



# Cryonics

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## Philosophy of a Cryonicist

*Cryonics* Interviews Hugh Hixon — Part II

## Alcor is. . .

The Alcor Life Extension Foundation is a non-profit tax-exempt scientific and educational organization. Alcor currently has 25 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.

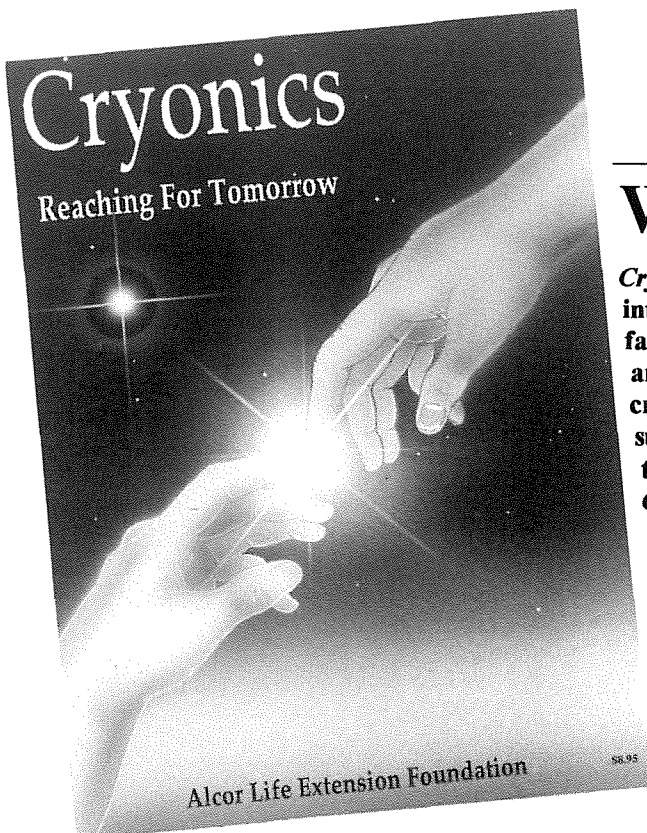
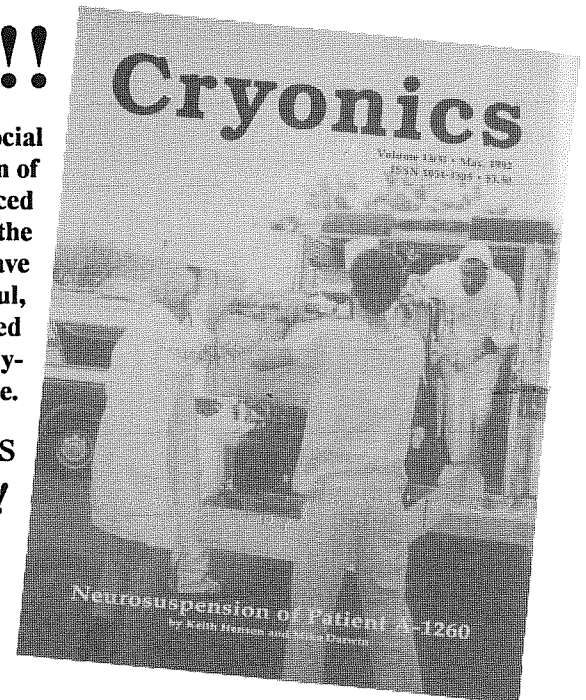
## Cryonics is. . .

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.

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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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*Cover: Hugh Hixon is interviewed by Ralph Whelan in this month's cover story.*

## In This Issue

Anyone who follows *Cryonics* and/or reads Cryonet postings is well aware of the strife and political upheaval that have dominated Alcor for the past few months. Some members have despairingly exclaimed that such divisiveness cannot go on, that the cryonics community is too small and too poor to waste its resources this way. Others shrug and grudgingly accept the turmoil as an inevitable component of growth. It's probably reasonable to expect a middle-ground of sorts in the future, where stress and strife will be present (especially as the membership total continues to climb), but the political edginess of the past few months will wane.

Before the political tension does wane, however, it's likely to mount a little bit more. As we move into 1993, two major changes face Alcor, one having just occurred and one just about to.

First, Mike Darwin, past President and head of the Transport Team for Alcor, has resigned from his contract to provide training for Alcor staff and volunteers, to serve on the Suspension Team during future suspensions, and to provide consulting regarding general readiness.

Mike's official employment with Alcor ceased at the end of last year, though he has participated in the subsequent five suspensions as an independent contractor. Throughout the past several months, however, the contractual relationship between Mike and Alcor became increasingly strained, as conflicts of principle and personality heightened. Eventually, it was clear that Mike would only work with Alcor under conditions which Alcor (the majority of the staff and Board, that is) found unacceptable, while Alcor would only work with Mike under conditions which Mike found unacceptable. Mike handed in his resignation.

The obvious question, then, is: Can Alcor do suspensions without Mike Darwin? And if so, how well?

The answer to that question is: *we'll see*. Really, the answer varies wildly depending on whom you ask. (And unfortunately, all of those most prepared to make an informed statement on the topic are quite clearly *interested parties*.) But the prevailing opinion among current staff and Suspension Team members is clearly that we *do* still have a solid suspension capability, and it's still the best there is in the world. And understanding and readiness in those of us

still on the Suspension Team are continuing — and *accelerating*. And there is now a much more concerted effort to involve “outside” medical professionals in future suspensions. I want to publicly thank Tanya Jones, Hugh Hixon, and Keith Henson for their relentless efforts in these regards.

The second major change: Carlos Mondragón has resigned as President of Alcor effective January 23, 1992, at which time Stephen Bridge will replace him as President and CEO.

Carlos has been president of Alcor since the now-infamous “Dora Kent Crisis” of '87-'88, when he took over from Mike Darwin, who had been president for five-and-a-half years. Carlos' five-year tenure has surely marked the healthiest half-decade in Alcor's twenty-year history, with a factor-of-ten increase in assets and well over three times the total membership base.

Steve Bridge has been a vastly dedicated member/volunteer since the late 1970s, when he was active in Indianapolis with Mike Darwin in IABS (Institute for Advanced Biological Studies), which later merged with Alcor. Steve has served as a past Editor of *Cryonics*, as a Certified member of the Transport Team, as President of the Indianapolis Chapter of Alcor, as a member of the Board of Directors, and more.

Like the departure of Mike Darwin, the change in presidency from Carlos to Steve is proceeding under an atmosphere of tension and disagreement. But, to make things a little bit clearer, both Carlos and Steve have written articles for this issue explaining their perspective with regard to this change and other things as well. Both articles are deftly written and insightful, and I will leave the interpretation of them to you.

I'll close by thanking the many members who've made their efforts and insights available during the trials of the past year, and by requesting the patience of all who — like us — are deeply concerned about the potential outcomes of the changes we're now experiencing. With your support and understanding, we will continue to improve, expand, and augment what has been and will continue to be the finest cryonic suspension organization in the world. Long life!

## Nock Talk

David Ross will be speaking on “Seven Paths to Immortality” at the Nock Forum in Hollywood on January 20, 1993. This is a

repeat of his ERIS 1992 talk in Aspen, Colorado. Ross has given numerous talks on Libertarian and Extropian themes.

Among the topics he will discuss are Life Extension, Human Uploading, Cryonics, Cell Repair Scenarios, and Transhumanism.

The talk should be interesting and challenging. For reservations, directions, and additional information, call 310-285-9321.

## Business Meeting Report Abort

If you page through this issue only to discover that your copy is missing the monthly Business Meeting Report, *don't panic*. The December meeting, as usual, turned out to be a Turkey. No business, no minutes, no kidding. Just music, lively conversation, and... well, turkey. Expect an extra-special (that is, extra *long*) Business Meeting Report in the next issue, as well as a few snapshots from that Turkey Thing that you were absolutely stark-raving *bonkers* to miss.

See you next year... *or else*.

## Is Cryonics Having A Baby?

One interesting side-issue that has popped up several times during the difficulties of the past few months is the somewhat sideline-ish role that *Cryonics* magazine has played. With so many powerful political hands being played, shouldn't *Cryonics* have been deep in the ring, reporting every nuance of the controversy? Or should *Cryonics* be free of the political winds of the moment, instead concentrating on scientific, social, economic, and cultural matters? What is the proper role of such a publication, and is the current format adhering to that role?

As usual, there are as many intricate, unassailable Position Papers on this topic as there are members. Refreshingly, though, they all seem to point toward the same problem: *Cryonics* is really two publications in one, in that it acts both as an informational and educational vehicle for existing members, and it acts as an introduction and marketing tool for *potential* members. Not surprisingly, in attempting to accomplish both of these tasks, it performs sub-optimally at both. And yes, the solution has always seemed obvious: create a newsletter, *The Alcor News* (or whatever), which spe-

cializes in informing existing members, so that *Cryonics* can shed those duties and serve better as a marketing tool. But where will the effort, time, and money for such a project come from? (I should emphasize here that if such a newsletter is created,

*Cryonics* would *not* lose its importance to existing members. Many items of interest and importance to members would continue to appear in *Cryonics*, while documents, or member-oriented exchanges would move over to the newsletter.)

Now, a qualified member is offering to donate his efforts in producing such a newsletter, if Alcor will foot the bill — which is likely to be in the \$2,000 to \$4,000 range. Is it time to make this split? Is the expense justified? What do *you* think?

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## Letters to the Editor

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Dear Ralph:

The October 12, 1992 issue of *Newsweek* magazine features an article titled, "ET, Phone Us," about NASA's plan to spend \$100 million over the next ten years to search for radio signals from intelligent extraterrestrials. One of the boosters of this project, astronomer Frank Drake, is quoted from his new book, *Is Anyone Out There?*, to the effect that if we contact ETs more advanced than humanity, they would probably be immortal because they, like we, foresaw that they could conquer aging and death through technological means, and then proceeded to do so as soon as their technology was up to the task.

As an immortalist I have to ask the obvious question: Would it not be better to spend \$100 million to make *ourselves* immortal before we spend such a sum in search of these hypothetical immortal ET's?

Long life,  
Mark Plus  
Wrightwood, CA

Dear *Cryonics*:

I often hear our members asking how they can help Alcor become a better organization. One way members can help is to show their support for our staff.

Recently the Alcor board authorized a health insurance package for our staff where Alcor pays for half the premiums and each staff member pays the other half. When I presented the plan to the Board, I told the Board that I felt that there was support for our staff and that our members would send in donations to cover Alcor's portion. Now that we have the insurance, I am writing and asking for your help.

Alcor's portion on the insurance for all the staff members is about \$300 per month. You can help by sending in your donation each month and marking it "Employee's Health Insurance Donation." Or, you may want to write to or call Al-

cor's Bookkeeper, Joe Hovey, and ask him to add a specific amount to your Emergency Standby Fee each month, quarter, or year (depending on which option you use to pay).

Just a simple note authorizing him to bill you for an extra amount will help us raise the extra money we need. In addition to giving the staff the protection they need with this new health insurance, your gesture is a show of your support to the staff for their dedication and hard work.

I urge you to join me in a show of support now by sending in regular monthly donations or authorizing Joe to begin billing you for a regular donation amount of your choice.

Thank you for your help.

Sincerely,  
David Pizer  
Alcor Treasurer

*Cryonics*:

Why is it that Alcor's change of management — the election of Steve Bridge as president — was announced by an official looking "release" on the Cryonet (authored by Courtney Smith)? Does this mean that Saul Kent's policy will henceforth be to use non-board members, non-employees to communicate exclusively with this or that part of Alcor's membership? Who's kidding whom about who's really in charge?

I had been willing to trust Alcor's board and staff not just because I knew them all, but because I expected them to be **accountable**. But how well can we trust an Alcor that is under the control of people who have no official position or legal responsibility for the organization?

If major changes at Alcor will now be made at "special meetings" of the board — called with minimum notice to the directors and no notice at all to members — we all have reason to worry. This was also the way by which Saul accomplished his takeover of Cryovita. What's next? Will the Patient Care Trust Fund be moved

to some bank in Timbuktu?

What exactly is being planned? I haven't heard or read any specifics, except that Saul once told me that once his Life Extension Foundation's problems with the FDA were over, he wanted LEF to combine with Alcor in order change the U. S. Government (!) — was he really serious? Whatever his plans, will he be able to maintain the one vote majority on the board by which Steve Bridge was elected in order to implement his agenda? If not, then where will be the leadership Alcor needs?

What happens when there is no time for a board meeting and Saul can't be reached? Alcor will now **depend** on Steve Bridge. I like Steve, he's a good person, but based on his resume, how can anyone predict the quality of his decisions? How does managerial experience in a children's library bureaucracy relate to the hard-core, ground breaking operations of a cryonics organization? I'm sure Steve will improve things as far as being organized is concerned, but how do we know how he will hold up under the pressure of being in command when that happens? Alcor needs a strong leader at all times — Steve will have the responsibility, but where will the authority be when things get tense?

This is all very scary because in spite of these worries Alcor is still our best bet for survival. How long will that be so?

Ever forward,  
David Brian Christiansen

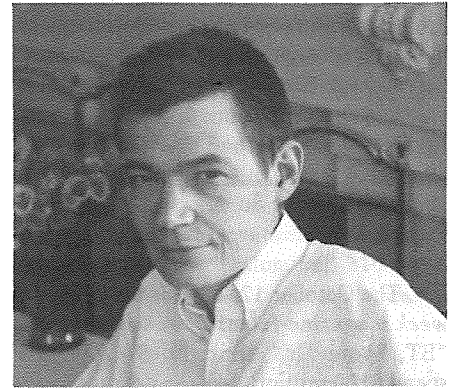
Dear *Cryonics*:

I would like to inform *Cryonics* readers that the members of the Patient Care Fund Advisory Committee and of the Endowment Fund Advisory Committee resigned on August 27, 1992.

Sincerely,  
Erik Klien  
Las Vegas, NV

## Gold from Dross

Michael Perry



As cryonicists we often encounter opposition from “experts,” particularly the scientific establishment, who are ever resourceful with excuses for why it is not worthwhile pursuing our goals. This problem — a resistance to innovation and change, however constructive and desirable it may be — is a recurring one, particularly in the halls of academia, where it might be hoped that the learned professors would be happy to consider new and exciting scientific prospects. One observer of this phenomenon, some years ago, commented:

“I have found the Professors as a body, though learned in received theories, to be among the *least competent* to decide on any newly discovered principle. Their interest, education, pride, prejudice, self-love and vanity, all rise in resistance to anything which conflicts with their tenets, or which outruns the limits of their own reasoning. So little do they look beyond the principles inculcated by education, and so tenaciously do they hold on to these, that when driven from one principle, they fall back to another, and when beaten from all, they return again to the first, and maintain themselves by dogged assertion, or charging their assailants with ignorance and a lack of science.”

Certainly this has validity for us if we replace “Professors” with “Cryobiologists” (who often are also professors) and consider the resistance to date of the latter to cryonics. It just so happens that the quotation is from an 1874 book by one John A. Parker, the main purport of which is to square the circle (that is, to construct, using only a ruler and compass, a square equal in area to a given circle, something that would be proved impossible in 1882). The book has other mathematical non-

sense, and in general is a piece of trash. The point is that sometimes words of wisdom, or other things of value, appear in unlikely-seeming places. In this column I’ve assembled, in addition to the above, a few other instances of such “gold from dross,” that are relevant to the problems we face in cryonics. There are many more examples and this should be taken as a brief introduction only.

The second case I want to consider concerns the noted science fiction writer Robert Heinlein. Many cryonicists are familiar with his haunting and beautiful novel, *The Door into Summer*, in which he uses the device of cold sleep to transport characters into the future, without aging. This in turn is only one of many works in which interesting futuristic themes are explored, that of immortality or greatly extended lifespan being prominent among them. Unfortunately Heinlein was unable to see the advantage to himself of a life extended through science, and he died in 1988 without being frozen. On the best of his wonderful ideas he couldn’t have been wholly serious and sincere, yet the ideas are there just the same. In deciding which to share one is confronted with an embarrassment of riches. The following is just one of many possibilities, but can be considered representative. It is not even directly concerned with the conquest of death, but like the quote above, with more general progress in scientific understanding, and the opposition and prejudice this often arouses.

