally, though we do run a bit late from time to time...) Rather, we are simply advancing the dating for all future issues by one month to accommodate newsstand sales. Periodical vendors and distributors expect the current issue of most magazines to pre-date reality by roughly a month. (Perhaps they consider this "futuristic.") Hence, to prevent *Cryonics* being removed from the stands earlier than appropriate, we're adopting this standard.

Who says we're unconventional?

You Put Your Right Foot In...

Dipping our toes into the *real* unknown at last, Alcor has made a deposit on a building in the Scottsdale Airpark near Phoenix, Arizona. Steve Bridge's article elsewhere in this issue ("Alcor Places Deposit on Building in Scottsdale, Arizona") goes into some detail on the nature of the proposed deal. It will be a couple of months before we close escrow, and until that time Alcor can reclaim its deposit if we discover some aspect of the building that makes it unsuitable for our purposes. However, at present it seems to meet all of our requirements quite nicely, and extensive investigations of the political/regulatory climate are now underway.

Various possibilities for investments and donations toward the building are also being examined. Suspension Members should expect (and perhaps will already have received) a package detailing the results of our investigation. Any non-member who may have an interest in donating or investing in this building should call Alcor and ask to be added to this mailing list. (This is *not* an offering or solicitation. Any such offering or solicitation will adhere to all applicable regulations.)

Audit Management Letter

In Steve Bridge's article, "Accounting for the Numbers" in the May, 1993 issue of *Cryonics*, the last nine paragraphs were a summary of the Management Recom-

mendations letter given to us by the auditors. A few members have expressed an interest in seeing the "unaBridged" version of these recommendations, so we are making these available upon request. If you are interested in these deeper details, call or write to us here. We will send a copy of the full letter to any Alcor Suspension member who wants one. The letter is seven pages long.

Director Elections Approaching

The annual election of Alcor Directors is approaching, this year scheduled for the September 11 Board of Directors meeting, which will be held at the Alcor facility in Riverside, California. It's likely that any new candidate will want plenty of time to discuss his/her goals and values with existing Directors, so any Suspension Member who would like to be considered for one of the nine slots should consider making that interest known to an Alcor Director(s) as soon as possible.

As always, the meeting will be open to the general public, though the voting will be by secret ballot and will be restricted to existing Directors, per Alcor's By-Laws. Attendees will be encouraged to voice their support, questions, or criticisms for the nominees.

Want to Help Spread the Word?

As part of our goal of getting the cryonics philosophy into as many hands as possible, we would like to encourage public and academic libraries to carry *Cryonics* magazine. Considering how many students actually *succeed* in reaching Alcor to request information each week, it's certain that there's not a school in the country without one or more students planning on (or giving up on!) a cryonics-based report. Convincing libraries to carry *Cryonics* magazine is sure to pay off in every case eventually, and often sets the foundation for reports, projects, and presentations that expose dozens or hundreds more people to the concept.

The June issue of *Cryonics* was intentionally overprinted because it represents a reasonably thorough cross-section of introductory cryonics material. We encourage anyone wishing to provide libraries with cryonics literature to request copies of the

June issue. It would be especially helpful if someone out there is willing to compile an up-to-date libraries mailing list (the information can be found in the American Library Directory, available at most public libraries), and perhaps even assist with the cost/labor involved in the mailing. Please contact Ralph Whelan at 800-367-2228 if you would like to help with this project. There's absolutely no telling how many receptive minds might owe their cryonics arrangements to your efforts.

Alcor and You

Tireless Alcor Suspension Member Charles Platt recently completed "Alcor and You," an informational booklet for members that compiles various techniques and suggestions for how to improve your likelihood of an *effective* suspension, how to interface with (or initiate) a local Alcor Chapter, how to prepare for (and respond to) a medical emergency that may require cryonics, and more. The booklet also includes a pull-out response form that will enable us to update our records regarding member phone numbers and preferences regarding your desired level of confidentiality (if any). Expect the booklet in your mailbox soon.

Our thanks to Charles for helping us with another step in the direction of improved service.

Sometimes, Being Right is Expensive

The good news, as we've known since October of last year, is that the courts have firmly upheld Alcor's legal right to practice cryonics in California. The bad news is that our motion to recover our attorney's fees in establishing this has been denied. On the morning of June 17 (now "Black Thursday"), Judge Aurelio Muñoz ruled that the California Department of Health Services will *not* have to compensate Alcor for any of the roughly \$92,000 that Alcor spent defending its right to store "human remains," despite the Health Services' groundless and arbitrary refusal to issue "Disposition of Human Remains" to Alcor, thus forcing Alcor to litigate or cease to store patients.

For details of the hearing and a bit more of the history, see Steve Bridge's article elsewhere in this issue.

Letters to the Editor

Dear Ralph:

I would like to compliment you for the June, 1993 issue of *Cryonics*. In one magazine you have represented much of the cryonicist worldview.

An aspect of this worldview I would like to question, however, is the belief prevalent among cryonicists that economic progress in the future will make us fantastically wealthy. David Krieger assumes this to be the case in his "Revival" story, while Keith Henson explicitly states it in his "Future Tech: The Implications of Revival" column.

Our long-term prosperity depends on a growing rate of productivity, the output of goods and services per worker. It is common knowledge that productivity in the United States leveled off sometime around 1973, and has changed very little for most of the last two decades.

Lately, after investing \$1 trillion in computers, American businesses are starting to show some productivity gains in their management and service sectors, as described in the cover story of the June 14 issue of *Business Week*. But this is a good news / bad news situation. The drive to get more productivity out of management and services implies that businesses have run up against limits to increasing the productivity of their physical factors — land, labor, and capital — despite their best efforts over the last twenty years.

This phenomenon is significant, though I do not understand all of its consequences. If physical productivity growth has stalled, what happens to economic progress when the productivity revolution in management and services finds its inevitable limits? Investment strategies suggested for cryonicists and cryonics organizations presuppose continued economic growth based on increasing productivity; these strategies may have to be revised in light of a foreseeable productivity ceiling.

A new book which explores the productivity problem is *The Evolution of Progress: The End of Economic Growth and the Beginning of Human Transformation* (Random House, 1993), by C. Owen Paepke. Despite its economic pessimism, I recommend the book to fellow cryonicists because Paepke argues that economic progress will be supplanted by progress in the technological self-transformation of people through genetic engineering, intel-

ligence increase, and *radical life extension*. So, according to this scenario, we suspension patients might be revived into a transhuman society not much more affluent than the one in which we live today. Of course, this assumes our would-be resuscitators will be able to afford our revival!

Long life,
Mark Plus
Wrightwood, CA

Mark:

In our conversations on this topic, I have indicated that Mr. Paepke's arguments — as described to me by you — seem fallacious on several levels. Rather than beat my own drum, though, I will refer you and other readers to Thomas Donaldson's review of The Evolution of Progress in this issue. Perhaps you are especially well-suited to judge the validity of Mr. Donaldson's analysis. — Ed.

Dear Board Members:

At the October 1992 Alcor meeting, I was authorized by the Alcor Board to set up public meetings to enable Alcor members to discuss their ideas about changes in the structure and organization of Alcor. It was the general consensus of the Board that the major purpose of these meetings would be the opportunity for Board members to listen to the wishes of the Alcor membership and, presumably, to respond to those wishes.

I decided to set up a single conference (rather than local meetings) to discuss these structural and organizational issues, and to invite members of other cryonics organizations (in addition to Alcor) to attend the conference.

The conference was held on Memorial Day Weekend at the Red Lion Hotel at Ontario Airport in California. About 50 people attended the conference, the vast majority of which were Alcor members.

The only Alcor Board member who attended the entire conference was Steve Bridge. Two other Board members — Alan Lopp and Ralph Whelan — were present at one of the seven panel discussions, while the other six Board members chose not to attend the conference at all. I and the other Alcor members who attended the conference were quite disappointed at this

very poor showing by the Alcor Board.

Of all the issues discussed at the conference, the one about which the Alcor members were most enthusiastic was the idea of adding some degree of democracy to the method by which the Alcor Board is elected. Most of the Alcor members at the conference felt that they would like to have some direct voice in determining who runs Alcor and how the organization is run. Some Alcor members expressed their frustration at the difficulty of influencing the Board, which has sometimes appeared disdainful of the wishes of the membership.

It is now 18 days since the conference ended. The Alcor Board has met twice during this 18-day period, yet no one has contacted me on behalf of the Board to ask me to report on the conference, or on any of the issues discussed at the conference. Apparently, most members of The Board have so little interest in considering the possibility of relinquishing any of their power that they don't even want to be bothered with the views of the membership.

I think it is important for every Alcor Board member to understand that the Board is making a serious mistake in ignoring the wishes of the membership so blatantly. While it is true that the members being ignored by the Board are relatively few in number, they are among the most active and influential members in the organization. Although the current by-laws give the Board legal control over Alcor, they do not confer the moral authority required for true leadership.

Saul Kent

Steve Bridge responds to Saul Kent:
Dear Saul,

While I also was disappointed that more Alcor Directors did not attend the Memorial Day Weekend Cryonics Conference, I think that your letter offered a number of misleading conclusions. You were indeed invited last October to set up local membership meetings to discuss Alcor's structure and organization. I know that you actually did set up some of those meetings (even though you neglect to say that in your letter), because I hosted one myself back in Indiana. We sent you an audio tape and summary of the meeting.

When you first (in February, 1993)

announced the conference, I was aware that this somehow fit into this plan; but I was not aware you considered this a substitute for these local meetings or part of your authorization by the Board. I thought, and I believe the other Directors thought, that this was a personal Saul Kent project to discuss change in cryonics. As a matter of fact, I am sure that you said this was about structural change for cryonics in general — along the lines of, "What is the best structure for cryonics organizations?" You indicated you were trying hard to get representatives from all cryonics organizations. I saw no intent to make this conference part of a referendum for change in Alcor that would offer "the wishes of the Alcor membership." As further evidence, you did not ask Alcor to make this an Alcor conference. You asked Alcor to be one of many sponsors. To characterize this as an Alcor Conference for Change after the fact is a very political move and does not reflect reality.

I do not know why all of the Directors did not attend the conference, although I know that one Director was stuck moving from his apartment that weekend, one was in bed with a bad back, and one canceled his attendance based on what he thought were physical threats against him by another individual who was to be there.

I attended all of the conference because I thought it was the duty of Alcor's President to attend important cryonics conferences, and because I am interested in potential structural or organizational changes in the future myself. However, I did not know what panels I was to be on until a couple of days before the conference. I recognize that you were very busy with the final stages of getting 21st Century Medicine ready to be open for investment and being part of a complex set of negotiations with Alcor. But the lack of organization may have caused some Alcor Directors or staff to think that this was not going to be an important event. Certainly few knew that as many as 50 people were going to attend.

In addition, I will remind you that the relationship between some of the Alcor Directors and the principals of 21st Century Medicine (for the other readers, this means primarily Saul, Mike Darwin, Paul Wakfer, Steve Harris, and Sandra Russell) had become increasingly hostile during the previous month. I think it is possible that some Directors thought that the conference was mostly a chance to promote 21st Century Medicine.

The Board of Directors has not asked

you to report on the conference because we did not know that you considered this a substitute for local meetings or as part of your Authorization from the Board. If you had asked for this to be on the agenda for the June meeting, I would have done so. I would be happy to do so for the July meeting.

I don't know how each individual Board member feels about more democracy (or other forms of representation) in Alcor; but I don't think that the Directors are "blatantly" ignoring the wishes of the membership. I have stated several times that I would like to see some change in the way Directors are chosen; perhaps by making long-term, active members into a sub-group of "voting" Members, along the lines described by Fred Chamberlain. Because of specific laws governing our non-profit status and because a massive change in our by-laws would be required (which would mean opening up our tax status for IRS review again), this change would be extremely complex.

There are certainly problems with Alcor. It is important to point out these problems and I personally respect your ideas in this regard. It would have been extremely useful if more Directors had been at this conference to share ideas with Alcor members and others. However, the inference that Alcor asked you to set up this conference and then proceeded to ignore the results is a severe distortion of the situation.

Sincerely,
Steve Bridge, President

Dear Editor,

The June, 1993 issue of Cryonics contains an article discussing the care of Alcor Suspension Patient A-1399. This article contains the following statements:

"One complication which may have affected the perfusion involved was a result of (surprise!) bleach. Bleach has been shown to neutralize the AIDS virus within 30 seconds of undiluted exposure. As a result, we have incorporated it into our AIDS precautions. Chlorine bleach was poured into the ice bath of the MALSS, because many excretions, including blood from the surgery, flow into the bath. Unfortunately, much more bleach was poured into the bath than was necessary to

chlorinate 5-10 gallons of water. The ice-water from the MALSS is used in the perfusion circuit to provide cooling, and the massive amount of bleach may have corroded the heat exchanger causing it to rust. Corrosion of the heat exchanger/oxygenator might then have contaminated the patient circuitry with cooling water. We are still awaiting test results which will give us the information necessary to determine the extent of the damage (if any)."

The article in which the above is contained then goes on to state how well the suspension went and in particular to note that:

"During this suspension, the atmosphere in the field and in the operating room was much less stressful than for any other I've experienced. This doesn't indicate inattentiveness, it indicates a reduction in the performance-limiting pressures....The team is inexperienced, with some exceptions; however, that inexperience is not hindering the process of performing and improving the quality of cryonic suspensions for Alcor members."

The statement about corrosion to the heat exchanger prompted me to call Alcor and speak with Hugh Hixon about this matter. The information I was given stands in stark contrast to both the tone and the specific meaning of the above quotes.

I was told that a definite leak of wall water (i.e., tap water) from the heat exchanger into the Viaspan solution perfusing the patient was documented. Further, I was told that the fact that this leak occurred was discovered as a result of observation of a color change of the (residual) red cells present in the perfusing Viaspan from a normal red/pink to brown/yellow. This color change is indicative of denaturation of the patient's hemoglobin (probably due to oxidation by hypochlorite) and is, in and of itself, definitive evidence that the patient was perfused with solution containing lithium hypochlorite (bleach).

Since over 60 days have elapsed since this suspension was performed I then contacted Alcor's president Steve Bridge to ask if he a) understood the gravity of the situation, b) had undertaken any testing to determine the time course and degree of exposure of the patient to hypochlorite and tap water, c) determine if this very serious

incident had been discussed with Alcor's technical advisors, and d) find out if the next of kin had been notified of the problem and/or if there were any plans to notify them.

The answers I received were, in my opinion, totally unsatisfactory. No tests have been run to determine the lithium level in the perfusate (a possible marker for the concentration of hypochlorite). My requests to see arterial and venous blood gas data on this patient (which might indicate the degree of compromise of metabolic activity) were brushed off. No one but Hugh Hixon, Steve Bridge, and Suspension Team Leader Tanya Jones had discussed the matter.

I also inquired as to whether the oxygenator had been returned to the manufacturer or to any of the private medical device accident investigation services which exist. The answer was no. The oxygenator should have been professionally evaluated as soon after the accident as possible. Furthermore, tests should have been conducted to see if the failure mode can be repeated with another oxygenator to further clarify the etiology of the accident.

In my opinion, the tone and much of the content of the A-1399 case report is inappropriate. Contrary to the statement "that inexperience is not hindering the process of performing and improving the quality of cryonic suspensions for Alcor members" I submit that perfusion of a patient with hemoglobin denaturing concentrations of chlorine bleach and contamination of the blood path with dirty tap water does not constitute an acceptable, let alone improved, standard of care. As opposed to either a technical or clinical triumph, what is documented in this report is a biomedical disaster that in a normal clinical setting would be a cause, not for rejoicing, but for profound grief and soul searching.

I am told that instead of a scant few grams, nearly 8 ounces of lithium hypochlorite were added to the bath. This is enough to yield a terminal bleach concentration in the range of .5 to 1.5% (depending upon the volume of water present in the bath). That concentration of bleach, leaving aside its effects on the heat exchanger, would be sufficient to cause contact skin burns on extended exposure (even at 2-4 degrees C). Witness the fact that this solution apparently corroded stainless steel at that temperature. An unmentioned fact is that the patient's skin and mucous membranes were also bathed in this solution.

