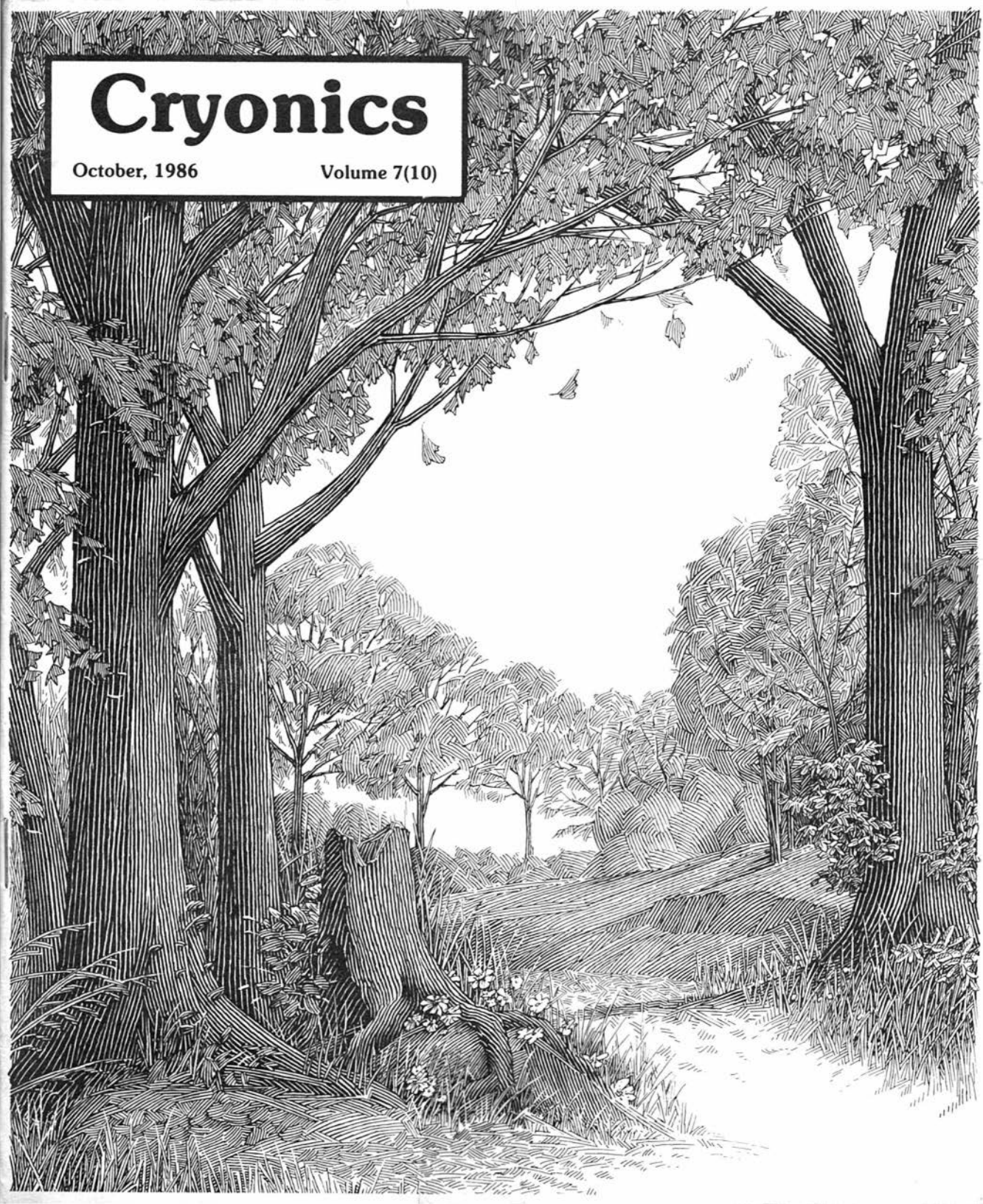


Cryonics

October, 1986

Volume 7(10)



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EDITORIAL MATTERS

Due to scheduling problems, the second part of our coverage of the Society for Cryobiology meeting has been omitted from this issue and carried over to the November issue.

In the center of this issue of CRYONICS you'll find a lengthy and intimidating-looking legal form. If you're an ALCOR Suspension Member a groan is probably escaping your lips right now, only to be followed by a loud declamation: "No! Absolutely NOT! I cannot, I will NOT fill out any more forms!" We sympathize! But we also want to warn you (if you're a California resident --and even if you're not) to look this one over carefully before you toss it in the wasteban. It is a simple, easy-to-fill-out form called a **DURABLE POWER OF ATTORNEY FOR HEALTH CARE**. Chances are, aside from your Suspension Paperwork, there isn't any more important piece of paper available to safeguard your biostasis arrangements. We urge you to read the article on page 10 of the magazine and to execute this form. It could be a real life saver.

We consider this form so important that we've let it consume a fair amount of magazine space. We felt it was more important to bring you this protection than

to bring you our usual quota of news. After you've read what this piece of "boilerplate" can do for you, we think you'll agree.

GIFT SUBSCRIPTION OFFER

It's time to start thinking about the holidays again: very soon Christmas and a new year will be upon us. The question is, what have you done for yourself about cryonics in the last 30 days? After all, think what cryonics has been doing for you, virtually every second of the day: it and your own efforts to help are all that stands between you and everlasting oblivion.

One easy and inexpensive way to do something to help cryonics (and thus improve your chances) is to give a gift subscription to CRYONICS (US subscriptions only). We're offering them again, this time at \$10.00, or 50% off the normal subscription price. The restrictions are the same as last year: the recipient cannot have previously been on our mailing list as a subscriber to CRYONICS or as a member of ALCOR. We can make this offer only for USA subscriptions --we lose money on the overseas subscriptions even at full price.



This year we're also going to offer some advice about **whom** to give a subscription to, based on our accumulated experience with gift subscriptions over the last few years. Basically there are two classes of people you might consider giving subscriptions to: friends and "influential people". In our experience, unless a friend has expressed some interest in cryonics, it is probably a waste of time and money to send them a subscription. But, if the person has expressed an interest in cryonics or remarked that they "find it a fascinating idea", then they are a good prospect to give a gift subscription to.



The "influential people" class may seem the least likely to yield a return. We've heard lots of people say "Oh, they'll just throw it in the trash and never read it." That was our first reaction too, but that hasn't turned out to be the case. One "influential person" who was given a gift subscription to CRYONICS (by John Krug) a number of years ago was Eric Drexler. I think it's fair to say that CRYONICS influenced Eric's thinking significantly, and that **Engines of Creation** has been a major shot in the arm for ALCOR and cryonics in general.

Several years ago Luigi Warren purchased a gift subscription for science fiction writer Arthur C. Clarke. We dutifully sent the magazine off to Sri Lanka once a month, wondering if Clarke ever got it, let alone read it! Sure enough, a letter from Clarke showed up in our mailbox one day praising us for one of our articles on nanotechnology!

People like Drexler and Clarke are important because they are opinion shapers and because they are communicators. We can't possibly afford to send every person like this a copy of CRYONICS once a month. Nor can we know who are the likely candidates. But we know they are out there. Science fiction writers like Greg Bear (**BLOOD MUSIC**) and John Varley (**OPHIUCHI HOTLINE**) may be excellent candidates for CRYONICS. And keep in mind that these people don't have to be sold **personally** on cryonics, they only have to write about it. Some years ago, Mike Darwin met science fiction writer Joe Haldeman at the Champanacon science fiction convention held in Champagne-Urbana, Illinois. Not long after that, the idea of cryonics and neuropreservation (by name) started turning up in Haldeman's stories. What's more, Haldeman knows we're real, that we're really **doing this now**. People like Joe Haldeman talk to a lot of other people and shape their ideas and images.

When you think about giving gift subscriptions, think about people who might be able to **use** the idea of cryonics, not necessarily to live longer personally, but to write stories about, or talk about... These people are always hungry for new and interesting ideas, and if cryonics isn't exactly new, they may at least find it interesting.

We've taken all this time and space to talk about gift subscriptions because we think they're important. A few more Eric Drexlers (and John Krugs!) and this thing will really get rolling. That single gift subscription has probably increased our suspension membership by about 20%!

So, when you're sitting down thinking about whom you wish to thank and show your gratitude to over the holidays (and the coming year) think of ALCOR and cryonics. We think it isn't too much to ask to consider spending \$10 to try to change the world. Based on our experience the odds appear to be better than at Las Vegas, and the payoff is potentially **infinitely** more rewarding.

TAXATION AND REPRESENTATION

As we've already pointed out, the end of the calendar year draws near. It may also be the end of an era. The Reagan Administration's tax reform package is now almost assured of passage, and for us, at least, it appears to be bad news. Next year, charitable contributions will probably not be as easy to deduct, and it looks like this may be the last year to get maximum advantage out of charitable giving.

It's no secret that we need your support. There are half a dozen critical research areas that need addressing, a new building that needs interior work, and a facility in Florida that needs moving (see story below). We need



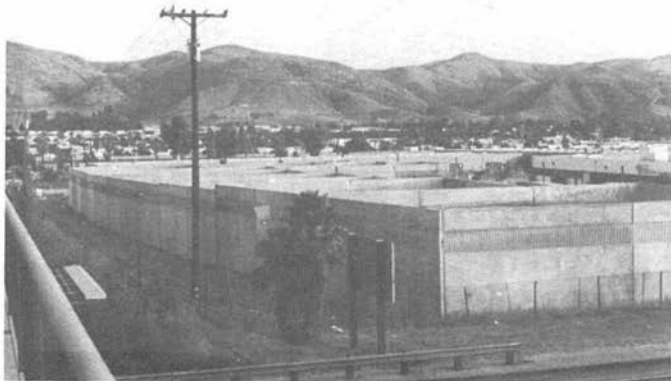
financial support for that. Before January 1st rolls around, consider giving us that support. While there are many "worthwhile" ways to give money, we feel we can confidently say that **none of them will be used as efficiently, or have more leverage, or be more likely to save your life, than a contribution to ALCOR.** We feel we have a good track history of solid research work, excellent patient care, and good use of resources available to us. We want to be able to continue to do that work. But we can't do it without continued help from you.

Right now there are a number of areas that particularly need help and support: construction of an operating room and kennel area in our new facility, CRYONICS magazine, research on brain ultrastructure during ischemia and freezing, elimination of the suspension patient fracturing problem during deep cooling and most importantly, improved techniques for cryopreservation of the brain.

Consider giving one of these areas your help and support this year, because next year it may be a lot harder (and more expensive) to do so.

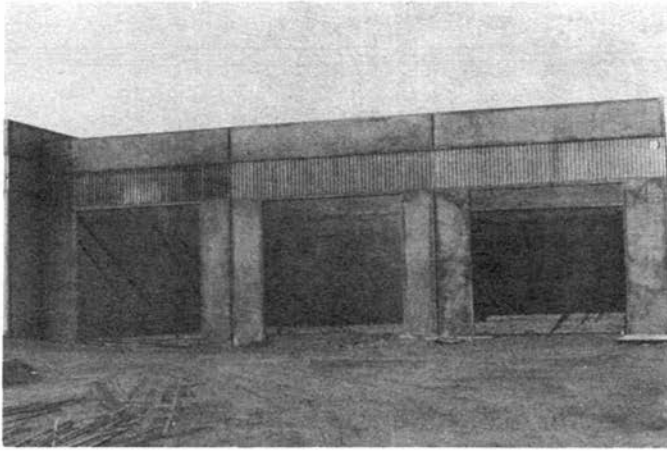
IN CALIFORNIA: THE WALLS ARE UP

As you can see from the accompanying pictures, progress with the new ALCOR building has been steady. As usual, complications have arisen, and the developer is now a little behind schedule, but things are still going well. The walls are up on our building and on all the other buildings in the development. The developer's really exciting problems have, as might be expected of any undertaking even remotely related to cryonics, been confined to the ALCOR building.



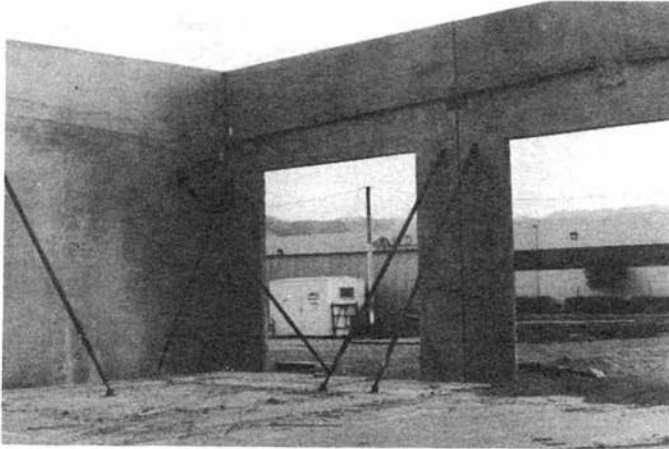
August 27. The walls have been erected.