The novel *Orphans of the Sky* concerns an attempted Earth expedition (“the Trip”), starting in the early 22nd century, to reach the vicinity of Alpha Centauri some 4 1/3 light years away. The ship, a large spinning cylinder with few windows

to the outside, is powered by a conventional atomic drive (realistically, there is no faster-than-light travel!), so centuries are needed for the journey, and generations live and die on board. (Here there is no cure of aging and in fact the technological level differs little, in many ways, from the mid-twentieth century setting in which the book was written.) The spinning provides artificial gravity, so that what we would call “outer” levels (closest to the surface) are “lower” to the inhabitants within. The ship is in reality a giant terrarium, warmed by atomic fuel and heavily insulated from energy loss to the outside, with the lower levels given over to farming. There is little incentive or need to venture forth from the self-contained environment. Knowledge of the original mission, and of the nature of things generally, degenerates as generations go by, accelerated by a revolt that has left a hostile crowd of mutant humans in control of the upper (inner) levels of the ship. The uppermost level includes the control room where there is a view port showing the depths of space and thus, that there is a Universe Outside, but this is mostly unknown to the low-level inhabitants. A mythology has grown up meanwhile, in *Paradise Lost* fashion, in which Jordan, the organizer of the expedition, and Huff, the leader of the revolt, play roughly the roles of God and Satan, respectively. Hugh Hoyland, a low-level inhabitant, is a young apprentice scientist, learning arithmetic and other advanced arts, but is also inquisitive enough to make an exploratory foray to the upper levels. There he falls into the clutches of Joe-Jim Gregory, a two-headed mutant who amuses himself (Joe, that is, while the other head, Jim, is asleep) trying to explain to his young captive that there is, indeed, a

World Outside.

"... 'Did it ever occur to you that the Trip was just what the old books said it was — the Ship and all the Crew actually going somewhere, moving?'"

"Hoyland thought about it. 'You don't mean for me to take you seriously. Physically, it's an impossibility. The Ship can't go anywhere. It already is everywhere. We can make a trip through it, but the Trip — that has to have a spiritual meaning, if it has any.'"

"Joe called on Jordan to support him. 'Now listen,' he said, 'get this through that thick head of yours. Imagine a place a lot bigger than the Ship, a lot bigger, with the Ship inside it — moving. D'you get it?'"

"Hugh tried. He tried very hard. He shook his head. 'It doesn't make sense,' he said. 'There can't be anything bigger than the Ship. There wouldn't be any place for it to be.'"

"Oh, for Huff's sake! Listen — outside the Ship, get that? Straight down beyond the level in every direction. Emptiness out there. Understand me?"

"'But there isn't anything below the lowest level. That's why it's the lowest level.'"

When Joe suggests imagining, as a thought experiment, digging a hole at the lowest level to get to the Outside, Hugh is upset.

"He began to get some glimmering of a possibility, a possibility that was unsettling, soul-shaking. He was falling, falling into a hole that he had dug which had no levels under it. ... 'That's awful!' he ejaculated. 'I won't believe it.'"

It's easy for us, from our knowing vantage point, to appreciate the absurdity of Hugh's objections and fears. For him the universe is spatially bounded, within a rather narrow compass (only a few miles around, in fact, at the lowest and broadest level). Any suggestion of the existence of something beyond what has always been everything is more than a little unsettling. On the other hand, as immortalists we know that a similar narrow focus is normal for people in general, whose lives, though not bounded in space as here are certainly bounded in time. Any suggestion of doing

something about *that* is likely to be met with dismay and denial, both at the possibility and the propriety of it. Heinlein was surely aware of this, and in his writings (in many passages at least) took the optimistic stance of favoring life extension, though unfortunately when all was said and done, not really.

For the last case of gold from dross I turn closer to home, to the man many regard as the nemesis of cryonics. Robert Nelson became notorious for his deceptions and his failed cryonics operation at the Chatsworth cemetery. Earlier though,

the atomic bomb by which we were "shocked into a reevaluation of the quality of life itself," and perhaps, called upon to improve it.

"The capacity of man to destroy himself provoked another response, perhaps arising from his conscience, and as he continued to build 'bigger and better' instruments of destruction, he also endeavored to find new ways of prolonging life. The Golden Age of Medical Research was launched, and the battle to conquer death and disease became everyman's personal war, regardless of his political and philosophical convictions."

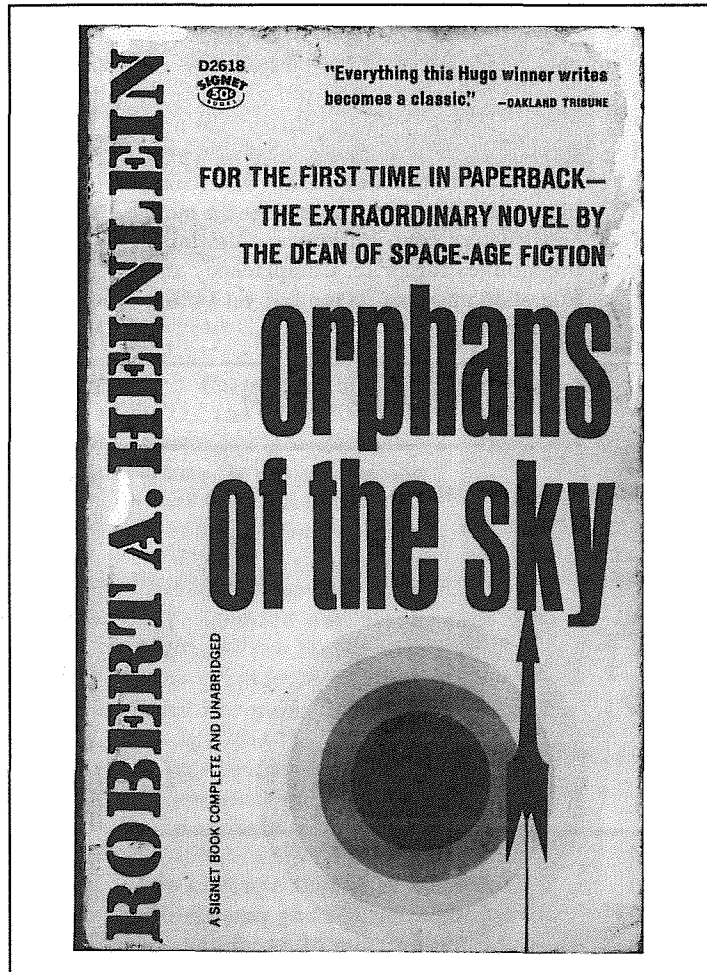
That a few were not content to let matters rest here should not seem surprising:

"Is it any wonder then, that someone would carry the struggle one step further and challenge the necessity for dying at all? Certainly, few men face the prospect of death with equanimity. Man fights this grim intruder with every weapon modern science places at his command and willingly contributes great portions of his capital, garnered in today's jungle-like commercial arena, toward the advancement of the science that might one day prove death unnecessary."

The point is then made that the freezing of Bedford ("Harold Greene" in the book) opens the possibility of life extension to every man, woman and child. There is a lively discussion and answering of objections on such topics as why we should freeze now rather than wait for the process to be "perfected" and why the "population explosion" is not so serious as to make life extension inadvisable. Some additional

space is devoted to an eloquent plea that dying children, especially, should be frozen. A couple whose son died of leukemia "dissolved their marriage, each one a constant reminder to the other of the cruel tragedy they both wanted to forget."

"And yet, I talk to doctors who steadfastly maintain that to advise a parent of the possibility of cryogenic suspension would be to give that parent false hope. *False hope*. There is no qualified scientist or medical man living today who can state unequivocally that what we propose is impossible or will not be accomplished even-



he had seemed sincere and committed. After the freezing of James Bedford, carried out under his direction in 1967, he wrote a book, *We Froze the First Man*. A few passages from this work outline an inspiring philosophical stance and a plea for action.

"We are living in an age when the old answers do not fit the new questions, and at the risk of great agony, we are forced to discard the pat and the obvious and open ourselves to the realities which have been thrust upon us with unexpected force ..."

Nelson reminds us of the advent of

tually. I pinned one such medical man down and asked him if he didn't consider it his responsibility as a physician, in accordance with the Hippocratic oath which clearly states that 'I will follow that method of treatment which, according to my ability and judgment, I consider for the benefit of my patients,' to advise a terminal patient, or more particularly his parents when that patient is a child, of the possibility and availability of cryogenic suspension...

"While this 'doctor's' answer was, admittedly, extreme, he said, 'there are too many people in the world already.'

"Tell that to the parent of a dying child!"

To briefly conclude, a few thoughts are suggested by the cases above.

One is that the "professors" are often right after all, and many good-sounding ideas are fatally flawed. Hopefully it won't be true for our special preoccupation of cryonics, but we don't know for sure yet, and probably won't know for some time.

We must resist making a "dogma" out of cryonics, *while continuing to further it as best we can*, as long as it continues to offer hope that alternatives cannot. Among other things, we need *improvements* in our procedures to offset the possibility that they aren't yet good enough to deliver all we would like. And if nothing else, we need improvements to more easily convince people to take cryonics seriously.

Second, good ideas can and often do come from questionable sources. We need to be able to make intelligent use of such ideas, wherever they come from, without extending our trust further than is warranted. This requires objectively assessing both the ideas and their originators.

Finally, we all have our golden moments, along with the less-than-stellar performances. So here I make a generic plea for some toleration of others' shortcomings, and an attempt to encourage the more constructive contributions and diminish the motives for strife. Complacency and toleration must not go too far, yet I think

cryonicists, being such strong-willed individualists, in their bickering and ego-clashes have often done much more harm than good. We need especially to keep this in mind as Alcor grows. I think the level of harmful divisiveness now is great, and it must diminish if Alcor is to fulfill its mission of defeating death, the *real* enemy of us all.

### Sources:

Heinlein, R. *Orphans of the Sky*, Signet, 1965, quotations from p. 29.

Heinlein, R. *The Door into Summer*, Signet, 1964.

Nelson, R. *We Froze the First Man*, Dell, 1968, quotations from pp. 124-126.

Parker, J. *Quadrature of the Circle*, Wiley, 1874, quoted in Beckmann, P., *A History of Pi*, St. Martin's, 3rd ed., 1974, p. 179.

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## Future Tech

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### Cool Heads

H. Keith Henson

Last time I said I might try to report on the controlled neuro cooler project — especially if we got it done. We didn't, but I am going to report on the progress to date anyway.

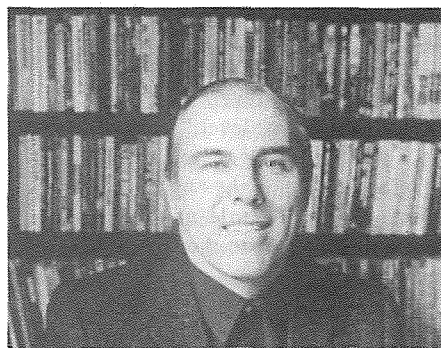
Early last spring, just after the first suspension of the year, Hugh Hixon and I were planning another pig training session. In the interest of getting as much as we could (using all but the squeal) out of the pig, we had decided to do a neuro isolation and glycerol perfusion on top of the planned blood washout, and then freeze the pig's head. A cryobiological researcher wanted to see what difference in damage we got with slow and fast cooling, so we were planning to do two with different cooling curves.

What made us delay this project was the work load that cooling puts on the staff. A rotating team of people has to watch the cooling process for about two days, and control it by adding chunks of dry ice to a five-gallon bucket of silicon oil. While we don't mind doing this for patients, the thought of subjecting staff members to this grueling task twice for something which really should have been turned into head cheese was just too much. Hugh and I decided to delay the training for a month or two, and build a computer controlled cooler.

We decided to stick with dry ice and silicon oil. Control of the cooling rate was to be by varying the amount of oil pumped into a can containing dry ice chunks. We

were very concerned that the little pump motors we were planning to use would not be able to start up near the temperature of dry ice (light oil gets as stiff as heavy grease) so the initial design included a pump operating continuously and a solenoid switching a hose back and forth between the silicon oil running over the dry ice and just recirculating back to the bucket with the patient. If more cooling was needed, the oil was to flow over the dry ice more of the time.

The initial design for the cooler consisted of a box made out of glued 2-inch styrofoam with a metal frame inside to hold the pump, solenoid, and two containers. I put it together, welding, cutting, gluing, etc. in my back yard over a period







Testing pump number two at my home workshop.

of two or three months, and wrote a control program partly by patching together chunks from other programs.

Hofstadter's Law says everything always takes longer, even when you take Hofstadter's Law into account! This project ran into delays about as bad as any I have ever seen. The changes in the Cryovita management left us uncertain about the conditions for training, and the political infighting massively diverted time and energy. In addition, we had the flood of suspensions last summer. Still, by the end of summer I took the cooler box and a disk with the program on it to Riverside.

Our first use was immediate! We had been using a timer to control the flow of LN<sub>2</sub> into a cooldown dewar for whole-body patients. This required constant fiddling with the on/off time by Hugh to keep on the cooling curve, and we had a patient being cooled. Hugh had me adapt the hardware interface and program to control the LN<sub>2</sub> valve. We got it to work almost immediately, and the remaining temperature descent for that patient was under computer control.

Before we had a chance to test the cooler system, the last suspension of the summer came along. When the perfusion was complete, we filled the unit up with dry ice and tried it — with full-time observation to be sure we could take over by hand if anything failed. It didn't work very long. We had ice clogging a drain pipe because a screen had been omitted, and, as the temperature went down, the pump flow rate went to near zero. The last part of that

patient's temperature descent to -78 degrees C had to be done by hand addition of dry ice.

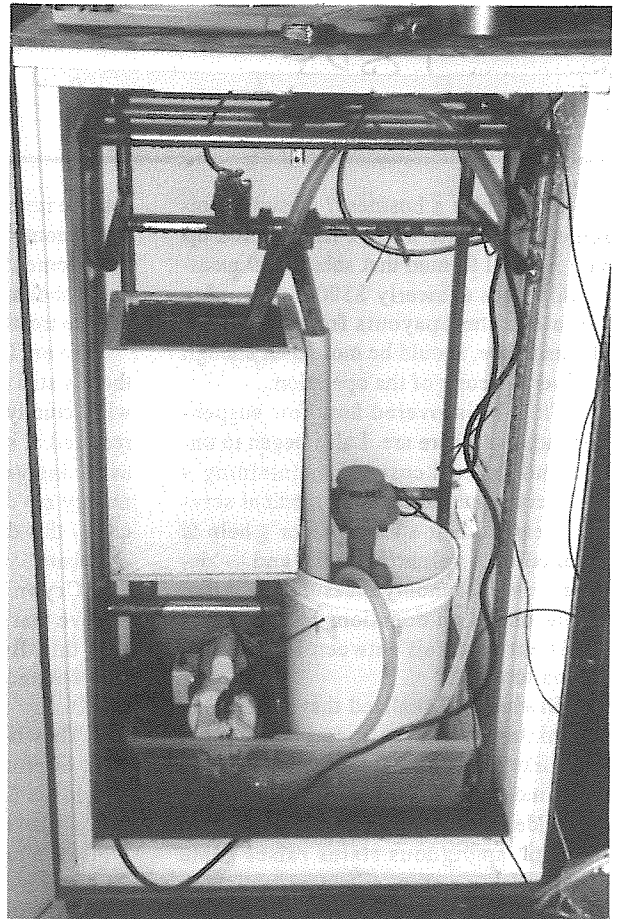
Cold silicon oil dissolves up a lot of CO<sub>2</sub>, and fizzes like soda water as it goes through a pump. It was my opinion that the little centrifugal cooler pumps we were using were turning the oil to unpumpable froth as the gas bubbled out. Hugh thought the higher viscosity at low temperature and the pump impeller shape was the problem. Turned out he was right. In a later test we found out that the little cooler pumps didn't do much better with cold oil even if we kept the CO<sub>2</sub> out of the oil.

When you don't have any good ideas, visit a junkyard! I did, and found a very nice little gear pump for about five percent of what it would have cost new. However, silicon oil is only "oil" in name — it does not lubricate worth a hoot. The first time we tried pumping silicon oil with it, the oil instantly turned black as the gear pump started to grind itself to pieces. I took it back home, and made some

hairy internal modifications the factory would never have approved of to get it to work without shredding itself.

After making the modifications, I ran it on my workbench pumping cold silicon oil for an hour (photograph). It was not much of a surprise that it started up without problems after pumping oil at near -78 degrees C — the pump was designed to pump liquids to 100 psi, and to start with that much back pressure. This let us simplify the control method. Though it had worked okay, switching the flow back and forth by moving tubing with a solenoid was kind of a kludge. Just switching the pump motor on and off to control the cooling rate is a simple solution.