At least as serious as the fact that this accident occurred is the way in which it is being handled. My conversations with Steve Bridge and with Hugh Hixon indicate what appears to be a fatalistic attitude regarding this incident and a lack of urgency to see that it is adequately investigated and steps taken to insure that it (or some root-caused variant) never happens again. The attitude seems to be "Well, that's one mistake we'll never make again." The questions left begging are how and why did it occur in the first place, how will this be handled vis a vis next of kin, and what assurances do Alcor members have that a similar error will not occur next time, or the time after?

What I found particularly macabre was that elsewhere in the June issue is a "special note of recognition" praising Hugh Hixon and Team Leader Tanya Jones for a job well done. There is a principle in law and medicine known as the "Captain of the Ship" doctrine. Simply put, this doctrine imposes liability, both moral and legal, on the person in charge of an operation for the actions of his/her assistants during the period when those assistants are under the team leader's control. I would suggest that perfusing a patient with bleach as a result of careless addition of a corrosive quantity of pool chlorine to the ice bath does not merit praise.

This incident calls out for creation of a quality control mechanism whereby suspension care can be evaluated by qualified individuals and wherein serious breaches in technique can be dissected, objectively evaluated, and recommendations made for preventing a recurrence. Every hospital has internal medical quality assurance mechanisms which begin with grand rounds and go up the ladder to an internal board of inquiry. Alcor has many technically competent members who might be tapped to serve on a such Board, and there are many outside experts available for a fee in specific areas (Alcor's ability to attract such experts during the Jones case and other litigation is proof positive that it can be done). I believe it is urgent that such mechanisms be put in place as soon as possible, and that basic standards for care be drafted to guide such oversight.

Sincerely,
Mike Darwin

Tanya Jones
Suspension Services Manager, responds:

All cryonic suspensions performed by the Alcor Foundation are reported in *Cryonics* magazine. These reports serve to illustrate the realities of cryonics *today* for Alcor clients and potential clients, and have long been an aspect of Alcor's commitment to improvement. From the first paragraph I ever wrote for *Cryonics*, I have striven to uphold and perpetuate this commitment by preparing honest and open articles.

Preparing objective suspension reports for publication has been a challenging aspect of my job. Of the suspension articles I have written, the most recent one (June, 1993 *Cryonics*) was also the most rigorous. Objective examination of any suspension is always critical to improving the quality of cryonic suspensions, and this was my first suspension as the Suspension Team Leader. I knew that a comprehensive examination would be a direct reflection of my job performance, and that *any* examination had the potential to provide me with methods for future improvement.

Everyone who reads that article will have a unique perspective to its content. Some people who have already read it, found details which appeared inaccurate or incomplete, and some of them quickly responded by requesting those missing details. I've answered several calls from members with questions about the content of my article. One similar inquiry came from Michael Darwin.

When Mike read about bleach (lithium hypochlorite) contaminating the perfusion circuit, he was justifiably disturbed. My article contained information about the nature and the origin of this problem, and my article contained a method for preventing its re-occurrence, but it didn't address the question Mike felt most important: *How did this affect the patient's ultimate condition?* My only response to this question (in the article) was "We are still awaiting test results which will give us the information necessary to determine the extent of the damage (if any)." Mike's concerns prompted him to call Hugh Hixon for further information.

Hugh was unable to immediately answer all of Mike's concerns to his satisfaction. Next, Mike called Steve Bridge to question *him* about this situation. Steve's answers were also deemed "totally unsatisfactory." Mike then wrote a letter to the Editor of *Cryonics*, because he believed that Hugh and Steve were underestimating the seriousness of this problem, and that this was a mistake. In this letter, he detailed his frustration at being unable to

obtain more information from either one (some of Mike's frustrations might have been better addressed had he called the Suspension Team Leader — me — with his questions), and followed with assertions that this reflects a fatalistic attitude toward performing quality control for suspensions.

Unfortunately, this isn't indicative of a fatalistic attitude. It's indicative of more serious problems.

Historically, Alcor employees have been overworked and underpaid. Although these are usually motivators which cause a reduction in individual job performance, their negative effects are usually countered by the intrinsic motivation of self-preservation. Usually, but not always. The fact is, working at Alcor is stressful and demanding. Every staff member occasionally feels overwhelmed by the magnitude of his or her responsibilities. With little or no overlap in the job-related skills and abilities of each staff member, this may result in even the occasional critical task slipping through the cracks.

Hugh Hixon is the only employee with the necessary training to meaningfully perform such investigations, and he was arranging his post-suspension work according to *his* priorities. He'd carefully planned an approach to assessing the cause and effect of bleach in the circuit, but other tasks intervened.

In some respects, I am glad Mike called Hugh about the article, because with one phone call, he accomplished something I'd failed to achieve after repeated requests: Hugh stopped *talking* about how he would investigate the failure mode of the oxygenator and the subsequent bleach contamination, and he began *doing* it. His investigation was methodical and comprehensive.

Long before he physically examined the oxygenator himself, Hugh discarded the idea of using an external investigator, like Mike suggests. His reasons included: that independent investigations are usually initiated to seek out manufacturing or design deficiencies; and that corrosion by a powerful disinfectant falls outside the standard arena for external examination. The bludgeoning of an oxygenator with lithium hypochlorite in the pursuit of cryonics was not so subtle a failure mode that it demanded outside investigation.

Still, what happened to the oxygenator? The label from the bottle of bleach recommended that the granules be dissolved before adding them to the water

(in our case, water in the patient ice bath). This wasn't done, thus, granules were pulled into the ice-water circulation, then into the stainless steel coils of the heat exchanger. Because the granules remained undissolved, they lodged inside the tiny coils and began eroding the metal. This erosion resulted in a few tiny holes, and subsequently, seepage between the sterile and non-sterile sides of the circuit. By studying the flow of water through the oxygenator over a 24 hour period, Hugh discovered the total leakage of contaminated water was less than 20ml.

To address the question of *patient* contamination, lithium analyses were conducted using samples from the transport and suspension. As both Hugh and Mike realized, they would be a good indicator of the contamination levels in this case. Lithium levels of 0.5-1.3 mEq/l are seen in individuals using lithium to combat clinical depression and a clinical test was readily available. The results were that no lithium was detected in our samples, with the lower limit of detection being 0.10 mEq/liter. Hypochlorite damage was also investigated, and Hugh found that much higher concentrations of hypochlorite than infiltrated the perfusion circuit were completely neutralized within 10 seconds of exposure to the washout solution. Given the flow rates used during the perfusion and the volume of fluid held by the oxygenator, it appears that little or none of the hypochlorite reached the patient. The damaging agents spent sufficient time within the oxygenator circuitry to enable complete neutralization by components in the washout solution.

The preliminary results of Hugh's examination are encouraging, and have given us the means by which to never repeat this incident. (Once complete, his examination process may be detailed in a future posting to CryoNet or in *Cryonics* magazine.) In my article, I stated that bleach granules will be pre-packaged for suspensions. Now we know that this was an inadequate solution, and that the disinfectant should be pre-packaged and *pre-dissolved*.

I believe the above should answer most questions about the perfusion of bleach into our patient. Now I would like to address another aspect of Mike's letter.

Mike believes that the encouraging tone of my article was inappropriate. He submits that the perfusion of bleach was a "biomedical disaster that in a normal clinical setting would be a cause, not for rejoicing, but for profound grief and soul-

searching." In this, he is absolutely correct; however, a cryonic suspension does not constitute a normal medical setting, and I believe that hospitals typically minimize their staffs' exposure to free-flowing, AIDS-contaminated fluids in anything except an extraordinary emergency.

It's unfortunate that our patient was involved in a new failure mode, but I have found profound grief and soul-searching (as advocated by Mike) to be an unproductive combination, and have therefore preferred to address damage assessment and solutions rather than the berating myself or poorly-trained but willing volunteers.

The entire tone of my article is one of encouragement, because in its entirety (as opposed to dissecting details) it answered an essential unknown. This suspension demonstrated that Alcor is able to perform cryonic suspensions without the services of Mike Darwin, and even the mistakes which surfaced during suspensions with Mike's participation were largely avoided. It is my opinion that Alcor can and will continue to successfully perform cryonic suspensions, and that for a long time to come, each one will teach us more about how better to provide this service to our clients. If this isn't encouraging news to Alcor's membership, I'm at a loss for what to say.

My approach to learning how to fulfill the terms of my job description (Suspension Services Manager: "administer and improve cryonic suspensions," is the short version) has stemmed from a business background. Jerry Leaf spent time documenting protocols for cryonic suspension (over a decade ago), and those protocols were removed from Alcor by Cryovita and weren't available for me to study when I began learning about suspensions. Neither was Mike Darwin available to provide any of the complex protocols (with the notable exception of his transport manual) he mostly maintained in his head. When both men's services were lost to Alcor, *no one* had the ability to coordinate a cryonic suspension. It eventually fell to me to learn.

My education is not yet complete, but an extensive portion of it has been documented. Should I ever leave this position, much of the information necessary to train a new person would be quickly retrievable. This gives me more hope for a better suspension, should my death be the cause of my departure. Additionally, it gives Alcor more discretion in evaluating my

performance.

On a final note, the most effective portion of Mike's investigation into the bleach/damage assessment (from my perspective) was his telephone call to Hugh. Whether or not the timing was coincidental, Hugh began his investigation almost immediately after learning that others were interested in the results of an investigation. It's unfortunate that Mike's letter expressed his accusatory conclusions, rather than his questions, in a manner which didn't exactly promote cooperation toward finding answers or solutions, but instead encouraged defensive responses to his criticisms. Mike raised important issues, however, his presentation of those issues was unnecessarily abrasive. I have spent a significant amount of time preparing this response, hoping to avoid inflammatory comments by concentrating on the *issues*, and my task was made more difficult by the numerous obfuscating phrases which were colored to evoke an emotional reaction to Mike's position (and subsequently, Alcor's inadequacies), as opposed to a rational response to the very real issues he brought forth.

I do appreciate an opportunity to respond to questions and concerns about the quality of suspensions Alcor is capable of providing (or has provided), but I prefer those communications be reasonable exchanges. They tend to produce more productive results. If anyone else had concerns about the tone of my article, I hope this has explained my approach to reporting this suspension. Feel free to contact me with any further questions, comments, or suggestions.

Dear Editor,

Several months ago the board of Alcor agreed that they would have formal discussions on whether or not Alcor should change the structure of the Board of Alcor.

During the month of May, Saul Kent organized a conference during which the topic of how the Board of Alcor should be structured was discussed. Two members of the board of Alcor participated in this discussion. They were Allen Lopp and Steve Bridge.

Almost all of the fifty people who attended the conference were Alcor members. There was general agreement among them that some measure of democracy should be introduced into the method by which Board members are elected.

It is my personal opinion that the membership should have a say in who represents them on the Board. There should be term limits on participation on the board. The Board members *should not* be employees of Alcor. (The CEO would be an exception.)

It is my opinion and the opinion of many other Alcor members that key decisions regarding Alcor have been influenced by the fact that Board members who are also employees of Alcor may have acted (or failed to act) because of how the decision would affect them as employees rather than in the best interest of the organization.

The September election of the Board members of Alcor is approaching and I have heard nothing that would indicate that the Board of Alcor is seriously considering the opinions of its members.

I would appreciate if you and others on the Alcor Board would address the issues I have just mentioned, in print.

Thank you,
Maureen Genteman

I have opposed the notion of a member-selected Board of Directors since well before I was a Director myself, mostly because I wish to see the leadership of Alcor make its decisions based on survival and growth of the organization, not politics. Further, I wish to see the Directorship of Alcor chosen on the basis of knowledge, ability, and values, not charisma and political appeal. I have not heard one thing from the members of Alcor who desire a member-driven Board that makes me feel that this philosophy is in error. This does not mean I am not listening. It means I do not agree with you.

I think term limits are worth considering, and would be happy to hear your arguments in support of this.

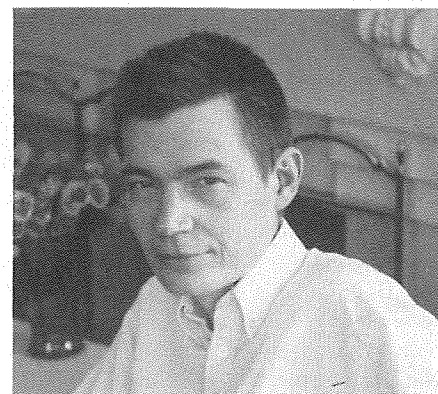
I think that in general you are right about the inadvisability of employee Directors. The exception to this occurs when an organization is in start-up mode, which I believe Alcor to be in presently. However, I would be happy to hear your arguments in opposition to employee Directors of present-day Alcor, including examples of the sorts of actions (or inactions) that support your position.

Ralph Whelan
Editor, Cryonics
Director, Alcor

For the Record

The First Cryonics Operation

Michael Perry



When Ev Cooper's Life Extension Society (LES) was started late in 1963, it

was recognized immediately that "we should get down to business on a freezing

program for those who wish a plan for preservation in the event of any immediate

LIFE EXTENSIONISTS MEET

Frozen Dog Is Placed in Capsule

By WILLIAM GRIGG
Star Staff Writer

Members of the Life Extension Society transferred their frozen dog yesterday from a box of dry ice to a shiny round "cryocapsule" for indefinite storage.

The manufacturer and owner of the capsule, Ed Hope of Phoenix, Arizona, promised to keep the dog until, he said, scientists may develop techniques to "reanimate" her.

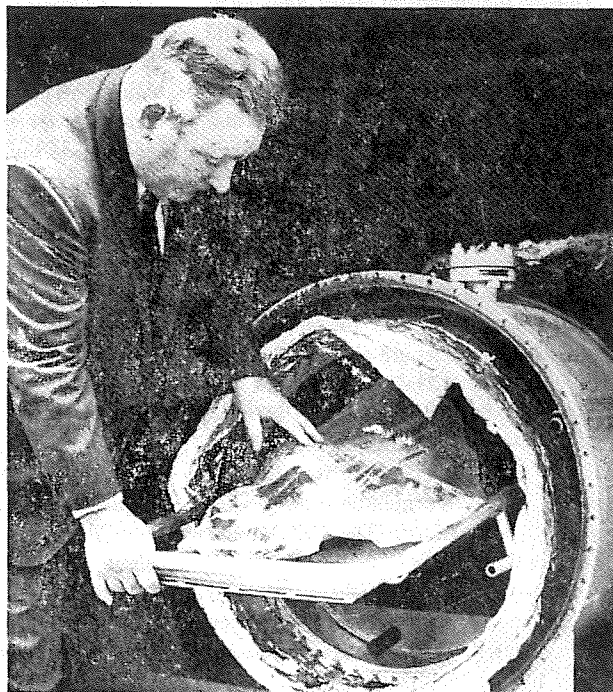
Hope brought the capsule here from his new manufacturing firm, Cyro-Care Inc. of Phoenix. He said he will carry the dog in her capsule to New York for a few television appearances and then to Phoenix for storage.

Dog Frozen Dec. 22

The dog, Bel, part Labrador retriever, was anesthetized and frozen here Dec. 22 by the president of the society, Ev Cooper. The society, made up primarily of laymen, advocates the freezing of humans, at death, for reanimation and cure of terminal illness at a later date.

Robert Ettinger of Detroit, author of "The Prospect of Immortality," helped transfer Bel to her new capsule. He said the freezing of the dog would be valuable "partly for dramatization and partly to start developing a stock of frozen animals" for later reanimation experiments.

The transfer was accomplished in a parking lot in the 1300 block of K Street NW. On most any other day of the year except New Year's, a crowd might have gathered. But yesterday, the area was deserted.



The frozen dog, Bel, is stored in a "cryocapsule" by Ed Hope, of Phoenix, the manufacturer of the capsule. The experiment is the work of the Life Extension Society of Washington.