During tilt-up of the walls the rigger handling the crane inadvertently **dropped** one of the walls to our building. A 7-1/2" thick slab of steel reinforced concrete measuring 16'x27' and weighing 20 tons does not tumble down like a flapjack. One worker was injured (although thankfully not seriously) and a substantial amount of equipment was destroyed--not to mention the wall to our building! So, they had to quickly pour another wall and use a lot higher quality mixture of concrete to allow them to be tilted up more rapidly. This resulted in a delay of about 2 weeks. There have also been the usual problems and delays any project of this magnitude normally encounters. As we knew from



the start, people with weak stomachs or tender dispositions should not watch the manufacture of sausage, law, or industrial buildings (the same might be said of cryonics as well).

Instead of the end of September as our completion date, we're now looking at the middle or end of October, barring any more falling walls or other mishaps. Fortunately, our arrangement with our current landlord gives us plenty of elbow room to accommodate the delay. We'll keep you posted.



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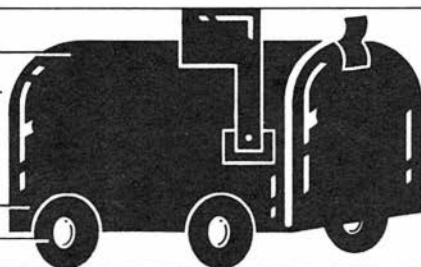
WHERE DO I GO,



NOW THAT I'VE
REACHED
MY LIMITS?

THIS IS ONLY ONE OF HUNDREDS OF DIFFERENT
POT-SHOT CARDS. IF YOU CAN'T FIND MORE AT
YOUR LOCAL STORE, WE'LL SEND YOU A STARTER
SET AND CATALOGUE FOR \$2.00. WRITE TO
BRILLIANT ENTERPRISES, 117 W. VALERIO ST.,
SANTA BARBARA, CALIFORNIA 93101.

*Letters to The
Editors*



Dear Mike and Hugh,

I am absolutely delighted and astonished at the quality of the new **Transport Protocol for Cryonic Suspension of Humans**. The clarity and detail are excellent and exactly what is needed for us non-experts out in the cryonics wilderness. I expected the technical information, of course, but there is a surprise bonus: two chapters on administrative procedures and on obtaining cooperation from hospital staff. I must confess that those details concerned me as much as the technical ones. I don't have the suspension experience that Mike and others in ALCOR have, and I am most happy to profit from their well thought out suggestions.

In the past few years, a number of people have complained about Mike's tendency to find a potential disaster in every uncrossed "t" and undotted "i". Apparently having a personal acquaintance with "Murphy", Mike spends a lot of time thinking about worst case scenarios (especially since he has been in several of them). Personally, I find this picky approach the only way worth pursuing when our lives are at stake. It leads to alarm systems for suspension units, earthquake protection vaults, basic research, the Florida base, the Cryonics Coordinator program, and books such as **Transportation Protocol.....** As the investigation into NASA's shuttle disaster brought out details of mismanagement and "we'll get around to fixing that someday", it became apparent to me what the result must be when potentially fatal problems are ignored. In the 1970's cryonics had its version of the **Challenger** explosion. Mike said that it must never be allowed to happen again. Let us all learn once more from both these tragedies. Sure, Mike can be a pain in the butt sometimes, but remember, the dead and buried feel no pain. Go on, Mike, be picky.

Finally, I want to encourage our readers who have enjoyed Eric Drexler's new book, **Engines of Creation**, to purchase one extra copy and donate it to their local university or public library, or local medical center library. Also, I hope after you have read the book (Please, don't fake it!) you will write a letter to your favorite news or science magazines and encourage them to write a review or do a feature on the book. Getting Drexler's book to a wide audience can only help us as cryonicists, and his thoughtful look at future problems — with possible solutions-- really is valuable to society in a number of ways. Personally, I did not mention cryonics in the letters I wrote. I felt the letter would be better accepted if it sounded like I was just an interested reader, rather than someone with my own axe to grind. If the book gets **read**, cryonics will get noticed. You do as you see fit; but please write. It is so little effort for what may be a great gain.

Steve Bridge
Indianapolis, IN

Comments from the Editors:

In Thomas Donaldson's book review of **Engines of Creation**, in the September CRYONICS, he attempts the argument that Nature may know more than Drexler when it comes to limits to molecular technology, in matters such as rate of growth, materials made, things done, etc.

It must be remembered that rate of growth and other limits in nature reflect a wide variety of compromises that will not be found in our molecular tools. We do not need bacteria that are capable of surviving billions of years of evolution. Quite the reverse. Beyond a certain point, fragility is a positive virtue in a self-reproducing tool.

A tool has no need of such considerations such as living in a diffusion-limited environment, ability to sporulate to survive dry spells, wide pH tolerance, ability to survive in its own waste products, and in general, the ability to carry on offensive and defensive biowar against its environment in order to insure the survival of its DNA.

Thus it seems reasonable to postulate that generally the minimum performance of a tool will be very close to the maximum performance of the best biological system, and the tool's performance may well be much greater, because it does not have to support the overhead of systems needed for do-or-die survival.

It should also be understood that all biological structures are **conformationally limited**. There are severe constraints on their ability to mutate into new structures. To mutate say, hemoglobin, to the point where it would perform the functions of collagen would take a **long** time. Likewise, it is conformationally very difficult for water-based life to transform by random mutations to the point where it could thrive on the surface of the Moon.

Life as we know it uses only part of the periodic table. Again, the rest of the table is conformationally inaccessible. However, we now use, and our molecular tools to come will use, boron fibers, lead, tungsten, titanium, metallic copper, ceramics, and countless other things which are the very unnatural products of our ingenuity. Even the parts of the Periodic Table that biology **does** use are by no means fully utilized. Where is a biological system that uses diamond, or fiber optic communications?

Virtually all life as we know it has evolved through Darwinian evolution. Except for a few tantalizing hints there are no signs of any form of Lamarckian evolution, where adaptations to environmental change are passed directly to offspring. If Lamarckian evolution did exist, it would quickly come to dominate the biosphere. What man's mind has done, and what Drexler proposes as an extension into the molecular scale of things, is beyond Lamarck. Not Darwinian mutation and selection, but a deliberate use of our ability to foresee, and design our tools accordingly. When I first read **Engines of Creation** in typescript, it had another title which Doubleday in its infinite wisdom saw fit to discard. Drexler's title was **The Future by Design**, and that's exactly what's going to happen.

Regarding several of Thomas's other points, I agree with him completely regarding the limits of "physical law". The best descriptions we have of reality, namely Relativity and Quantum Mechanics, are merely parsimonious descriptions of most of what we know about reality. They are known to be

incomplete. Specifically, explanations of the equivalence of inertial and gravitational mass in Relativity, and the results of the double slit experiment in Quantum Mechanics are not very satisfying. So Drexler's limits are based on the best we know, but Thomas's remarks on whether or not they are "fundamental physical limits" are correct.

Concerning AI, I am inclined to the prediction of G. Harry Stine that we will learn to couple our machines directly to our minds before we are able to create machine intelligences, and that before the term "AI" disappears, it will come to mean Augmented Intelligence, with the term "Artificial Intelligence" being relegated to an obscure historical speculation.

Finally, regarding the introduction of molecular technology into our civilization, I agree with Thomas that it will be a "treacherous gory melee", but this should in no way be taken as an excuse for not planning. I applaud Drexler's efforts to exert some control even if I do not agree completely with his specific recommendations and their consequences.

Hugh Hixon
Fullerton, CA

IN FLORIDA: TROUBLE AND THE NEED FOR ACTION

by Mike Darwin

Someone recently accused us of being the NATIONAL ENQUIRER of cryonics because of the "sensational" stories we print. Being at the forefront of cryonics makes for an interesting life, and we wouldn't have it any other way. Perhaps we do print sensational stories, but unlike the NATIONAL ENQUIRER the stories we print are true and they are generally things which have happened to us. Sometimes, we wish they weren't.

As most of our readers and members know, the perfusion facilities of Hollywood Health Services (with whom ALCOR has arrangements for use of facilities to cover East Coast and Florida ALCOR suspension members) are in the Life Extension Foundation Building in Hollywood, Florida. The building is owned by Steve Ruddel, who has been very sympathetic to and supportive of life extension for many years. He has made an entire floor (about 2,000 square feet) of the Life Extension Building available for the cryonics facility. He has also given low cost leases to the Life Extension Foundation for their activities, and has made meeting facilities in the building available for various other local groups to use.

Mr. Ruddel is a pleasant and extremely reclusive man whom I have met briefly on a number of occasions, but cannot say that I know well. I like the man, and I have always felt that he has dealt fairly with me and with ALCOR and that he is genuinely concerned about and interested in cryonics. Mr. Ruddel lives on the top (5th) floor of the Life Extension Building.

At 6:50 AM on Thursday, August 28th the police cordoned off the streets surrounding the Life Extension Building. A Broward County Sheriff's Department

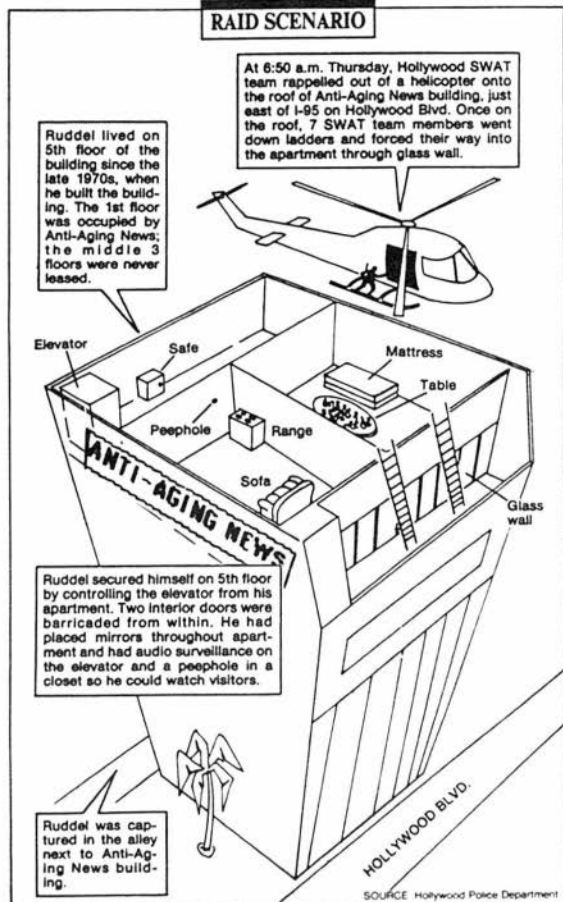
UH-1B "Huey" helicopter, similar to those used in Vietnam dropped eight Special Weapons and Tactics team members on the roof of the building at 2835 Hollywood Boulevard and burst into Mr. Ruddel's heavily secured apartment. A sharpshooter from the local SWAT team hovered in a helicopter across the street providing cover for the eight officers rappelling onto Mr. Ruddel's patio.

The headlines in the daily papers proclaimed: "POLICE SWARM DRUG LAB", "CRACK LAB RAIDED", "MAJOR COCAINE SUPPLY CUT"... The facts add up to an arrest for Mr. Ruddel who was charged with possession of cocaine and with acting as a dealer. We have good reason to believe these press/police charges of a major cocaine lab/dealer occupying the 5th floor of the building are ludicrous distortions used to justify what probably turned out to be an embarrassing lack of justification for such a major undertaking. The press reportage is fascinating, and serves as a lesson as to how much you can('t) believe of what you read in the papers.

Regardless of what the facts turn out to be, several things are clear: Mr. Ruddel did apparently have several hundred grams of cocaine in his dwelling and he was arrested and charged with a felony. The raid on the building has resulted in considerable bad press, and it has focused local police and judicial attention on the building and on people using it. It is not something we wanted to happen, and given our limited visibility into Mr. Ruddel's lifestyle and undertakings (he never confided to me his possession and/or use of cocaine) not something we could have anticipated.

It goes without saying that cryonics has enough problems without being linked to cocaine use. And, just for the record, I personally am violently opposed to cocaine use and also to alcohol and other drug use--including marijuana (I do not, however, favor outlawing these things. Lots of things disgust me, but that doesn't mean they should be illegal).