We have always taken some trouble to cool patients slow enough to avoid "shell freezing." This is a condition where outer layers freeze first and then are cracked by inner layers expanding as they freeze. Once during a test Hugh and I needed a simulated heat load, so we dropped in a gallon baggie nearly full of water (in place of a patient), and ran at the maximum cooling rate. The shell freezing was *most* spectacular! The largest crack in the result-



The world's first automated neuropatient Phase II cooling system.

ing ice ball was 3/4 inch wide, and much of the volume looked crushed like snow. On the next test we tried a bag of Alcor's SHP-1 perfusate with 30 percent glycerol. I was impressed by the dramatic damage reduction cryoprotectives provide. Even at -50 degrees the bag of perfusate was not a hard solid, but would "give" like putty when squeezed.

I have only hit the high spots in this report. In the process we learned a great deal about heat-transfer problems, ice build-

up, materials incompatibility (you should see what silicon oil does to silastic tubing!), odd computer interface problems, surge suppression, and the usual obscure problems with software. We are likely to scrap the original design entirely and go to a chest version. One problem is that I no longer have the free time to build another box.

It has been nine months now, and while the project has turned out to be useful, we never did get to what we started

out to do. Now, unless Steve Bridge can reverse the "no animals" restriction imposed on Alcor as a condition for zoning, Alcor will be hard put to provide cryobiological researchers with some sample brains frozen at different rates.

Next time (if I can get it to fit), I might take a hard look at our efforts to guess how good a job we need to do for various future technologies to revive us.

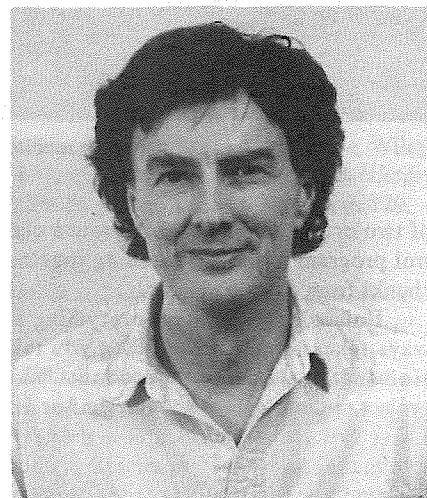
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## The Real-World Interface

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### Promoting the Unproven

Charles Platt



Is cryonics a business? I used to imagine that it was, when I first signed up with Alcor. I figured that substantial membership dues of nearly \$300 a year, plus the intermittent payouts from members' life insurance, should be more than enough to cover the costs of the operation.

Then I discovered how few suspension members there are. I also began to understand the real costs of maintaining a fairly elaborate emergency medical service. I learned that a lot of Alcor's help is supplied on a volunteer basis, and — despite drastic economy measures — Alcor has depended on donations to make up a persistent shortfall between income and expenditure.

Gradually, I realized that Alcor is an odd mixture: a nonprofit corporation that looks like a business from the outside but seems more like a charitable foundation on the inside.

This ambiguous status raises some problems. For a start, outsiders who think of Alcor as a business naturally assume that it is selling a service or product. And yet, this isn't true. Members of Alcor

receive nothing in exchange for their dues but a monthly magazine, an occasional announcement, and a promise: that if they are pronounced legally dead, their remains will be treated in a rather unusual way.

Even if this promise holds good, there's still no guarantee that the treatment will actually work. It *may* enable life to be restored at an indefinite time in the future, assuming various forms of advanced technology are developed. But the actual chances of this dream coming true are a matter of debate.

Cryonicists have good reason to believe that the picture looks a lot brighter than this. But they can't actually prove it, and consequently, everything rests on trust.

This being so, to what extent is it right to promote cryonics? To what extent should we feel comfortable about influencing public opinion in favor of our cause, while we have at least some doubt about its functionality ourselves?

When Mike Darwin resigned from Alcor last November (see *Up Front*), he

made some fairly pointed comments. One of them referred to "the recruitment of ever more members with promotions and contests and slick literature in a never ending quest to stay one step ahead of a Ponzi-style day of reckoning."

Let me focus on the first part of Mike's statement, in which he is reacting against attempts to "sell" cryonics. Presumably, he feels uneasy about promoting a service while we cannot prove that it works. So here we go again, grappling with the ambiguous status of cryonics. To what extent is it a legitimate business? To what extent do we have a real service? And to what extent is it right to go out of our way to win people's trust, instead of passively waiting for them to come to us?

A year ago, when I thought of Alcor in simpler terms, I started wondering how to promote it. My motive was purely personal: I want Alcor to save my life, and I assume it will be better able to do this if it is better funded and has more members.

So, what could I do to achieve my goal? I focused on the gap between the

cryonics mindset and public attitudes in general. (This is the same topic which I am now addressing in these columns.) I saw the general public perceiving cryonics as being ghoulish and morbid. How could this misconception be corrected?

Well, when a normal business wants to make its product seem more valuable and attractive, it uses standard public-relations techniques. For instance, it may offer one of its products as a prize in a competition.

So — why not? Why not offer a whole-body suspension as a valuable prize?

Through my work as a science-fiction writer, I knew Keith Ferrell, the editor of *Omni* magazine. Keith had already bought a one-page article from me endorsing cryonics, and *Omni* was in the habit of running contests. *Omni* also had a highly effective public-relations department. Suppose the magazine asked its readers to write 500-word essays titled something like, "What I would like to see and do in the twenty-second century." *Omni* could publish a selection of the essays (which would fill pages of the magazine at zero cost), and the person who wrote the winning essay would have a chance — one day — to wake up in the future that (s)he had tried to imagine.

The benefits were potentially great, all around. People who entered the contest would obviously be interested in cryonics. Alcor could obtain their names and addresses and send them promotional literature. Meanwhile, the contest would be getting exposure on radio and TV, because nothing like it had ever been done before. It would boost the sales of *Omni*, and it would spread the word about Alcor.

I saw two very important additional advantages. For the first time, Alcor would be controlling the media, instead of passively submitting to journalists and hoping they would be sympathetic. Also, so long as the contest winner remained alive, Alcor would not have to pay for the prize! In fact, if the winner was in reasonably good health, the cost of the future suspension should be coverable via a life-insurance policy. The prize would genuinely be worth \$120,000 (an important fact in promotion), but it would not necessarily cost that much.

I proposed my idea to the Alcor board of directors. They approved it. I pitched it to Keith Ferrell. He loved it.

Many months passed, because Keith always had something a bit more pressing to do than grapple with the legalities of

## How Many Are We?

Alcor has 349 Suspension Members, 463 Associate Members (includes 130 people in the process of becoming Suspension Members), and 25 members in suspension. These numbers are broken down by country below.



Country	Members	Applicants	Subscribers
Argentina	0	1	0
Australia	13	1	4
Austria	1	0	1
Canada	10	3	27
Denmark	0	0	1
Estonia	0	0	1
Finland	0	0	1
France	0	0	4
Germany	1	0	1
Holland	0	1	0
Italy	0	2	2
Japan	2	1	0
Lichtenstein	0	0	1
Lithuania	0	0	2
Mexico	0	0	1
Norway	0	0	1
Russia	0	0	1
Spain	6	2	0
Sri Lanka	0	0	1
Sweden	0	0	2
Turkey	0	0	2
U.K.	13	5	8
U.S.A.	303	113	265

this bizarre idea. But now, it seems that the contest is finally turning into a reality. Early in January 1993, so far as I know, it will be announced. (I am writing this column at the beginning of December 1992.)

The question remains: was this an ethical thing to do?

Keith asked me to write an introduction to the contest, telling people the facts about cryonics. I did so, as honestly as I could. I warned people (for example) that no mammal has ever been wholly frozen and resuscitated. I made no claim, explicit or implicit, that cryonics will definitely work.

And yet, obviously, the purpose of the contest is to make cryonics look better to the general public. After all, the whole idea of public relations is to manipulate people's perceptions.

From the cryonic viewpoint, people's perceptions *need* to be revised. Cryonics has received some bad press, over the years. It's about time we had a chance to get our side of things into print.

Yes, of course — and I'm sure that executives in tobacco companies feel exactly the same way about *their* product!

Cryonics is obviously more ethical to promote than tobacco. Amortized over a lifetime, it probably costs less; and one thing we can say for sure is that it has no chance of killing anyone, since the people who submit to it are already dead (in conventional terms).

I feel uncomfortably aware, though, that this contest is the first step along a path that ultimately leads to overinflated claims, misleading packaging, legal disclaimers in small print, and downright lies. The emphasis can so easily shift toward selling the service instead of improving it. Money is so easily diverted away from research, toward advertising and promotion.

This, I think, is what Mike Darwin is concerned about in his quote above. Fair enough; I share his concern. We have to be vigilant and self-critical as cryonicists, because there is no easy way for anyone — including us — to test our claims.

Personally, even though I understand more about cryonics than I did a year ago,

I still believe that the best way to strengthen Alcor is to spread the message as actively as possible in the hope of recruiting new members. If this is carefully done, it can work like a system of positive feedback, in which the new members provide money which helps to improve the service, and the improved service can then be promoted to attract new members.

I'm glad that Mike Darwin has voiced his criticisms, because any cryonics organization needs them as an antidote to wishful thinking.

At the same time, I think my view of positive feedback is slightly more realistic, right now, than Mike's pessimistic assessment. I am not formally affiliated with Alcor in any way (except as a suspension member), but I have met and talked to everyone who works there, and I have considerable faith in them. So long as Alcor remains honest about its real capabilities, I have no regrets about promoting it as often and as actively as I can.

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## A New Era Begins

*Carlos Mondragón*

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Alcor will soon have a new administration. I will continue to do everything in my power as a suspension member and as a director to promote the interests of Alcor's suspension patients. I hope you will do the same.

We are fortunate that this transition is not taking place in the midst of an external attack, as was the case the last time Alcor changed presidents. Over the past five years, we've successfully protected our patients from danger, established our member's right to choose cryonic suspension, and upheld the legality of cryonics. Simultaneously we've grown from 97 suspension members to 349; and assets grew from \$223K to over \$2 million. And most of the media attention we get no longer treats us like "kooks."

In the hope that some of my experience will survive within Alcor's "in-

stitutional memory," I've written this brief history of my tenure as chief executive and the manner by which I believe future presidents should be evaluated.

### The Last Five Years

So now here are some highlights of what I consider to be some of my most important decisions and policies, and the results for Alcor.

My tenure as Alcor's CEO began when the organization was under attack. And one of our patient's lives — Dora Kent — was at stake. Our continued existence was not a certainty. Our resources consisted of some very dedicated people and very little money (in the grand scheme of things, this is still true now). Our most important obligation was to our patients in suspension (also still true). And our lia-

bilities were growing by the day: legal fees, greater numbers of bureaucrats taking an interest in us, sensationalistically negative press (no longer true).

In dealing with the situation, my first act was one of prioritization of objectives and maximization of resources: I assumed command. The president, Michael Darwin, had become non-functional. Jerry Leaf was then vice-president, but he was doing something much more immediately important and something which he was best qualified to do. I looked at the ninety-seven names on the suspension membership list. Then I called Jerry and told him that unless he objected or had a better idea, I would take over.

Jerry readily agreed and so I called Mike and all the other directors in sequence. There was no objection. At the next monthly meeting of the board



(February, 1988) Mike resigned, Jerry nominated me, and I was elected without dissent.

My first action items as CEO were dictated by my priorities as a director (survival of patients, ability to suspend members, therefore survival of Alcor) in the context of the circumstances. We had to have money freed up to pay lawyers (no telling how much this would eventually come to), so the first thing I did just as the board meeting ended was to tell two of Alcor's three employees that we could not afford to pay them any longer. I told Hugh Hixon that we would only have limited amounts to pay him for work on an hourly basis as he was needed and I told Art McCombs (who had been getting paid on a piece-work basis) that he was back to being a volunteer. Mike was retained on full salary because I considered him essential and he had no other means of supporting himself.

Looking back at the 1988 financial statements, it is impressive to note just how little room for error we had. As things turned out, donations for legal bills rolled in at a much greater rate than I had hoped for. And the legal victories were achieved with the help of members such as Keith Henson, Steve Harris, Art McCombs, and others who found ways to use the system to make our adversaries live up to the law.

In my estimation, the second most important decision I made in those early days was to reverse Mike's long standing policy of minimizing media exposure. I had noted that even the most negative press was getting us inquiries from "instant cryonicists." These were people who didn't need to be convinced, they just needed to know where to find us. I believed then, as I do now, that more members meant more resources with which to achieve our institutional goals. Further, I was sure (based on the brief encounter I had with the press on the day I was arrested by coroner's deputies) that I could have a positive impact on the tone of the reporting about cryonics and Alcor.

The quantity of reporting on Alcor since my presidency began (based on a visual once over of our files of clippings and videotapes) is about fifteen times more than everything accumulated in prior years. And subjectively, I think the content is closer to being fair.

According to Charles Platt's article in the August 1992 issue of *Cryonics* (page 14), the media is by far the largest source by which new members have heard of Alcor. I admit that my desire to have Alcor

grow, and to use the media to that end, has at times been a factor in other decisions I've made (such as the Donaldson litigation — more on that later). Given the results, I think I've followed the right policy right from the start in this area.

Its doubtful that all of the consequences of the Dora Kent suspension could be counted by one person. The first which comes to my mind is our litigation with the State of California Health Department. (Their attempt to administratively outlaw cryonics was not a result of Dora Kent, but the manner by which they handled us was.) My initial attempts to reach a negotiated settlement with the State were unceremoniously rebuked. (For a full account of the specifics of this case, see my article in the November 1990 *Cryonics*.)

Then Dick Jones, twenty years a cryonicist, ten years an Alcor member, and by then terminally ill, became involved. Since our attorneys told us we would have a better chance of success with a terminally ill member as a plaintiff, and since until this matter could be resolved we could not expect to extricate any of our suspension members from any California Hospital, Dick was motivated to participate.

I feel wonder at the reach which even the smallest mistakes can have when the intricacies of interpersonal relationships are involved. In the first year and a half of my presidency, I was employed full time at a factoring company (private bank) and so I was limited to the evening hours and time stolen from my employer to do Alcor business. Saul Kent had been actively interfacing with our attorneys on the matters consequent to the Dora Kent suspension, and so he also took an active role in the Health Department issue. Saul's energy and enthusiasm are boundless and he had been a most valuable asset. I made what seemed at the time to be a minor error in not realizing that Saul's buoyancy wouldn't be well received in all cases.

It was Saul who approached Dick Jones with the idea of being the plaintiff in the Health Dept. suit. Predictably, Saul presented a glorious picture of victory and the *fantastic press attention we would receive*. Dick knew the importance of proceeding, but was deeply troubled about the possibility of media attention (he was ill with AIDS and he had never publicly dealt with his personal life). Dick's partner, Jenna McMahon, was aghast.

I received a frantic phone call at work from Dick and Jenna. It took me half an hour to convince them that we didn't have to go for publicity and that the suggestion

of their lawyer (Barrett McInerney) of using a fictitious name was acceptable to Alcor. I assured them that we would make no use of Dick's name. Dick decided to go ahead, but he remained somewhat disturbed. Unfortunately, this incident set a tone, at least in the minds of Jenna and Mr. McInerney, which eventually led to disastrous consequences when Dick's health began its downward spiral toward deanimation.

We'll never know all of the machinations which led to Dick's signing of a second will and trust in his last hours, documents which gave part of his money to relatives. Alcor could not be party to the ensuing litigation over his estate. Saul Kent as a fourth successor trustee of the original estate plan initiated the litigation and single-handedly managed it until it came time to settle.

Cryonics is a new endeavor. I've always recognized that mistakes are inevitable, and if not fatal they are useful as lessons. None of us had any experience with estate litigation. We do now. I became active on behalf of Alcor as a beneficiary when it came time to end the Jones Estate litigation. I hired two attorneys to represent us at an hourly rate less than half of what all the other lawyers on both sides of the case were getting. When it was clear that Saul wasn't going to win, we accepted the family beneficiaries' invitation to a settlement conference. I don't think our lawyers could have done any better in salvaging the situation. The settlement agreement was, at that point, the best we could hope for.

I do not mean to imply that Saul Kent did not have my full support as he was handling the estate litigation. He did. And he had the support of everyone on the board of directors, except Mike Darwin (Mike predicts every disaster conceivable, so he can't help occasionally being right). The point here is that this was our most costly mistake, and I have acknowledged it and learned from it.

## Finances

Once the Jones estate litigation was settled, Alcor began receiving amounts previously unheard of in the cryonics "business." Three months before the settlement, I presented the board of directors with an eight year financial plan. The plan made very conservative assumptions in all respects. It was designed to leave Alcor with an endowment large enough to generate investment income equal to its internally projected increases in spending as its

income from the estate dwindled, while assuming zero membership growth.