Hope. In a letter dated 10 Sept. 1965, which appeared in Cooper's newsletter *Freeze-Wait-Reanimate* of that month, Robert Ettinger reported that Hope had contacted him with plans to build a "cryogenic interment installation" and had contracted for land between Phoenix and Tucson.⁵ (The site eventually chosen was at 2300 E. Washington, in downtown Phoenix.⁶) Hope had meanwhile contacted Gold and others around the country who intended to build containers or otherwise involve themselves in human freezings, and realized that there was no real product or sign of any being developed soon.⁷

Through the newsletter in turn, word of Hope's plans reached two young engineers in Phoenix, Ted Kraver and Frank "Rick" Rickenbacker, both graduates of MIT who had backgrounds in cryogenic engineering as well as interest in human freezing. The three soon met and decided to form a partnership, which became Cryocare Equipment Corporation.⁷ As the name suggests, the primary objective was to manufacture equipment, in this case human-sized cryogenic storage containers. It was assumed for the time being (despite earlier stated intentions, apparently) that storage and maintenance of suspension patients would be handled by others.

The first objective, then, was to build a serviceable container. Funds were pooled, totaling around \$2000, and the two engineers set out to create a capsule. The design eventually fabricated was a horizontal, double-walled, thermos-style hollow cylinder, with an inner container 24 inches in diameter and 80 inches in length. This inner, aluminum tank was wrapped with aluminum foil and glass mat insulation, before being placed in a larger-diameter, steel outer cylinder. The space between the two was then evacuated to provide thermal insulation. The entire assemblage, on rollers, was about 4 feet high, 10 feet long, and 3 feet wide.⁶

A capsule was completed by late December and made available for a freezing experiment by the Life Extension Society (one of the few such experiments performed under sponsorship of LES, and apparently the first true cryonic suspension of any organism). With the assistance of a veterinarian, a black, female, part Labrador Retriever named Bel was anesthetized, perfused with DMSO, then frozen to dry ice temperature.

This freezing on December 22nd was timed for the annual LES conference in Washington, D.C. which occurred ten days later, New Year's Day, 1966. That morn-

deaths."¹ The logical choice for carrying this out, including the long-term storage of frozen patients, was the Life Extension Society itself, since it was the only organization of its kind in existence. But establishing an actual cryonics operation, involving freezing and storage, proved surprisingly difficult, and it was not LES but other, subsequent organizations that would divide the credit for this accomplishment.

The first organization that actually practiced human freezing and long-term, low-temperature storage was Cryocare Equipment Corporation in Phoenix, Arizona. It was the brainchild of Mr. E. Francis "Ed" Hope, a financial wheeler-dealer whose business ventures were to involve everything from night clubs to substitute human skin.

Hope got his start in Camden, New Jersey, where he operated Chubby's nightclub, which featured entertainers such as Nat (King) Cole. When the business failed he got into welding and making aluminum tanks for milk trucks and the like, and operated a heating oil company, though

these too were not great successes. In the late 1950s he arrived in Phoenix "with less than a thousand bucks in my pocket." Still trusting his instinct for profits, however, he invested in (of all things) wigmaking. In this venture his hunches proved correct. "No other industry in the United States grew like wigs. I happened to hit it at the right time." By the late '60s he was selling wigs nationwide, had two wig colleges, and had won a government contract to teach wigmaking to the Hopi Indians.²

Meanwhile opportunity had beckoned from another and unexpected quarter, the budding cryonics movement. In May 1965 there was a near-freezing in Springfield Ohio, which pressure from relatives finally aborted. One of the stated objections was that there was no insulated container to store the would-be patient. Such a container was to have been supplied by Leonard Gold of Juno, Inc., in Springfield, Illinois, but it was only in the prototype stage.³ (Although the company had planned to build a 4000-unit freezer facility in the Los Angeles area, these plans were aborted due to lack of funds.⁴) Enter Ed



CHICAGO DAILY NEWS

ing the frozen dog was brought to the parking lot of Marty Laffal's Restaurant, where the conference was about to begin, and Hope and Robert Ettinger transferred her to the capsule while eager reporters looked on. Previous conferences had been "small, quiet, informal, thoughtful gatherings," and the streets had been emptied by the New Year's holiday, but the encapsulation still caused a sensation. A representative of the Humane Society denounced the freezing as shocking, disgusting, and serving no useful purpose, and suggested Ev Cooper go freeze himself. (Instead reports have it that he spent some time hiding in the men's room.) Reporters swarmed everywhere, asking anyone they could find for interviews, and the proprietor of the restaurant became increasingly nervous, finally "waving his hands in the air and shooing away any reporters, and perhaps others, who tried to enter." Meanwhile police had been patient with Hope who had parked his trailer with the dog and capsule in a no-parking zone, but finally demanded he move it, an act affording further fodder for photographers (and more exposure to Hope and his capsule). The media circus continued until nightfall, when a German film crew could still be seen by the capsule, taking close-up shots in the gathering gloom.⁸

There were other publicity events, for example, showings of a Hope capsule with Hope and Ettinger on the Mike Douglas Show in March,⁹ then another milestone: the freezing of the first human. (The

patient, a woman in her 60s who is still unidentified, had previously been embalmed and stored at above-freezing temperature in a mortuary for two months; thus the event was not a true cryonic suspension, but an important step nonetheless.) Although it wasn't particularly wished, that freezing in April 1966 launched a second phase of the career of Cryocare, that of storage provider. The patient was kept on the facility grounds for several months until relatives decided to have her thawed and buried. (The site was used for other purposes too, and in fact could have housed many patients with room to spare.)

In January the following year the first true, human cryonic suspension occurred, that of James Bedford. Although Cryocare did not take part in the freezing it was soon involved. Relatives purchased a Hope capsule to store Dr. Bedford, then transferred the celebrated patient to the facility in Phoenix. Cryocare thereby became, in full, the first cryonic storage operation. More patients followed, though relatives or other interested parties were encouraged to arrange their own storage when possible.

A report in the *Chicago Tribune*, January 1968, described Hope's operation at its height, and offers interesting insights. At the time there were two patients at the facility, Dr. Bedford and Louis Nisco, a Detroit businessman frozen the previous September. Two other patients had been handled, the first freezing and Marie Phelps-Sweet (Mrs. Russ Van Norden) who was turned over to Robert Nel-

son's organization after a brief stay at Cryocare (with ultimately tragic results). Improvements had been made in the containers, such as using steel throughout (aluminum inner tanks were more prone to vacuum leaks) and aluminized mylar for insulation. Where the original capsules had been bolted shut, patients now were welded in, which further reduced nitrogen boiloff. (In fact the capsules could go several *months* between fills, the catch being that continuous pumping to harden the vacuum was necessary. Otherwise a capsule would eventually lose its vacuum and boil off its liquid nitrogen in a matter of days or less.) A capsule cost \$4,685, and annual storage charges at the Cryocare facility were around \$500. Hope himself is revealed as strictly a businessman-to-the-core, more interested in profits than the hope of immortality that cryonics provides, and in fact having misgivings about the operation for its financially weak performance. Many thousands had been invested, and so far there were no profits, the losses being financed from the wig-making business.²

Some additional information deserves mention. Cryocare did not have a suspension team, or anything approaching it, but only did "straight freezes" unless other arrangements had been made by the contracting party. Hope in fact seemed particularly interested in freezing for cosmetic purposes, as a way to prevent deterioration but not for an eventual return to consciousness, though not denying the possibility. (This interest is perhaps explained by the fact that some freezes were



Cryocare manufacturing facility owned by Mr. Hope. Never fully used.

carried out only after significant storage at above-freezing temperature — as especially in the case of the first freezing — which would compromise the chances of later reanimation.)² Patients at the facility were maintained by the two engineers, Kraver and Rickenbacker, who thus became the first patient caretakers. The tanks contained a liquid level gauge, and were refilled when the gauge indicated about half the liquid had boiled out. The tanks were filled from a bulk tank which itself was refilled periodically from a cryogenic supplier. A patient container had a total capacity of about 600 liters, which, with a reasonable allowance for patient volume and support, would leave around 400-500 liters for liquid nitrogen. Very good thermal insulation was achieved, particularly with the patient welded in the tank (so that there was no opening to the outside to leak heat) so that a capsule could go an estimated 7 months before all its liquid would boil out and was in fact refilled about every 3 months. This would correspond to a boiloff of about 2-3 liters of liquid nitrogen per day, similar to that of a 160-liter cylinder now used to ship liquid nitrogen, and comparable to or perhaps a little better than the per patient boiloff of one of Alcor's 4-person, upright "big-foots." (These in turn however are not welded shut but have removable lids, this construction being necessary for practical reasons.) As noted earlier, there was a drawback, however, in that a pump had to run continuously to keep the capsule vacuum "hard" enough to achieve the low boiloff.

There would be a few other notable events in 1968. For a time a Mrs. Schulman was maintained on dry ice at the facility, pending a decision by the next-of-kin (her son) as to what would be done (she was thawed). A capsule was sold to a man, Donald Kester Jr., whose father committed suicide in July, and who would later feel he had been "suckered" and have the father (not stored at the facility) thawed in California.¹⁰ Profits, as usual, failed to materialize. By early 1969 Cryocare had effectively ceased to function, its patients having been transferred to other storage or otherwise disposed of, in all cases with the approval of relatives, whose continued funding had been necessary for the maintenance. As to the fate of the patients themselves: all were eventually lost (along with Bel the dog), with the exception of Bedford who remains frozen to this day at Alcor. Some of Cryocare's capsules continued in use by other organizations for several more years, though superseded by other, improved designs including upright containers like those now in use.

In summary, Cryocare seems fairly typical of early cryonics ventures: it was started by a tiny group of visionaries who didn't quite realize what they were getting into, it made important contributions, and finally — it failed. Its specific contributions include the first container for storing humans in liquid nitrogen, and the first cryonics facility. Both these quite different accomplishments are considerable and should not be underestimated, particularly in view of the limited resources then available and the difficulty, in view of the con-

troversial nature of cryonics, of making any serious and lasting advances. They were major milestones on a rocky road we are still traversing, still with limited resources, our venture too radical and unsettling for most of the world to take seriously. Let us hope that the mainstream comes to respect cryonics, and more importantly, that its mission of resuscitation can be completed, so that those who have given so much to the movement will not have struggled in vain.

References

Key:

C=*Cryonics*;

F=*Freeze-Wait-Reanimate*;

L=*Life Extension Society Newsletter*;

N=*Chicago Daily News*.

1: L.Jan64.1;

2: N.29Jan68.3, repr. F.Feb68.2;

3: F.May65.10;

4: F.Feb65.3;

5: F.Sep65.3;

6: F.Jun66.3;

7: Kraver, T. Notes on the first human freezing, C.Mar89.11;

8: F.Jan66.1;

9: F.Apr66.4;

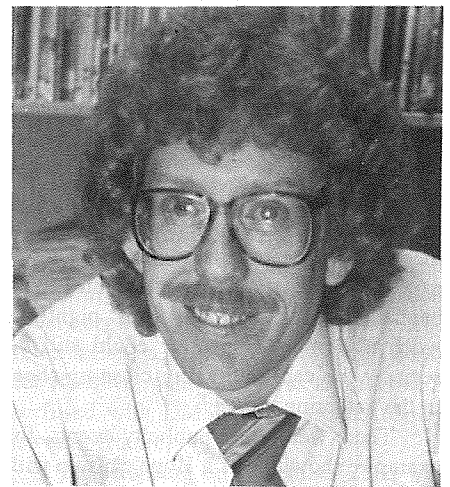
10: C.Jul92.5.

In addition, thanks go to Saul Kent, Joseph Klockgether, and especially Ted Kraver for sharing recollections that contributed to this article.

Understanding Alcor: Notes from the President

Cold Steel and Hot Tempers

Stephen Bridge



Five months ago I moved to Riverside and became the President of Alcor.

Now my friends back in Indianapolis say, "It must be fun and exciting work-

ing with all of those brilliant, future-oriented people." Potential members

who attend our meetings or follow the arguments on Cryonet (an electronic mail network for cryonicists) see a different side of cryonics life, and they ask why we can't get along better, since we have a common purpose. Some of our current members ask the same thing; but most of them ask some variation of "It's so obvious what the right methods are. Why can't you all agree with ME?"

Alcor has about 360 members and most are indeed brilliant and future-oriented. Working with them has often been exciting, but it has rarely been "fun." Remember, it takes a lot of personal courage to sign up for cryonic suspension — so much courage that only a few hundred have ever done so, even though the idea has been around for about three decades. The kind of people who become cryonicists are the same people who have always gone against the norms in society. The average cryonicist was one of the first on his or her block to have a computer. Cryonicists tend to be atheists and libertarians (although there are many exceptions.) They read science fiction as young adults and probably still do. They hold many strange ideas about the importance of life and death, space travel, the abilities of machines to imitate life, and the nature of the future. They have had ideas beyond the norm all of their lives and they spoke them *out loud* to their friends and families and everyone within earshot. On a good day they were merely weird; on a bad day they were insufferable and obnoxious.

Most of the friends and families of these proto-cryonicists argued back, told them they were nuts, and eventually stopped inviting them over to dinner. You know that friend you had in high school that was really fascinating but that you really hope doesn't have your current address? He joined Alcor. (More likely, you *are* him.)

All of these people have spent their lives standing up for their principles, justifying their beliefs, and trying to prove to others that they are right. They don't suddenly stop doing that when they sign a Cryonic Suspension Agreement with Alcor. Being right and being despised for it is a lifelong habit. When 360 of these individuals get into the same group, they do *not* say, "Whew,

now I don't have to worry about being right all of the time." No, they start off with, "Now, what's wrong with your approach is..." or "What you need to do is..." or (if all the sense of community hasn't totally been lost) "What *we* need to do is..."

Of course the most fun is that there is so much advice available to you, that when one inevitably messes up on something in a few weeks, there is *always* someone who can say, "That's just what I predicted. If you had only followed my advice..."

Anyway, that is the root of why cryonicists don't always get along, except in very small clumps. This is very hard for newcomers to understand. They feel so strongly that they have finally found a group of people who think like they do, who see the world in the same way, that they forget what kind of people they are. Don't expect cryonicists to get along all of the time. They haven't had any practice at it.

In some ways, most groups that might be identified as radical, fringe, idealistic, libertarian, or futuristic have the same problem. In cryonics the problem is intensified by the *life or death* nature of our business. If you don't like the people in the local Chamber of Commerce, you can join the Rotary or other community groups. If you don't like the people in your cryonics group, you have four choices:

1. *Join another cryonics group.* But it was a lot of work to join Alcor, it will be a lot of work to switch, and there are only a couple of other choices. Besides, the other groups are also made up of *cryonicists*, whom you might not like any better than the ones you already know.

2. *Start your own group.* This is a mind-numbing amount of work, even if you have the money and personality to attract the number of knowledgeable staff to be successful. And if you *are* successful, your group will attract a lot of ... *cryonicists*, who will tell you all of the things you are doing wrong.

3. *Don't join anything and hope you don't die.* But that's why you got into cryonics in the first place.

Faced with alternatives like these, most people are stuck with the last choice:

4. *Stay with your cryonics group and either suffer or try to improve it.* Unless you have achieved some personal relations breakthrough in tact, cooperation, and subtlety, "trying to improve it" will be seen by the group's leaders as "telling them what to do," so better get used to it. Cryonicists are going to argue.

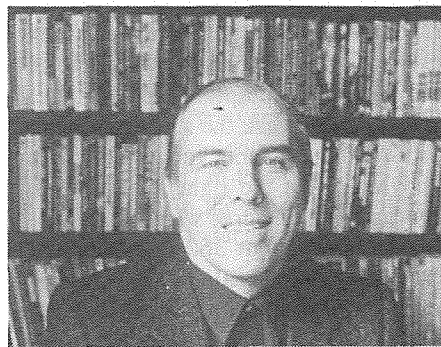
Cryonics is a l-o-o-o-o-n-g way from being perfected. There is an immense amount humans simply do not know about freezing living systems, about memory, about basic physiology and biochemistry. And we are far from the most knowledgeable people on the planet. We often cannot even agree on what questions to ask. People who want to be active in cryonics thus *start* with a tremendous load of frustration, even before they meet other cryonicists.

The majority of Alcor's members do not participate in the various disagreements that occur. If you are in that majority, we ask you to be patient with us when you become aware of these disagreements and to recognize that they generally lead to progress (although often indirectly). It is possible there will be more peace in cryonics only when there are enough effective cryonics organizations in the world to give free choice to all points of view. If that were to occur today, we would end up with several small and ineffective groups, scrambling for money and people. (Alcor is the largest cryonics group in the country and we're *still* scrambling for money and people.)