Given that we've got enough image problems already, we don't need more. Particularly not those kind of image problems. Nor do we need to be rusted out of bed to deal with probing reporters who want to know how cryonics and the



"immortality scam" fit in with the cocaine dealing.

I was not the only one who had to deal with such questions. Several of the Florida members who are directors of HHS are respected members of the community with reputations to safeguard. Some, like Austin Tupler, who owns the largest truck leasing company in the state of Florida, have already been very generous with time, money, and personal reputation in the promotion of cryonics. They do not enjoy such calls either.

None of the ALCOR Officers or Directors is on the HHS board, nor do we hold any HHS stock. This means we are not in a position to affect HHS decisions. Nevertheless, the majority of the HHS directors agree that it's time to find a new home for the perfusion facilities ALCOR uses in South Florida. The big question is: how to do it?

The need to relocate couldn't come at a worse time. Many of the Florida people have made heavy financial commitments in support of the California facility (which makes sense, since storage will be carried out here in California, and research operations are also located exclusively here). Money is tight.

Nevertheless, something needs to be done. One of the Officers of HHS has agreed to begin looking for property and to provide substantial capital towards a down payment. In November or December, Mike Darwin will go down to Florida to assist with the search and prepare the perfusion facility for relocation. It isn't going to be easy.

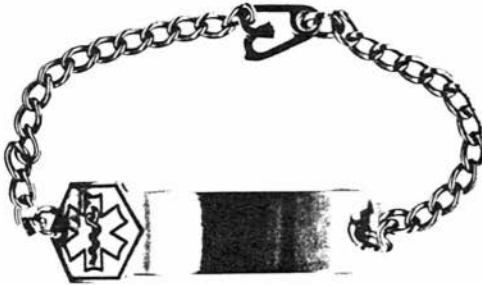
Help and support from the entire ALCOR network would be appreciated. We hope to be formulating a plan of action to deal with the problem and we'll report on progress as it occurs.

The Cryonics Bracelet Contest: Top Contenders

First, the news. We hope we're back on track on a source for new ID tags. It is just within the realm of possibility that we've found a vendor able to supply a tag which meets our needs and which will dovetail with the contest we've just held.

Below, we present the top three essays/entries in the bracelet contest. All three entrants had thoughtful strategies for a good bracelet message. We are particularly impressed with the good sense exhibited by Brian Wowk, of Manitoba, Canada, who suggested picking and choosing elements from among the best entries in order to optimize the message. We intend to do this. We also intend to give each of the entrants a free tag and or wallet card as soon as we work out a way to get them! It is certainly clear that the people who took the time to write us with their thoughts and ideas made a real difference. The fresh perspective was exactly what we needed, and we feel confident that will result in a real improvement to the Emergency Response System.

From Fred Chamberlain:



BIOSTASIS ANATOMICAL DONOR
DONT AUTOPSY OR EMBALM;
RESUSCITATE; DONT STOP;
COOL WITH ICE PACKS AND
CALL TOLL FREE NO. ON BACK

CALL 1-800-XXX-XXXX, AND
SAY "EMERGENCY PRIORITY,
A-XXXX" - IF YOU ASSIST,
THE ALCOR LIFE EXTENSION
FOUNDATION WILL PAY YOU!

The words on a bracelet are chosen to serve a purpose... to get the person reading the bracelet's message to call and assist. Of those two, calling is perhaps the most important, because without notification to ALCOR, no other action of any helpful kind is likely to occur.

Why "biostasis" rather than "cryonics"? Two reasons! First, as the popularity of Eric Drexler's book grows, people who have a positive attitude towards cryonics will relate to "biostasis" in a positive and familiar way. They will not find such a term out of place. Secondly, because of the negative publicity that "cryonics" has had, that term could lead to stereotyping on the part of some medical people, with the thought: "Oh that's one of these 'cryonics' people... they're crazy... why should I go out of my way to call this toll free number... I'll wait and see if the doctor in charge wants to be responsible for it!" Even a small proportion of anti-cryonics "rednecks" will eventually place some donors at great risk. For this reason, "biostasis" could be a better choice than "cryonics".

There is a third reason for "biostasis" vs. "cryonics". The term "anatomical donor" should register as something familiar to most medical people, but the term "biostasis" may **not** be familiar to them (unless they've read Drexler's book), and it might delay their taking some action such as removal of corneas without at least finding out what "biostasis" is **supposed** to mean. Similarly, the unfamiliar term might impel them to follow other instructions such as resuscitation and cooling, until they better understood what is involved. The last part of the instructions on the front have the purpose of getting the reader to turn the bracelet over and read the back, emphasizing that the number to be called is toll-free.

On the back, a number starting "1-800- " tells the reader (for a second time) that this a toll free call. (Note: The current ALCOR 800- number does not work in California. Eds.) It asks them specifically to say "emergency priority" and give the donor's ID number. This could be a "hot button" for the answering service to go into emergency procedures and to write down the donor's number, so that if the caller disconnects it is at least known that a specific donor is in trouble. Other routes of communication could then be started to determine what's happening.

Irrespective of the discussion against offering "rewards", the proposed message says that ALCOR will "pay you" if you "assist". If ALCOR, after receiving a call, gets no assistance except information as to the donor's number and location, this still in itself would be worth a great deal. Now examine the

other side of the coin! How much would ALCOR be obligated to "pay" for this "assistance"? Few courts, however idiotic, would be likely to hold that ALCOR had "underpaid" by giving the caller \$10.00 for the initial call. How much is a toll-free phone call worth in terms of compensation for labor, anyway? And, wouldn't ALCOR be willing to pay a \$10.00 fee for being notified?

From this point forward, it is up to the recipient of the call at ALCOR to make it clear to the caller what ALCOR is willing to pay, for what sorts of assistance. This matter requires more discussion. We are dealing with a potentially very large range of possibilities concerning the caller, who has been informed that "ALCOR will pay you if you assist". The ALCOR staff person who takes the call should immediately begin to develop two things at the same time: (1) a picture of what is happening, along with a picture of how the caller fits into this from the standpoint of being able to help, and (2) a perception on the caller's part of what is needed and what ALCOR is willing to pay.

If the caller is an orderly in a hospital and the entire course of events is in the hands of physicians, and the orderly is unable to do other than give you the most rudimentary information, then this (the name of the physician in charge, name of the hospital, perhaps the phone number of the hospital) is about all you can expect to obtain. You could obtain the orderly's name and address, and tell him he will receive a check for his assistance. If he asks how much, you could tell him that it's never less than ten dollars and could be much more, depending on the extent of the information you've received, but that this determination will be made by others, and that he will be hearing from ALCOR in the near future.



If the caller is speaking from a phone booth in an abandoned, remote area, is alone with an injured (or dead) donor, and is in such a position that he (or she) might be asked to undertake some sort of rescue action, then the situation is entirely different. The ALCOR representative is in a complex negotiating position, and may have to make offers (or not make them) on a basis of the detailed circumstances.

Is the donor dead or alive? If the donor is clearly dead, then financial uncertainty vanishes. If the donor is alive, then the matter of ALCOR's obligating resources it doesn't have becomes a sticky question. Regardless of these complexities, the underlying fact is that ALCOR has received notification that a donor is in trouble and some idea of what sort of trouble it is, and would not probably be liable for costs of more than about \$10.00 just for this information alone. On that basis, to fail to offer to "pay for assistance" seems to amount to risking not knowing that anything is wrong in exchange for the elimination of a \$10.00 liability.

Each donor could prescribe to what extent he or she wants assistance beyond that which could be covered by \$10.00 for the phone call, and could post a deposit in an amount that could be different for each donor. If a donor states emphatically that no assistance beyond the notification is desired, then that can be "charted" on a list of donors, and would tie the ALCOR Representative's hands (unless the report is that the donor is dead). If a donor wants to post a deposit of \$1,000.00, then this would give the ALCOR Representative considerably more negotiating power, and the Representative could request emergency transportation to a hospital and offer a "reward" that seems to fit the case (\$100 for accompanying the ambulance and then calling ALCOR again from the hospital, for example.) If the deposits were held in money market accounts and accrued interest, donors who made such deposits could regard them as low-yield investments.

In the interest of providing ALCOR Representatives on duty with the greatest amount of information as to how to proceed, donors who posted "assistance deposits" could specify any particulars they wished as to how things were to be handled for them in the commitment of their deposits for assistance.

A more organized approach would be for ALCOR to devise a "negotiating strategy" which would specify a "target" compensation for each of a large range of possible acts of assistance, and then use this as a guideline applicable to all who might post deposits.

In either case, donors who post a deposit would be asked to sign a blanket release acknowledging that ALCOR's negotiation for assistance in specific circumstances does not guarantee that any assistance of any kind will be obtained, and that ALCOR shall not be liable in any way for failure to secure assistance, due to either the caller's insistence of payments that amount to extortion (\$10,000 for making a second phone call, or for disclosure of further information) or to a caller's state of mind that rules out further assistance. ("Oh, this sounds like 'cryonics'. Well, to hell with you; I'm not even going to tell you where I'm calling from!").

From Brian Wowk:

This is my entry in your bracelet message contest. As you will see I have taken maximum advantage of your allowance of multiple entries and alternatives by proposing a dizzying array of possibilities to choose from.

For the front of the bracelet I propose a message consisting of any or all of the following.

MEDICAL INFORMATION	or	MED INFO
DONOR INFORMATION	or	DONOR INFO
LEGAL INFORMATION	or	LEGAL INFO
SEE WALLET CARD	or	WALLET CARD
SEE OTHER SIDE		

Rather than explicitly list all the possible combinations of these lines I think it's reasonable to suggest that you consider them mentally. The ideal physical arrangement of the message will, of course, depend on the one considered.

Note that the line, "DONOR INFORMATION", is particularly interesting since it has the potential for attracting information even after death.

I would also like to suggest that the possibility of including some kinds of personal medical information on the front be considered. The value of having a full five lines of suspension related information on the back may justify this.

I propose these alternatives for the first line of the back message.

RESEARCH DONOR A-XXXX
SPECIAL ORG DONOR A-XXXX
MED RESEARCH SUBJ A-XXXX
BIOSTASIS SUBJECT A-XXXX

I particularly like the last two because they avoid the sneaky and risky tactics of "DONOR" messages. The last message is in fact the best in this respect since it directly addresses the issue at hand.

I think "BIOSTASIS" would tend to generate one of two responses. The majority of people would not recognize the word, but may be impressed by a strange technical term. The minority of people sufficiently "in the know" to recognize "BIOSTASIS" might understand what's at stake, and respect procedures to be followed. This would be in contrast to the response to a word like "CRYONIC", which is more widely recognized, and widely scoffed at.

I will use the "BIOSTASIS" line in my subsequent examples, although it is only one of my suggestions.

Here are some proposals for the next two lines.

IF DEAD OR DYING CALL	IF DEAD OR NEAR DTH CALL
NOW COLLECT 714-738-5569	NOW COLLECT 714-738-5569

These are admittedly crude, but readable even by the semi-literate.

For the remaining two lines I propose the following as some lines to build from.

Medical instruction messages:

SEE WALLET CARD NO DELAY
RESUSCITATE & COOL BODY
RESUSCITATE AND COOL FAST
OXYGENATE BRAIN AND COOL
KEEP BRAIN OXYGENATED
DO NOT AUTOPSY OR EMBALM
DO NOT REMOVE ANY ORGANS

Note: The last line will become essential if proposed (in Canada) legislation is enacted making everyone an eligible organ donor in absence of explicit wishes to the contrary.

Motivating messages:

SPECIAL PROCEDURES REQD
URGENT SPECIAL PROC REQD
URGENT PROCEDURES REQD
PROMPT COMPLIANCE REQD
PROMPT RESPONSE REQUIRED
SPECIAL RESEARCH SUBJECT
MEDICAL RESEARCH SUBJECT
BRAIN RESEARCH SUBJECT
SPECIAL LEGAL ARRANGEMENTS
SPECIAL LEGAL SITUATION
SPECIAL LEGAL STATUS

Reward messages:

\$500 FOR ASSISTANCE
\$500 FOR YOUR ASSISTANCE
\$500 FOR COOPERATION
\$500 FOR YOUR COMPLIANCE
\$500 FOR PROMPT RESPONSE
\$500 FOR RESPONDING
\$500 FOR RESPONDING FAST
\$500 FOR APPLYING PROC
\$500 FOR FOLLOWING PROC
\$500 PAID FOR COMPLIANCE
\$500 PAID FOR RESPONDING



Note: The word "CASH" could be used in place of the actual amount.