The fly in the ointment was that the actual income to the estate turned out to be radically lower than what everyone (including Dick and Jenna) expected. When this happened, I informed the board of directors in March of 1990 that we had two choices: make immediate and radical cutbacks in order to preserve our income from the estate as capital, or, adopt a riskier plan that would rely on a continuation of our recent growth rate. The board opted for the latter, with no dissent.

The new plan was also less ambitious in its scope: it went out only five years. It did provide for an endowment fund. As of April 1991, this plan was on track. At that point, a majority of directors became anxious about the perceived riskiness of the plan.

On April 23, 1991 we held a financial/budgetary planning session. In attendance were board members, the Alcor staff, and Saul Kent and Courtney Smith. Once again, a plan of my design was accepted. This time however, everyone had input and the plan was unfolded, step by step, with everyone having an apparently clear understanding of its consequences.

The biggest difference in the new plan was that it provided for a very substantial reserve (\$400K) to be held as capital in the Endowment Fund. To accommodate this, the staff agreed to a 25% cut in salary (excepting Mike Perry, who is paid out of the Patient Care Trust Fund, and Ralph Whelan, who had just been hired with a directed donation). The staff was reduced by one (Art McCombs), and other less consequential cuts were made. Continuing growth was assumed, and a diminishing operating deficit was predicted through 1994, at which time our (non-endowment) reserves and the operating shortfall would both be down to zero.

As of now, we are well ahead of projections. The Endowment capital is *completely intact*. (An audit of the Endowment by a member who is also a CPA has verified this.) The operating accounts have been in surplus territory for several months, and while this may not hold up consistently, we are ahead of schedule.

These details aside, the objective reality is in the progression of our financial statements. I don't think I need to comment further, just have a look at them. In five years, our assets have grown from \$223K to over \$2 million. Net worth has grown from \$219K to over \$1.6 million (excluding the recently established reserve

for patient care for accounting consistency). Because some of Alcor's patients had inadequate or non-existent funding, five years ago the Patient Care Fund covered only 73% of our currently required minimums. Now, the Patient Care Trust Fund covers 103% of minimum funding for long-term care.

Another financial consequence of Dora Kent was a substantial loss of money to fraud. Early in 1988, we were all still very understandably paranoid about possible state action against us. (We had been raided twice, accused of murder and grand theft, and we had been told that the Cryonics Society of New York had been put out of business by \$1,000/day Health Department fines.) Everyone wanted to get a substantial amount of money abroad.

There's no way to sugar coat it: we got took. The "banker" we used turned out to be a fraud. Another mistake to learn from. A simple enough lesson: an office suite in Newport Beach, an impressive suit, and the best recommendations don't guarantee integrity.

## More Litigation

There were four other legal battles consequent to Dora Kent. Each of them yielded a vindication for Alcor and long-term positive results for cryonics generally.

With Dave Pizer's financial backing, those of us arrested in the first coroner's raid sued the county and collected a \$90K settlement. There was no monetary impact for Alcor, but this victory boosted morale and enhanced our reputation in county officialdom.

In a battle with the District Attorney, we went all the way to the State Supreme Court and affirmed our Fifth Amendment rights (and everyone else's as well). The cost to Alcor was only \$2k. That's because Chris Ashworth put me in contact with the dean of the California Trial Lawyers Association, and I convinced him that it was in his organization's best interests to take the case *pro bono*. Three of our suspension team members were saved from having to testify before the grand jury about the suspension.

We didn't have to go to court to win against UCLA's false charges of stolen property. Instead, we persevered administratively and after much correspondence from Jerry Leaf and myself (as well as numerous phone calls from Keith Henson and some supportive detective work provided by Steve Harris) they relented.

Our property was returned.

And just a year ago, the California Medical Board dropped its investigation of Steve Harris. This case was critical to Alcor (and cryonics generally). If Steve had been injured in any way as a result of his association with us, it would have been a long time before we could expect any physician to come near us again. We spent over \$45K on this matter. Along the way we also got a superior court ruling that propounded a *pre-mortem* right to cryonic suspension. That ruling was helpful in the Health Dept. case, and every other subsequent legal brief we've presented.

I was criticized at the time for the very aggressive attitude I took on that last case. I was adamant about it because I believe that loyalty on that level is in the best *long-term* self interest of Alcor. The hardest thing we must achieve is the long-term survival of Alcor with its *purposes* (read that: patients) intact. That can only be done if we stand up for our own (ourselves). Only then can we expect — individually or as an organization — to be stood up for.

And this leads to one last episode in our litigation saga: The Thomas Donaldson case. Again, there was substantial criticism of my aggressive advocacy and support of that lawsuit (the cost was too much, we couldn't possibly win, we would antagonize the medical community, etc.). The board was not close to being united on this issue. Then at a board meeting, Art McCombs gave a short impassioned speech, and those he didn't convince, at least quietly acquiesced. The gist of what he said was that as long as it was financially feasible to do so without endangering the organization, we had an obligation to *try*. The Dora Kent case had established our reputation for being the cryonicists who fought for their own, and *that* is something we will never be through proving. I took a raise-your-hand poll of the members present at the meeting. Two members and one director still weren't convinced. We went ahead anyway.

There was no money in our operating plan for the Donaldson case. To this day, some of my critics say that that litigation was a mistake. After all, we lost and we sure could use the money we spent. But I don't see it that way. We are still getting dividends on that money. Alcor got millions of dollars worth of free publicity. That publicity brought new members as well as new subscribers, and the greater level of awareness it brought about will continue to pay off for years. Thomas him-

self has told me he had little hope of winning, but he knew that someone had to be the first to try. His courage in subjecting himself to the whole thing will not be forgotten. And because the Appellate Court's decision gave some way, the next time the legal issues will be substantially narrower (plus which, they did reaffirm the right to post-mortem cryonic suspension). The added financial burden we took on in the Donaldson case was a small risk relative to the added strength it gave Alcor.

Now, there is only one bit of litigation pending — our suit to recover our fees in the Health Dept. case. And it isn't costing us any money. A not insignificant side benefit to Alcor of all that litigation has been my own practical legal education and store of experience. When it came time to argue the case of our tax-exempt status (property only) before the State Board of Equalization, I was able to write the brief and present a professionally organized case. (They started out thinking I was a lawyer until they got to the page that listed my salary.) We still don't have a decision from them. I took the risk of not hiring an attorney by looking at the costs versus costs. The property taxes we will have to pay if we lose are in the low five figures, but our legal fees would have been too. Steve Harris and Dave Pizer provided excellent help with this one.

## "Running Alcor"

These are the most major of the policy level decisions I have made, on my own, or with the board, and a flavor of the way I went about implementation. Some things didn't work out, others did. In every case, I think I learned something, and in every case I am comfortable with the thought processes that led to the decision. On balance, the results are in our favor.

The other half of the executive equation is what's known as *management style*. It is fruitless to argue the subject because it is one of subjective biases. One can only reach objectivity at the level of the results reached.

Much has been written or said about my being a "crisis manager." I appreciate the intentions of those of my supporters who have found virtue in this. But I don't like it. There is a negative connotation to the term that doesn't apply. Among my critics, the most lucid on this issue has been Mike Darwin. It is one area in which Mike and I have a basic philosophical difference.

Yes, I do very well in crisis situa-

tions. I don't freeze up. I make decisions fast and well. But this is something that every chief executive *had better be able to do*. I remember one day when Jerry Leaf introduced me to a visitor as "our fearless leader"; to which Mike Darwin muttered, "That much is true." What Mike and others have perhaps failed to fully understand is that courage in every corner of one's character is the first requirement of a leader.

I can't imagine courage with a fundamentally pessimistic psychological bias (though I concede it could be possible). Some time ago, I had a boss who never used the word "problem." Instead, he would always substitute the word "opportunity." Every single time. We never once had a problem in our department; we had lots of opportunities. That man's methodology may have been hokey, but his philosophy was right, and as a matter of fact, he got good results.

If you aren't sure that Alcor faces probable future circumstances that will require leadership of this kind, consider the decisions that had to be made the night of Jerry Leaf's suspension. Everyone involved offered input. The first question was whether or not to get our lawyers to wake up Judge Muñoz. The risk was a clear escalation of hostility with the medical examiner who had already agreed to come out in eight hours, and who could just as easily make it longer, find another judge, insist on an autopsy, drag us through months of litigation, etc. The only possible benefit: about eight hours' less ischemia for Jerry. I took the chance because everything inside me said "things will work out" because "*I'll see to it they work out.*" Muñoz called in an order. We could take Jerry away right away, but the coroner's deputy was on the phone. I compromised: we would wait another 45 minutes, they would come do their visual examination and that would be the end of it. I balanced the extra hour of ischemia (at that point four hours so far) against the specter of protracted litigation and the possibility of Muñoz getting ultimately reversed and Alcor facing a court order to hand over a patient for autopsy.

I am not so much of an optimist that I think that from now on all of our members will deanimate in an accommodating hospice program.

What is harder to illustrate, is that the much less important, day-to-day, mundane and common *non-crisis* decisions have to be made with similar thought processes.

I do not use the same management

style at Alcor that I've employed or observed at other places. Our organization is unique. Our purpose is unique. Our people are unique. In most organizations, employees are primarily motivated by the need to earn a living. In some, a degree of commitment to the corporate mission is needed. That degree of commitment is greatest in the non-profit world and must be higher in inverse proportion to the resources of the institution and in direct proportion to the radicalism of its cause. The equation at Alcor is as extreme as it gets.

The problem is made even more interesting by the fact that the very nature of our cause attracts persons who are extremists in their individualism, their self-interest, their egos, and quite often their opinions. Add to that the fact that nearly all are first class intellectuals.

If all of this weren't enough, when I started, Alcor's staff — none of whom I had hired, and two of whom were directors of the corporation — were already intensely hostile to one another. Hugh Hixon and Mike Darwin seemed to communicate only by loudly arguing, Mike and Arthur McCombs flat out hated each other, and Hugh and Arthur got around each other like two tomcats in the same house (carefully, but seldom in all-out battle). Only Mike Perry seemed to get along with everyone, though he wasn't especially well treated. Jerry Leaf was helpful in that his mere presence inspired people to behave — nobody wanted to look foolish in his eyes. Jerry was *not* helpful in that he often egged on Arthur against Mike Darwin. Oddly, I did not feel overwhelmed by all this. For the past year, at least, interaction among the staff has been professional and cordial.

I believed when I started, as I do now, that our staff is comprised of motivated, intelligent, honest, inventive, and hard working people. All of them started as volunteers. Within their areas, they are all positively and rationally self-directed. My job has been to foster a *collegiate* atmosphere where each could do his or her best. I have functioned mostly as an arbiter on a day-to-day basis.

Various people have told me I should have imposed a more structured environment. I don't agree. When one has a group of people willing to take on the long hours of hard, often tedious, often challenging, occasionally interesting, and seldom exciting work that we do, one does not ask them to keep regular hours, dress up to a code, and suffer the constant interference

of a manager that knows less about what they are doing than they do. I have been careful not to stifle or dampen the drive, creativity, enthusiasm, initiative, and commitment of people who have shown their willingness to put their lives on hold and on the line for cryonics.

When there is a disagreement on how to proceed with a given project, I often don't understand the technical details of the biological or silicon based system being debated. So I ask enough questions to get something of a feel for what it's about and what is at stake, then I decide. The decision is based on the strength of the convictions involved, the working relationships, whose area of responsibility is involved, and because I am human, my unconscious biases.

The degree to which my style has worked is evidenced by the productivity of the staff, the quality of their performance and their unflinching dedication. They deserve all the credit for that. All I do is offer all the support, encouragement, and loyalty I have in me.

## Two Other Important Areas

Of major concern to many Alcor members is the relative paucity of research done at Alcor over the past few years. Previous portions of this article describe where our resources were being directed. No amount of research we could have done would be of any benefit to our patients if our legal fight for survival had been lost. That notwithstanding, *money was only a secondary impediment to research.* (The TBW (Total Body Washout) series done in the mid-'80s cost less than \$25k).

One of my first acts as president was to write a research fund policy which the board passed four years ago. A fund was established with a simple procedure for getting a grant — internally or outside of Alcor. Until August of 1992, no grant applications were received. On those few occasions when Mike Darwin (who was director of research until December, 1991) had projects, he got my encouragement and support. At those rare times when he asked for money, he got it.

For the immediate future, our ability to use animals in research is constrained by a recent zoning restriction which discriminately prohibits Alcor from doing so. (Three years ago we began a search for new quarters. Hopefully, Alcor will soon move to a more benign environment.)

In reality, there has been research *and development* at Alcor in the past few years.

Not like the glamorous and dramatic TBW's of the mid-'80s. Jerry, Hugh and Mike did accomplish patient care improvements such as the new big-foot dewar storage system for whole body patients. Mike continued to improve transport procedures. And work has begun on an automated patient cooling system (developed by Keith Henson, Hugh Hixon and Scott Herman). Funds are still available for research on a moderate scale, and I do hope that the board of directors will make grants to worthy applicants.

The most important concern for living suspension members is Alcor's ability to suspend us. In my opinion, Alcor's emergency response and suspension capability is better now than it has ever been, and still the best in the world. When Mike Darwin was Transport Team Leader and Jerry Leaf was Suspension Team Leader, they both got total support from me. In every instance, if Mike suggested that money be spent on something to improve suspension capability (and there were many), I found a way for us to afford it. Since Jerry's suspension, we have made training a top priority, and established working relationships with two contract surgeons, one of whom has displayed a strong interest and caring about the work. When Mike resigned last year, the training efforts intensified, spearheaded by Tanya Jones and Keith Henson.

Alcor now has 21 *Certified Transport Technicians*, that's one for every sixteen suspension members (15 have experienced at least one suspension, and 7 have helped at least five suspensions). And those numbers do not include people such as Hugh Hixon (25 suspensions), Keith Henson (10 suspensions), and myself (20 suspensions) — people who have a tremendous store of cryonic suspension experience and skill. Nor does that number include the professional contract surgeons and perfusionists available to us. Three more transport techs are being trained right now. But until we have perfected suspended animation, there will always be room for improvements. If the present rate of growth in the number of suspensions continues, it won't be long before Alcor can afford medical professionals in almost every position on the suspension team. With adroit financial maneuvering, economies of scale will make that transition possible.

## Evaluating the Chief Executive

The primary task of any corporate

board of directors (in line with *any* set of organizational priorities or mission) is the selection and ongoing evaluation of the corporate officers. The directors' second priority is the setting of organizational policies, a responsibility shared with the chief executive. A fair performance appraisal is based on the job description involved, the employee's general level of competence, and his/her level of success in reaching specific pre-arranged goals. The position of chief executive is no exception and should be evaluated in this way — except that his or her pre-arranged goals are those of the organization as a whole and are not specific.

Alcor's Bylaws state the primary objectives and purposes of the organization as:

a) to promote, foster, and conduct basic and applied research in all areas of the life extension sciences including, but not limited to, cryonics, cryobiology, gerontology, molecular engineering, and cell repair technology;

b) to engage in the application of whole body cryonic suspension, neuro-preservation, and other post-mortem and biopreservation techniques and to provide these services to the general public;

c) to promote, encourage, further and carry out research to develop techniques for short-term and long-term fully reversible arrest of metabolism in man and other animals, i.e., the development of suspended animation;

d) to promote, encourage, further and conduct research to allow for repair, recovery, and rehabilitation of humans placed in cryonic suspension, neuro-suspension, or other biopreservation techniques;

e) to act as a bank or storage facility under the California Uniform Anatomical Gift Act (section 7153.5(a) of the California Health and Safety Code) for tissues, organs, and all other human remains as may be required to further the purposes of (a) through (e) above;

f) to engage in the dissemination and administration of techniques and information for extending human life span, health and quality of life;

g) to act as a trustee, conservator, guardian, executor, power of attorney or



medical surrogate as may be required to further the purposes above;

h) to sponsor seminars, exhibits, workshops, displays and other activities to educate the general public about the life extension sciences in general and cryonics in particular;

i) to provide financial support, research facilities, equipment and supplies required to carry out all of the above objectives.

This then is the context within which I think Alcor's chief executive should be evaluated. Has the chief executive's actions and management furthered the purposes of the organization? How much progress has been made? Is the degree of progress achieved acceptable given the environment and resources available? To the extent that the chief executive has prioritized the organizational purposes and objectives, was that prioritization correct?