If you are in the group of activists, grit your teeth and keep trying to make us better. We'll grind our own molars and try to respond in a positive way.

What to do with a Million Years

H. Keith Henson



People who can't figure out what to do with a Sunday afternoon wonder why we cryonicists want to live a long time. This is not one of *my* problems, nor anyone else's I know in cryonics. However, if all this works, and we do have a time ahead of us which might stretch into a million years or more, what projects could we tackle? To some extent what we do depends on the tools we have available, so what can we expect when we are revived?

I have asked several audiences how many of them would board a spaceship for a several hundred thousand year journey. I get as many as 20% of those at science fiction conventions, but the one time I asked this question to a large group of cryonicists, over 90% of them were ready to go.

Before we go, we can get some idea of what's out there with large telescopes. And, given replicating assemblers to build space-based telescopes, we will be limited only by the amount of material we want to move and tie up in mirrors. I expect we will resolve continent-sized features on planets out to 1,000 light years or better, and locate the oxygen atmospheres (if any) out to a much further distance. But there are real limits to what we can find out with remote sensing, so someone (or thing) will have to take a closer look.

If we want to see the wonders of the Galaxy, what is the optimum approach? We could send out machines, but why not go ourselves? There are 100-200 billion stars in our galaxy alone, and even with nanotechnology it will take a year or two to explore each star system, not counting travel time between stars. Visiting every interesting object in serial is literally impossible, since the interesting places won't last long enough. I don't want to take such a long time looking over this one small flock of stars that most of them burn out.

The only way clearly available is to

explore the Galaxy in parallel. This requires duplicating people, a topic which has been extensively discussed on the computer nets over the past year. Many are uneasy about Xeroxing people, thinking this will lead to the worst overpopulation conditions imaginable. Others claim that societies which permit it will be more successful than ones which don't.

To explore the Galaxy in parallel, we need to make only a few starships, perhaps 100, and recruit crews for perhaps 10, but we make copies of the 10 crews to fill all 100. At 1,000 people per ship, and 100 ships (100,000 adventurers) this would probably be necessary anyway. I doubt there are as many as 10,000 people in the entire world who would board a starship. Misfits who want to *do* something as opposed to watching or reading about space exploration are very rare. An assembler doesn't care what it is making, and unless there really is some special "vitalizing" force, we won't have to make hard choices about which way to go — we take all roads (or at least a fair sample of them).

People have talked about making a copy of themselves and having the copy do the unpleasant chores. That's silly. A good copy would be indistinguishable from the original right down to desires. You could neither make a copy to go visit the stars nor one to stay on Earth that would be happy unless you didn't care which you did (unlikely) or someone messed with their personalities in the copying process (unethical). In fact, I think it would be unethical to distinguish among copies (a case where the Golden Rule applies in its strongest form).

Though others disagree with me, the only case I can see where copies are justified is a situation where a person really has no preference between two mutually exclusive choices. The copying process

might best be fixed so as to split the original material in half, so neither of the individuals coming out of the process (and starting to diverge) would have a better claim to being "original."

Philosophical problems of identity aside, and assuming we avoid problems such as over-improving ourselves to where we don't want to do anything or other as-yet-un-thought-of dangers, I expect starships to exit the solar system within a decade of the nanotechnology breakthrough. One show-stopper might be if we speed up our thinking/social interaction to the limit Drexler thinks possible. The faster we go, the longer the universe seems to last, but at several million subjective years to the nearest star, we might not see much of it. Starships pulled by light sails might ride laser beams, or they could be powered by antimatter. The energy source for either would be solar power plants englobing the sun.

The way to travel between stars on laser beams is amusing. You send a probe ahead to the target star. The probe doesn't slow down, but fires nanotech "seeds" backwards to nearly zero velocity as it rips through the target star system. The seeds are scattered toward the planets of the target star which have atmospheres. They are braked by the atmospheres, and settle to the surface. There (I hope not in someone's back yard!) they grow from the size of a bacteria into a rocket, similar to a "stage tree" popularized by SF author Larry Niven. The stage tree launches into space, sets up a base on a stray asteroid, and builds a deceleration laser. Either before it leaves the ground, or in space, information in the seed is used to build a microwave receiver. Any information on how to build the deceleration laser that cannot fit in the seed can be sent later by microwave, along with instructions on

when to turn on the beam. If it doesn't work ... well, this is how you have an adventure in an otherwise overly safe era.

At the target stars, the explorers build new launch facilities and an appropriate number of copies of the ship and crew for the targets ahead. How many stars do they get to visit? If 100 ships go out to inspect our galaxy, each ship and its descendants will have to visit a billion stars (neglecting losses and overlaps). Fortunately exponential growth comes to the rescue. A ship needs to copy itself only about 30 times since 2^{30} is about 10^9 double yourself less often; if too many, make more copies per generation. Doubling, the last generation looks at half the star systems in the galaxy at once.

Do we go out and come back to exchange information? With 50 billion starships? Even if there is room to park them, where in our solar system could we hold a meeting for 50 trillion intrepid explorers? We will need an economy sized ringworld, and getting a permit to build one around Sol might take longer than the round trip. Besides, coming back home takes twice as long as needed. There is no point in wasting time even if we have plenty. So we will sweep across the Galaxy and converge at the far edge for a giant party, scientific meeting, and memory merge so we can say we have seen all the wonders of the Galaxy. Oh yes, the convention committee will have to get a little ahead of the pack to construct party hotels for the 50 trillion attendees of the Far Edge Party.

As you can imagine, discussions about the Far Edge Party get rather lively. Someone came up with the suggestion of prizes for strangest or most interesting aliens. Another person pointed out that with nanotechnology and tens of thousands of years, the judges will have a very hard time detecting cheating with constructed aliens, or life forms raised to sentient status.

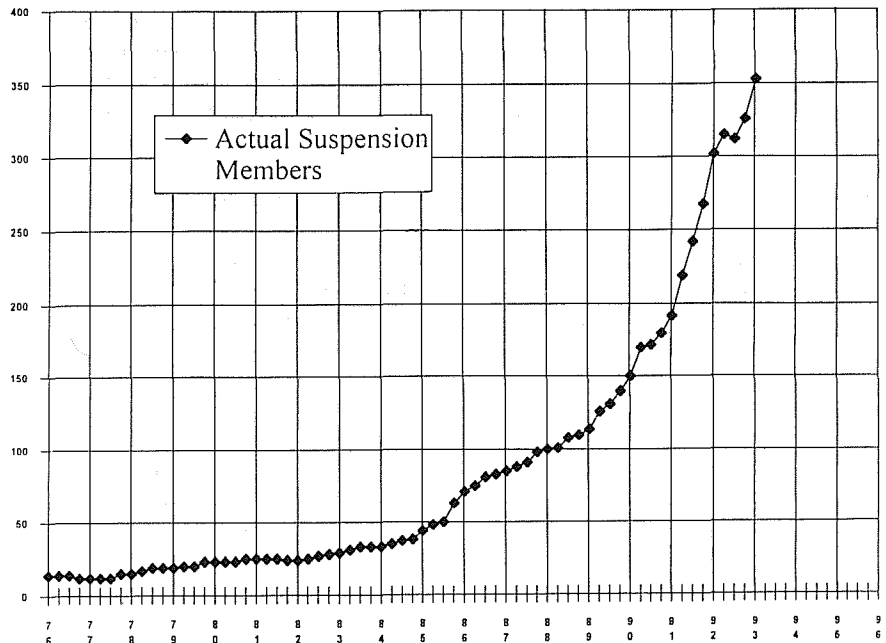
How long will it take to cross the Galaxy looking for life and getting a look at all the galactic "hot spots?" Light takes about 100,000 years. If travel speed is, say, half the speed of light, it should take perhaps 250,000 years to get to the party. That takes up the first quarter million years, plus however much time they decide to party. Next column I will go into projects such as moving stars and plugging black holes, which will take a lot longer.

How Many Are We?

Alcor has 360 Suspension Members, 507 Associate Members (includes 117 people in the process of becoming Suspension Members), and 27 members in suspension. These numbers are broken down by country below.

Country	Members	Applicants	Subscribers
Andorra	0	0	1
Argentina	0	1	1
Australia	13	1	4
Austria	1	0	1
Brazil	0	0	1
Canada	10	5	37
Denmark	0	0	1
Costa Rica	0	0	1
Estonia	0	0	1
Finland	0	0	1
France	0	0	2
Germany	2	0	2
Holland	0	0	1
Italy	0	2	1
Japan	2	0	0
Lichtenstein	0	0	1
Lithuania	0	0	2
Russia	0	0	1
Spain	6	2	0
Sri Lanka	0	0	1
Sweden	0	0	2
U.K.	13	3	8
U.S.A.	313	103	310

Total Alcor Suspension Members
Linear Graph



Alcor loses Fee Motion, Gains Death Certificates

Stephen Bridge, President

From 1988 to October, 1992, Alcor was locked in a legal battle with the California Department of Health Services over its refusal to certify Death Certificates and Disposition Permits for cryonic patients, effectively making it illegal for us to operate. The State lost its appeal last summer and finally decided in October, 1992 not to take the case to the State Supreme Court.

At that point, Alcor initiated a suit against the state of California to recover approximately \$92,000 in legal fees (the actual amount of fees was much greater, but only certain classes of fees are potentially recoverable). Since the motion was being heard by Judge Aurelio Muñoz, who made the initial ruling against the State and who has expressed much anger at employees of the Department of Health Services for continuing to throw roadblocks up against Alcor, we thought our chances of recovering the fees were very high.

The Fee Motion was heard on Thursday, June 17 and ... we lost. Not one cent. Judge Muñoz said he was "not unsympathetic" to our case; but that our case did not fit the criteria set down by law for payment of fees. His decision was given as a tentative ruling the day before the hearing (so the attorneys know what to argue for).

"The Motion is denied. First of all, the court does not feel that this action was defended in bad faith or was frivolous. Although the decision of the Court of Appeal now makes the issue clear and clearly supports the position advocated by the moving party, at the time this case was before the court the law was not that clear and the issues not that settled. Some of the fears of the State may yet come to fruition if scientific technology ever comes up to Alcor's hopes.

"The request is also denied on the private attorney general theory. Moving party was really advancing and litigating its own rights and not that of the general public. Even though the court realizes that

moving parties feel this was a great issue of overriding public importance, the court disagrees. This was not a right to die case. Instead, the court was being asked to determine if dead is really dead when one party with evangelistic fervor was contending dead is dead, but maybe not completely. What moving parties were asserting and vindicating were personal to members of organizations such as Alcor. The benefit to the public at large is speculative and thus does not warrant the awarding of attorney's fees."

Our attorney David Epstein argued further in court, pointing out all of the frivolous actions taken by the State's attorneys, including their contention that cryonics was not specifically made legal, so it must be illegal — the exact opposite of the U.S. Constitution and other basic principles of American law. He also pointed out that he never claimed this was a "right-to-die" case; he used the *Bouvia* case (*Bouvia v. Glenchur* (1987) 195 Cal. App.3d 1025) as an example to show that a case which upholds the rights of even one individual can help to convey rights to every citizen, even if the majority of those citizens may never avail themselves of that right. In fact, *Bouvia* herself changed her mind after winning the case and decided not to use the "right-to-die." Yet the State had to pay her legal fees.

Epstein's argument in this case was that the citizens of California had gained support for the right to determine what happened to their remains after legal death, including the right to cryonic suspension. It did not matter that only a small fraction of the citizens might choose to use this right.

Unfortunately, Judge Muñoz had already decided the case and was immune to our viewpoint. This is like an umpire's judgment call in baseball. It can't be appealed except by calling the judge's honesty into question — and after all of the rulings in our favor from Judge Muñoz, we could hardly do that. My impression of the Judge (my first time to see him) was that

he was a fair and thoughtful man who didn't quite see our point on this one.

The Death Certificate Problem Gets Solved

In the course of the hearing, Judge Muñoz did give us some aid on one specific problem. Two of our whole body patients (Cynthia Pilgeram, suspended in 1990, and Richard Clair Jones, suspended in 1988) still did not have certified Death Certificates, because the state had refused to issue Death Certificates to cryonics patients at the times these patients were placed into suspension. When I tried to re-apply for those Certificates earlier this month, I ran into another series of barriers from the State Registrar's office in the Department of Health Services, in the person of Earl Renken, the Registrar with (supposedly) the most knowledge about cryonics.

Mr. Renken acknowledged that Alcor had been given a blanket court decision that Alcor patients had to be given Death Certificates. However, it was his Department's interpretation (later it turned out it was *his own* interpretation) that this did not waive the legal requirement that a specific court order is required to register a death which took place longer than one year ago. He went on to say that he understood we might be in a "Catch-22 situation" since it wasn't really our fault that the death certificate was not issued. He understood why the problem happened since, he said, when this death occurred, "cryonics was illegal."

I pointed out to Mr. Renken that he was incorrect, that his Department had *claimed* cryonics was illegal, but the court had disagreed. He stated "that was not our interpretation of the court order." He then stated that the only way to get a Death Certificate on any death older than one year was to get a court order and to process a VS-109, "Delayed Registration

Form." He said the Department would alter that position only if a Court or Tammy Chung told them to do so.

After our attorneys talked to Deputy Attorney General Tammy Chung, the cooperation got better immediately. Ms. Chung had already been given a dressing down by Judge Muñoz two years ago when the DHS had refused to certify the Death Certificate on Jerry Leaf, and she was highly anxious to dispose of this problem. When our attorneys brought up these problems at the Fee Motion in court, Judge Muñoz was obviously irritated at the State. Ms. Chung told Judge Muñoz that Mr. Renken had been "scolded" for this and had been instructed to make *no* decisions for the State in this regard but to refer any questions to the Department's Attorney.

Muñoz said that if Alcor *did* have any more problems getting Death Certificates, he would take it very personally and he would invite Alcor's attorney to prepare contempt charges. And he would make sure that Alcor's attorney fees for *those* actions were paid by the State.

We have now received the Death Certificate (and Disposition Permit) on Mrs. Pilgeram and the forms for Dick Jones are in preparation as I write this.

Alcor's Previous Victory Does Not Apply to Other Cryonics Organizations

While Alcor Life Extension Foundation shouldn't have this problem anymore, the answer is less bright for other cryonic suspension organizations in California. In my conversation with Mr. Renken, he said that the Department of Health Services also interpreted the Court Order as applying *only* to Alcor and that other cryonics groups in California could *not* obtain Death Certificates on their patients. I was amazed at this statement since the court order clearly stated that the DHS had an obligation to issue Death Certificates on legally dead individuals.

When I questioned Attorney David Epstein on this, he wrote [bracketed words are added by me]:

"While I appreciate the importance of the universal application of the *Roe vs. Mitchell* ruling, the comment by Mr. Renken that Judge Muñoz' order applied only to Alcor Life Extension Foundation is one of his few statements that technically is correct. The plaintiffs in the lawsuit were Alcor, Jones [Dick, listed as "John

Roe" when the case began], Merkle [Ralph], and Henson [Keith], the latter two as individuals and on behalf of all Alcor members. It is a well established legal principle that, except in special circumstances such as class actions, judgments are directly binding only as to the parties appearing and litigating the matter before the court."

He went on to say, "Other cryonics organizations benefit from the *Roe vs. Mitchell* opinion in that it establishes a precedent. Thus, if they had a dispute with the Registrar's Office and could establish that they were similarly situated to Alcor's position in *Roe vs. Mitchell*, the State would be hard-pressed to justify a failure to follow the *Roe vs. Mitchell* precedent. If, on the other hand, the State could demonstrate a material distinction, the State might not be bound by *Roe vs. Mitchell* as to that other organization."

I have sent the full text of Mr. Epstein's letter to the other cryonics organizations in California, so they may be prepared in case the State really wants to waste more of the taxpayers money on cases like this. Maybe they will be lucky and find that it was just Mr. Renken's imagination running wild again.

Alcor Places Deposit on Building in Scottsdale, Arizona

Stephen Bridge, President

Over the past few weeks, we have been discovering that our Conditional Use Permit to do business here in Riverside was not at all complete and that numerous building problems exist which might be very expensive to fix.