I think there is a lot to be said for rewards, even if offered by the ERS tech over the phone and not on the bracelet itself. I believe that facilities and personnel should be reimbursed for the performance of procedures they believe to be of little medical value, and which health insurance may not cover. Moreover, a reward for the performance of necessary procedures, beyond just the phone call itself, would help ensure those procedures would be followed, even by off-duty personnel.

The following is a small selection of the messages that could be built from the lines I've suggested.

(Three pages of computer-generated message combinations omitted.)

If it is necessary to include personal medical information on the back of the bracelet this could be placed on the first line, and a reasonably good message should still be constructed with one less suspension line.

For example.

ALLERGIC TO PENICILLIN
MED RESEARCH SUBJ A-XXXX
IF DEAD OR NEAR DTH CALL
NOW COLLECT 714-738-5569
DO NOT AUTOPSY OR EMBALM

Concerning the subject of cooperation-inducing strategies in general, there is an approach that makes a lot of sense to me.

Consider this: ALCOR patients have made specific legal arrangements authorizing the "use" of their remains by a medical research foundation. This foundation's research interests encompass postmortem tissue viability, organ preservation, and the phenomenon of brain death. The freezing and long-term storage of organs and cadavers is a part of ongoing research.

Much of current research focuses on the development of protocols and transport systems to maintain brain life in the event of failure of critical body systems. This life-saving technology will be generally applicable to situations involving critical injuries far from facilities that could deal with them. (I don't mean actual cryonic suspension. I'm referring to aggressive, but reversible, measures to keep a patient's brain alive, and body tissue viable, when there are major, but fixable, problems below the neck. Cryonic-style patient support systems could save lives in situations where present ambulance-style care would leave patients D.O.A. One major application of this kind of technology will arise when practical artificial hearts become available, but implantable at only a few facilities far from where people will have their "fatal" heart attacks. Indeed, it may even be possible to sell cryonics-acquired know-how!)

In other words, I think the performance of suspension procedures can be justified on conventional research grounds. Never having been in the situation I can't say for sure, but I can imagine gaining full cooperation of hospital staff without ever having to mention the distant possibility of "raising this person from the dead", unless pressed to the point.

Even if it's not possible to completely pass off ALCOR and its purpose and activities as "research" oriented, I think the research argument can be a useful last line of defense for dealing with uncooperative people.

Finally, I'd just like to express my hope that after you choose the winning entry that you would not feel inhibited in formulating a bracelet message that incorporates the best ideas generated by all the contestants and beyond.

DURABLE POWER OF ATTORNEY FOR HEALTH CARE

(California Civil Code Sections 2410-2443)

This is a Durable Power of Attorney for Health Care form. By filling in this form, you can select someone to make health care decisions for you if for some reason you become unable to make those decisions for yourself. A properly completed form provides the best legal protection available to help ensure that your wishes will be respected.

READ THIS FORM CAREFULLY BEFORE FILLING IT OUT. EACH PARAGRAPH IN THE FORM CONTAINS INSTRUCTIONS. IT IS IMPORTANT THAT YOU FOLLOW THESE INSTRUCTIONS SO THAT YOUR WISHES MAY BE CARRIED OUT.

The following checklist is provided to help you fill out this form correctly. You may use this checklist to double check sections you may be unsure of as you fill in the form. You may also use this checklist to help make sure you have completed the form properly. If you have properly completed this form, you should be able to answer **yes** to each question in the checklist.

- _____ 1. I am a California resident who is at least 18 years old, of sound mind and acting of my own free will.
- _____ 2. The individuals I have selected as my agent and alternate agents to make health care decisions for me are at least 18 years old and are **not**:
- my **treating** health care provider.
 - an employee of my **treating** health care provider, unless the employee is related to me by blood, marriage or adoption.
 - an operator of a community care facility (Community care facilities are sometimes called board and care homes. If you are unsure whether a person you are thinking of selecting operates a community care facility, you should ask that person.)
 - an employee of a community care facility, unless the employee is related to me by blood, marriage or adoption.
- _____ 3. I have talked with the individuals I have selected as my agent and alternate agents and these individuals have agreed to participate. (You may select someone who is not a California resident to act as your agent or alternate agent, but you should consider whether someone who lives far away will be available to make decisions for you if and when that may become necessary.)
- _____ 4. I have read the instructions and completed paragraphs 4, 5, 6, 7, 8, and 9 to reflect my desires.
- _____ 5. I have **signed** and **dated** the form.
- _____ 6. I have either _____ had the form notarized; **or** _____ had the form properly witnessed:
- _____ 1. I have obtained the signatures of two adult witnesses who personally know me.
 - _____ 2. Neither witness is:
 - my agent or alternate agent designated in this form.
 - a health care provider, or the employee of a health care provider.
 - a person who operates or is employed by a community care facility.
 - _____ 3. At least one witness is not related to me by blood, marriage, or adoption, and is not named in my will or so far as I know entitled to any part of my estate when I die.
- _____ 7. I HAVE GIVEN A COPY OF THE COMPLETED FORM TO THOSE PEOPLE INCLUDING MY AGENT, ALTERNATE AGENTS, FAMILY MEMBERS AND DOCTOR, WHO MAY NEED THIS FORM IN CASE AN EMERGENCY REQUIRES A DECISION CONCERNING MY HEALTH CARE.

SPECIAL REQUIREMENTS

- _____ 8. **Patients in Skilled Nursing Facilities.**
If I am a patient in a skilled nursing facility, I have obtained the signature of a patient advocate or ombudsman. (If you are not sure whether you are in a skilled nursing facility, you should ask the people taking care of you.)
- _____ 9. **Conservatees under the Lanterman-Petris-Short Act.**
If I am a conservatee under the Lanterman-Petris-Short Act and want to select my conservator as my agent or alternate agent to make health care decisions, I have obtained a lawyer's certification. (If you are not sure whether the person you wish to select as your agent is your conservator under the Lanterman-Petris-Short Act, you should ask that person.)

If you change your mind about who you would like to make health care decisions for you, or about any of the other statements you have made in this form, you should take all of the following steps: 1. Complete a new form with the changes you desire; 2. Tell everyone who got a copy of the old form that it is no longer valid and ask that copies of the old form be returned to you so you may destroy them; 3. Give copies of the new form to the people who may need the form to carry out your wishes as described above in number 7. If after reading this material you still have unanswered questions, you should talk to your doctor or a lawyer.



DURABLE POWER OF ATTORNEY FOR HEALTH CARE DECISIONS

(California Civil Code Sections 2410-2443)

WARNING TO PERSON EXECUTING THIS DOCUMENT

This is an important legal document. Before executing this document, you should know these important facts:

This document gives the person you designate as your agent (the attorney-in-fact) the power to make health care decisions for you. Your agent must act consistently with your desires as stated in this document or otherwise made known.

Except as you otherwise specify in this document, this document gives your agent the power to consent to your doctor not giving treatment or stopping treatment necessary to keep you alive.

Notwithstanding this document, you have the right to make medical and other health care decisions for yourself so long as you can give informed consent with respect to the particular decision. In addition, no treatment may be given to you over your objection, and health care necessary to keep you alive may not be stopped or withheld if you object at the time.

This document gives your agent authority to consent, to refuse to consent, or to withdraw consent to any care, treatment, service, or procedure to maintain diagnose, or treat a physical or mental condition. This power is subject to any statement of your desires and any limitations that you include in this document. You may state in this document any types of treatment that you do not desire. In addition, a court can take away the power of your agent to make health care decisions for you if your agent (1) authorizes anything that is illegal, (2) acts contrary to your known desires or (3) where your desires are not known, does anything that is clearly contrary to your best interests.

Unless you specify a shorter period in this document, this power will exist for seven years from the date you execute this document and, if you are unable to make health care decisions for yourself at the time when this seven-year period ends, this power will continue to exist until the time when you become able to make health care decisions for yourself.

You have the right to revoke the authority of your agent by notifying your agent or your treating doctor, hospital, or other health care provider orally or in writing of the revocation.

Your agent has the right to examine your medical records and to consent to their disclosure unless you limit this right in this document.

Unless you otherwise specify in this document, this document gives your agent the power after you die to (1) authorize an autopsy, (2) donate your body or parts thereof for transplant or therapeutic or educational or scientific purposes, and (3) direct the disposition of your remains.

If there is anything in this document that you do not understand, you should ask a lawyer to explain it to you.

1. CREATION OF DURABLE POWER OF ATTORNEY FOR HEALTH CARE

By this document I intend to create a durable power of attorney by appointing the person designated above to make health care decisions for me as allowed by Sections 2410 to 2443, inclusive, of the California Civil Code. This power of attorney shall not be affected by my subsequent incapacity.

2. DESIGNATION OF HEALTH CARE AGENT

(Insert the name and address of the person you wish to designate as your agent to make health care decisions for you. None of the following may be designated as your agent: (1) your treating health care provider, (2) a nonrelative employee of your treating health care provider, (3) an operator of a community care facility, or (4) a nonrelative employee of an operator of a community care facility.)

I, _____ (insert your name)

do hereby designate and appoint: Name: _____

Address: _____

Telephone Number: _____ as my attorney-in-fact (agent) to make health care decisions for me as authorized in this document.

3. GENERAL STATEMENT OF AUTHORITY GRANTED

If I become incapable of giving informed consent to health care decisions, I hereby grant to my agent full power and authority to make health care decisions for me including the right to consent, refuse consent, or withdraw consent to any care, treatment, service, or procedure to maintain, diagnose or treat a physical or mental condition, and to receive and to consent to the release of medical information, subject to the statement of desires, special provisions and limitations set out in paragraph 4.

4. STATEMENT OF DESIRES, SPECIAL PROVISIONS, AND LIMITATIONS

(Your agent must make health care decisions that are consistent with your known desires. You can, but are not required to, state your desires in the space provided below. You should consider whether you want to include a statement of your desires concerning decisions to withhold or remove life-sustaining treatment. For your convenience, some general statements concerning the withholding and removal of life-sustaining treatment are set out below. If you agree with one of these statements, you may INITIAL that statement. READ ALL OF THESE STATEMENTS CAREFULLY BEFORE YOU SELECT ONE TO INITIAL. You can also write your own statement concerning life-sustaining treatment and/or other matters relating to your health care. BY LAW, YOUR AGENT IS NOT PERMITTED TO CONSENT ON YOUR BEHALF TO ANY OF THE FOLLOWING: COMMITMENT TO OR PLACEMENT IN A MENTAL HEALTH TREATMENT FACILITY, CONVULSIVE TREATMENT, PSYCHOSURGERY, STERILIZATION OR ABORTION. In every other respect, your agent may make health care decisions for you to the same extent you could make them for yourself if you were capable of doing so. If you want to limit in any other way the authority given your agent by this document, you should state the limits in the space below. If you do not initial one of the printed statements or write your own statement, your agent will have the broad powers to make health care decisions on your behalf which are set forth in Paragraph 3, except to the extent that there are limits provided by law.)

I do **not** want my life to be prolonged and I do **not** want life-sustaining treatment to be provided or continued if the burdens of the treatment outweigh the expected benefits. I want my agent to consider the relief of suffering and the quality as well as the extent of the possible extension of my life in making decisions concerning life-sustaining treatment.

I want my life to be prolonged and I want life-sustaining treatment to be provided **unless I am in a coma** which my doctors reasonably believe to be irreversible. Once my doctors have reasonably concluded I am in an irreversible coma, I do **not** want life-sustaining treatment to be provided or continued.

I want my life to be prolonged to the greatest extent possible without regard to my condition, the chances I have for recovery or the cost of the procedures.

If this statement reflects your desires, initial here _____.

If this statement reflects your desires, initial here _____.

If this statement reflects your desires, initial here _____.

Other or additional statements or desires, special provisions, or limitations.

(You may attach additional pages if you need more space to complete your statement. If you attach additional pages, you must DATE and SIGN EACH PAGE.)



5. CONTRIBUTION OF ANATOMICAL GIFT

(You may choose to make a gift of all or part of your body to a hospital, physician, or medical school for scientific, educational, therapeutic or transplant purposes. Such a gift is allowed by California's Uniform Anatomical Gift Act. If you do not make such a gift, you may authorize your agent to do so, or a member of your family may make a gift unless you give them notice that you do not want a gift made. In the space below you may make a gift yourself or state that you do not want to make a gift. If you do not complete this section, your agent will have the authority to make a gift of all or a part of your body under the Uniform Anatomical Gift Act.)

If either statement reflects your desires, sign on the line next to the statement. **You do not have to sign either statement.** If you do not sign either statement, your agent and your family will have the authority to make a gift of all or part of your body under the Uniform Anatomical Gift Act.