Has the chief executive made the best use of the organization's resources in order to further its purposes? I.e.: Are the employees who report to the chief executive successful in their jobs? To what extent has the chief executive provided financial planning, and have those plans been reasonable? What is the financial state of the organization? What is the overall quality of the organization's products and programs? Has the chief executive balanced risks and opportunities in a manner appropriate to the organizational priorities?

These are the premises which I held when I became a director and officer of Alcor in April 1987 and when I became CEO in January of 1988. These are the questions I've asked and the standards by which I have evaluated myself whenever I've considered the matter.

All of the questions I posed above boil down to one word: *Results*. What is the "bottom line?" Ultimately, any executive's performance must be evaluated by that standard: the more a job is managerial and the less it is technical, the more results become the *only* objective measure available.

In the final analysis, my view as a director is that the corporation has been growing, is financially stronger than it has ever been, and is better able to protect its patients and provide its members with constantly improved cryonic suspensions.

I have friends in suspension counting on me as a director to be very careful

about Alcor's future. It is my most important task to make sure that future directors share my commitment and priorities and values. The selection of a chief executive for Alcor and its directors must never be done on the basis of popularity. And even qualifications are only the second consideration. Common values come first. Let me explain: When I vote for a new director, I'm choosing someone whom I will have to trust with my life if I end up in a dewar. And if I hope to ever get out of that dewar, that director will have had to have voted for new directors also trusted and committed to our common self-interest, *above all else*. Those directors also need to know and trust the officers they elect.

I have urged the board to formalize a periodic review of the chief executive's performance and that of the other officers. I urged that the criteria used be essentially that which I described above.

Further, I recommend that the board consider ways to involve activist members in the board selection process which will not result in the further politicalization of Alcor (a process unfortunately already begun). We can provide for review and input without turning over our fate to the vagaries of a democratic popularity contest.

## What's Next

Although there is now no immediate threat to the organization or our patients, we are still so small as to hardly register on the tracking systems of governments or other large potential adversaries. So, in spite of the many battles we have won in the last five years, we are not yet part of the "mainstream." It remains important for Alcor's leadership to be agile, quick-witted, and vigilant. (This was easy for me because I've never been a mainstream person.)

The most immediate dangers to Alcor which I can now foresee are internal. For twenty years, Alcor operated under a "constitution" comprised of our Articles of Incorporation, By-laws, and accumulated precedents set by the board of directors. This constitution (which I believe has substantially contributed to our success and is critical to our long-term survival) is being challenged. To some extent it has already been compromised. The present change in management and changes on the board of directors were not a result of the sort of review I've advocated here, but rather a result of *political* action.

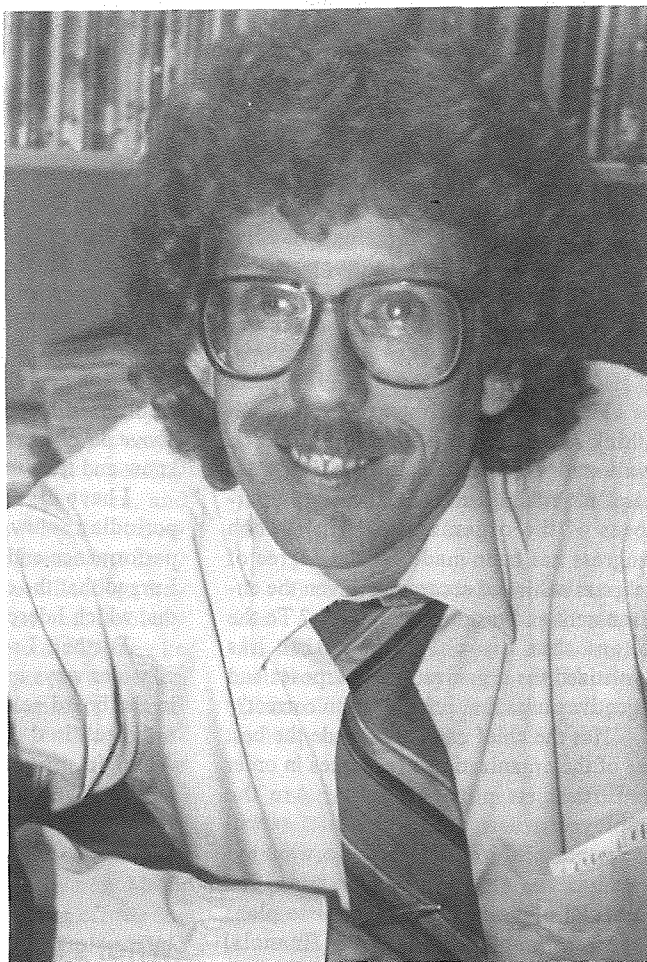
There are three active cryonic suspen-

sion organizations in the world, supported by less than 600 signed-up members. For at least ten years, Alcor has maintained the superior technological capability (this is of course open to debate). But technology is not all that has differentiated Alcor from its "competition." Many of us decided on Alcor because we were impressed by the argument that our fate was not in the hands of a majority of members, most of them unable to keep fully informed on the issues confronting cryonics year by year. Instead, members of Alcor have been empowered as *consumers*: our sign-up fee has always been the lowest, thus leaving animate members no financial disincentive to switch to a better organization if they find one. And those members who have made the effort to get involved naturally contribute their ideas as well as their labor. By contrast, democracy *disempowers* individuals who are misled by the illusion that they have a degree of power. And at Alcor's historical growth rate, at any given time, those persons signed up for less than 2.7 years constitute a majority.

For some months now, there has been a push to have the board of directors modify the bylaws in order to allow some form of membership participation in the selection of directors. This idea was incorporated into the campaign to replace me as president. This year there will be a pressure on the board of directors to allow regional elected representatives on the board, and to remove suspension patients and the Patient Care Trust Fund from the control of the directors. Hopefully, Alcor's new directors will tell us *sooner rather than later* where they will stand on these issues. By comparison, the question of who sits in the president's office is relatively unimportant.

The campaigning which the board of directors has experienced so far is just the beginning. Perhaps when organizations grow beyond a certain size, this sort of thing is inevitable. But it is sad to see so much of our energy and resources consumed by such struggles. Those of us who abhor politics also just aren't any good at it, and we tend to have little patience for uncommitted platitudes where our lives are at stake. That means that the greatest pressure on Alcor's new directors will come from those who want to dismantle our existing constitution. Let's hope they have the strength to ignore that pressure.

# From President-Elect Stephen Bridge, To the Alcor Membership



The history of cryonics is replete with bumps and bruises, failures and tragedies, along with more than a few startling triumphs. The nearly twenty-one years of the Alcor Life Extension Foundation are similarly uneven. Alcor was started in early 1972 because of doubts and differences that Fred and Linda Chamberlain had with Robert Nelson and the Cryonics Society of California. This was a prescient move on their part, since a few years later it was discovered that Nelson had failed to keep his patients frozen.

Alcor stayed a tiny, almost personal organization for another decade. Jerry Leaf became involved with cryonics in 1977 and, based on his background in thoracic surgery and research, rapidly began upgrading the quality of suspensions. He worked with both Trans Time and Alcor to train teams of members to do research and perform human suspensions. Coincidentally, I also became a cryonicist in 1977, when Michael Darwin and I started the Institute for Advanced Biological Studies in Indianapolis. IABS never became a large

cryonics group, but we did begin many paths that have led to current Alcor successes. We wrote a 24-page booklet that, over the years, has turned into *Cryonics — Reaching for Tomorrow*; we became the first group to publicly advocate neurosuspension as a suspension option; I (together with the ideas of several attorneys) wrote a set of legal paperwork which was the ancestor of the current Alcor suspension documents; Mike especially was able to accomplish some notable early research and come up with several significant new technical ideas; and, in 1981, we started *Cryonics* magazine.

Later in 1981, Michael Darwin moved to California, and in 1982 we merged IABS with Alcor. Mike became Alcor President and, with Jerry Leaf, Hugh Hixon, Allen Lopp, and other Southern California members, swiftly changed Alcor into the liveliest, most technically progressive, and most rapidly growing cryonics organization in the country. Mike was President for 5 1/2 years, including the move to Riverside.

But in January, 1988, the suspension of Dora Kent spurred the Riverside Coroner to attack Alcor, resulting in two raids on our facility, the detention of several Alcor personnel, and a flurry of legal actions. On the brink of disaster, Alcor made Treasurer Carlos Mondragón its new President. Carlos was a gritty fighter for the rights of Alcor and of its suspended patients. He almost seemed to grow larger and stronger as the situation grew worse. With the assistance of Jerry Leaf, Saul Kent, Michael Darwin, Steve Harris, Keith Henson, Arthur McCombs, and some terrific attorneys (and other members too numerous to mention — no slight intended), Carlos led Alcor to a series of legal victories that stunned several local and state governmental agencies.

Interestingly, the storm of news coverage of these events eventually placed Alcor as the heroic organization in the battle; and our membership began to boom (for a cryonics organization, anyway). Mike Darwin was named Director of Research, and he, Jerry Leaf, and Hugh

Hixon continued to make substantial advances in our suspension capability. Under the Presidency of Carlos Mondragón, Alcor has placed 17 more patients into suspension, and suspension membership has grown from 100 to about 350.

In the ten years since Mike Darwin moved to California, Alcor has completely changed from a tiny group of friends hoping to find some way to hold on to life, to a dynamic organization with seven employees, dozens of volunteers around the United States (many with training in how to provide the early stages of "transport" for a suspension patient), sets of transport equipment and supplies in four remote U.S. locations and two sites overseas, and assets of around \$2 million.

And now comes another change in leadership. Carlos Mondragón has resigned as President and CEO, effective January 22, 1993, and I have been selected to take his place. While much hostility has been vented in the various arguments of the past few months, I consider this to be a "bump," not a failure. Looking at the both dynamic and crisis-laden history of Alcor, I understand that becoming the leader of this organization is an awesome challenge. The members of Alcor not only want every positive aspect of Alcor's recent past to continue (and to accelerate, no doubt); but they also want every problem they point out eliminated. *Today*. In an organization whose members overwhelmingly identify themselves as "libertarian" (my dictionary unaccountably leaves the words "argumentative, opinionated, stubborn, and uncompromising" out of the definition), this means a lot of forceful "pointing out."

Not surprisingly, these kinds of members offer many solutions which conflict with each other. It will not be easy for Alcor's Board of Directors and me to sort these solutions out — or even to agree on what the problems really are. But we will give it the greatest effort we have in us.

For those many members who do not know me, let me tell you more about myself. I am 44 years old, and I have spent the last eighteen years as a librarian in Indianapolis, including the last twelve years as an assistant branch manager. After the Institute for Advanced Biological Studies merged with Alcor in 1982, I continued to be one of the more active cryonicists in the country. I have written many articles for *Cryonics* and I have continued to be the main editor and re-writer for Alcor's suspension paperwork (though if you recently worked your way through that

mass of paper, you might not call this a positive).

For several years I have been the Alcor Midwest Coordinator and I am President of the Alcor Indiana Chapter. I was one of the first Alcor members to get EMT training, and two years ago I also took Alcor's Transport Technician Course. In early 1990, I took a three month leave of absence from my library job to work at Alcor in Riverside. I have worked on five suspensions, including three transports. During the past several years, I have given over fifty cryonics or nanotechnology slide presentations in Indiana, Illinois, and Ohio. In September, 1992, I was elected to the Alcor Board of Directors.

The past few months have been bumpy for Alcor, although not because of legal actions. For the first time in Alcor's twenty years, a political disagreement became the prime topic of conversation and threatened to overwhelm much of the good that has been accomplished. While the various leaders of Alcor have cooperated on many projects over the years, it is inevitable that independent-minded people under stress will eventually clash. This year's events, like most such problems, can only be understood in the context of five years of legal and economic turmoil that have challenged Alcor, the differences in philosophy and style that Alcor's leaders have had, and in their real differences of opinion on how Alcor's goals should be reached. I am not going to speculate here about which people were right most often or which disputes did the most harm. But it is understandable how much of the membership's attention has focused on the two most visible participants: Presidents Mike Darwin and Carlos Mondragón.

Carlos and Mike are both battlers, leaders who know what they want (and who assume that what they want is RIGHT) and who are willing to push and drag others along the paths of their vision. This willingness to battle has been a great benefit to Alcor when the battles are waged against outside forces, such as indifference, the medical and legal problems that death throws at us, or the interference of hostile governmental agencies. However, too often the battling has been done against each other or other Alcor members. This is not to put the entire blame on Carlos and Mike or to diminish their past accomplishments. Other Alcor members have participated in, and perhaps even relished, the conflict of the past year. It

seems to be a natural consequence of squeezing several cryonicists into the same room.

My personality and methods are much different. I think I am a little slower to react and more steady. I prefer to become a "bridge" between people, rather than to inspire conflict. I believe that I have the personal respect of most of the Alcor members who have met me, although I also recognize the level of demands which will be placed on me. While I have a strong conviction in the need for liberty, I do not identify myself as a pure "libertarian;" so maybe I can resist the ego-need to battle with members over whose opinion is "right." I also recognize that Alcor itself, as a non-profit corporation, constrained by the requirements of government and run by a Board of nine Directors, is not properly a "libertarian" organization, no matter what the political convictions of its members. With a cryonics organization, where long-term survival and stability must be an over-arching principle, I consider this situation a plus, not a minus.

My first priority as Alcor's President will be to insure the continuation of our primary tasks: care of the patients already in suspension, and assurance of our ability to perform new suspensions. From a technical standpoint, I have confidence that we can continue excellent suspension maintenance and that the basic capability is there to handle transport and suspensions. In regard to performing suspensions, members' questions to me during the past few weeks could be divided almost exclusively into "When are you going to bring Darwin back?" and "You're not bringing Darwin back, are you?"

Many members may not yet be aware that Michael Darwin has resigned from his contract to perform on Alcor's suspension team and from his suspension membership in Alcor. (I should note that this does NOT mean that Michael has abandoned cryonics itself. He is still pursuing potentially valuable suspension research through his own company and through Cryovita.) Michael has discussed some of his reasons for this decision on the computer network and with the Board of Directors; but he has decided not to begin a series of arguments in the pages of *Cryonics*. It would not be fair for me to summarize Michael's reasons; but I think it is fair to state that they involve differences between Michael and some Alcor staff concerning the manner (in the broadest possible sense) in which suspen-

sions are to be performed. While I share some of Michael's concerns (and believe others to be exaggerated), I think that "dropping out" is the wrong way to make improvements. Since I am one of Michael's oldest and closest friends, it might seem obvious that I would immediately begin pushing as hard as I could to reinstate Michael on the suspension team. But I am NOT going to do that.

Performing suspensions is not a task that one person can do. A team of a dozen or so members is required from transport through descent to -196C. Michael's resignation and the responses it has generated from other team members show a great amount of frustration and mistrust on both sides. It simply will not work to slam these people back together in the super-heated atmosphere of a cryonic suspension. As much as I admire the work that Mike has done and the talents he has, I must conclude that under current circumstances it is not in Alcor's interest to bring Michael Darwin back onto the suspension team. Furthermore, Michael has indicated that he DOES NOT WANT to be on the suspension team.

We are going to have to learn to do cryonic suspensions without Michael Darwin. Maybe this was going to happen anyway. Michael's resignation leads me to question whether or not we could count on him if other difficult relationships arose in the future. It may be possible that after nearly twenty years on the front line of battle, Mike has lost his enthusiasm for performing suspensions and prefers to pursue his research.

I sincerely hope that Michael and I can keep the kind of friendship that allows us to share suggestions and knowledge. I am positive that the research he is pursuing will give us new methods to limit the damage done to patients during suspensions. Perhaps over time some of the hard feelings will diminish and both sides will

perceive enough improvements to motivate a higher level of cooperation. I do not expect this to happen soon.

Yes, it WILL be harder to do this work without Mike Darwin. It was harder after Jerry Leaf went into suspension, too; but remaining team members renewed their commitment to Alcor and accomplished six more suspensions. I have confidence that the current team and prospective new team members will reorganize and forge ahead.

Obviously, one important task I have is to encourage more technical and medical people to find out about our work and join the suspension team. Even if we have every team position covered, we do not have much depth and any additional loss in the future (if only for a vacation) will make the situation more difficult. YOU can help with this. If you know EMTs, paramedics, nurses (especially with emergency or surgical background), medical technicians, perfusionists, or physicians that might be interested in the frontiers of medicine and technology, don't be shy. Talk to them about cryonics, give them our literature; and if you see them getting excited, please give me a call.

In future articles in *Cryonics*, I will be writing about other issues facing Alcor.

- Ralph Whelan and I will be working on methods of fund raising to increase Alcor's financial stability (expect a phone call!).