First, at the moment we don't really *have* a Conditional Use Permit. Our C.U.P. was conditioned on Alcor taking a number of specific actions within 90 days. That time period expired about a week after I arrived in California in late January. I thought that only a couple of problems remained to be solved, but it turned out that many items were incomplete. We have applied for an extension, and the City is very likely to grant it at the hearing on July 8th; but one problem may be unfixable at any reasonable price.

Alcor and Symbex Property Group (a limited partnership made up of Alcor members or corporations with Alcor connections) originally had this facility built in 1987. At that time a lot of interior construction (including the operating room and the entire second floor) was done without a permit for reasons of money and time. We had to leave Fullerton facility fairly quickly and permits were taking almost a year to get approved in the building boom of the time. So now we have to get the permits retroactively. Unfortunately, some parts were either not built to Code or at least do not match the current building code (you're judged on when you apply, not on when you build). The architect that we have hired to help us deal with these problems estimates that total cost to file

proper plans and do additional construction could be at least \$40,000 — basically tearing down and rebuilding the second story. Aside from the money, this would put our operating room out of commission for several weeks — clearly unacceptable. We could get away cheaper by simply walling off the second story; but this would eliminate 1/3 of the floor space in a building already cramped.

So the urge to leave town — already at a high level because of the increased earthquake risk in Riverside — has grown stronger among the Board. Why spend \$40,000 to remake an inadequate building when we already know we don't want to stay in Riverside?

This issue was discussed at the June 6 monthly meeting, but a decision was post-



poned for a week while Directors looked at the options. In a special meeting on Monday evening, June 14, the Alcor Board of Directors voted to place a \$20,000 deposit on a possible building in Scottsdale, Arizona (a suburb of Phoenix). This is *not* the same building that was nearly purchased one year ago. It is the same one that was considered about three months ago.

NOTE: Putting a deposit down does not mean we have purchased the building. This allows us 90 days to examine the financing, construction, liens, tenant leases, and other aspects of the deal which we can only find out by making an offer. If we do not like what we find, we can cancel the deal and get our money back. As a matter of fact, other Alcor members are still looking at buildings in Northern California and possibly other parts of Arizona, in case this building does not work out. We plan to know for sure whether or not this building is a good deal within 30 days.

The offer we made (and they accepted) was \$770,000 for a building with approximately 19,800 sq. ft. The building is about ten years old and has adequate ceiling height for transferring patients from dewars. It is a much more attractive building than the one we are in and will be even more so with a new coat of paint and some attention to the landscaping. It is divided into 11 units which can be used separately or combined. Six of the units are currently leased (five units are on new three-year leases), with five empty, although there are several companies interested in the empty space.

Alcor would start with three sections,

about 5,280 sq. ft. The sections that we are most interested in already have impressive offices and other useful interior construction. There is room to do special construction for patient care, surgery, and general storage, including modest second story construction for storage. (Yes, we will be very careful to make sure it is done properly this time.) As Alcor grows over the years, and as tenants' leases expire, we can take over more units.

The building has a large mortgage (about \$525,000), but it appears that rental income will be enough to cover the mortgage, taxes, and other monthly expenses. We will also be attempting to renegotiate the mortgage. If we can raise at least \$350,000 from our members, we feel

we can make the move comfortably. If we can raise more than that, the rents will become positive income for the partnership.

The deposit money came from the Patient Care Trust Fund, on the theory that the PCTF will be an investor in the building anyway (as it is in the current Alcor facility) and it will be refunded if we decide not to buy this building.

A Building Fund fund-raising project was just about ready to get started this month and that will now be kicked into higher gear. I believe that some kind of limited partnership such as Symbex will be formed, with two kinds of member participation available. Depending on tax considerations or individual preference, Alcor members may invest in the limited partnership or they may donate money to Alcor so that Alcor will own a bigger share of the partnership. An arrangement for full or partial pre-payment of suspension may also be possible.

Legal considerations have not been forgotten. They weigh especially heavily on my mind. We are aware that several court decisions in Alcor's favor have established our right to do business in California. These benefits may not exist in Arizona, although there is some evidence that other useful benefits may exist. We are sure that the zoning in the Scottsdale Airpark (the same business park where the building proposed last spring was) is not a problem, and we have a guardedly approving letter from the State Department of Health. Conversations with Department of Health officials and other bureaucrats have been reasonably productive so far. Over the next few days I hope to find out in



much greater detail whether there are hidden legal problems or hostility if we move to Arizona.

The primary reason we want to move from Riverside is better protection for the patients. Riverside-San Bernardino is the area of the United States *most* likely to have a devastating earthquake in the next five years. I am not at all confident that our current building provides enough protection. While the legal status of the patients appears clear in California, recent actions by the Department of Health (see elsewhere in this issue) show that the battle may not be over. If Arizona is better for cryonics than California, we want to be there. If we are heading someplace *worse*, we want to find that out as soon as possible so we can focus on staying in California (but still not in Riverside).

By the time you read this, you may already have received a letter informing you of a fund-raising effort for this building or further information about our moving plans. We realize that some

people's money is tight and that the possibility of Alcor leaving Southern California is hard for some to support. But the safety of our patients and possibly your own future safety may depend on your assistance.

Addressing the concerns of Southern California members: The Alcor Board of Directors is committed to providing top quality suspensions for all of our members. We have performed several suspensions in Northern California over the past five years, and Phoenix will actually be closer to Los Angeles than Riverside is to San Francisco. We hope that more of the Southern California members will train to be Transport Technicians (we currently have three in the Los Angeles area) and that they will be willing to purchase duplicate equipment for their team to at least match the capability in the Bay Area, New York, Florida, and Indiana.

In 1987, our move to Riverside was a big step for Alcor. We had only 80 Suspension Members and we didn't know if

we could raise the money to buy a \$200,000 building. But about 25 members put themselves on the line and the money was raised. That building was one of the keys to Alcor becoming the largest and most well-known suspension organization in the world in a very short time.

Today we have about 365 members, more than four times as many as in 1987. We are trying to buy a much larger building, but because of the tenants and the current financing (assuming we can take it over or renegotiate it), we don't need to raise the entire cost of the building. This deal is both practical and a good investment. And a new building with better patient security will help push Alcor to the next level of progress.

If you are interested in investing in this building or in a tax deductible contribution to build Alcor's share, please contact me or one of other Directors. It's time to take the next step up.

T-Shirts: The Gift That Keeps Giving

Matt Swanson

The following statement by Michael Perry appeared in his column "For The Record" in *Cryonics*, January 1993: "And if nothing else, we need improvements to more easily convince people to take cryonics seriously." This is a simple, straightforward statement, but a profound challenge. Recently a lot of talk has been put forward on the selling and marketing of Alcor/cryonics in hope of membership growth. This may be the first impossible subject for the rules of selling and marketing. Notice I don't say "service" or "business." Cryonics is perceived to be so different, so "strange," so controversial that we must approach it as a "subject" first and a "business / service / product" second. It seems most

of the approaches used for membership growth have been from the inside out. We must start thinking from the outside in.

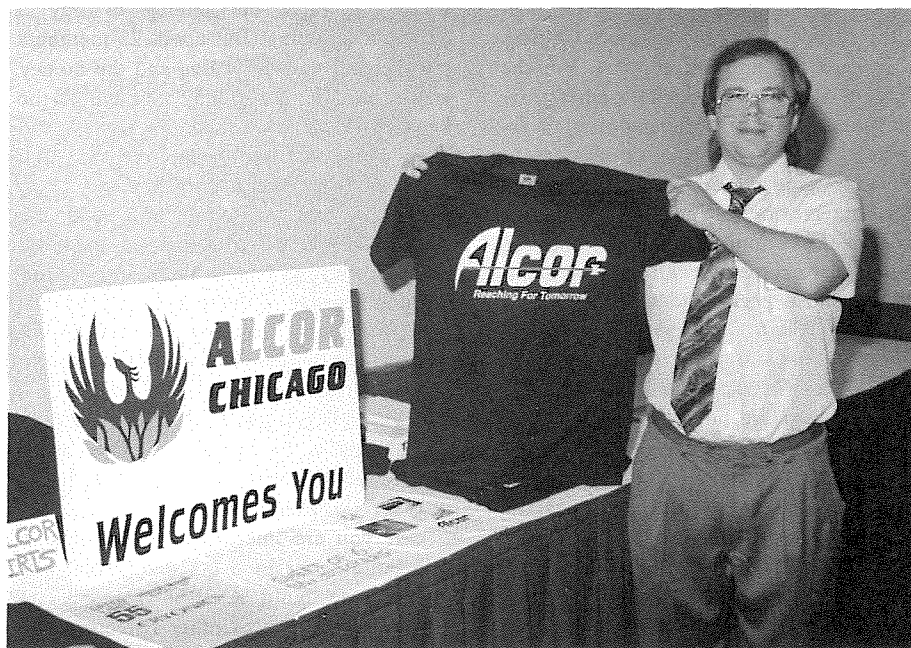
Over the years, Alcor and its members have tried every approach to get new members, using every catchy phrase and argument in the book. Then why are we

still so few in number? There's no right or wrong answer.

I first came to Alcor in 1989 by phone and 1990 in person. As a member, I felt I could contribute to an area in Alcor that was all but missing. An area that might, if utilized properly, prove to be successful in attracting new members. This is about promotion, but the root of my work is getting the proper "tools" of advertising, promotion, and marketing in the hands of Alcor staff, members, and the general public. This is also about image. How we handle that image in these early stages of the evolution of cryonics might chart our growth or downfall for decades to come.

My primary objective is to blend Alcor/cryonics into





The Alcor Chicago campaign will have the following items: T-Shirts, Sweat-shirts, Desk Cube Notepads, Magnets, Bumper Stickers, Promotional flyers, Key Chains, and Tote bags, with new items always in development.

I intend to put my entertainment-promotion-marketing design skills into high gear this year in an effort to fill the need for the development of creative visual image through promotion/advertising and gift items. Phase One of the program follows:

Development of Alcor for Visual and Business Areas

A. Promotion/advertising tools

1. Creating design for three different 8 1/2 x 11 flyers
2. A cryonics full size wall poster
3. Two music video promotions (MTV style). Complete with on-location filming, interviews, photos, and high-tech editing. Five to ten minutes each in length.

the '90s. This will be done through the projects themselves, and their image, "look," and "feel." That first contact with the potential customer/member is always the most important. The items and projects I'm working on will not put serious burdens or questions in the customer's mind (at first). They will be designed to make him/her feel comfortable, and hopefully promote enough interest for that person to write or call Alcor. That's the total goal of my work: to get potential members to write, FAX, or call Alcor *before* too much of the wrong information enters their minds.

Promotion/marketing actually works hand-in-hand with merchandise/selling. Radio and TV are great, but you can't beat personal public exposure, like a T-Shirt, for example.

Alcor Chicago's campaign will address these issues with a new line of promotion/advertising tools and gift items. These will strive for new looks, a new feel, and a head-on, hard hitting marketing approach for Alcor and cryonics to target the 18-45 age group, the young and the healthy, the group we need for membership growth and our future. The projects/gift items will focus cryonics in forms and images the general public are used to in the '90s.

I just returned from the Cryonics Conference in Ontario, California. The "how can we increase our growth potential" puzzle is missing some pieces. Charles Platt, Bill Seidel, and myself laid the ground work for one of the missing pieces: video. Four — count 'em, *four* — video projects

are in the works. These will represent a strong and powerful tool we shouldn't be without.



BUCKLE UP



CRYONICS

Cryonics is...

Cryonic suspension is the application of low-temperature preservation technology to today's terminal patients. The goal of cryonic suspension and the technology of cryonics is the transport of today's terminal patients to a time in the future when cell/tissue repair technology is available, and restoration to full function and health is possible—a time when freezing damage is a fully reversible injury and cures exist for virtually all of today's diseases, including aging.

As human knowledge and medical technology continue to expand in scope, people who would incorrectly be considered dead by today's medicine will commonly be restored to life and health. This coming control over living systems should allow us to fabricate new organisms and sub-cell-sized devices for repair and resuscitation of patients waiting in cryonic suspension.

For information contact:

The Alcor Life Extension Foundation, 12327 Doherty Street, Riverside CA 92527
Toll Free 800-367-2228 Fax 714-736-6917

Alcor flyer promotion design by Matt Swanson of MTS Entertainment

B. Structuring items for specific uses

1. Handout material
2. Mailings
3. Conventions
4. Meetings
5. Media promotion
6. Executive/professional (doctors, hospitals, university)
7. Personal use

C. Development of Gift Items

1. T-Shirts/sweatshirts
2. Desk cube notepads
3. Magnets
4. Bumper stickers
5. Coffee mugs
6. Tote bags
7. Calendars
8. Tour jackets
9. Key chains

D. Development and establishment of production

1. Budget preparation
2. Production cost analysis
3. Contacts for advertising/ordering
4. Storage, shipping, and related operations

For an order form please write to the address below. We now have the first promotion flyer available (see picture) at 20 cents each, please order in quantities of five. And the first T-shirts are in, black with new Alcor lettering on the front, with small rocket ship and "Reaching For Tomorrow" on the bottom, silver or white lettering. These are top quality fruit of the loom, 100% cotton, pre-shrunk, and are \$16.00 in small, medium, large, and

extra-large.

Order from: MTS Entertainment / P.O. Box 668 / Mt. Prospect, IL 60056. First class postage will be used. Please include 52 cents for every ten flyers, or \$1.00 for each T-shirt. Please make checks payable to Brenda Peters.

A hidden advantage of the plan is that Alcor Chicago will receive 50% of all profits realized from the new customized merchandising business, so *you're helping Alcor grow with every purchase!* Did I hear a drum roll? Yes, by golly, I believe I did! There was even a trombone. Yes, I'm certain of it. And what's that you say? A kazoo? Hmmmm. Do you think there might be a market for customized cryonics kazoos?

Alcor MidWest Ends Hibernation

Courtney Smith

Alcor MidWest held its latest meeting in April at the home of Brenda Peters and Courtney Smith. There was the usual good discussion and food. However, the group also made strides to moving to a higher level of activism.

The first decision was to define "our territory." We noticed on the map in *Cryonics* magazine that there is a contiguous strip of states with no cryonicists in it starting with the Dakotas and swooping around the midwest. This band surrounded the states of Illinois, Indiana, Ohio, Michigan, Wisconsin, Kentucky, Minnesota, Iowa, and Missouri. This then became "our territory." There are 26 signed up members in the midwest region with 5 signing up. The bad news is that we only know about half of the people in our region. The good news is that we therefore can make some quick strides in networking with the others.

We then focused our discussions on several key issues:

1. Stabilization Team
2. Newsletter
3. Dues

Clearly, our biggest priority is to staff a complete stabilization team. This led to a discussion of our current status and where we would like to be.

Currently, Alcor MW has a full transport kit that is being paid for by several members from Indianapolis, though there is still \$4,000 left to be paid. We have one member who is Alcor Certified, Bob Schwartz. We have boundless enthusiasm, charming personalities, and stunning good looks. But there is much more that we can and must do before we can truly stabilize members in the MidWest.

Bob has taken the responsibility to construct a shipping box, which is the one piece of necessary equipment that we don't have. In addition, Bob will get copies of the training tapes.

Brian Shock, Matt Swanson, and perhaps one other member volunteered to become our next members to receive Alcor certification, when that training is next available. In addition, Matt and Jim Cunningham were interested in taking training to become certified Emergency Medical Technicians. The group also decided to get pagers for its Team members and to devel-

op an Emergency Action Plan that Team members and volunteers could use in the case of an emergency.

Indianapolis members already have a relationship with a mortician in Indianapolis, but it was decided to set up a relationship with a mortician in Chicago also because Chicago represents a nucleus of members. Fortunately, we have a member in the Chicago area who is a part-time mortician. Unfortunately, that member was not at the meeting so we couldn't resolve this issue right away.

Another decision of the group was to find some way to help the Indianapolis members pay off the \$4,000 debt on the state-of-the-(he)art Michigan Instruments HLR. This led to a discussion of the other critical factor necessary for success in the MidWest: money.

We tentatively decided to charge dues of \$100 per year for members of the MidWest group. In addition, we would charge \$25-50 per year for "associate" members, people who are not yet signed up. This money would go to paying for training of Team members, adding new equipment, and helping to pay for the HLR.