(_____) Pursuant to the Uniform Anatomical Gift Act, I hereby give,
(signature) effective upon my death:

- Any needed organ or parts; or
 The parts or organs listed:

(_____) I do not want to make a gift under the Uniform Anatomical
(signature) Gift Act, nor do I want my agent or family to do so.

6. AUTOPSY AND DISPOSITION OF MY REMAINS

I understand that my agent will be able to authorize an autopsy (an examination of my body after my death to determine the cause of my death) and to direct the disposition of my remains unless I limit that authority in this document. I also understand that my agent or any other person who directs the disposition of my remains must follow any instructions I have given in a written contract for funeral services, my will or by some other method.

(OPTIONAL: If you do not want your agent to be involved in these matters, you should state your desires concerning an autopsy and the person you would like to direct the disposition of your remains. If any of the statements below reflect your desires, sign next to that statement. If none of these statements reflect your desires and you want to limit the authority of your agent to consent to an autopsy and/or to dispose of your remains, you should write your own statement in paragraph 4, above.)

Autopsy

(_____) I hereby consent to an examination of my body after my death
(signature) to determine the cause of my death.

(_____) My agent may not authorize an autopsy.
(signature)

Disposition of Remains

(_____) My agent may not direct the disposition of my remains and I
(signature) would prefer that _____
(name and address)

direct the disposition of my remains.

(_____) I have described the way I want my remains disposed of in
(signature) (circle one):

1. A written contract for funeral services with _____
(name of mortuary/cemetery)

2. My will

3. Other: _____



7. DESIGNATION OF ALTERNATE AGENTS

(You are not required to designate any alternate agents but you may do so. Any alternative agent you designate will be able to make the same health care decisions as the agent designated in Paragraph 2, above, in the event that agent is unable or unwilling to act as your agent. Also, if the agent designated in Paragraph 2 is your spouse, his or her designation as your agent is automatically revoked by law if your marriage is dissolved.)

If the person designated in Paragraph 2 as my agent is not available and willing to make a health care decision for me, then I designate the following persons to serve as my agent to make health care decisions for me as authorized in this document, such persons to serve in the order listed below:

A. First Alternative Agent

Name: _____

Address: _____

Telephone Number: _____

B. Second Alternative Agent

Name: _____

Address: _____

Telephone Number: _____

8. DURATION

I understand that this power of attorney will exist for seven years from the date I execute this document unless I establish a shorter time. If I am unable to make health care decisions for myself when this power of attorney expires, the authority I have granted my agent will continue to exist until the time when I become able to make health care decisions for myself.

(Optional) I wish to have this power of attorney end before seven years on the following date: _____.
(Fill in this space ONLY if you want the authority of your agent to end EARLIER than the seven-year period described above.)

9. NOMINATION OF CONSERVATOR OF MY PERSON

(A conservator of the person may be appointed for you if a court decides that you are unable properly to provide for your personal needs for physical health, food, clothing or shelter. The appointment of a conservator may affect, or transfer to the conservator your right to control your physical care, including under some circumstances your right to make health care decisions. You are not required to nominate a conservator but you may do so. The court will appoint the person you nominate unless that would be contrary to your best interests. You may, but are not required to, nominate as your conservator the same person you named in paragraph 2 as your health care agent. You can nominate an individual as your conservator by completing the space below.)

If a conservator of the person is to be appointed for me, I nominate the following individual to serve as conservator of the person:

Name: _____

Address: _____

Telephone Number: _____

10. PRIOR DESIGNATIONS REVOKED

I revoke any prior durable power of attorney for health care.



Date and Signature of Principal

(YOU MUST DATE AND SIGN THIS POWER OF ATTORNEY)

I sign my name to this Durable Power of Attorney for Health Care on _____ at _____
(Date)

(City) , _____
(State)

(Signature of Principal)

(THIS POWER OF ATTORNEY WILL NOT BE VALID FOR MAKING HEALTH CARE DECISIONS UNLESS IT IS EITHER: (1) SIGNED BY TWO QUALIFIED ADULT WITNESSES WHO ARE PERSONALLY KNOWN TO YOU AND WHO ARE PRESENT WHEN YOU SIGN OR ACKNOWLEDGE YOUR SIGNATURE OR (2) ACKNOWLEDGED BEFORE A NOTARY PUBLIC IN CALIFORNIA.)

CERTIFICATE OF ACKNOWLEDGEMENT OF NOTARY PUBLIC

(You may use acknowledgment before a notary public instead of the statement of witnesses which appears on the following page.)

State of California)

) ss.

County of _____)

On this _____ day of _____, in the year _____,

before me, _____
(here insert name of notary public)

personally appeared _____,
(here insert name of principal)

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument, and acknowledged that he or she executed it. I declare under penalty of perjury that the person whose name is subscribed to this instrument appears to be of sound mind and under no duress, fraud, or undue influence.

NOTARY SEAL

(Signature of Notary Public)



STATEMENT OF WITNESSES

(If you elect to use witnesses instead of having this document notarized, you must use two qualified adult witnesses. None of the following may be used as a witness: (1) a person you designate as your agent or alternate agent, (2) a health care provider, (3) an employee of a health care provider, (4) the operator of a community care facility, (5) an employee of an operator of a community care facility. At least one of the witnesses must make the additional declaration set out following the place where the witnesses sign.)

I declare under penalty of perjury under the laws of California that the person who signed or acknowledged this document is personally known to me to be the principal, that the principal signed or acknowledged this durable power of attorney in my presence, that the principal appears to be of sound mind and under no duress, fraud, or undue influence, that I am not the person appointed as attorney-in-fact by this document, and that I am not a health care provider, an employee of a health care provider, the operator of a community care facility, nor an employee of an operator of a community care facility.

Signature: _____ Residence Address: _____

Print Name: _____

Date: _____

Signature: _____ Residence Address: _____

Print Name: _____

Date: _____

(AT LEAST ONE OF THE ABOVE WITNESSES MUST ALSO SIGN THE FOLLOWING DECLARATION.)

I further declare under penalty of perjury under the laws of California that I am not related to the principal by blood, marriage, or adoption, and, to the best of my knowledge I am not entitled to any part of the estate of the principal upon the death of the principal under a will now existing or by operation of law.

Signature: _____

(Optional Second Signature): _____

COPIES

YOUR AGENT MAY NEED THIS DOCUMENT IMMEDIATELY IN CASE OF AN EMERGENCY THAT REQUIRES A DECISION CONCERNING YOUR HEALTH CARE. YOU SHOULD KEEP THE EXECUTED ORIGINAL DOCUMENT AND GIVE A COPY OF THE EXECUTED ORIGINAL TO YOUR AGENT AND ANY ALTERNATE AGENTS. YOU SHOULD ALSO GIVE A COPY TO YOUR DOCTOR, MEMBERS OF YOUR FAMILY, AND ANY OTHER PEOPLE WHO WOULD BE LIKELY TO NEED A COPY OF THIS FORM TO CARRY OUT YOUR WISHES. PHOTOCOPIES OF THIS DOCUMENT CAN BE RELIED UPON AS THOUGH THEY WERE ORIGINALS.



SPECIAL REQUIREMENTS

(Special additional requirements must be satisfied for this document to be valid if (1) you are a patient in a skilled nursing facility or (2) you are a conservatee under the Lanterman-Petris-Short Act and you are appointing the conservator as your agent to make health care decisions for you. If you are not sure whether you are in a skilled nursing facility, which is a special type of nursing home, ask the facility staff. If you are not sure whether the person you want to choose as your health care agent is your conservator under the Lanterman-Petris-Short Act, ask that person.)

1. If you are a patient in a skilled nursing facility (as defined in Health and Safety Code Section 1250(c)) at least one of the witnesses must be a patient advocate or ombudsman. The patient advocate or ombudsman must sign the witness statement **and** must also sign the following declaration:

I further declare under penalty of perjury under the laws of California that I am a patient advocate or ombudsman as designated by the State Department of Aging and am serving as a witness as required by subdivision (f) of Civil Code 2432.

Signature: _____ Address: _____

Print Name: _____

Date: _____

2. If you are a conservatee under the Lanterman-Petris-Short Act (of Division 5 of the Welfare and Institutions Code) and you wish to designate your conservator as your agent to make health care decisions, you must be represented by legal counsel. Your lawyer must also sign the following statement:

I am a lawyer authorized to practice law in the state where this power of attorney was executed, and the principal was my client at the time this power of attorney was executed. I have advised my client concerning his or her rights in connection with this power of attorney and the applicable law and the consequences of signing or not signing this power of attorney, and my client, after being so advised, has executed this power of attorney.

Signature: _____ Address: _____

Print Name: _____

Date: _____

Although doing so may injure the winner's ego, it may save the lives of ALCOR patients.

From Steve Harris:

The Bracelet problem is an interesting one. While thinking about it I have come to some conclusions and ground rules which you may or may not agree with.

First, I don't think it is a good idea to try to explain cryonics, or use the word, or prattle about suspended animation in the ten short lines of a bracelet. This is only likely to get the wearer dismissed as a crackpot. Save the idea of cryonics for when it can be discussed at length. The original "whole body donor" concept is a good one, except for the small chance of misunderstanding about organ donation that you have already mentioned. I have decided to invoke a nebulous "tissue preservation protocol", which may help get a doctor to rationalize instructions to continue working on a dead body with CPR and some cooling, etc.

Second, the bracelet message should stand alone, since it may indeed be the only message after a drowning, mugging, nighttime emergency, etc.

Third, as I see it, outside the normal Medic-Alert function, the function of a bracelet is twofold: the most important function is to generate an immediate call to ALCOR (ideally, this should be repeated on both sides), and the bribes for this are different depending on whether the patient is alive or not. For a live patient, the best bribe is the promise of a medical history for the doctor. For a clinically dead patient, you are probably correct in offering some sort of cash reward. We can leave the amount unspecified so that everyone can come up with his own sum. The other function of the bracelet is corroborative: it is much easier for a doctor to follow weird telephone instructions on what to do with a body, if the body is wearing a tag which in broad terms commands the same treatment.

Here is one attempt at a message. **Med Hx** (Medical History) is an accepted abbreviation which will be understood by any MD. The last of the ten lines may be of lesser importance, except psychologically, since elective autopsies/embalmings require permission of kin, as you know. Specific med info can be given here alternatively.

MED HX: CALL COLLECT 24 HR
714 738-5569 WILL PAGE.
IN CASE OF DEATH, SEE
REVERSE FOR TISSUE PRES
ERVATION PROTOCOL. \$REWARD

CALL # NOW FOR INSTRUCTN
PUSH 50,000 U HEPARIN IV
DO CPR WHILE COOLNG WITH
ICE TO 40F. KEEP PH >7.5
NO AUTOPSY OR EMBALMING!



DIABETIC LIDOCAINE ALRGY (alternative message for last line)

A CHANGE IN PROTOCOL

One of the principal objectives of cryonics procedures is to minimize the onset of damage or structural changes associated with so-called "death"--or deanimation as we call it. To this end we begin artificial circulation and respiration immediately after the pronouncement of clinical death--where possible--and also administer medications to combat the effects of reduced or absent circulation and breathing.

One of the medications which has been included in our "transport protocol" since 1978 is Solu-Medrol (methylprednisolone). Solu-Medrol is a synthetic version of a class of natural compounds called glucocorticoids (GC's for short) which are released by the adrenal glands in response to stress. In the body GC's are effective in increasing the availability of energy substrates, inhibiting immune reactions, stabilizing cell membranes and, in particular, inhibiting the breakdown of lysosomes and their subsequent release of cell digestive enzymes.

Solu-Medrol in particular is very effective as a membrane stabilizer and inhibitor of lysosomal degradation and has been shown in some past studies to be useful in augmenting hypothermic organ preservation. Some years ago, GC's, in particular the synthetic GC's such as Solu-Medrol and Decadron (dexamethasone) were felt to be useful in protecting the brain against damage from ischemia. This is why it was included in the transport protocol.

However, a number of papers have been published disputing this effect (D. Anderson and R. Crawford, *STROKE* 10, 68 (1979); F. Plum, et al, *ARCH. NEUROL.* 9, 571 (1963); M. Dyken and P. White, *J. AMER. MED. ASSOC.* 162, 1531 (1956). Recently in *SCIENCE* (27 September, 1985, 1397-1400) Robert Sapolsky and William Pulsinelli of Rockefeller University and Cornell Medical College have demonstrated that GC's can be toxic to brain cells in the rat and can result in significantly increased cell death if they are administered following an ischemic episode (10 minutes) such similar in character to those that would be experienced during the interval between pronouncement of legal death and the start of resuscitation. The mechanism by which GC's, in this case corticosteroid, caused brain injury has not been elucidated. However, Sapolsky's and Pulsinelli's work does seem to clearly indicate that such injury occurs, at least in the rat.