- I want to move forward rapidly with our efforts to protect the Patient Care Trust Fund and other Alcor accounts.

- During my short time on the Board of Directors I have led a movement to formalize the operations of Alcor and its Board of Directors. That will continue.

- I am interested in exploring various

proposals to change the manner in which the Board of Directors is chosen, although any such change must be made with great care.

- The Alcor staff and Directors will make a great effort to increase communication and cooperation between Alcor Central and remote members and chapters. I also want to increase contacts between the members and chapters themselves. Send us your suggestions.

- The risk of a severe earthquake in Southern California has almost certainly increased during the past year. Efforts to find a new building and to increase seismic protection in the one we have must receive a high priority.

- I want to develop a business plan which will explore the essential tasks of our organization and which will give us the basis for making the decisions necessary to handle growth in the future.

- There are many possibilities for research which Alcor could do on its own or in cooperation with other organizations. Alcor first made its reputation by developing new methods in almost every area of cryonics, including better storage protection and safety, ways to reduce ischemic injury, immensely better cooling methods from 98.6 degrees on down, and the first organized system of training and equipping remote agents to do patient transports. To be effective in the future, we must keep this edge.

None of these tasks can be accomplished by me alone or even by the Board or Staff alone. I am asking you to commit some part of yourself to preparing Alcor for the future. Your family and friends will need us someday — and so will YOU. Help us make sure we are ready.

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## Philosophy of a Cryonicist

### Interview with Hugh Hixon, Part II

*Interviewer: Ralph Whelan*

**Cryonics:** For various reasons, Alcor may eventually move its headquarters out of California. How do you feel about this?

**Hixon:** We realized when we went into the present facility we shouldn't be there for more than about five years, and this is exactly true. The problem is, we should've aggressively pursued looking for a new place even sooner than we have, but we've been severely cash limited. The deal we would've gotten in Phoenix would've been a real sweetheart, but it





came together and everything went down the drain, so that's a real blow. There's a lot of different forces on this move, and a lot of it has to do with the number of people we have available. A lot of our support is in Southern California, and people can't move. And yet it would be very nice to have at least our storage functions out of the earthquake area, but we don't have enough people to support two facilities.

**Cryonics:** In your estimation, are we going to have to move out of California before we can support two facilities?

**Hixon:** Yes. It is something I do not like. I used to think it would be possible to find a place in Southern California that in fact would be quite earthquake resistant, and I still do. However, the riots in L.A. were very educational because they demonstrated how stupid people could act and how stretched the infrastructure of damage control and firefighting and so on is. The engineering problem of taking care of a facility I might've dealt with, but the civil disturbances problem is very difficult to deal with.

**Cryonics:** You're probably opposed, then, to locating Alcor near any major city.

reliable access to cheap liquid nitrogen. Plus there's the sheer physical scale of the move; the business rule is, two moves equals one fire, in terms of disruption of the operation. Plus, there's the major technical problem of moving those dewars *full*. There are all sorts of pro's and con's, but what really drives us is the danger of severe civil disturbance in the L.A. area after an earthquake.

**Cryonics:** Do you envision Alcor — or some other cryonics organization — becoming a huge and powerful corporation?

**Hixon:** That has a lot to do with the rate of growth. There seems to be, based on recent history, a real tendency to fragment. It may be we can become quite large, but it is not obvious at all what the

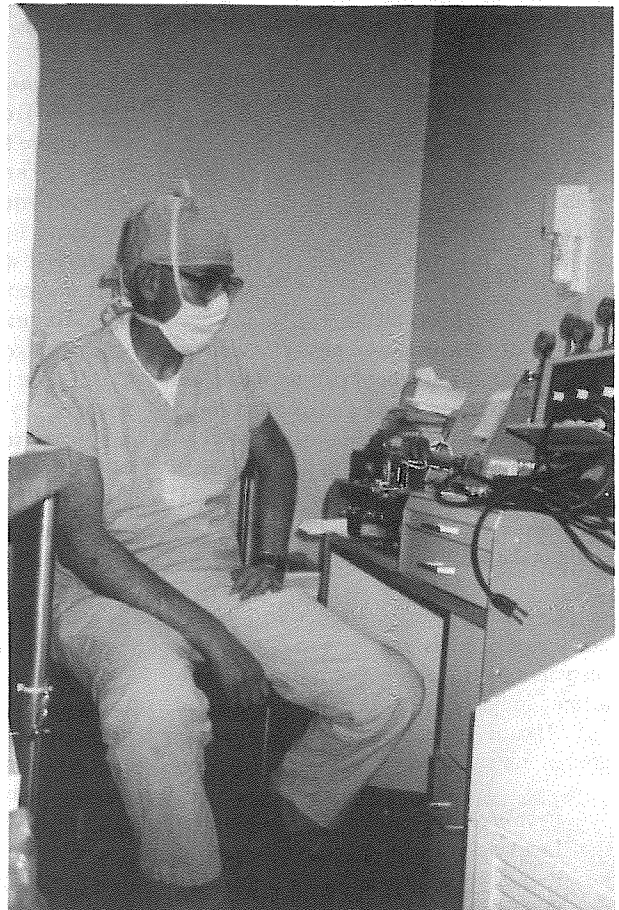
**Hixon:** No, that doesn't follow. There are a lot of cities that have never had that problem. L.A. has got a real good record of it now, because it had the Watts Riots twenty years back, and they had this crap that went down with the Rodney King affair. There's no reason to believe that after a serious earthquake things are going to be a whole lot better. I think engineering-wise we can deal with the problem of earthquakes, but services-wise we cannot. And yet we have this other problem, that a lot of support is in Southern California, and a number of our patients now and to come are going to be from Southern California simply because of the number of people we have here. So we have these opposing forces. And there's other constraints.

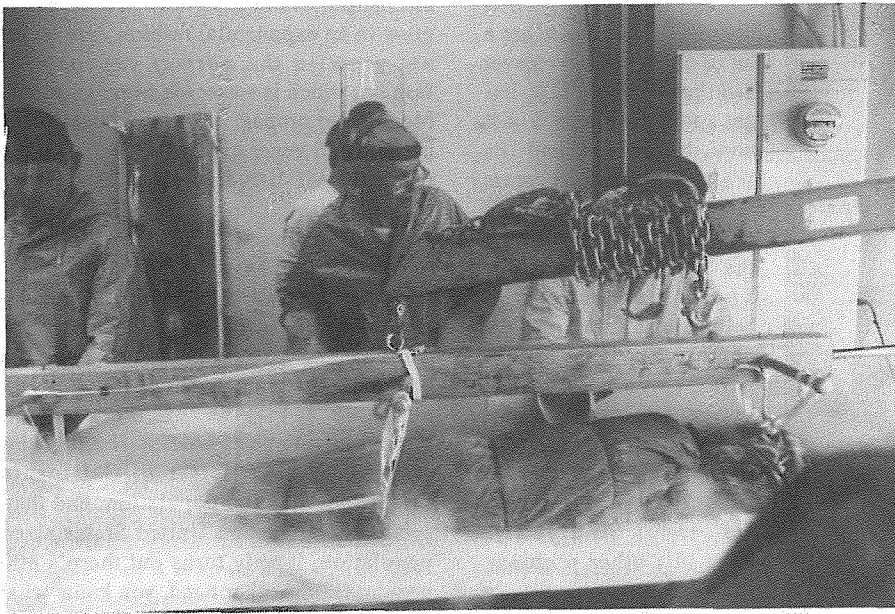
We have to have

mechanism of our growth is. We appear to grow in an exponential fashion, but we do not grow in the *normal* exponential fashion, which is a cascade of propagation. Most of our propagation usually damps out by the third generation. It's kind of like a reverse half-life situation, where the people just pop up out of the blue. It's seems rather directly related to the amount of publicity we have, but there obviously are other factors also because we've had a lot of publicity before and not had as many people come in. Plus there's the question of what's the total number of cryonicists out there. It may be that there's some upper limit. For example, if you take the number of cryonicists in California divided by the total population, and then you extend that to a United States sized population, it only turns out there's 800 people. On the other hand, you know what they say about California's population: they shook the country and all the loose nuts rolled down into the corner. *(Laughs)*

**Cryonics:** A lot of people would argue that cryonics will not have "mass appeal" until it's offered as a hospital procedure.

**Hixon:** Well, that's a chicken and egg





**Transferring the First Man:** Hugh watchdogs every step of James Bedford's move to a state-of-the-art "Bigfoot" dewar.

problem. There's a possibility of concern about legitimacy, and yet having a hospital procedure gives us legitimacy. So somewhere we need to crack the egg.

**Cryonics:** Would you say it's likely that rather than having "Alcor Suspension Centers" all over the country, we will instead interface directly with hospitals, and the suspensions — that is, the perfusions — will be performed there?

**Hixon:** There is no question in my mind that *ultimately* we cannot compete with hospitals for medical services delivered. The problem is, how long will we have to bear the burden ourselves? If we could achieve field washout capability with all of the local teams, that would get rid of a lot of the requirements for heavy medical support. It would still be very nice to die in a hospital and be suspended right there, but "flush and store" solutions — and the ability to use them in the field with each of our local teams rather than simply the people from Southern California — could make a big difference.

**Cryonics:** But wouldn't you agree that our only realistic avenue to *premortem* suspensions is that we begin by having it offered in hospitals?

**Hixon:** The only *realistic* avenue to *premortem* suspensions.

**Cryonics:** But wouldn't you say that that law is more likely to be changed if hospitals come to the independent realization that beginning the procedure *premor-*

*tem* in *sure-terminal* cases makes a lot more sense.

**Hixon:** I don't think so. I don't think hospitals have that much influence. Plus, I think that the right-to-die initiatives are going to have more effect sooner.

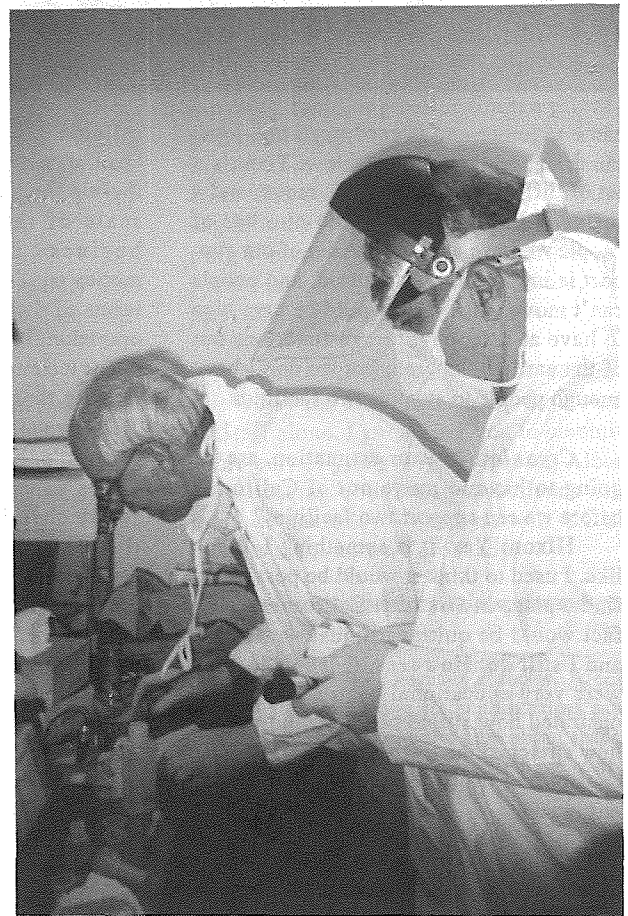
**Cryonics:** As an avid science-fiction reader, you're sure to have noticed that extremely few *s-f* writers portray cryonics in a positive light, when they portray it working at all. Care to speculate on that?

**Hixon:** The thing is, when you get into reviving the dead in science-fiction and fantasy, it's always a magical process, usually by a deal with the demons from the netherworld, or something like that. The spiritual, mystical attitude toward the soul probably has a lot to do with things. You have this thought of death as something inef-fable that can't be quantified, when in fact when you look at it, it's just another damned engineering process: you break it down into its pieces and most of them look one way or another tractable to

solution. But most people don't carry their thoughts that far. They take death as they know it from childhood, and what they've heard, and they tuck into a little room and then go away and try not to think about it. And *we've* thought about it, and from an engineering point of view, the tools are either available or they *will be* available. But most people out there don't get that far. And science-fiction authors, in a lot of respects, aren't any more far-seeing than anyone else. Most science-fiction does not come true. In fact, most science fiction I think would have to be described as rather prosaic.

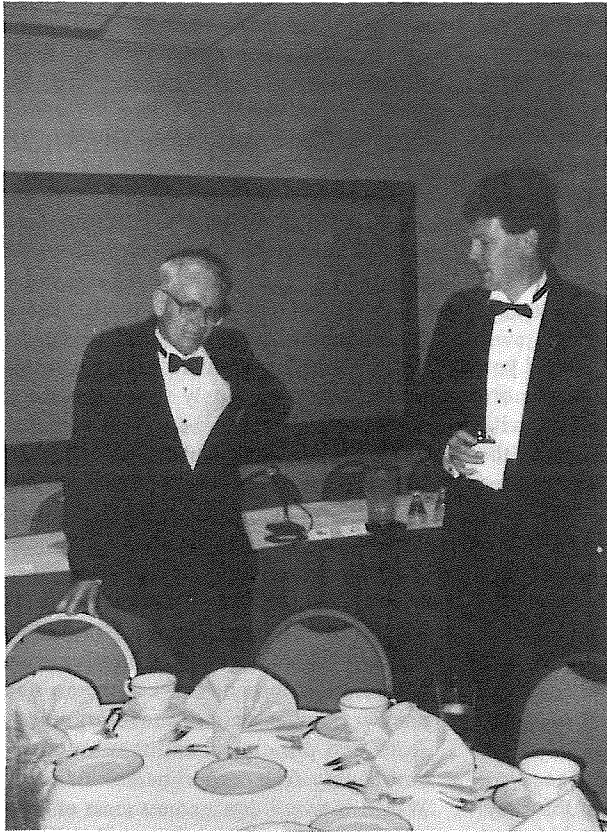
**Cryonics:** So you don't think that science-fiction writers are a particularly fertile ground for cryonicists?

**Hixon:** Particularly not. They're just like the general population, except they write science-fiction. They get up in the morning, put their pants on, pay taxes... they're not really all that different. They're not imbued with some sense of the future, or some great vision or anything like that, particularly.



**Hugh and Keith** run blood-gas analyses and refractometry during 1992's first suspension.





At the Alcor 20th Anniversary Dinner:  
A reluctantly-tuxedoed Hugh talks with Allen Lopp.

**Cryonics:** Well then what makes someone an “instant cryonicist,” and why are there so few?

**Hixon:** *I haven't got a clue.* I really want to take the time to do a histogram. One of the things that I'm pretty confident of is that we're going to see a real spikey age distribution. And it may not help us a lot, but if you see definite age spikes, then you can assume that there is a strong cultural determinant, of some undisclosed nature. Or their mothers were frightened by Elvis stories, or something like that.

**Cryonics:** Okay, let's suppose we find out that the age spikes are in neat five-year chunks... the point is, why so few?

**Hixon:** There is a lot of competition for what Keith [Henson] would refer to as the Death Meme, and the Resurrection Meme, and so on... It's probably a combination — as usual — of genetic wiring and rather random things that they're exposed to. So far we've never been able to identify a real definite rule. It's been a real obstruction, and I don't know that anybody can get around it. I talked about this once with Timothy Leary — who before he was interested in consciousness expanding was a hot-shot psychometrician — and he says that most psychometric tests are worth

piss. On the other hand, he used as evidence that one diagnosed him as a total outlaw.

**Cryonics:** I sometimes theorize that most people tend to move through phases in their lives — perhaps from Christianity to Objectivism or Atheism or mysticism, whatever — and that maybe when we seem to have an “instant cryonicist,” it's because the person is in a “phase gap” of sorts.

**Hixon:** That isn't supported by our growth statistics, because if that were the case you'd expect to see fairly constant input, not the exponential rise that we see. Let me put it this way: it could be a component, but it's not the rate-limiting factor. On the third hand, I don't remember that I was undergoing much of a transition. I was *ripe*. Per-

manently ripe.