We will look into getting a bank account to hold the vast wealth of Alcor MW.

We are also considering having special identification cards made for Alcor MW members.

The group will also strive to hold a conference in the Fall with guest speakers.

We look forward to seeing you at our meetings to help us move Alcor MW forward into the next century!

PUTTING THE ABORTION CONTROVERSY INTO THE DEEP FREEZE

by Anna Livia

My daughter had an abortion three days after her 16th birthday. It was the most difficult moment of her life and mine — for all the usual reasons, plus one ...

Upon hearing of my daughter's situation, a friend modemed me an article he'd written about the cryonic preservation of the human embryo. [Sidebar]

Was this really an option?

The short answer to the question is "Potentially."

The Facts of Life

Fertilization. Immediately, the zygote begins to divide, forming a ball of cells called the blastocyst, which flows down the oviduct to the uterus. Two regions of cells then form: an outer layer, the trophoblast, and an inner cell mass from which the embryo will develop, nourished for the time being by the small amount of ovum yolk.

Six to eight days after fertilization, the blastocyst attaches to the wall of the uterus. The trophoblast then produces enzymes that digest the uterine wall enabling the blastocyst to implant. But most blastocysts don't attach. Many that do implant spontaneously abort. Between 30-50% of fertilizations do not result in detectable pregnancies; they simply "don't take" and go completely undetected.

If the blastocyst could be detected and extracted prior to attaching to the uterine wall, it could be frozen... preserved for future implantation.

Today's methods for detecting pregnancy rely almost exclusively on serum testing for increased levels of the Human Chorionic Gonadotrophin hormone, detectable in

the mother's blood once it has interacted with the blastocyst via the placenta. The mother's blood will contain this hormone only after implantation and the formation of the placenta conduit—after it is too late to remove the blastocyst for cryonic preservation.

Post-Op

In the days and weeks following my daughter's D&E (dilatatus & evacuation), I discussed this (or attempted to) with several medical professionals in the OB/GYN department at a local teaching hospital. The head nurse who greeted me seemed very knowledgeable and, I thought, would surely answer my basic question...

"How soon after fertilization is it possible to detect the zygote?"

"We **do not** give a pregnancy test until her period is at least two weeks late," said the nurse.

"That's not what I asked. 'How soon after fertilization is it possible to detect the zygote?'"

"We **do not** give a pregnancy test until ..."

It's as if I were asking her to divulge a trade secret. Medical

THE CARE AND PRESERVATION OF THE HUMAN EMBRYO

BATTLE OVER EMBRYOS The Tennessee Supreme Court heard arguments over who should get custody of seven frozen embryos conceived by a couple before their divorce. Mary Sue Davis Stowe wants to donate the embryos to an infertile couple. Lawyers for her ex-husband, Junior Lewis Davis, argued he "has a constitutionally protected right not to become a parent" against his will.

This little news item contains the logical, humanistic solution to one of the most polarized, passionate, moral issues of the late 20th century.

Abortion-Pro-Choice vs. The Embryo's right to life.

The scientific-humanist position on this controversy is to defend the rights of the woman to manage her own reproductive organs and to ameliorate the terrible tragedy of poverty, starvation and child-neglect caused by over-population.

On the other hand, only the most impersonal technician-bureaucrat can feel happy about abortion.

Totalitarian governments, like Communist China which attempt to lower birth-rates by forcing women to submit to abortions, merit contempt from those who prize individuality.

Many religious institutions define abortion-pro-choice as a defiance of divine law. With this there can be no objection. However, when church leaders use their pulpits to lobby for secular laws against pro-choice and attempt to impose their religious beliefs on non-believers, they invite angry opposition.

And so the controversy rages. At this time when western democracies are plagued with grievous practical problems of war, poverty, educational collapse, it seems frivolous that "abortion" becomes a central issue in partisan politics.

It turns out, however, that there is a simple, life-affirming solution to this vexing concern.

The cryonic preservation of embryos.

technicians were somewhat more helpful and considerably more pleasant, but could not give me a definite answer. Physicians tended to be the most reluctant to give anything that even vaguely resembled a concrete answer. Most could not fathom why a woman would want to know she was pregnant any sooner than is currently common: about four to six weeks after fertilization.

Finally, a young (pregnant) gynecologist gave me a straight answer: "Eight days."

If the zygote were to be extracted and frozen, the procedure would need to be done within a week of fertilization.

Spurred on by that successful acquisition, I asked her what she thought about a cryonic alternative to retaining or aborting unwanted pregnancies.

She immediately began to abort the issue. "Well, your health insurance wouldn't cover it. And it's a medically and legally complex and expensive procedure..."

I spoke to other physicians and health care professionals. To my surprise many were aware of the possibility for a cryonic alternative. All diagnosed it as "promising." All agreed that some type of reliable Conception Test could be devised. None saw prenatal cryonic preservation as a realistic alternative until such a Conception Test became available. And none saw that happening any time soon due to...

TEconomic Viability

The funds necessary to research, develop, test and market the Conception Tests required for a cryonic option to abortion, and the specialized gynecoscopic equipment needed for the procedure, from the point of view of the companies who would put up the money (those who currently manufacture and distribute the equipment used in D&E

procedures), cannot be justified by the number of women they believe would avail themselves of the option. Unfortunately, I believe they are correct in that assumption for a number of reasons, not least of which are:

- **Time.** From intercourse to cryo-suspension can take no more than a week.
- **Money.** Tests, procedures, and suspension-storage costs could be prohibitively high. Insurance coverage is by no means a given.
- **Complications.** Not so much from the medical-surgical or cryonic procedures, but those from post-suspension legalities and the psychological anxiety they evoke.

Surely one of the most important things many of us do is procreate: give another consciousness an invitation to the Game of Life.

Although developing a cryonic alternative to aborting or retaining an unwanted pregnancy presents few scientific or technological difficulties, it does present considerable sociological, legal and ethical ones. Nevertheless, the cryonic option would preserve life

Thursday, 13 June 1991 Los Angeles Times

UNWANTED FETUSES

At the present time the controversy between pro-abortionists and anti-abortionists seems insoluble. I believe, however, that I have a solution.

Embryo transplant using in-vitro fertilization has become a reality in animal husbandry, especially in cows. If a similar technique could be found enabling a fetus to be transferred from the uterus of a woman who means to abort it (murder it, as a pro-lifer put it), to another uterus of a woman who would save it from its impending murder—why lol—the problem is solved.

Every female pro-lifer would have the opportunity to volunteer her uterus to grow the unwanted fetus in and thus prevent the murder, while enabling the natural mother to be rid of the unwanted pregnancy. It would enable the pro-lifers to "put their money where their mouth is."

Who knows, perhaps with an all-out investigation akin to the Manhattan Project, further research might enable men to become surrogate mothers.

Furthermore, this would enable the Bush Administration to identify the new enemy it so desperately needs now that the pusillanimous Russians are withdrawing from the field. A war to make the world safe for unwanted fetuses.

The prospects are mind-boggling.

STANLEY MARCUS, M.D.

Encino

Unwanted Pregnancies

The phrase is common, its meaning, often misunderstood.

I don't want to kill it. But I'm 15, he's 17— we can't have a baby now — and I could never carry it only to give it up for adoption.

It's not necessarily the child that is unwanted, but the pregnancy.

A cryonic option would alleviate the either/or immediacy but not the need for decisions.

- If in utero zygotes are extracted and frozen, the Stowe v. Davis in vitro scenario is more than a bit likely in more than a few cases.
- If Pro-Life lobbyists influence future legislation, would adoption be mandated in order to assure the frozen unborn their right to life.
- If Pro-Choice lobbyists influence future legislation, would women retain proprietary control over that part of their bodies in cryonic suspension.

while simultaneously protecting women's right to choose.

At last count there were some 12,000+ frozen fertilized human eggs in storage throughout the United States.

This article was originally written in 1991. Since then several realities have changed. The Tennessee Supreme Court ruled in favor of Mary Sue Davis Stowe. The Pro-Life Reagan-Bush-Quayle era seems to have given way to the Pro-Choice Clinton-Gore era. And perhaps most significantly, the French "abortion pill," RU-486, may soon be available to American women.

Nevertheless, the cryonics option remains a viable possibility.

Cryonics Forum

The following reports an exchange between Alcor Member Ralph Merkle and well-known cryobiologist David Pegg. Our thanks to Dr. Merkle for providing the readers of Cryonics with this startling glimpse into the mind of the modern cryobiologist.

May 3, 1991

David Pegg
MRC Medical Cryobiology Group
University Dept. of Surgery
Douglas House, Trumpington Road
Cambridge CB2 2AH, United Kingdom

Dear David;

The BBC has asked me to be one of the "pro-cryonics" group in an upcoming television show on the subject. I gather you will be one of the "anti-cryonics" group. I would be interested in knowing whether you actually plan to appear on the BBC show, or whether they are merely planning on asking you.

I have enclosed the latest draft of "The Technical Feasibility of Cryonics," which will shortly be submitted to the *Journal of Theoretical Biology*. As always, I invite criticism of the paper. I would also like to thank you for the time you have spent, and the comments you have sent me.

I have not found any published technical papers (sorry, letters to the editor don't count) that claim that cryonics won't work, nor have I heard of any technical reasons to believe that cryonics won't work. If you know of any published technical articles that claim or state that cryonics will not work, I would be interested in getting copies. If you know of any technical reasons to believe that cryonics won't work, I would also be interested. (Actually, I'm also interested in letters-to-the-editor, just for my own records. I'm really looking for peer-reviewed articles, though.)

To refresh your memory, there are two ways that cryonics might fail:

1. Death by the information theoretic criterion might occur prior to reaching liquid nitrogen temperature. You'll find a discussion on page 19 and on page 25.

2. Technology that is feasible in prin-

ciple proves impossible to develop even after several centuries. A brief introduction to nanotechnology is provided in the paper. Further technical literature on nanotechnology is available, and the pace of developments in this area is increasing rapidly.

I would like to know your estimate of the technical probability that cryonics will succeed. I realize that this estimate cannot be viewed as a probability, but it is useful to state it as such. Please break down your estimate into the two failure modes indicated above.

I draw your particular attention to footnotes 12 and 21.

Yours truly,
Ralph C. Merkle

10 May, 1991

Mr. R.C. Merkle,
Computer Science Laboratory,
Xerox PARC,
Palo Alto Research Centre,
3333 Coyote Hill Road,
Palo Alto, CA 94304, U.S.A.

Dear Mr. Merkle,

Thank you for your letter of May 3rd with its voluminous enclosure. I know nothing about the BBC programme to which you refer, but would like to take this opportunity to try to get you to understand the position that I and the vast majority of cryobiologists take. Essentially, you are postulating that anything that is combatible [sic] with the laws of physics is possible, and that anything that is possible will eventually occur. If you accept those premises, then you can envisage that it will eventually be possible to write out a complete chemical specification for a human being, and therefore to create one. The problem is, that nobody can attach any probability to such a projection. It is literally fantasy, which does not mean that

it cannot happen but simply that the means of achieving it cannot be specified. Your calculations and extrapolations from present knowledge may entertain, and even encourage you, but frankly I am indifferent to them. If history is any guide, the means that will eventually be used to achieve such fantastic objectives (if they are ever achieved) will be quite different from the means that we might envisage right now.

As for your basic assumptions, there is no problem with the first, but the second seems very dubious. At the least, it is open to considerable doubt whether any future civilisation possessing the sort of technology that would be required to repair damage to individuals frozen by presently-available techniques would actually choose to do so. It is at least equally probable that they would prefer either to create entirely new individuals or simply to prolong their own lives indefinitely. To conclude, it is pointless your trying to pursue your arguments with me. There simply is no scientific basis for a discussion.

I would also advise you to consider carefully the form of words that you use in describing the position of the Society for Cryobiology. You know perfectly well that we do not prevent public discussion of cryonics, and nor would any person whose personal system of beliefs included the two propositions I mentioned above be excluded from membership. We are a scientific society, not the administration of a totalitarian state and our bylaws refer only to proper conduct of scientists as scientists. It is not acceptable for any member of our Society to misrepresent the science of cryobiology, nor to advocate or take part in the freezing of deceased persons in anticipation of their reanimation. The reason is that this would bring the science into disrepute by suggesting that an entirely fantastic practice has a basis in current scientific knowledge and that there is a known finite probability of the enterprise being concluded successfully.

Yours sincerely,
David E. Pegg M.D.

May 28, 1991

David Pegg
MRC Medical Cryobiology Group
University Dept. of Surgery
Douglas House, Trumpington Road
Cambridge CB2 2AH, United Kingdom

Dear David:

Thank you for your prompt reply. I find your statements fascinating. Your central thesis appears to be that you haven't the faintest idea whether cryonics will work, for many of the central questions and issues are completely outside your domain of expertise. You then extrapolate from this to conclude that it is impossible for anyone to analyze the likelihood that nanotechnology will become feasible at some point in the future.

I have enclosed a draft of Drexler's technical book on nanotechnology. Drexler is circulating it to appropriate members of the scientific community for review and comment. After examining it, I would like to hear whether you wish to modify, in any respect, your claim that "There simply is no scientific basis for a discussion."

I should point out that you have (a) refused to attend the talk I gave on nanotechnology in London, (b) ignored my offer to give a talk at a location and time convenient to you and (c) displayed not the slightest interest in further references or readings on the subject. Thus, you neither understand nor wish to learn about the subject. Under the circumstances, I think it inappropriate for you to make any claims at all about the subject area.

Your arguments against cryonics were quite astonishing.

Imagine, for a moment, that you, I, and a mutual acquaintance are having dinner at his house. Our host collapses, and we rush to see what is wrong. After examining him, we engage in the following dialogue:

Pegg: "I don't know if he's dead or not, and furthermore no one can know whether he's dead or not! Therefore, we should immediately place him in the furnace and reduce him to ash!"

Merkle: "Not only *might* he be alive, but it looks like he *is* alive. I will call a taxi to take him to the nearest hospital."

Pegg: "Taxi drivers are immoral and

unethical. It is not acceptable for any member of the Society of Transportation (of which I am a principle member) to misrepresent the science of transportation! We will not allow any member of the Society to advocate or take part in the practice of driving corpses to hospitals!"

Merkle: "But I say he is neither dead nor a corpse, and you say you don't know. And why has the Society of Transportation taken a position on the subject if you can't tell whether he's alive or dead? The Hippocratic Oath tells us, above all, to do no harm. If the hospital can save him and we don't get a taxi, then we have killed him and done great harm. Further, our host left very specific instructions that he wanted to be driven to the hospital if he collapsed. He's even left a note and the taxi fare in the kitchen."

Pegg: "The hospital staff is very busy, it is at least equally probable that they would ignore him and let him die anyway."

Merkle: "I don't think so. Our host has left some money to pay the hospital bill, and I don't share your low opinion of the hospital staff. I think he will live if we get him to the hospital, and he will surely die if we don't."

I believe this accurately captures your position. I'd recommend that you rethink it so that it at least meets certain minimum ethical standards and is internally self consistent. Claiming that you don't know whether cryonics will or will not work, and arguing vigorously that it is impossible to assign a probability to its likelihood of success is not compatible with systematic opposition to the practice. Under these circumstances, such opposition is clearly a violation of the Hippocratic oath, for it runs a very clear risk of doing great harm. Only if you have grounds for believing that the success of cryonics is highly improbable can you oppose it with ethical impunity.

I should point out that on page 24 of my paper I cite the Ethics Manual of the American College of Physicians. They state quite clearly that the wishes of the terminally ill patient must be recognized and honored by his physician.

Your claim that the Society of Cryobiology does not suppress research or publication on the subject of cryonics is incorrect. I did not at first believe the claims that I heard until after I was shown the by-laws of the society and the minutes of some of the meetings. I was completely astonished. I know of no other scientific

society which engages in such practices.

Your claim to represent the "vast majority" of cryobiologists is incorrect. Your opinions and opinions of other cryobiologists who oppose cryonics are well known. Any cryobiologist who publicly supported cryonics would run the risk of losing his grants, his salary, and his professional career. Thus, those who do support cryonics remain silent. For obvious reasons, I am not inclined to name the sources of my information.