This work, coupled with the lack of sound clinical or experimental evidence for the effectiveness of GC administration during ischemia has led us to reassess our use of Solu-Medrol. We have consulted with a number of our technical/medical advisers and have decided that at this time we will omit Solu-Medrol and other GC's from our transport protocol in the presence of ischemia greater than 5 minutes unless other studies demonstrate its usefulness as a general purpose membrane/lysosome stabilizer outweighs its potential hazard to the brain.

It should be emphasized that the work of Sapolsky and Pulsinelli indicated that damage to brain cells was largely confined to several discrete types of neuron and became apparent on a structural level only after many hours of blood recirculation at normal body temperature and prolonged administration of corticosterone. Nevertheless, in the absence of clear-cut benefits to the brain from their administration of Solu-Medrol we feel it prudent to discontinue its routine use in ischemic patients--and have done so.

Twenty Years Of Progress

by Dave Pizer

I often hear people say "cryonics isn't going anywhere". Even cryonicists have been heard to make this remark. Sometimes we cryonicists become discouraged because we don't seem to be making progress fast enough. I myself once almost felt the same way. But when I sat down and took a look at just what we have accomplished in the last twenty years or so, I was forced to reassess my pessimism.

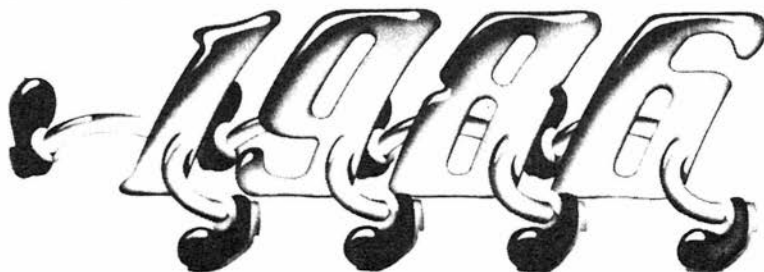
Twenty years ago no one was frozen in any cryonics program. Today there are twelve people in suspension. While it's true that there were once considerably more people in suspension and that many of them were lost in the Chatsworth catastrophe, that shouldn't necessarily discourage us. Twenty years ago we didn't have anyone frozen to become unfrozen. More importantly, from Chatsworth we learned some very important lessons. The cryonics organizations that are now in existence are hopefully aware of what happened. They have had the opportunity to implement sound administrative, technical and financial procedures and policies to prevent Chatsworth from happening again.

We have also seen a tremendous growth in the capability and competence of cryonics organizations — not to mention a growth in their number! We went from no organizations in 1966 to several organizations in 1986! And let's not underestimate the importance of competition. Competition makes us all function better. Often people will implement good changes in policy because of competition when they would never do so otherwise. Good! So much the better!

We now have advertising. We also have vastly improved public relations campaigns. We have booths in life extension events, science and technology shows, and related mediums.

Another critical and impressive change is the ever growing quality and number of our members. There are probably over 200 people signed up now, and a lot of those folks are high quality people; engineers, doctors, lawyers, salesman, real estate experts... the kind of people needed to provide a sound basis for future growth. That adds up to over 200 people signed up and another hundred or so waiting in the wings. Finally, we **are** growing at a good rate.

The public is also increasingly ready and willing to accept the possibility of cryonics working. When I ask someone to consider signing up, the answer is increasingly not "I don't think it will work," or "Cryonics, you mean freezing **dead people**, ha! you've got to be kidding." Often the answer is more related to



pragmatic problems such as "It's too expensive." The public is beginning to realize that cryonics might work. In the near future, as the public becomes more conscious of the possibility of eternal life, we are going to see a surge of people who believe in and will want cryonics.

I know this has been predicted before, but this time things are happening faster and in bigger numbers. I'm convinced that success is almost inevitable.

I often wonder how far along other ideas as peculiar to the "normal" way of life were after only twenty short years? It's hard to answer that question because there has never been anything in history to compare with the idea that man may be able to become immortal by his own hands. Sure, there have been all types of religious philosophies, but they have followed comparable earlier ones or were variations and additions pre-existing theories. Religion was developed over a very long period. Cryonics and life extension are truly different. The idea that we may be able to become immortal by this method is only a few years old, not thousands. It's going to take some time to gain acceptance!

We are involved in the most revolutionary idea in history and we have made good progress for such a controversial idea in just twenty short years.

So, don't be disappointed in what we've done. Don't be disappointed, but rather reflect on the fact that you have cause to rejoice. Rejoice in the fact that we have made great strides and we are on a giant roll. WE may be the first humans to be able to truly live forever. The thrill of being involved in this possibility can and should overshadow any other act in life.

For millions of years people have been dying. They have dreamed of, yearned for, and desired eternal life, and there may have never been any chance, until now. The faster we can influence society, the more people that can have that chance at eternal life.

It's happening. In just twenty short years it's happening, so rejoice and keep working.

Do It NOW!

by Mike Darwin and Steve Bridge

Chances are, you are young and in good health. You've probably made arrangements for biostasis, or are planning to do so. You very likely feel comfortable and optimistic about your future. Everything is taken care of—or is about to be. But before you decide to drive fast and live dangerously, we urge you to plug what is likely to be a major hole in your defenses. It's a hole you can easily plug, and that's what this article is about. Please, please pay attention to what we have to say here **because it literally may save your life.**

Getting to The Future

If you're a cryonicist (i.e., a signed-up, bracelet wearing, card carrying Suspension Member) you've already demonstrated your maturity and realism and

faced the fact that you could die. That's not an easy thing to do. However, there is one step further you need go in order to get the most out of your cryonics arrangements, and it is a step which we at ALCOR have found a tough one to get people to take. That step is to confront the possibility (and increasingly, given the direction of contemporary medical care, it's a probability rather than a possibility) that you may be unable to make important medical decisions for yourself long before you deanimate. This is not a thought most of us are comfortable with, but it needs to be faced, and dealt with, because it can be of crucial importance to the success or failure of your cryonics arrangements.

**DURABLE POWER OF ATTORNEY
FOR HEALTH CARE¹**
(California Civil Code Sections 2600-2603)

This is a Durable Power of Attorney for Health Care form. By filling in this form, you are either someone to make health care decisions for you if for some reason you become unable to make those decisions for yourself. A properly completed form provides the best legal protection available to help ensure that your wishes will be respected.

READ THIS FORM CAREFULLY BEFORE FILLING IT OUT. EACH PARAGRAPH IN THE FORM CONTAINS INSTRUCTIONS. IT IS IMPORTANT THAT YOU FOLLOW THESE INSTRUCTIONS SO THAT YOUR WISHES MAY BE CARRIED OUT.

The following checklist is provided to help you fill out this form correctly. You may use this checklist to double check sections you may be unsure of as you fill in the form. You may also use this checklist to help make sure you have completed the form properly. If you have properly completed this form, you should be able to answer "no" to each question in the checklist.

_____ 1 I am a California resident who is at least 18 years old, of sound mind and acting of my own free will.

_____ 2 The individuals I have selected as my agent and alternate agent to make health care decisions for me are at least 18 years old and are not:

- my existing health care provider
- an employee of my existing health care provider, unless the employee is related to me by blood, marriage or adoption
- an operator of a community care facility (Community care facilities are sometimes called board and care homes. If you are unsure whether a person you are thinking of selecting operates a community care facility, you should ask that person.)
- an employee of a community care facility, unless the employee is related to me by blood, marriage or adoption.

_____ 3 I have talked with the individuals I have selected as my agent and alternate agent and those individuals have agreed to participate. (You may select someone who is not a California resident to act as your agent or alternate agent, but you should consider whether someone who lives far away will be available to make decisions for you if and when that may become necessary.)

_____ 4 I have read the instructions and completed paragraphs 4, 5, 6, 7, 8, and 9 to reflect my desires.

_____ 5 I have signed and dated the form.

_____ 6 I have either _____ had the form witnessed, or _____ had the form properly notarized.

_____ 7 I have obtained the signatures of two witnesses, or _____

_____ 8 _____

Why? That's one of things we seem to have a hard time communicating to people. Unfortunately, all too many people out there see cryonics as some kind of magic. "As long as I get frozen everything will be OK!" seems to be the mantra of this class of folks. Unfortunately, that just isn't true, at least not given our current understanding of the Universe and the way it works. It is possible to get frozen and not come back. Molecular technology is not God, and future repair techniques and technicians will have to have something to work with in order to bring us back. That "something" is **information**. That information is encoded in the molecular makeup—the physical structures of our brains.

While contemporary freezing techniques damage that structure somewhat, we cryonicists believe (and have evidence to suggest that we are justified in believing) that the damage does not disorder the structure so much that we cannot **infer what should have been there from what is there now**. A very, simple analogy would be a radio with a broken knob. Almost anyone but a savage or a moron would be able to look at the radio and the knob and tell you what's wrong with the knob (and thus the radio) and what it **should** look like. The radio is damaged, but it is easily possible to infer from the damaged parts what the radio should be like. On the other hand, if we were presented with a box of fine black ash and asked to "set things right" we would have no idea where to begin!

The problems confronting us as cryonicists are much the same. If we seem to be digressing, it is to a good purpose and we will now return to the main point of this article. Getting frozen is only **part** of the solution to the problem of surviving "death". There first has to be enough of us left to freeze.

Avoiding Brain Death Before Legal Death

Unfortunately, a significant number of medical conditions which can cause us to deanimate can also destroy our memories and personalities long before we are pronounced legally dead. Certain horrible and relatively uncommon brain diseases such as pansclerosing encephalitis, Huntington's chorea, and Korsakoff's disease (which results from chronic alcoholism) come to mind. These are diseases which destroy the mind and brain long before the heart and lungs. In the very worst of these diseases, by the time the victim's heart and lungs stop, the higher centers of brain have been reduced to nothing more than a tangle of fibrotic scar tissue. The analogy of reducing a radio to a box full of fine black ash is a very apt one here.

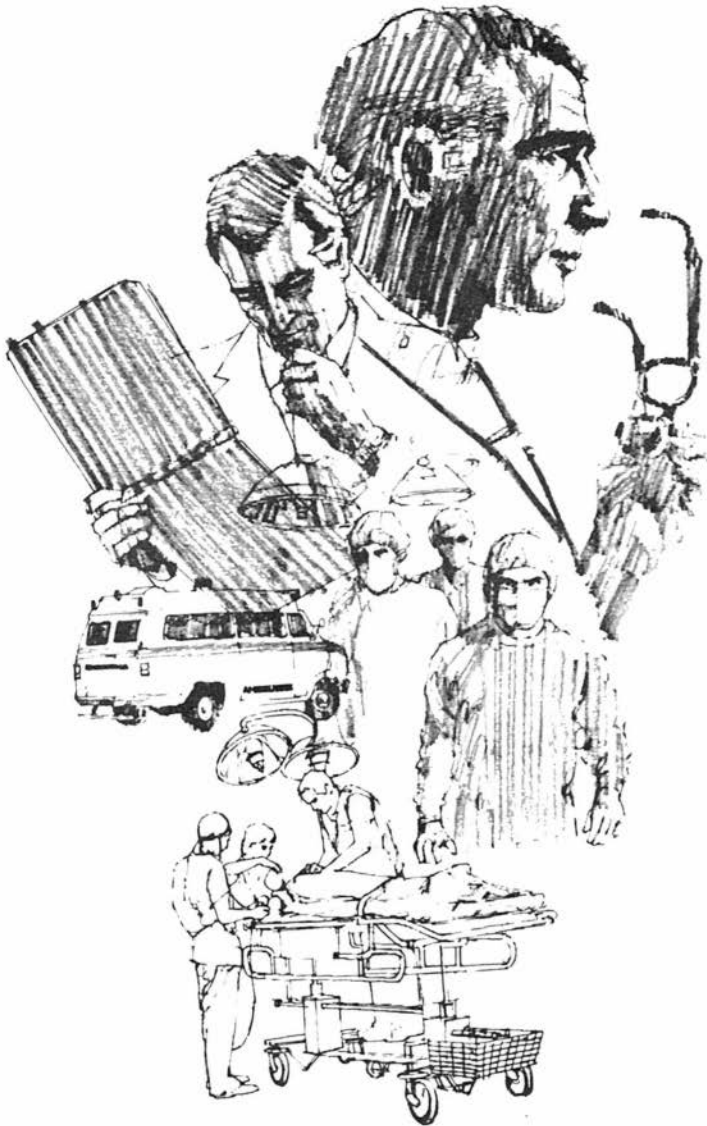
But it is not just these rare and terrible brain diseases we must concern ourselves with. There are others just as devastating which are far more common. About 15% of us will die as a result of stroke or stroke-related disease. Strokes destroy brain information. Indeed, if you have a severe stroke and end up brain-dead, you could very well be on a respirator for a day or even several days before you are **pronounced** "brain-dead" and taken off life support equipment. From a cryonics standpoint this is a disaster! It would be the equivalent of being allowed to sit around after death for a day or two while submerged in a warm bath! No doubt, a tremendous amount (if not all) of the information which makes up the individual is likely to be lost under those conditions.