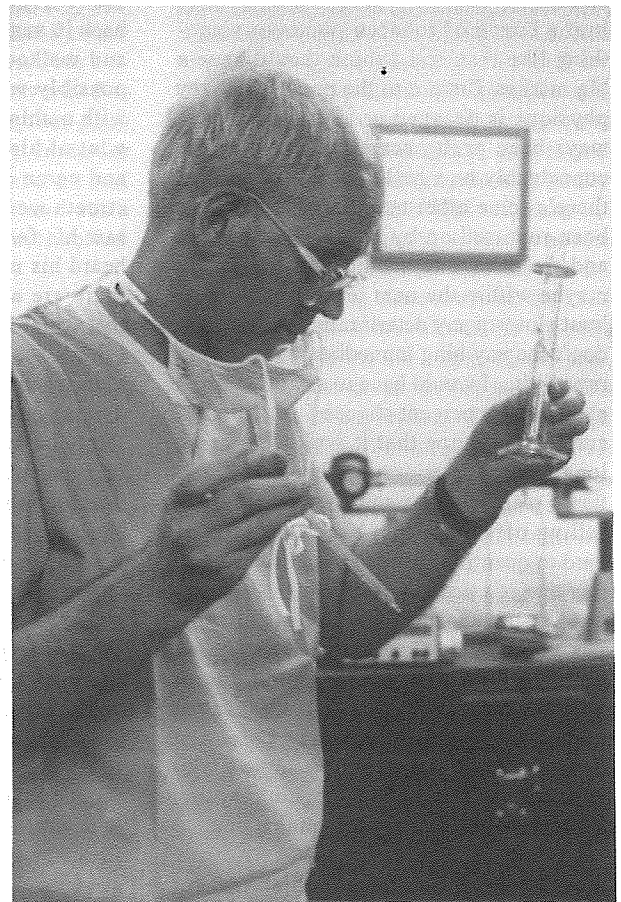
**Cryonics:** What single event — more than any other — do you think would improve the public perception of cryonics?

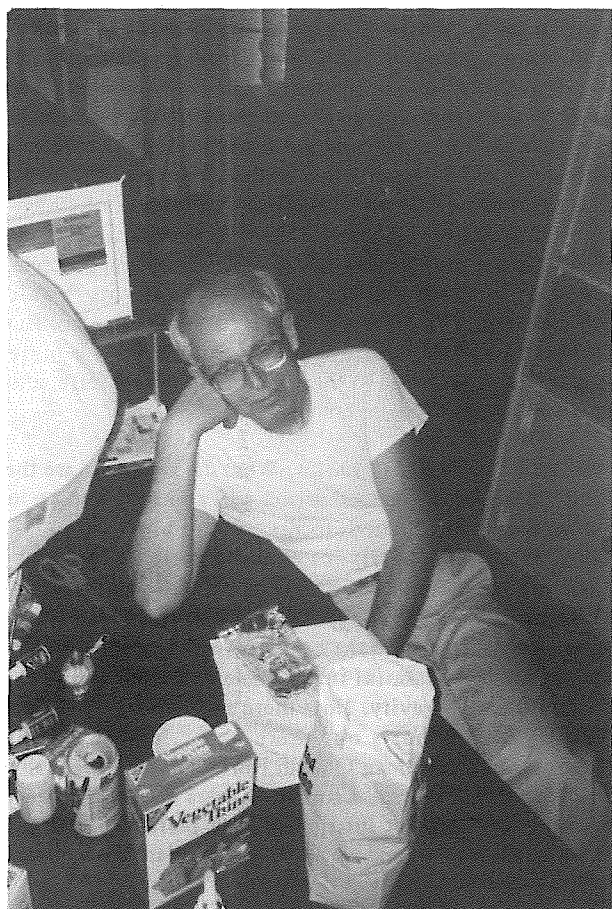
**Hixon:** Since public perception is extremely silly, it would probably *be* something extremely silly. What you have here is an extension of the principle called Rational Ignorance, which is to say that there's a huge amount of stuff out there that you ought to know, but there's only a limited amount of time, so as a result, anything that's not going to bite you immediately you ignore, because if it hasn't then it isn't gonna, so why bother? And a lot of time, this is a perfectly good strategy, and a good pruner of your actions. Because most of the time, what you don't know — a *huge amount* of what you

don't know, like whether a butterfly flapped its wings in Africa — isn't going to affect you at all. So you concentrate on the nearby stuff. And so most people, on any given special thing, rather than investigate themselves are going to take somebody else's word for it. And people take, for some reason, the Breakfast of Champions phenomenon, where athletes endorse breakfast cereals... and it's a real problem. So freezing a known celebrity would probably be a fairly remarkable step. But the trouble is, celebrities are no more prone to this idea than anybody else, and there're not very many of them.

**Cryonics:** What do you think are the chances that *you* will someday end up in cryonic suspension?

**Hixon:** Well, it's kind of race between genetics — mine — and medical technology — everybody else's. It requires that in the next ten years some really substantial improvements be made in longevity. Now there may actually be stuff that's out there now... certainly this Human Growth Hormone thing that came around a couple of years ago is at the very least intriguing, and instead of farting around we ought to transplant the hormone





into a bunch of tobacco plants or something like that, and I think they'd have a big market. I'm not to the point where my physique is decayed or anything, it's always been pretty scrawny, but it might conceivably be a hell of a help. And then there's some other tantalizing stuff that's been reported on by a guy named West, and we'll have to see how that goes. So maybe within the next ten years, I can at least slow up any deteriorating processes. I don't see anything immediately obvious to reverse it... I would have to say that there's about a fifty percent chance I get frozen. I sure as hell hope that it isn't after some long mental deterioration, because it certainly seems that my short-term memory is falling off somewhat, but that's kind of hard to quantify. It seems reasonable to assert that it's possible for medical technology to stay ahead of me, but it's obvious it's going to be a race. In ten or fifteen years, we'll be right smack into the human genome, and probably within eight or ten somebody's going to try to reset the developmental sequencer by some tricky means. That's going to be real interesting. I'd sure as hell like to be in on that one.

**Cryonics:** So then you think that for you to make it back to youthful immor-

ality, without spending a hiatus in suspension, you're going to have to be "bootstrapped" into the future by medical technology.

**Hixon:** Right. A year here, a year there. Who knows, maybe I'll have to start eating clean, or something like that. (*Laughs.*)

**Cryonics:** Would you say that it fills you more with excitement or with fear when you consider the notion of dropping into a limbo of sorts for a decade or three, then attempting to re-integrate yourself into the sort of technological society that would enable such a re-integration?

**Hixon:** Well, you're trying to dramatize it, and the answer is... I don't dramatize things very much. Look at it this way: somewhere in our history, probably a lot of somewhere, some guy put his worldly belongings on his

back in some lousy little village in Europe and walked down to the nearest port — possibly with rags on his feet, possibly with nothing — took a ship, probably had a lot of his companions die in [passage], and came over here where he heard the streets were paved with gold. He never saw his family again, he probably never heard his native language spoken again... there are a lot of ancestors that did just that, and probably in fairly recent history. I don't see that this is any more dramatic than what they did. I suspect that if there are any great number of us — which I certainly hope — there will be a whole field of reorientation psychology which will deal with the problem. And I don't see that I'm going to propose any special case. Just give me a toolbox and the operating instructions.

**Cryonics:** Any ideas on how you'll occupy yourself in a world of agelessness and nanotechnology?

**Hixon:** Go back to school. One of the things that I see that most people don't approach very much — presumably because it involves screwing around with their image of themselves — is that everybody assumes that the mind will remain a black box. The idea of modification of one's

mind really spooks people. I offer Tim Leary's experience as evidence, because what he had in mind was people changing themselves. It is a dangerous procedure, at least experimentally, but obviously once we start trying it we'll get better. Why can't I have elements of Albert Einstein's mind, or Mike Perry's mathematical ability, or all sorts of things? There's lots of room for improvement, and not just in physiological stuff like do I really need an appendix or a bald head. If you start digging through the entire genome of the human race, obviously there're a lot of ways in which we can be made better. And then we get into icky things like what constitutes personality. I take issue with a lot of the things that I see turn up in *Cryonics* because it's all arguments from first principles, without utilization of the huge mass of literature that's out there on psychology. A lot of it has to do with questions of identity. There're some interesting questions, and there have been some neat answers, but people do have arguments from first principles, and they're cut off completely from experimental evidence. Which is why I don't count most of those arguments as being worth a whole hell of a lot. There is evidence out there that it would be very interesting to use, but we have no psychologist among us who is acquainted with the body of that work.

**Cryonics:** What odds would you assign to cryonics working for today's cryonics patients?

**Hixon:** It's the same as the odds of civilization holding together for the next hundred or two hundred years. I think it's basically an inevitable technology, provided technology doesn't take a wrong turn.

**Cryonics:** So from a theoretical standpoint, this is inevitable?

**Hixon:** Yes. The problem is the peripheral conditions, like, you've got to have a society that will support it. You can't have gigantic religious revivals, economic collapse, major war, AIDS on roller skates... we're not going to have revival under Nehemiah Scudder, if you're acquainted with Heinlein. On the other hand, there's the opinion that if it doesn't work out, you don't wake up, and it doesn't matter anyway. If you do wake up, it can only be in a reasonably benign environment. That's the opinion I'm most inclined to subscribe to. If it doesn't work, I think I've lost very little. If it does work, I've gained a great deal.



## From the January, 1983 issue of *Cryonics*:

### When You Can't Even Give It Away: Cryonics And Fred Pohl

by Mike Darwin (with assistance from Steve Bridge)

In 1978, the Board of Directors of the Institute for Advanced Biological Studies (IABS), then headquartered in Indianapolis, began developing a plan to promote cryonics by persuading some important person to sign up for suspension. It was important that this person have an intellectual or emotional following who might be asked for research donations and who might spread the word about this individual's suspension. As the plan evolved we realized there was only one thing which a small organization could offer to impress such a celebrity. Our offer would be that we would make the arrangements for and carry out the cryonic suspension of the person for FREE, with only one string attached: that he allow us to use his name after his suspension to promote cryonics. We would also ask for a simple statement of affirmation from the individual which would be used with the public announcement of the suspension. The type of use and publicity would be carefully detailed before the agreement was final. As a minimum, we would certainly agree not to involve the individual's family (unless they volunteered themselves) and no family member would be asked to contribute money.

We soon decided that it would make the most sense to approach someone who had already expressed a firm interest in the idea and who further had done something to support it. We hoped for someone who was in favor of cryonics but who had not signed up because of primarily practical reasons: poor cost to benefit ratio, lack of confidence in the financial stability of the organizations, or the wish not to deprive surviving family members of a large part of their inheritance. We originally thought of the idea in connection with science fiction author Robert Heinlein. He has a large and emotional following and he is the author of *The Door into Summer*, a positive and powerful book about suspended animation which has become something of

a classic with cryonicists and non-cryonicists alike. However, we quickly ran into great difficulties in contacting Heinlein and, in any event, we weren't sure of his commitment to the idea.

But there was another popular author we were sure of — a man who had written several supportive articles about cryonics and who had made literally hundreds of TV and radio appearances to promote the idea in the middle and late 1960's. In *Playboy* magazine in June, 1964 this man wrote:

*It's hard to gainsay Ettinger's basic propositions. For it is not merely a question of John Doe, cancer victim age 35, being tucked away in the deep freeze and then a century later being brought out and repaired to live the rest of his life. If the thing works at all, it works indefinitely. And unless John Doe consciously decides along about the year 4,000 AD that enough is really enough and please don't bother next time, it is hard to see any point at which he really will permanently die.*

*Real motivations will be there. If you can spend a decade on the Great Barrier Reef and six months on the Grand Prix circuit, a year composing motets and a lifetime (our present lifetime) out past Mars; if you can tour the future centuries and sample the cultures of Aldebaran and have ample time for romance and mere loafing in between — there's motivation for a long, long time.*

*While there is work and pleasure and novelty and creative effort, and you have the mind and body to respond, you will be motivated — to ends no one now can possibly imagine.*

The author of these visionary remarks is Frederik Pohl, one of the most popular and accomplished of the modern science fiction writers, and the author of the cryonics-related novel, *The Age of the Pussyfoot*. In 1978 in his autobiography, *The Way the Future Was*, Pohl discussed his previous involvement with cryonics, his belief that it might work, and his reasons for not being signed up. One was financial: he did not wish to sacrifice quality in his life for the gamble of a future life. The other reason was philosophical: "What makes my life desirable to me is the net-

work of relationships and the endless iterative series of projects that I am always involved in. Stop them and re-start them at some future time, and they are no longer the same." It was also obvious throughout the book that Pohl has a deep commitment to his children, so we suspected that he wished to make sure they were well provided for after his death. While we could do nothing directly to overcome his philosophic problem, we certainly could offer to eliminate the financial considerations. Perhaps Pohl was our man.

Then, in early 1979, we discovered that Fred Pohl was to be the Guest of Honor at the North American Science Fiction Convention to be held the following Labor Day weekend in Louisville — easy driving distance from Indianapolis. We decided definitely to make our offer to Pohl at that time. Who could be more deserving? Who more likely to accept? We made arrangements with the convention committee for us to take Pohl to dinner on September 1st, 1979.

Reservations had been made at a good local restaurant, and a group of IABS members (and three non-IABS people who interceded with the convention committee to come along) escorted Pohl on foot from the Galt House hotel (Randroids and former Randroids may chuckle here) to the eatery. It was a pleasant meal, punctuated by Pohl's warm remembrances of the early days of "Ettinger's idea." He had many interesting anecdotes to tell, from the perspective of a man who was there at the beginning. During the course of the evening Pohl was asked about his current stand on cryonics. He repeated his previously given reasons for not joining and confirmed our impression of his feelings about his family. He also stated that he still felt it was basically a sound idea. Yes, he said, if things were different he certainly would have considered it for himself. As the meal drew to a close, I asked him if he would be willing to meet with several of us in order to hear about a rather unusual offer we wished to make him. He paused only a second before graciously accepting the invitation. I believe all of us in that little party were tensed with excitement. We were excited because we felt we were doing something important and because we were repaying a debt of gratitude long owed.

When we arrived back at the Galt

House, we escorted Pohl to my room, with a small core of IABS officers, including Steve Bridge, then president of IABS. Slowly and carefully we told Frederik Pohl what we had in mind, presenting him with a brief but comprehensive slide show documenting our physical capabilities before making him the offer. When we completed our presentation there was a moment of stunned silence from Pohl. This witty and articulate man was momentarily at a loss for words. He recovered himself and said that it was a remarkable offer. I believe his words were to the effect that it was the largest price ever offered for any commodity a human being could give — immortality in exchange for the mere use of his name. He also said, with some shock in his voice, that his previous excuses were no longer relevant and that he would have to rethink his position.

Our readers might wish to consider that people with far larger egos than Fred Pohl have traded their names, even for degrading use, for much, much less. Just close your eyes and picture Joe Namath in his panty hose or Bruce Jenner huckstering Wheaties. Human beings will do pretty cheap and tasteless things for mere money — and for not even very much of it. By comparison, the offer we made to Fred Pohl was on a silver platter.

Fred Pohl didn't take our offer that night in the Galt House. He said he needed time to think about it. We never heard from him again. He didn't answer the two letters we sent. He has been on the complimentary mailing list for *Cryonics* for

two years. In short, Fred Pohl turned us down...

What can we learn from Fred Pohl's refusal? First and foremost, we must rid ourselves of the notion that high cost is the most significant reason for the slow growth of cryonics. Pohl turned down the chance even though it was free. Few rich men have signed up, although many have been contacted. Of the non-suspension respondents to our recent cryonics poll, thirteen mentioned "financial" as one of the reasons why they had not arranged for suspension. Three of those people had incomes between \$15,000-\$25,000; three were \$25,000-\$50,000; and one made over \$50,000. Yet of the 41 respondents who are signed up to be frozen, thirteen listed incomes of less than \$15,000. If people want it, they will find a way to pay for it. The problem is getting people to want it. There are more important factors than money operating here.

All we can assume is that Pohl didn't want a future life. And at least in Pohl's case, this cannot be because he is not happy with this life. By all accounts and by our personal observation, Fred Pohl is at the height of his creativity as a writer, at the peak of his popularity, extremely active in all ways, and relatively content with his life — perhaps too content. He has the "work and pleasure and novelty and creative effort," and he has "the mind and body to respond." Yet somehow he is unable or unwilling to make that jump in logic to acknowledge that this can again take place in the future and be even better.

He is unable to accept the thought of again "leaving home," that is, breaking with the relationships and conditions of today to start again at a future time. He would rather cease to exist.

This is a hard lesson for a cryonicist to learn. A person may have money, he may have happiness, he may have vision; but if he doesn't have that one desire to be part of the future, then he doesn't want anything to do with cryonics, even for free. To extend our original metaphor — people may have beautiful gardens, but if they don't have roses, they don't want the manure. It is even harder to understand the lesson in this particular case, for we know that Frederik Pohl is certainly wise enough to realize that if you don't have the roses and don't buy the manure, then you end up as fertilizer yourself.