My greatest concern, however, is that you will continue this blight to the next generation of researchers. Those who are just starting out, who are vulnerable to the kind of pressure that you and other senior researchers can and have brought to bear, have abandoned research in this area. You have fostered a climate of fear and terror, and this must stop. At a minimum, the by-laws of the society must eliminate the medieval rules that call for expulsion of members who support cryonics.

The Society has not and is not currently behaving like a scientific society. The purpose of a scientific society is to foster open discussion and thus provide a basis for a consensus. There is currently no consensus on cryonics. Rather than foster open discussion, you and other members of the "old guard" have sought to suppress it. Fortunately, there are signs of change. Randy May supports the idea of open and public discussion.

Your fear that members of the society might misrepresent the science of cryobiology appears to be unfounded. According to you, there are no cryobiological reasons to believe that cryonics won't work. Indeed, viewed purely from the point of view of cryobiology, cryonics is likely to work. The principle question, according to your own words, is whether we can develop the needed repair technology. Therefore, there is nothing cryobiological to misrepresent. Unless, of course, you are referring to the grossly inaccurate statements made from time to time by various cryobiologists who oppose cryonics, and who claim or imply that they know, based on their understanding of cryobiology, that cryonics won't work. This is indeed a serious misrepresentation of the science of cryobiology. It should stop.

You argue that it is unacceptable for members of the society "...to advocate or take part in the freezing of deceased persons..." Your stated grounds are that it would bring the science into "disrepute." Galileo was in disrepute. So, too, was Copernicus. Is this the disrepute that you

fear? Or is it unacceptable on the grounds that nanotechnology will never be developed? You have no knowledge of this subject, and less interest. And finally, you haven't even claimed that the people in question are dead! For all you know, cryonics works just fine: in which case, someone who is frozen has not suffered "a permanent cessation of vital functions" and therefore is not dead (see the discussion page 17 et sequitur).

Cryonics has reached a stage where full and open discussion is imperative. I have found no reason to believe that it won't work, and I've looked hard. I *have*

found reasons to believe it *will* work. It's to everyone's advantage to obtain a consensus on the subject, whatever that consensus might be. This can't be done without the participation of the Society of Cryobiology. For better or for worse, people turn to the society when they want to know the "currently accepted scientific basis for cryonics." You know and I know that cryobiology is only a small part of cryonics, but as long as the Society blocks open discussion, this fact will not be generally appreciated. The by-laws *must* be changed. Your own past role in preventing open discussion is also not insignificant.

It's time to get this issue out in the open. If you can show cryonics is nonsense, more power to you. So far you haven't even come close. So let's broaden the discussion and stop threatening people.

Despite your obvious biases, I continue to believe you have expertise in cryobiology and I appreciate your comments. Oddly enough, I'd also like to thank you for your comments outside your area of expertise as well. They have been most illuminating.

Yours truly,
Ralph C. Merkle

The Evolution of Progress

by C. Owen Paepke
Random House, 1993

Reviewed by Thomas Donaldson

This book consists of a weird mixture of statements with which I agree and other statements which I find so poorly considered that I don't merely disagree with them, I think them almost not worth discussion. Despite the profusion of footnotes he provides for every chapter, its author, Mr. Paepke, clearly has spent very little time thinking over some basic issues, including just what the meaning of "progress" is in the first place. Moreover and at least as bad, when scrutinized a lot of his data applies to the US very well, to Europe and Japan less well, and has very little obvious application to the mass of humanity who do not live so prosperously as those countries already mentioned. For instance, he seems to quite blithely conclude that most of the world (Africa, Latin America, Asia excluding a few countries) will remain in the same condition indefinitely. He provides NO support for this critical conclusion. Anyone interested in investment right now will know, among other points, that Latin America, including Mexico, currently is undergoing many

economic and political changes, all leading to new economic advances.

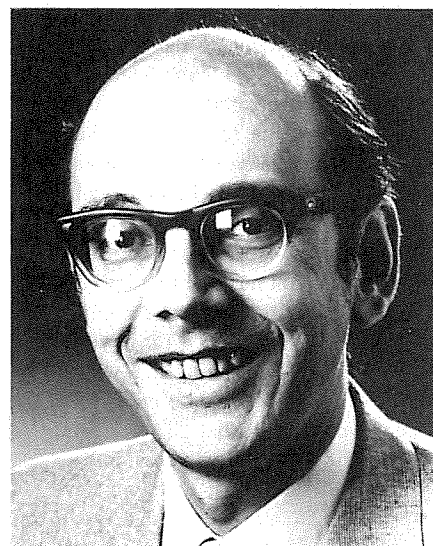
What, then, is Mr. Paepke trying to argue? It's hard to summarize a set of ideas which themselves are only vaguely developed. However, if I understand his general drift, he is arguing that economic growth (undefined) has now ceased, to be replaced by a quite different kind of growth in which we become masters and controllers of our own genetics and bodily and mental form, while simultaneously creating highly intelligent robot helpers. Part of modifying ourselves will consist of greatly lengthened lifespans. (A really radical conclusion, yes!)

Here are a few of the problems I have with this viewpoint, if it can be called that. First, he spends a good deal of time sketching our past technological history, basically to support the argument that we've gone as far as we can go in most "material" (isn't genetic modification material?) directions. This means that our houses are basically as good as they can get (minus a few trivial changes), our food

supply as good as it can get (again minus a few trivial changes), our transport as fast and easy (except a few trivial changes) as it will ever become, etc., etc. His discussion of past technological advances is all very well, but it fails completely to prove that further advances have become pointless.

Why? Because we cannot measure progress by the simple growth of a few parameters. If someone claimed that our material progress (again, remember we haven't defined that notion) will soon come to an end because we will be able to make as much steel as we can ever expect to need, most people would see him as the fool he is. Progress does not consist of the unbounded growth of any one thing or one parameter, nor of any small number of them.

For instance, to discuss transport alone, it may be true that we can only cut travel time (on Earth!) by no more than a factor of two. Does that mean further significant progress in transport has become impossible? No, because there are other



parameters by which to measure it: how much does it cost? How easy is it to make such travel? (Can I just pick up and go, or must I pay attention to airline schedules?) How comfortable is it? (As someone who has traveled back and forth to Australia quite a lot, I can see many improvements there.) For that matter, even getting back and forth between the airports and the origin and destination can be sped up a lot.

Furthermore, the distinction between "material progress" and "progress in human design" which he tries to make becomes far from clear when we examine it closely. If (as he suggests) we are to take up modifying ourselves and improving the intelligence of our machines, then just how are we to do that without the needed equipment and tools (which, by the way, don't yet exist)? Even nanotechnology, though it can certainly shrink some things, will not make everything small: a system to modify our brains, for instance, must be about the size of our brains (it may interpenetrate them, and consist of many nanosized *parts*, but they must all constitute a system operating in combination). Nanotechnology does not mean that everything will become nanosized. It means that everything will consist of nanosized *parts*. What about all the systems for diagnosis, testing, and design and manufacture of these modifications *and* of our intelligent computers? Are we to assume that these are not material goods?

One major argument for his thesis (contained in a chapter named "Enough") says basically that we now own all the physical goods we might want to own. The motivation for further material progress has therefore ceased. (What about other countries or people who still lack these things? Oh, they don't matter).

It's not hard for me to think of additional "material things" I would like to have ... all of them now either too expensive or nonexistent. Safe, self-flying personal airplanes (or personal spaceships?) to go anywhere in the world for, say, 60 cents. Several different houses would be nice. Ways to relieve me from the drudgery of everyday life (shopping, caring for the garden and the house, picking up after myself ...). Mr. Paepke has decided that since these changes do not fit on his scales of living conditions or transport (after all, I have plenty of food, one house is enough, and my trips to New York will be at most a few hours shorter than they would be now) they do not constitute "material progress."

In one very important sense we *do* face a barrier to long-term future progress,

and *space travel* is very critical to it. The reason for this is that in a very few centuries, at the most, we will exceed the energy limits of the planet Earth. That is, if we continue to increase our energy use without moving a lot of it off the planet, we'll create a catastrophe. There are indeed limits to growth ... on the planet Earth. Some may argue that we are already very close to them. Mr. Paepke has very little to say about this limit. Rather than any argument, he dismisses any future major activities in the Solar System as implausible. In fact, the index to his book gives no reference to interplanetary space travel at all, either positive or negative.

He doesn't base his arguments solely on the issue of whether or not "everyone" feels that they have "enough." He has another argument: science, he claims, has now exhausted all the major technological possibilities, so that further advances become too expensive to be pursued. He cites such things as subatomic physics, or cosmology, as instances of such barriers: no one except the experts really care about such advances, because they are so far from us and would cause so little changes that we have no reason to bother with them. That is, the possibilities of science, up to now the major source of innovative technology, have now been exhausted. Further money put into such fields will produce nothing of interest.

However his argument here omits important branches of science which currently play a very large role: such as materials science (where do all those silicon chips come from, anyway, and what about nanotechnology or superconductive materials?), geology and meteorology (it would be nice to control earthquakes and hurricanes, or at least predict them), chemistry and biochemistry (just what sciences are going to produce this ability to redesign ourselves that he talks about?). Very few physicists nowadays actually go into particle physics or general relativity. He may even be right in what he says about such fields: but who said they were identical to science itself? Just as with "progress" in general, scientific research does not stick to a small number of paths and go forward on each one. As it proceeds it uncovers entirely *new* paths; sometimes it later returns to the old paths with new ideas, sometimes not.

Nor, for that matter, does research even in fields such as general relativity lack any possibility of producing *technologically* important discoveries. The first thing to understand about both general

relativity and quantum mechanics is that no one yet has produced a complete theory reconciling the two. That is, both are *known* to be *wrong*. And whatever unified theory replaces them need not merely have effects at the umpteenth decimal place. It may produce some quite major and highly visible new phenomena. There is no good reason to believe that a different theory which explains currently known phenomena just as well must differ only in the last decimal places. Think about the difference between Ptolemaic and Copernican astronomy: sure, for predicting motion of the then-known planets, the difference was very small. But who would claim that these two theories differ by only a few decimal places?

(Incidentally, he is also wrong in claiming that these fields have not affected our everyday lives. Ion beam accelerators have been used in both materials science and medicine, and cannot be designed without taking the mass increase with velocity into account. And as we miniaturize our computers we run into quantum phenomena).

In one sense Paepke does have a point: at least the most publicly visible kinds of research now cost a great deal. However, that is not a point about *all* scientific research. Furthermore, organizations such as NASA (which has spent billions on a space station which might have been built much earlier and more cheaply using mostly existing components) cloud the meaning of that point a good deal. Is this money really spent because it must be spent to do anything at all? Or is pouring money on a problem, rather than using ingenuity, the bureaucratic response to a problem? (A team at Douglas has recently announced the design of a true spaceship, needing no more than 50 people to maintain it and able to go into orbit with one stage only: price, \$58 million dollars including research).

It's far from clear that government involvement has ultimately helped *any* technology or science. Even for particle accelerators, until now the easiest path to follow has been to beg more money from the government ... rather than to find more ingenious and cheaper ways to accelerate the particles or otherwise do the experiments (there are many proposals floating around to do that; so far as I know, research hasn't settled on any of them). Paepke's point may really mean that some areas of science have unwittingly fallen into bureaucracy, unhealthy and ultimately fatal for any science. And since *that* par-

ticle physics remains the only particle physics we know, we have no good idea of what would have happened if history had taken a different path.

On the question of whether or not any field of science has or could become exhausted, no one can really say. If anything else, to suggest such exhaustion I would want to see barriers in *all* attempts to make progress; and those barriers must persist for at least 100 years if not more against serious attempts to advance them, and not just in the U.S. but worldwide. In *all* previous cases, societies have decided that they've learned everything of value there is to be learned, only to get a rude awakening. It's very easy for a science to cease progressing if everyone decides it's not worth working on.

Finally, Paepke pays no attention to the ways the advances he *does* envision will react back upon exactly the kinds of progress he decided cannot happen. For instance, even though Paepke does not dis-

cuss space travel as such, he does discuss interstellar travel ... briefly, only to dismiss it as out of the question. (What about O'Neill type habitats in the Solar System, even small ones? Not mentioned). His reasons for dismissing it, in the light of the increase in lifespans and control over our own bodies which he also predicts, look very strange indeed: it might take 300 years, he says, before the starship reaches its destination. His argument: that three hundred years is obviously too long ... for people with an expected lifespan running into the thousands, and complete ability to put themselves into suspended animation and leave their intelligent computers in charge of the starship! (Really!) All of the modifications he suggests must necessarily affect his other conclusions: nanostructured particle accelerators might allow far cheaper particle accelerators, computers would allow creation of reliable inexpensive helicopters able to fly themselves.

When I was younger I spent time in

Chimbu Territory in the highlands of New Guinea, where the people had only been contacted after WW II. And I could talk with the Chimbus, sometimes using Pidgin, sometimes using a translator ... and the bright children had learned English. In these talks I heard of a question that puzzled all the Chimbu I met. They wanted White Men to come and stay in their village; a few White Men would bring great prestige. And so they asked me, as they asked all the visiting White Men: would I stay there? They offered me a wife, a pig, a hut, and a potato field (Yes, the Chimbus had been growing potatoes for centuries ... which suggests that even they had gone through changes when the potatoes arrived from faraway.). When I politely refused they told me that all the others had refused too. Wife, pig, hut, potatoes, we'll give you everything a man could want. Why do you all refuse? I could not answer.

The Chimbus, of course, had an excuse. Mr. Paepke has none.

Business Meeting Report by Ralph Whelan, Secretary

The June meeting of the Alcor Board of Directors began at 1:14pm, at the home of David Pizer in Wrightwood, California.

Resolved: The May meeting minutes are approved with one change: the section referring to staff reports on page one will be reworded to list the reports that are being appended. (Unanimous)

The July 11 meeting of the Board of Directors will be in Huntington Beach at the home of Marce and Walt Johnson. The July, August, and September meetings will all be held on the *second* Sunday of the month.

Steve reported that Trip Hord has also done some research on the possibilities of altering our C.U.P. to include animal research again. Trip proposed several possible strategies, but warned that a frontal request to change the C.U.P. opens the entire case up for review of ANY part of the document, including the permit itself. He felt there was a slim, but not impossible, chance that the Council might call public hearings and start the process all over again.

Our money situation has gotten very tight again. We have a number of large bills we owe, and the C.U.P. situation will be expensive no matter what strategy we adopt.

Steve has spoken with the attorney working on the Trust document for the Patient Care Trust Fund and has sent her more information that she requested. We were hoping to have a detailed report by Friday, but it took Steve a while to find all of the things she needed. We should have something very solid by the next meeting.

Greg Fahy has sent to Steve a progress report on the salamander project (attempting to show memory preservation after freezing), together with an accounting for funds. He has learned a lot; but is still short of results, partly because of the incredible difficulty of raising the little critters. He will be acquiring more Siberian salamanders this summer and will then attempt to extend the project.

Ralph reported that all Directors not attending this meeting physically should by now have received by regular mail a sample of the Marketing Proposal-slash-fundraiser, which went was mailed out to over two hundred and eleven Alcor members this past week. Except to say that the preparation of this mailing took an *extraordinary* amount of time — for which we may bill the marketing fund — there isn't much to report until Perry calls the recipients and begins getting feedback.

Charles Platt appeared on the Joan Rivers Show this week, generating about a dozen information requests so far.

The deadline for the *Omni*/Alcor Immortality Contest is now past. There are several hundred entries, with a few more to trickle in over the next couple of weeks. Ralph and Charles Platt have been working on the layout of the first of the two full-page ads for *Omni*, which will be placed in the issue that announces the contest winner.

Tanya reported that with the able assistance of Robert Cardwell, Alcor member and President of the Cryonics Association of Australia, the remote transport kit was reorganized. Robert and Tanya made a few changes in the kit inventory, based on the knowledge acquired through last month's suspension. The kit was found to be in good condition and is now fully prepared for the next remote transport, with the recent modifications.

To enable faster response time and less shipping expense, a more compact version of the remote transport kit is being constructed. When completed, this kit will significantly shorten the time needed to prepare for the surgery and perfusion during a transport.