But even major strokes aren't the whole picture in terms of our risks of dying in ways that could destroy our chances of cryonics working for us. A significant number of elderly demented patients suffer dementia due to repeated, multiple, and diffuse small strokes. Slowly, over a period of months or years, their brain is systematically destroyed and brain tissue is replaced with scar tissue. In such cases, brain weight may drop to less than a pound (the normal adult brain weight is three pounds) —with much of the remaining mass being scar tissue. Once again, even the most sophisticated biostasis techniques will not preserve what simply is not there to begin with. And there are other illnesses which can ravage the brain before bringing legal death, and not all of them are diseases of the elderly. The encephalopathy of AIDS, head trauma, and severe multiple sclerosis are all things which are more likely to affect the young than the old.

Powerful New Legislation

What's the point of all this? The point is that there is now at least one way you can help protect yourself from these kinds of serious risks and that is to take advantage of a recently enacted California law which allows you to make many of your health care decisions in advance. California now allows its residents to create a **Durable Power of Attorney for Health Care**. The law allows you to choose someone to make health care decisions for you if for some reason you become unable to make those decisions for yourself. The law represents a quantum leap forward in the security available to cryonicists living in California.

In practical terms, what this law means for cryonicists is that you can now give someone the authority to take you off a respirator if you have a flat EEG, or to discontinue tube feedings or other medical care which may be prolonging



the life of your body while you brain rots away. If we had set out to draft and lobby for such a law, we couldn't have done a better job ourselves of designing it!

To take advantage of this law, all you have to do is complete the **Durable Power of Attorney** form which is contained in the center of the magazine and be a California resident. A lawyer is not required to fill out this form. If you live in a state other than California, this form may still save your life. Take it to your attorney and ask him to draft you a **limited power of attorney** embodying the key elements present in this form. There is no guarantee it will work, but there is a reasonable possibility that it may --even without specific enabling legislation such as we have here in California.

Those of you who have filled out our **Directive to Physician** form may wonder if there is a difference between the **Durable Power of Attorney** and the **Directive**. A properly completed **Directive to Physi-**

ians under the **California Natural Death Act** can be followed by your doctors, who are also given legal protection for their actions. However, the directive is useful only when death is very close and is useful only if you wish to direct that life sustaining procedures be **withheld**. In short, it isn't very flexible and it doesn't provide any help to people who may be suffering slow, degenerative brain diseases (such as Alzheimer's or the others discussed above). The advantage of the **Durable Power of Attorney for Health Care** is that it not only lets you state your desire not to be given extraordinary treatment in instances where it would be useless and conflict with your chances for successful suspension, but that it applies in all situations where you are unable to make

health care decisions for yourself, not just when you are in "imminent" danger of dying.

Another incredibly important aspect of this law is that it provides the physician with legal protection in following your wishes, or those of your designated representative. In this era of litigation madness, that protection for the physician can mean the difference between cooperation and noncooperation.

Why Not?

Despite the tremendous advantage represented by this law, we have found a little resistance to using it on the part of some cryonicists. That resistance seems to result primarily from two factors:

1) Cryonicists are independent-minded people who do not surrender control to others easily. Particularly not control of life or death decisions.

We have no easy solutions to this problem. We can only point out that if you draft clear directives to guide your representative and if you choose an individual of integrity, we think the potential benefits far outweigh the potential risks. Also, there are the following safeguards built into the law:

a) The person to make decisions for you will be the person whom you have chosen.

b) The person you select may make health care decisions for you only if you are in a coma, are mentally incapacitated, or otherwise unable to make your own decisions.

c) You may terminate the **Durable Power of Attorney for Health Care** at any time by simply telling your doctor or the person you appointed to make health care decisions for you that you no longer want the **Durable Power of Attorney** to be effective.

d) A **Durable Power of Attorney for Health Care** is valid for a maximum of seven years and you must complete a new **Durable Power of Attorney for Health Care** form if you wish to be covered after the expiration date.

e) If you get divorced after completing a **Durable Power of Attorney for Health Care** form in which you have named your spouse as the person to make decisions for you, that selection is automatically revoked.

f) You may include written instructions in the **Durable Power of Attorney for Health Care** form, and you may tell the person you have chosen to make health care decisions for you, or your doctor, what you desire. These instructions will generally be legally binding.

g) If the person you have chosen to make health care decisions

for you decides to remove or withhold life-sustaining treatment, your doctor must try to discover if you object and may not remove or withhold treatment necessary to keep you alive if you object.

h) The person you choose to make health care decisions for you may not agree to:

- 1) commitment or placement in a mental health treatment facility,
- 2) convulsive treatment,
- 3) psychosurgery,
- 4) sterilization or abortion.

i) If the particular situation is not covered by any written instructions in the **Durable Power of Attorney for Health Care** form nor anything you have told your doctor or the person you have chosen to make these decisions, the person you have appointed must make decisions based on your "best interests" (i.e., conservative, life-sustaining treatment).

2) Choosing someone to make the right kind of decisions for you can be very difficult, particularly if you're the **only** cryonicist living in your state.

This problem is a far tougher one to handle. We can make a couple of suggestions, none of them exactly easy or straightforward to implement. First, try to interest other quality, responsible people in your area. ONE other cryonicist in your neighborhood is a big improvement over NONE. Second, get to know other cryonicists as well as you can. Showing up at events like the Tahoe Festival and the Life Extension Conference is a good way to start. If you meet someone there whom you like and respect, you may be able to build a relationship



which would justify choosing that person to act as your medical power of attorney. Even if the person is not in your state, someone who is familiar with your wishes and values who can be called on in such a situation is very likely to be better than no one, even if they are some distance away.

How To Do It

What follows are some general instructions and advice on how to fill out and prepare the form. Needless to say, you have to be the one who makes the decisions. The language we provide is intended to be suggestive and to provide a starting place. Only you can decide what's right for you.

INSTRUCTIONS FOR "CALIFORNIA DURABLE POWER OF ATTORNEY FOR HEALTH CARE"

NOTE: THIS FORM IS VALID ONLY FOR RESIDENTS OF CALIFORNIA. IF YOU ARE A RESIDENT OF ANOTHER STATE, YOU SHOULD CONSULT YOUR ATTORNEY TO FIND OUT WHAT YOUR STATE'S REQUIREMENTS ARE FOR PROVIDING POWER OF ATTORNEY.

On the **Patient's Directive to Physician** you have designated an individual to act as your "medical surrogate" in the event that you become incapacitated, incompetent, or otherwise unable to make your own medical decisions. However, this person has no legal status or power unless you also provide them with a **Power of Attorney**. A **general Power of Attorney** gives a designated individual the legal right to make all of your business, financial, legal, and health decisions as if they were you. It is a good idea that you have such a person selected so that your personal affairs may continue to be taken care of if you become incapacitated for a long period of time. Obviously, this must be a person you trust, since a dishonest or incompetent **Attorney-in-Fact** (the legal name for this agent) could do a lot of damage to your finances.

Many suspension members may prefer that the person making their health care decisions be different from the one making the financial decisions. It may not be possible to do that in all states, but California has a comparatively simple form by which you may designate a "**Durable Power of Attorney for Health Care**."

The copy of the form provided and the accompanying guidelines were written by the **California Medical Association**. The form is clear and self-explanatory; and if you read it carefully, we think you will have no trouble filling it out. We do wish to point out a couple of potential problems and to suggest certain language you may wish to use at various points in the form.

In general, this form could probably be filled out without the aid of an attorney. However, if you have a **previous Power of Attorney** in force, you should consult your attorney to make sure there are no conflicts. Also, you may wish to consult an attorney concerning our suggested language, which may or may not be appropriate for your particular situation or desires.

NOTES:

Section 2. **Designation of Health Care Agent.**

Even though the law says only that the **Health Care Agent** may not be your health care provider, we strongly recommend that it not be **any** health care provider. Emergencies may suddenly put you in the medical care of your Agent, even though you did not intend that. Also, to avoid conflicts of interest, this Agent should not be an officer of ALCOR.

Section 4. **Statement of desires, special provisions, and limitations.**

It is essential in this section that you leave clear, direct instructions concerning how you wish to be treated. This must include a statement that these instructions are based on a desire to have your human remains cryonically suspended after your legal death. We suggest that you **do not** initial any of the three printed statements provided with the document, but instead under "Other or additional statements..." write "See Attached Statement." **NOTE: YOU MUST SIGN AND DATE EACH ATTACHED PAGE FOR YOUR STATEMENT TO BE VALID!**

The following statement is **suggested**, based on our experiences and concerns. You should word the statement so that it reflects your own desires and feelings, and so that it is **absolutely clear** to your **Health Care Agent** what action should be taken if you are unable to make your own decisions. You may find it useful to have your statement approved by your attorney and by ALCOR before signing the full document.

"It is my desire to have my human remains placed into cryonic suspension following my legal death, in order that I may be revived in the future, with my personality and memory intact, if such a procedure is ever possible. Therefore, it is essential that the process of my dying not be extended by means which would tend to cause deterioration of the physical structure of my brain (for example, being kept on a respirator at near body temperature, when cerebral blood flow is non-existent or severely compromised).

"Therefore, as a general rule, it is my instruction that if there is a reasonable chance that I may be returned to mental and physical health, all necessary procedures should be undertaken. However, if at any time I have an incurable injury, disease, or illness certified in writing to be a terminal condition by both my attending physician and one other physician (except in circumstances where no other physician is rapidly available), and my attending physician has determined that my death will occur within a short period of time, and the use of life-prolonging procedures would serve only to artificially prolong the dying process and/or to increase the likelihood of severe brain damage, I direct that such procedures be withheld or withdrawn, and that I be permitted to die naturally with only the provision of appropriate nutrition and hydration and the administration of medication and the performance of any medical procedure necessary to provide me with comfort care or to alleviate pain. In such circumstances, I instruct that I be declared legally dead as soon as possible, and that my remains be promptly transferred to ALCOR Life Extension Foundation.

"I specifically desire that my life not be artificially prolonged nor my physiological functions be maintained by use of a respirator in the event of

severe brain injury or damage from any cause, including but not limited to: stroke, aneurysm, trauma, poisoning, or cardiac arrest. I stipulate that "severe injury" constitutes any condition in which flow to the brain is irreversibly compromised or in which electrical activity is absent (where there are no overlying reversible reasons for absence of electrical activity, such as the presence of barbiturates or hypothermia). If a severe injury of this nature has occurred and current medical techniques cannot reverse it, I instruct that I immediately be disconnected from life support equipment, that I be declared legally dead as soon as possible, and that my remains be promptly transferred to ALCOR Life Extension Foundation. To this end I authorize any and all tests required to establish continued cerebral viability, blood flow, and/or electrical activity as may be required in the judgement of my Health Care Agent on advice from my physicians."

Section 5. **Contribution of Anatomical Gift.**

This section is a controversial one for California cryonic suspension patients, since we do not know if cryonic suspension arrangements will be judged by the courts to meet the requirements of the **Uniform Anatomical Gift Act** (see ALCOR's **Authorization of Anatomical Donation**.) We suggest that the most options will remain open and that your body likely will be given the best care if you sign the first option ("Pursuant to the Uniform Anatomical Gift Act..."), check "The parts or organs listed:," and write in the blank space, "Full human remains, but **only** under the circumstances detailed on the attached page."

On the attached page, you must write:

"In accordance with my **Last Will and Testament**, with a completed **Authorization of Anatomical Donation**, and with other legal documents signed by me, I direct that upon my legal death my human remains be given to the ALCOR Life Extension Foundation, a California not-for-profit corporation specializing in research in cryonic suspension. If it is legally judged that ALCOR has no authority to accept my human remains under the terms of the **Uniform Anatomical Gift Act**, then I revoke this authorization and refuse to allow my human remains to be donated to any other organization or individual, unless such donation is necessary to effect the cryonic suspension of my remains. Since it remains my intention that ALCOR should have full and complete control of my human remains for the purpose of placing them into cryonic suspension, I authorize my agent and family to give ALCOR custody of my human remains by whatever legal means may be available."