In his "Author's Note" to *The Age of the Pussyfoot*, Pohl questions why so few people have been frozen and then states, "It strikes me that we are all, from birth, so often reminded that we are inevitably going to die that we cannot accept an offer of immortality when it is presented, until and unless it is shown to work. Demonstrate that it works *one time*, and we'll grab for it as we've grabbed for few things before." Perhaps that is true. But Pohl himself has shown us that, for many people, a lot more changers will be necessary. And some, unfortunately, will no longer be around to "grab for it" when it happens.

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## Reviews

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### Nanosystems

By K. Eric Drexler

Reviewed by Thomas Donaldson

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Like any book, this one has both defects and advantages. Its principal advantage is that its author presents, in one place, a great deal of the thinking done by him and those around him on the problem of building nanoscale devices.

For anyone watching the growth of our nanoscale capabilities it's useful to know what at least one thinker in that area believes about his subject.

In this vein, Drexler collects together (and explains) all the scientific results

bearing on his particular ideas and presents results of calculations done by him and others to show that these ideas have a future. So far as I can see (and I hardly spent as much effort reading the book as Drexler and his school have

spent actually doing these calculations), the basic, root calculations presented are correct. As someone who has read widely in many fields of science, and feels very easy with the math involved, I could not find any statement of fact to which I would object. And yes, it is useful to have one set of ideas on the subject of nanotechnology set down on paper.

However... I see this book as having important defects also.

The first issue is one of terminology. That may seem minor, but for Drexler it seems to provide a springboard into many implications which deserve (but never receive) explicit consideration. *Nanosystems*, at least to me, denotes any system of components based on *nanotechnology*, which in turn is the technological manipulation of matter at atomic scales to create

useful devices. Put so broadly, no one (and certainly no one who has read deeply in cryonics) can object at all to study of nanotechnology and nanosystems. To manipulate life as we wish to, we will necessarily use nanotechnology because lifeforms themselves consist of molecular-scale objects interacting in intricate patterns already.

Yet Drexler is nowhere so general as that. Even by the name of his book, Drexler suggests not just that it contains nanotechnology, but that it contains ALL of nanotechnology. Factually, that is quite false, even forgetting cryonics. For at least 10 years now, many people *not* in Drexler's school have studied and thought about devices which any simple parsing of the word would say are nanotechnological. Much of this work has centered on application to computing, but genetic engineers, with their finely tuned modified viruses, are also doing nanotechnology. I refer in particular to the work of Carver Mead; but many others have also participated. Readers might look, for instance, at the November 1992 issue of *IEEE Computer*, which contains a series of articles on molecular *computing*, as seen by scientists in the United States, Russia, the British Isles, and Japan. The current applications of genetic engineering to human beings also deserve attention.

Perhaps I read too much into Drexler's discussions in *Nanosystems*; readers will have to judge that for themselves (I hope after first looking at *IEEE Computer* and following out some of the paths presented there). And readers should know, if they don't already, that I have publicly stood apart, as a skeptic, from Drexler and his school. However the book is notable by its lack of both citation and discussion of the work of others who take quite different paths to nanotechnology. All that, so far as it goes,

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*Any technically inclined cryonicist should buy and read this book; but I strongly recommend that they explore other ideas in nanotechnology too. It tells of only one corner of a very large cloth.*

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receives a discussion in Appendix B, totaling less than 6 pages... only 5 pages if you exclude a short discussion of Feynman's original ideas. Not only that, but Drexler makes his discussion (and comparison) very easy by omitting one standard, known field of engineering completely: that is, *chemical engineering*, which unlike chemistry devotes itself to production of needed chemicals. (It's easy to criticize chemistry as not a branch of engineering!) Much of this other work, also, has a far more empirical bent: these others don't simply do theoretical calculations, they wrestle with the real world, making (or trying to make) real devices. No one would claim that cures for cancer using modified cells taken from a patient are matters of theory alone.

In discussing his results at the end of the book, Drexler claims that he is the first to consider nanosized *mechanical devices*. Put thus, I see no reason to deny his claim. However, what is *not* clear is just what will be the final outcome of *all* this work. Drexler states himself that the means to construct his devices do not presently exist. Nonexistent devices will, of course, always do a better job than any existing device... whatever that job may be. When we do build nanosized computing devices, will we really do it with rods and knobs? Somehow I doubt that. We

will very likely find a far better way, one which actually USES all the characteristics of the small scale (such as quantum dynamics, and flexible molecules), which Drexler tries to avoid by using diamond as his basic material. And it's the same for therapeutic devices, or any other kind of device. Even with these special diamondoid materials (made, of course, using nanomachines made of... guess what: diamondoid materials!), the calculations Drexler presents don't actually *prove* the possibility of his machines

(suggest, indicate, but not *prove*). That problem comes because the calculations always show only the feasibility of one particular kind of part: a gear, for instance. A gear and a rod do not make a working machine. What we do not know, and what is never verified, is that these parts can all as-

semble successfully into a working machine to achieve some purpose. That problem comes directly from our inability to do the required calculations on an *entire system*.

In particular, Drexler and his school apparently used Macs as their main computers, and an established small scale program, MM2, for their calculations. In discussing MM2 (p.42), Drexler quotes results from others giving its accuracy as about 0.1% for bond length, 0.5% for bond angles. To make a single gear to this tolerance is easy: but a large, working nanosystem may need much higher tolerance (Drexler argues that it will *not* on pp. 315-318, but with far too much handwaving: the problem lies not in fitting a mechanism together, but in making it ACT to a high tolerance). We will only *know* that such machines will work either by actually making one, or by making vastly more powerful computers than we now have. Nanotechnology has not yet reached the state of electrical engineering, where computers test out devices before sending them to fab.

One final, persistent question I had on reading this book was that of just what Drexler was attempting to achieve when he wrote it. I don't believe even Drexler thinks that, when we finally attain mastery of the nanorealm, we'll do it with his designs. In one long chapter he

discusses, in detail, his ideas about theoretical engineering. These are quite interesting and he makes some good points. We do need much more thinking about possible devices of all kinds. Biology and even biochemistry, unlike physics, has suffered for years from a refusal of many (not all!) of its theorists to consider possibilities rather than simple facts. Moreover, to sketch out what is possible it IS reasonable to assume safety factors far beyond those needed in ordinary engineering (which suggests again that no one will ever actually build the devices proposed: they would have far too much "fat" compared to useful real versions).

But his discussion, in *Nanosystems*, omits some critical points for anyone who wants to argue possibilities. The main critical point is that he and his school are far from alone in considering such issues. Even the idea of computers based on nanosized parts existed prior to Drexler's published work. The existence of living things of all kinds suggests, by itself, that understanding and using the phenomena of the nanorealm would yield very great benefits, as current genetic engineering has forcefully begun to show.

Against this background, all of these calculations about nanomachines seem excessive. Particularly if he wishes to argue, to a naive audience, that nanotechnology is coming and will bring great benefits, then much more discussion of other lines of work, and existing devices, would seem appropriate.

Or again, is he seriously trying to argue not only the possibility, but the *engineering superiority*, of his nanomechanical devices? To make such a point on purely theoretical grounds, with no actual machine, he must not only consider his nanomachines in detail, but also in equal detail a range of nonexistent devices built on other principles: chemical? Biochemical? Highly modified versions of living things? *Nanosystems* contains no such detailed comparisons. (It's easy to see why not: it would extend to at least 5 times its present length!).

As with K. Eric Drexler, I too believe that control of the nanorealm can and will be achieved, and that such control will bring us great benefits. And I too vividly remember reading Feynman's original article. I part from Drexler, though, in doubting that nanomachines as he describes them will ever take their

place as useful devices. Perhaps someday, like Babbage's computer, someone will build them, just to prove their possibility... while our actual devices will use more subtle means to achieve far more.

Feynman not only suggested that we might master the nanorealm, but also that we would find new ideas and principles when we did so. And the existence of so many living things, combined with the total absence of nanomachines as Drexler defines them, suggests that the Universe is telling us something important about ANY nanodevice. (Yes, we see *mechanisms* all over: enzymes themselves are mechanisms. Mechanisms make protein and read off RNA from DNA. Yet nanomechanisms never seem to grow larger than that; and most interesting, the point at which Drexler stops calculating his device behavior and starts handwaving coincides closely with the maximum size of machines in living things). Any technically inclined cryonicist should buy and read this book; but I strongly recommend that they explore other ideas in nanotechnology too. It tells of only one corner of a very large cloth.

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## 1988

David Pizer

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1988, as many of you know, started just after Saul Kent brought his dying mother into Alcor so she could deanimate at the facility and hopefully receive the best possible suspension. As a result of that action, Alcor came under attack by the Riverside Coroner's Office, especially by the head of that department, Coroner Ray Carrillo. Carrillo wanted Alcor to surrender Dora Kent's head so he could autopsy and destroy it.

On the evening before the January 7 raid (and this was only the *first* raid; there was a followup the next week), I arrived at Alcor to do an interview of the

staff for the cryonics newsletter, *Venturist Voice* (now called *Venturist Monthly News*). I slept at the lab that evening. In the morning, I was in the bathroom when I heard a loud knocking on the door. Eventually I opened it and became aware of many law enforcement people in the facility. I was temporarily detained then asked to leave.

My friend Mike Perry and I eventually parked across the narrow street in front of Alcor, in my car. We watched as officials came and went inside the facility. I began to take pictures (and I believe Mike took a few also). The of-

ficers came to our car and ordered us to cease taking pictures and then left. We continued to take pictures, and shortly thereafter the officers returned and arrested us. (We were put in separate cars.)

As I sat alone in a police car, hands cuffed behind my back, I noticed that members of the press began to arrive and interview the officials. Although I could not hear very well what was being said, I could see that the press was satisfied with what the officials were telling them. It seemed that Alcor would receive some very bad publicity. What happened after that is not too clear in my mind. I was



concerned with what was going to happen to myself, my friends, and the patients of Alcor.

About this time a small group of neighbors began to gather to watch. Out of this small crowd a person stepped forward and addressed the press. He introduced himself as the Treasurer of Alcor. He told the press that what was happening was a breach of justice and a mistake on the part of the officials. He was articulate and he answered all the questions from the press in a professional and persuasive manner. At the end of his talk he was placed in handcuffs by the officials and taken to the police station with the rest of us.

It is my opinion that if this person had not stepped forward just when he did, the press would have gone against us in a terrible way and the officials would have had the nerve to remove our patients, thereby destroying Alcor. But the press did not go against us. They were mostly in our favor, or at least were not too hostile. The man who stepped out of the crowd and spoke was Carlos Mondragón.

There was no one else there to speak for us. Mike Darwin, Hugh Hixon, Mike Perry, myself, and eventually Art Mc-

Combs were all arrested and put out of reach of the press. Saul Kent and Jerry Leaf, believing they could be of more help to Alcor on the outside, went into hiding.

Upon our release Mike Darwin was unable to stand the pressure. As CEO, he felt he would suffer the most if charges were pressed against us. Mike became unable to function. I have been told that other people were offered the presidency of Alcor but no one even wanted to talk about it. Eventually Carlos called Jerry (who was then Vice President) and said he would take over. Carlos was our CEO and President from that time until he resigned on November 21, 1992.

As most of you know, we filed suit against the Coroner, we fought him in the press and eventually won. I believe that his immoral actions were initially just a self-serving ploy, to help in his political career. It backfired on him; Coroner Carrillo lost at the next election, and we won a \$90,000 settlement from the officials. During the period right after the Dora Kent affair, Board of Directors' positions became available at Alcor. Several qualified persons were asked to be on the Board but declined because of the con-

troversy and potential risk to their careers. Now that nearly five years have passed and we have won such a decisive victory, these fine people can come forward and serve on the Board and in fact we are lucky to have them.

I know most of us on the Board feel a lot of gratitude to Carlos for paving the way. I know that Alcor brought in a lot of new members during this controversy, because people admired our courage and because after we won, cryonics became more respectable. So now as 1992 comes to an end we all feel a little safer with this crisis behind us. We all feel a little more comfortable with the fine quality Board we now have to lead us. But let's remember that it wasn't always that way. I hope we will never forget 1988. I hope we will never have to repeat the lessons it taught us.

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# Meetings and Announcements

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## 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, JAN 3 meeting will be at the:  
Sheraton-Cerritos Hotel  
12725 Centercourt Dr., Cerritos, CA  
310-809-1500

**Directions:** Take the 91 Freeway, between the 605 and I-5 Freeways, to the Bloomfield Exit. Go south on Bloomfield to Towncenter Dr. and turn left. Go to Centercourt Dr. and turn right.

The SUN, FEB 7 meeting will be at the home of:  
Linda Abrams  
856 N. Harper, Los Angeles, CA

**Directions:** Harper Ave. is parallel to and between Fairfax and La Cienega in the West Hollywood area. 856 N. Harper is between Melrose Ave. and Santa Monica Blvd., on the corner of Harper and Willoughby. Take Fairfax or La Cienega north from I-10, or Santa Monica east from the 405 or west from the Hollywood freeway. (From the San Fernando Valley, take Laurel Canyon Blvd. south.)

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There is an Alcor chapter in the San Francisco Bay area. Its members are aggressively pursuing an improved rescue and suspension capability in that area. Meetings are generally held on the second Sunday of the month, at 4 PM, followed by a potluck. Meeting locations can be obtained by calling the chapter's Secretary, Lola McCrary, at (408) 238-1318 or (E-mail) lola@lucid.com.

The SUN, JAN 10 meeting will be held at the home of:  
Ralph Merkle and Carol Shaw  
1134 Pimento Ave.  
Sunnyvale, CA

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, FEB 14 meeting will be held at the home of:  
Leonard Zubkoff and Lola McCrary  
3078 Sulphur Spring Court  
San Jose, CA  
Tel: (408) 238-1318

The business meeting will start at 4 p.m., and the potluck around 6 p.m.

**Directions:** Take 101 south past the 880 and 280/680 junctions to the Capitol Expressway exit, (third exit past the 280/680 junction). Take Capitol Expressway East (back over 101) toward the San Jose foothills. Go right on Aborn Road (second traffic light; there is a Red Lobster on the corner where you need to turn). Go left on White Road (third traffic light; White is to the left and San Felipe is to the right at this intersection). Go right on Stevens Lane, which is the next traffic light. Go down Stevens, past the stop sign, and then take Mount Isabel, (second street on the right after going through the stop sign). Turn left onto Sulphur Spring Court, which is the next street. 3078 is the second house on the right.

**NOTE:** Leonard's house is definitely not child-proof; in fact, the proliferation of equipment, connecting cables, and tools should probably be considered child-hostile. I have no objection to children visiting, but their parents must be prepared to supervise them adequately so that no accidents occur.

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Alcor's Southern California chapter meets every other month. The next scheduled meeting is on January 11, 1993, and will be hosted by Mike Darwin, who will be giving a tour of his research facility. This will be an exciting opportunity to see what goes on in a cryonics research facility. Please call Chapter president Billy Seidel at 310-836-1231 for carpool information and directions. If you are not on our mailing list, call Billy Seidel at the above number.

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: Jan. 17, Feb. 21, Mar. 21, April 18.

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. The address is: 335 Horse Block Rd., Farmingville, L.I. For details call Curtis or Gerry at the above number.

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Alcor Indiana has a newsletter and a full local rescue kit, and two of the members have taken the Alcor Transport course. If you are interested and in Indiana, Illinois, Kentucky, Ohio, or Michigan, the Indiana group meets in Indianapolis on the second Sunday of each month, at 2:00 PM. Call Steve Bridge at (317) 359-7260, or Richard Shock at (317) 872-3066 (days) or (317) 769-4252 (eves) for further information.

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There is a cryonics discussion group in the Boston area meeting on the second Sunday each month at 3:00 PM. Further information may be obtained by contacting Walter Vannini at (603) 595-8418 (home) or (617) 647-2291 (work).

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Alcor Nevada is in the Las Vegas area. Their meetings are on the second Sunday of each month at 1:00 PM in the Riverside Casino in Laughlin, Nevada. Free rooms are available at the Riverside Casino on Sunday night to people who call at least one week in advance. Directions: 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. For more information, call Eric Klien at (702) 255-1355.

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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: Jan. 3, Feb. 7, Mar. 7, April 4.  
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 Pevensy West Ham railway station. When you arrive at Pevensy 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 071- 702-0234.

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