A less cheerful piece of news: the Alcor ambulance was burgled this month. Nothing is missing from the stock, save the Citizen's Band (CB) radio, which had been clamped to the dash, and nearly the entire inventory of needles and syringes,

which were removed along with their storage containers. News of this break-in has been circulating, as has the rumor that medications were also stolen. This is not the case. Needles, syringes, and the CB were removed — no medications. The MALSS and medication kits are currently housed inside the Alcor facility and will continue to be stored inside until the ambulance is parked in the environmentally-controlled ambulance bay.

Hugh is examining the possibilities for incorporating an alarm system into the existing camera/surveillance system.

May, 1993 was a better month for Alcor membership growth than April. Alcor's total membership as of June 4, 1993, is 358. Three individuals completed the sign-up process and became full suspension members. Additionally, an Alcor member who had canceled his membership in October, 1992 — pending the outcome of Alcor's audit — reinstated his membership. We lost two members in May, one who canceled his suspension arrangements for personal reasons, and one whose insurance arrangements are currently invalid. Eight individuals entered the sign-up process in May, the most in any one month since April, 1992.

The effort to assess membership paperwork and financial arrangements has picked up considerably, thanks to a significant amount of volunteer work on the part of Alcor member Mark Plus. Mark began work on the assessments early in May, and has completed approximately 40 of the 55 "critical" files (i.e., files of members who have a terminal condition, advanced age, unorthodox funding arrangements, previous funding problems, etc.) Of the members whose files have been assessed so far, approximately half need further documentation on their funding arrangements. (This percentage should be much lower with members who are not on the "critical" list.) In most cases, this will mean naming Alcor as irrevocable beneficiary or collateral assignee on the member's insurance policy, or providing proof that this has already been done. In June, those members who need to do this will receive notification of this fact, as well as instructions and advice for proceeding.

Steve thanked Mark Potts for his ongoing assistance with assessing the funding security in member files. Bob and Margaret Schwartz invested a healthy chunk of time assisting with mailings and organization at the Alcor facility. Thomas Donaldson spent several days at the

facility volunteering on a re-organization of patient records, and Robert Cardwell, visiting from Australia, has assisted with numerous odd jobs over the past four weeks. Charles Platt has recently completed an informative booklet for Alcor Suspension Member entitled "Alcor and You," which we will be sending to all members soon. Scott Herman has been virtually omnipresent at Alcor for the past several months, and his assistance in numerous projects has been invaluable. Thanks to all of these members for their time and efforts.

Steve reported that the California State Health Department *still* will not issue certain death certificates to Alcor — despite Justice Muñoz's order for them to do so — purportedly because of a legal loophole that Death Certificates not filed within one year of death require a court order. Steve is in contact with David Epstein, our attorney in this matter, regarding how we will deal with this and how this might interface with our Fee Motion hearing, presently scheduled for June 17.

Hugh reported that the new "Bigfoot" dewar is at least 95% complete, with little work remaining but polishing. Estimates of boiloff for this new dewar are in the neighborhood of 10 liters per day.

Although testing in the area of excessive liquid nitrogen losses is still ongoing, right now it appears that much of the "excess" LN₂ consumption may be attributable to various hidden costs, rather than loss of liquid.

Allen Lopp circulated a detailed plan for a standing Alcor Audit Committee, which included an analysis of responsibilities and a mission statement. The Directors will discuss Al's plan by email, and probably vote on Committee members at the July meeting.

Steve reported that at the end of last year, we were given 90 days by the City of Riverside to "come into compliance with" a list of requirements. We are not yet in compliance with all of the items on that list. One of the requirements was that we submit to the Riverside Planning Department our engineering plans for the building we now occupy. When we did this, the City replied that a) we are not in compliance with minimum headroom requirements for our second story construction, and b) reinforcements to the foundation required by City Code for second story construction were not put in place.

To address this, two architectural firms have given estimates of their costs in

preparing plans for addressing these problems. These estimates on *plans* are both in excess of \$6,000. The costs for the actual work that will be required are not yet known.

Naturally, since we hope to move from Riverside soon, we don't wish to spend several tens of thousands of dollars on our current facility when that work will not likely change the re-sale value of the building. However, if we don't come into compliance with these costly requirements, we will lose the Conditional Use Permit that is required by law for us to store human remains.

Steve is researching options for getting more time extensions for this.

Allen reported that the Facility Search Committee has constructed and mailed to realtors in various parts of Northern California a flyer detailing our requirements. Allen and others believe that the seismically safe regions of Northern California have the advantage (over out-of-state sites) of being in the jurisdiction of the court rulings we have established in protecting our rights to practice cryonics in California.

Dave reported that the 14,000 square foot building that the Board considered a couple of months ago is available for sale again. Dave emphasized that letters from local authorities in this area (Scottsdale, AZ) appear to state that C.U.P.'s will not be required for us to function (and store patients) in this area. Dave also emphasized that Judy Norman — the head of the Facility Search Committee — has already visited and "approved" this building as a potential Alcor facility. Dave believes that the real estate market in this area is such that this building will be much more of an asset in future years than most any building in the California real estate market.

Mark Voelker has spent a lot of time getting permission from the Pima County and City of Tucson zoning committees for locating a cryonics facility in the Tucson area. As far as Mark can tell, there are no officials in the Tucson area that would prohibit or excessively regulate a cryonics organization.

Brenda reported that she has drafted a fund-raising letter for a new facility for Alcor, and that she plans to spend some time this summer working on raising money for this.

Ralph made and Hugh seconded a motion to take \$25,000 from PCTF and use it as a deposit on the building in Scottsdale, with the condition that Dave must

get 60 days for escrow, else the motion is void. Some directors were uncomfortable with this motion because they had not had an opportunity to see the proposed facility, so Ralph withdrew the motion and called a special meeting of the Board for 14 June, 7:00pm, at the Alcor facility in Riverside. Ralph stated his intention to make the same motion again at that time.

Saul Kent and others have started a for-profit research company, 21st Century Medicine, which is also raising funds for research being conducted by Cryovita. Cryovita has assigned to 21st Century Medicine the rights to a Perfusate Patent developed by Jerry Leaf and Mike Darwin, with the assistance of Alcor personnel and facilities. Our attorneys have helped us with the negotiations as the principals of 21st Century Medicine and the Board of Alcor have tried to come to an agreement on the status of the patent. 21st Century Medicine chose option B of the motion passed at a meeting of the Alcor Board of Directors on May 30, 1993, as follows:

B. The Alcor Board would be willing to consider the possibility of 21st Century Medicine purchasing all commercial rights to the patent in question and all rights to any profits flowing from the patent in question, for a fixed dollar amount in lieu of 21st Century Medicine stock, provided that Alcor retain the right to use the patent in question for the cryonic suspension of its members, the members of other cryonics organizations, and for experimental use. Under this plan, since Alcor would receive no stock in 21st Century Medicine, a non-competition clause would no longer

be necessary. If 21st Century Medicine finds this possibility attractive, we invite 21st to submit to Alcor a proposed fixed dollar amount.

Since Dave wants time to get a legal second opinion on this proposed agreement, as agreed to by 21st, this topic is tabled until the special meeting already called for Monday, June 14.

Based on the Long-Term Patient Care expenses recently calculated by Michael Riskin and Steve Bridge, Steve and Ralph will prepare some form of proposal for what our suspension minimums should be and how the expenses should break down between the Patient Care Trust Fund and the Operating Fund. Steve and Ralph will prepare this as soon as possible so that this might be considered at the special meeting of the board already called for Monday, June 14.

To address cash flow problems stemming from the uncertain insurability of a recent suspension patient, the following resolution was passed:

Resolved: That because we have not been paid for our most recent suspension, and it is at this point uncertain that we will be, Steve is authorized to borrow an additional \$15,000 from the Endowment Fund, to be repaid immediately when and if we receive payment for our last suspension. (8 in favor, 1 opposed)

Resolved: The Board of Directors authorizes Steve Bridge to close Pacific Horizons Account #0000102863, Prime Fund. (Unanimous)

June 14, 1993: Special Meeting of the Alcor Board of Directors

The meeting began at 7:14 pm.

Resolved: That the Board approves the following text as a potential agreement between Alcor and 21st Century Medicine. (8 in favor, 1 opposed)

[Text omitted due to its length. See section "B" of the proposed agreement in the regular monthly meeting report above. — Ed.]

Resolved: That David Pizer is authorized to make a refundable deposit not to exceed \$25,000 on the proposed facility in Scottsdale, with the understanding that we expect at least a 60-day "free look," and preferably a 90-day "free look." (6 in favor, 3 opposed)

Resolved: That Dave Pizer's \$25,000 is reimbursable from the Patient Care Trust Fund

The meeting adjourned at 9:00 pm.

Advertisements & Personals

The Alcor Life Extension Foundation and Cryonics reserve the right to accept, reject, or edit ads at our own discretion and assume no responsibility for their content or the consequences of answering these advertisements. The rate is \$8.00 per line per month (lines are approximately 66 columns wide). Tip-in rates per sheet are \$200 (printed one side) or \$240 (printed both sides), from camera-ready copy. Tip-in ads must be clearly identified as such.

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Venturist Monthly News promotes immortalist philosophy. For

free sample write: The Venturists, 1547 W. Dunlap, Phoenix, AZ 85021.

EXTROPY: The Journal of Transhumanist Thought #10: Pigs in Cyberspace, by Hans Morevec; Protecting Privacy with Electronic Cash, by Hal Finney; Technological Self-Transformation, by Max More; Interview with Mark Miller of Xanadu, by Dave Krieger; Nanocomputers, by J. Storrs Hall; Reviews of *Nanosystems, Genius*, books on Ayn Rand. \$4.50 from Extropy Institute; PO Box 57306; Los Angeles, CA 90057-0306. E-mail info from more@usc.edu.

Do you want to keep up with science and technology bearing on cryonics? **PERIASTRON** is a science newsletter written by and for cryonicists, only \$2.50 per issue. **PERIASTRON**, PO 2365, Sunnyvale CA 94087.

LIFE EXTENSION FOUNDATION OF HOLLYWOOD, FLORIDA provides members with "inside" information about high-tech anti-aging therapies. for free information call 1-800-841-LIFE.

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Meetings & Announcements

Meeting Schedules

Alcor business meetings are usually held on the first Sunday of the month (July, Aug., & Sept.: 2nd Sunday). Guests are welcome. Unless otherwise noted, meetings start at 1 PM. For meeting directions, or if you get lost, call Alcor at (714) 736-1703 and page the technician on call.

The **SUN, AUGUST 8** meeting will be at the home of:
Russell Cheney
5618 Ruby Place
Torrance, CA

Directions: Take the Harbor Freeway (110) south from the San Diego (405). Exit on Carson, going west (right), and go all the way to the west end of Carson, in Torrance. Follow Carson as it angles right (north) and becomes Howard Avenue. Go about 1/4 block and turn right onto Ruby Place. There is a bear in the front yard.

The **SUN, SEPTEMBER 12** meeting will be at:
ALCOR
12327 Doherty St.
Riverside, CA 92503

Directions: Take the Riverside Freeway (State Hwy 91) east toward Riverside. Go through Corona, and get off at the McKinley St. exit. Go right (south) on McKinley. Turn left (east) on Sampson (1st stop light). Go about 1 mile along Sampson to Granite. Go left on Granite to its end, and turn right on Doherty. Go about 200 yards on Doherty and turn left into the industrial park just short of the street end. Alcor is the third building from the back, on the right.

ALCOR NORTHERN CALIFORNIA MEETINGS: Potluck suppers to meet and socialize are held the second Sunday of the month beginning at 6:00 PM. All members and guests are welcome to attend. For those interested, there is a business meeting before the potluck at 4:00. Once every three months there will be a party or gathering at a local eatery and no business meeting. See details below. If you would like to organize a party, or have a suggestion about a place to eat contact the chapter secretary, Lola McCrary, 408-238-1318. We are also hoping to have speakers on various topics in the near future.

The **SUN, JULY 11** meeting will be held at the home of:
Ralph Merkle and Carol Shaw
1134 Pimento Ave., Sunnyvale, CA
Tel: 408-730-5224

After the business meeting and potluck there will be an *Introduction to Cryonics* talk at 7 PM, followed by a question and answer period.

Directions: Take US 85 through Sunnyvale and exit going East on Fremont to Mary. Go left on Mary to Ticonderoga. Go right on Ticonderoga to Pimento. Turn left on Pimento to 1134 Pimento Ave.

The **SUN, AUGUST 8** meeting will be held at the home of:
Keith Henson and Arel Lucas
1794 Cardel Way, San Jose, CA

Directions: Take the 17 South (880) and get off going east on Camden. Stay on Camden as it turns south and go to Michon Dr. Turn right onto Michon and go to Harwood Rd. Turn left on Harwood and go south to Almaden Rd. (1st street on right). Turn right on Almaden and right again onto Elrose, then left onto Cardel. 1794 is near the end of the street, on the left.

Las Vegas Area: *Alcor Laughlin* meets the third Sunday of the month at 1:00 PM at the Riverside Casino in Laughlin, Nevada. FREE rooms at the Riverside Casino on Sunday night are available to people who call at least one week in advance. Take 95 south from Las Vegas, through Henderson, where it forks between 95 and 93. Bear right at the fork and stay on 95 past Searchlight until you reach the intersection with 163, a little before the border with California. Go left on 163 and stay on it until you see

signs for Laughlin. You can't miss the Riverside Casino in Laughlin, Nevada. The time and place of these meetings sometimes changes, so before you come, please call Eric Klien at (702) 897-4176.

Alcor Chicago is in the process of starting up. For meeting information and getting on the mailing list, contact Brenda Peters at (312) 587-7050, or: Huron Plaza, 30 E. Huron, Suite 4709, Chicago, IL 60611.

Boston: There is a cryonics discussion group in the Boston area meeting on the second Sunday each month. Further information may be obtained by contacting Walter Vannini at (603) 889-7380 (home) or (617) 647-2291 (work). E-mail at 71043.3514@CompuServe.com.

Alcor's Southern California chapter meets every other month. If you are not on our mailing list, please call Chapter president Billy Seidel at 310-836-1231.

The **Alcor New York Group** meets on the third Sunday of each month at 2:00 PM. Ordinarily, the meeting is at 72nd Street Studios. The address is 131 West 72nd Street (New York), between Columbus and Broadway. Ask for the Alcor group. Subway stop: 72nd Street, on the 1, 2, or 3 trains. If you're in CT, NJ, or NY, call Gerard Arthus for details at (516) 689-6160, or Curtis Henderson, at (516) 589-4256.

Meeting dates: **July 18, August 15, Sept 19, Oct 17.**

New York's members are working aggressively to build a solid emergency response capability. We have full state-of-the-art rescue equipment, and four Alcor Certified Techs and four State Certified EMTs.

The Alcor New York Stabilization Training Sessions are on the second and fourth Sundays of every month, at 2:30 PM, at the home of Gerry Arthus. Address: 335 Horse Block Rd., Farmingville, L.I. For details call Curtis or Gerry at the above number.

District of Columbia: Contact Mark Mugler at (703) 534-7277 (home) for meeting information. The next meeting will be held on July 11.

There is an Alcor chapter in **England**, with a full suspension and laboratory facility south of London. Its members are working aggressively to build a solid emergency response, transport, and suspension capability. Meetings are held on the first Sunday of the month at the Alcor UK facility, and may include classes and tours. The meeting commences at 11:00 A.M., and ends late afternoon.

Meeting dates: **August 1, Sept 5, Oct 3, Nov 7.**
The address of the facility is:
Alcor UK, 18 Potts Marsh Estate, Westham, East Sussex
Telephone: 0323-460257

Directions: From Victoria Station, catch a train for Pevensey West Ham railway station. When you arrive at Pevensey West Ham turn left as you leave the station and the road crosses the railway track. Carry on down the road for a couple of hundred yards and Alcor UK is on the trading estate on your right. Victoria Station has a regular train shuttle connection with Gatwick airport and can be reached from Heathrow airport via the amazing London Underground tube or subway system.

People coming for AUK meetings must phone ahead – or else you're on your own, the meeting may have been cancelled, moved, etc etc. For this information, call Alan Sinclair at 0323 488150. For those living in or around metropolitan London, you can contact Garret Smyth at 081-789-1045, or Russell Whitaker at 081-812-2661 (pager).