NOTE: YOU MUST DATE AND SIGN THIS ADDITIONAL PAGE!

Section 6. **Designation of Alternate Agents.**

Same cautions as for Section 2.

Notary Public or Witnesses.

Note that you may validate this form by signing it either in the presence of a Notary Public or in the presence of two (2) witnesses. If you choose witnesses, follow the same cautions as for Section 2.

Copies.

After signing, send two (2) photocopies of this document to **ALCOR**, and send copies to your **Agent**, any **alternate Agents**, **next of kin**, and **your physician**.

Special Requirements.

Note these if you are a patient in a "skilled nursing facility" or if your have a **conservator** whom you wish to designate as your **Health Care Agent**.

When We Wake Up

by H. Keith Henson

In general, prognosticating about the future is a shaky business. But I feel more confidence in describing a world in which we wake up than in describing the future in general. This is because our world is largely shaped by the available technology, and we are beginning to have a fairly good concept of the technology that will be required to reconstruct the relatively messy stuff we put into cryonic storage.

My connection to cryonics is unusual, perhaps unique. My family and I are possibly the first to be brought into cryonics by an understanding of the reanimation end of the process. I was convinced that reanimation will be possible in the relatively near future by reviewing several drafts of Eric Drexler's **Engines of Creation**. I have enough background in both biology and computer science to check the logic of all his important points about nanotechnology and its offshoot cell repair machines. It still took considerably more than a year before the reality and imminence of it all sunk in and we started the lengthy process of signing up. The untimely death of a friend goaded us into finishing it.

(The shame is not to die, but to die the day before cell repair machines, etc. make long term life extension available. If you see it coming, it becomes a shame to die the week before, the month before, or the year or decade before.)

Nanotechnology, the ability to manipulate atoms and build replicators and computers at the molecular level, seems to be both necessary and sufficient to reanimate those waiting in storage. There are a number of physical and social dangers associated with developing nanotechnology, but if we are reanimated at all, those dangers must have been avoided. Given an economy based on nanotechnology, what can we expect?

For a starter, we will have vast resources in relation to the population. Even land, provided it is not necessarily on Earth, will be inexpensive. The same technology that can restore the fine details of cells can build both spacecraft of remarkable performance



and skyhook cables strong enough to bridge between earth and geosynchronous orbit. Land in space habitats, built with nearly no human labor, should be cheap. With such wealth, incredible diversity is possible. It could range from hunter-gatherer societies to super-techs living inside totally artificial information spaces, where thought takes place up to a million times faster than possible for protein based life. (A way to subjectively stretch the age of the universe a million times.)

Because general purpose assemblers will be efficient without needing long production runs, there is little reason to ship finished goods long distance. Many production "runs" by an array of assemblers may make only a single item. Recycling of something currently undesired into something needed will be trivial. Clothing, for example, could come in a solid block. When the block was instructed to do so, it would become anything from a bikini and a beach towel to an arctic parka. Scarcity, even of collectibles, will be hard to maintain when anything can be duplicated to atomic precision. Money for exchange will have to be based on credit or (possibly) valuable elements.

I suspect that a substantial fraction of the population will undergo an "evolution in place", starting with trivial things like growing new teeth out of diamond, and continuing by enhancing physical and mental abilities to the limits of material science and information theory. A 747 crash in the future may be an annoyance instead of a disaster, with the passengers picking themselves up, combing the aluminum fragments out of their hair, and walking away.

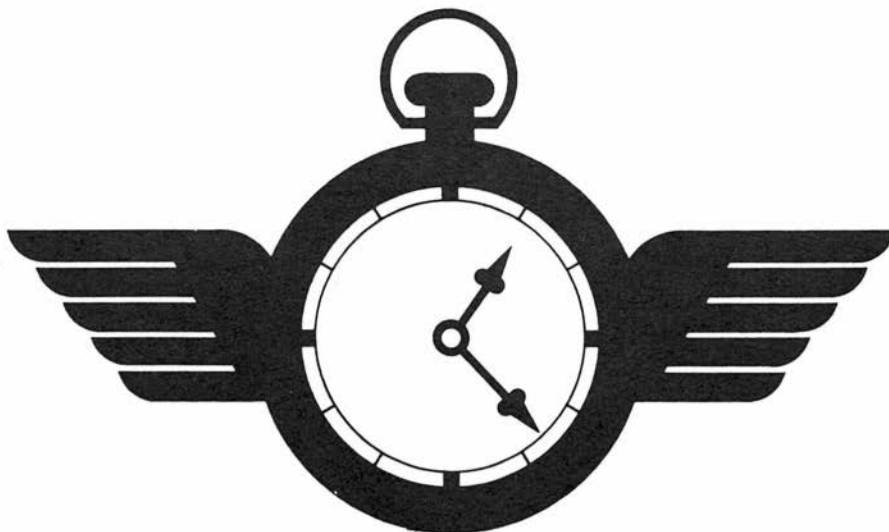
Two questions invariably worry active people about being reanimated in the future. What will I do to make a living, and what will it cost to live at that time? Some historical trends seem likely to continue. Among them are the falling cost (relative to income) of almost everything physical, including materials, energy, food, transportation, and, most likely housing.

The important materials of the future are common. Carbon, perhaps the most important structural material, is available from the air. Solar energy becomes economical when collectors and energy storage devices can be grown, perhaps doubling as roofing. Synthesized food, corresponding atom for atom with the finest natural food, would cost only a few cents per day even at current energy prices.

Given nanotechnology and artificial intelligence, many services that are today provided by humans are likely to mostly be provided by machines. The only other part of the spectrum of living expenses that has been taking an increasing share over the last century is (very broadly speaking) information. Besides the print media, this category includes movies, television, computer games, and data bases. Creation of new information or noting linkages in old data may be the most rewarding economic activity. (Writers take note.)

With the opening of the solar system, colonists to fill the vast spaces may be in such short supply that the few willing to go may be duplicated (dopplegangers) thousands of times over, and placed one to a colony. This leads to interesting possibilities for conferences of physically identical people, perhaps with the option of memory merge since the last time they got together. How would a wife know when she had taken the right one home?

Because of the value of information, there is likely to be a demand for people who are willing to travel to the stars. For the long lived, there are a



number of ways this could be accomplished. The cost to do so could fall so low that small companies seeking information from far away places could do it on their own. Of course, even at the speed of light, it takes decades to centuries to go somewhere interesting and come back to a central information exchange. Crew of a starship might be a natural occupation for a cryonicist who has already traveled in time far from familiar surroundings.

SCIENCE UPDATES

by Thomas Donaldson

PROTECTION FROM HIGH PRESSURE

For many years now the suggestion has circulated among cryobiologists that perhaps freezing might go better if done under high pressure. In theory, high pressure will lower the freezing point of water, therefore making it easier to form a glass rather than an ice. Since ice formation disorganizes tissues in many ways, any such method ought theoretically to improve survival.

However, cryobiologist Greg Fahy, at the Red Cross Blood Research Lab in Bethesda, MD, was the first to study this phenomenon seriously. One of the first results of any serious study of high pressure freezing is that just like cryoprotectants and freezing itself, high pressure can damage cell membranes. Among Fahy's discoveries about high pressure freezing perhaps the most important is that several common cryoprotective drugs, including DMSO and propylene glycol, will also protect against high pressure. (This may occur because high pressure affects cell membranes in a similar way to freezing.)

A recent paper from two Brazilian scientists, L.F. Onuchic and F. Lacaz-

Vieira, at the Institute of Biomedical Studies in Sao Paulo, reports some further studies with **red blood cell membranes** (*CRYOBIOLOGY*, 22, 438-445 (1985)). Onuchic and Lacaz-Vieira looked at red blood cell membranes not for their interest in their own right, but as a model system which might help elucidate the reasons for high pressure injury and improve our means of protection from it. Among their results is the fact that glycerol will also protect against high pressure.

They used a system in which they could apply pressures as high as 10,000 atmospheres on cell suspensions for periods from a few seconds to several minutes. They measured survival of their red blood cells by their ability to retain potassium (K^+) ions.

Normal unprotected **toad** red blood cells (I do not know why these scientists chose toads as their blood source!) will survive very well pressures as high as 2000 atmospheres for periods of 3 to 10 minutes. However they fail badly at pressures of 5000 to 8000 atmospheres. Glycerol did significantly help survival, but did a much less than perfect job. For instance, unprotected cells exposed to 8000 atmospheres for 10 minutes lost 80% of their K^+ , while cells protected with glycerol lost "only" 60% after the same exposure. At least for their experimental system, 8000 atmospheres at 10 minutes is an important threshold. Below those figures, the red blood cells survive much better.

Although these authors confess that they haven't yet any proof of the **mechanism** of protection, I found their thoughts on this question quite interesting. For instance, one mechanism for high pressure injury consists of electrical breakdown of the membrane at high pressure. The authors speculate that this may happen because of a phase transition in the membrane, which glycerol acts to prevent.

It's quite clear from Fahy's work that we WANT much better ways of protecting tissues from high pressure. If we had them, we'd have an opportunity to avoid a lot of freezing damage by vitrification rather than freezing. Attempts to work out the mechanism of protection for drugs (such as glycerol) known to protect against high pressure ought to tell us how to find better drugs. Red blood cells, even from toads, seem a useful model to do this.

NUCLEAR WINTER CHAPTER 3: OR, WHY THE SKY IS NOT FALLING

In 1983 Sagan, Turco et al claimed that a nuclear war would cool the Earth by 20°C worldwide, The war would produce a worldwide pall of thick smoke. This smoke would cool the Earth. Not long afterward Edward Teller spoke up, suggesting that local rainfall at the site of a nuclear blast would clear most of the smoke out of the sky before it had the chance to spread worldwide. That is, smoke produced would be "rained out". Teller gave no figures and couldn't give them at the time. Rebuttal of their claims would be time consuming (exactly what the nuclear winter proponents may have intended).

Recently in *NATURE* B.W. Golding et al from the Meteorological Office of the United Kingdom actually present calculations of the effects of a nuclear smoke plume which are detailed enough to prove or disprove a claim that smoke would get rained out (*NATURE*, 319, 301 (1986)).

You guessed it.

Smoke would get rained out.

In detail, Golding et al used a model of wind circulation which worked on a much finer scale than any previous model used for this purpose. Previous models of the Earth's atmosphere used in nuclear winter theories had a horizontal resolution no better than 5 degrees of latitude. This means that the calculations simply could not take account of any events which covered areas of less than 5 degrees latitude, or about 350 miles. Since the first injection of smoke would be over an area much less than 350 miles on a side, previous models simply couldn't show any effect.

The model that Golding et al use is exactly the one they use for their weather prediction. They did their calculations on a Cray supercomputer, using the same parameters the U.S. National Academy of Science study did for the problem (**EFFECTS ON THE ATMOSPHERE OF A MAJOR NUCLEAR EXCHANGE**, Washington, 1985). It turns out that a local smoke plume will create intense vertical winds. These winds will raise the air, creating clouds and very likely rain. The rain would wash out the smoke.

Golding et al qualify their claims. For instance, they haven't studied just how sensitive their model may be to slight changes in the parameters, or to more complex equations which provide even more realism. Until it becomes engineering practice (which for nuclear winter on the Earth is hopefully **never**) science never proves anything. But the suggestion here is clear.

This report was accompanied by an extremely acid commentary (by K.A. Emanuel of MIT) about nuclear winter **proponents** in the "news" section of **NATURE**. Emanuel welcomes the report as one of the first attempts to do science rather than politics on the issue of climatic effects of nuclear war.

OCTOBER 1986 MEETING CALENDAR

ALCOR meetings are usually held on the first Sunday of the month. Guests are welcome. Unless otherwise noted, meetings start at 1:00 PM. For meeting directions, or if you get lost, call ALCOR at (714) 738-5569 and page the technician on call.

ALCOR

ALCOR LIFE EXTENSION FOUNDATION

4030 NORTH PALM #304
FULLERTON CALIFORNIA 92635
(714) 738-5569

The OCTOBER meeting will be at the home of:

(SUN, 5 OCT 1986)

Saul Kent
16280 Whispering Spur
Riverside, CA

DIRECTIONS: Take the Riverside Freeway (Hwy 91) east to Riverside and get off going south (right) on Van Buren Blvd. Whispering Spur is south of the freeway four miles, and 1.0 miles beyond Mockingbird Canyon Rd., on the left. 16280 is the second house on the right, at the end of the white fence.

**Alcor Life Extension Foundation
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