

CRYONICS

Volume 11(2)

FEBRUARY, 1990

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CRYONICS is the newsletter of the Alcor Life Extension Foundation, Inc. Mike Darwin (Federowicz) and Hugh Hixon, Editors. Published monthly. Individual subscriptions: \$25 per year in the US; \$35 per year in Canada and Mexico; \$40 per year all others. Back issues are \$2.50 each in the US, Canada, and Mexico; \$3.50 each all others.

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EDITORIAL MATTERS

This month we bring you a very unusual document: an account of the cryonic suspension carried out in March, 1989, written by the non-cryonicist family members who participated. Indeed, the use of the word "participation" does a disservice in describing the kind of support and effort that was exerted by Cyndi and Jim Donovan before, during, and after the suspension of Jim's father, Dr. Eugene Donovan*. Ramrodded would be a better adjective to use.

Jim and Cyndi were instrumental in arranging for Dr. Donovan's suspension in March of 1989, handling many of the logistic details when Dr. Donovan simply lacked the energy and reserves that would have been required to do so. Their account of those efforts and of Dr. Donovan's suspension is a very valuable extra. For the first time it provides insight into areas we have only been able to guess about: family dynamics, emotional considerations, and how Alcor and cryonics are perceived by family members who encounter us for the first time under what can only be described as very adverse emotional and psychological conditions. In reading Jim and Cyndi's chronicle it becomes painfully clear why so few people get suspended "at the last minute."

It also makes clear what extraordinary people Jim and Cyndi Donovan are. Thank you both for the insight you have given us with your article, and for the privilege of knowing and working with both of you.

* * * * *

* In the May, 1989 Cryonics, Dr. Donovan was given the pseudonym "Eugene Nalley," and Cyndi and Jim Donovan were "Cindy and Jim Nalley," responding to a request for confidentiality that they have now relaxed.

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NEW LITERATURE AVAILABLE

The beginning of the new year has seen two developments which offer the promise of increased growth for Alcor. The first is that the third edition of Alcor's core piece of literature, "Alcor: Threshold To Tomorrow," (affectionately known as the "Blue Book") has been published. The new Blue Book features an improved color scheme for the cover (a deep, carnelian blue and gold, rather than the light blue and gold used on the previous edition) which lends it greater "authority," as the printers say. There have also been some modest improvements in the text inside, including, hopefully, elimination of most of the typos that plagued the first and second

editions. However, the really exciting thing about this printing run of the Blue Book is not the change in color scheme, or the editorial changes, but the fact that this press run was for 5000! The first press run of 600 and the second of 2000 were exhausted in only three months and eight months respectively and we are rapidly eating through this 5K run. And, most importantly, the Blue Book appears to be a much more successful tool for getting new Suspension Members than anything we have used in the past.

What kind of success are we referring to? Well, for the first time in our history, and may be for the first time in the history of cryonics, we are getting members on the basis of what we call a "cool lead" (no pun intended). What we mean by a cool lead is that the person's only contact with Alcor has been via a media-induced inquiry such as reading about us in a magazine, writing for information, and then deciding to sign up. Prior to the use of the Blue Book we saw virtually no sign-ups of this kind.

We think it likely that the Blue Book and Blue Book-related changes in our marketing approach in other areas (such as radio and TV interviews and personal and public presentations) are major reasons for this increased success (also, the climate may be changing toward cryonics).

But the Blue Book is not the only new literature development for which we have high hopes in the coming year. We have also completed and taken delivery on a brochure which will serve as a major new element in our promotional campaign and which we hope will have a similar revolutionary effect in reshaping the image of both Alcor and cryonics.

This brochure was largely the brainchild of Saul Kent and is designed to be used as a follow-up mailer to the initial Alcor information package currently mailed to people who

(Continued on page 4)

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Brochure subjects. (These are two of a total of eight on four two-sided inserts.)

ALCOR IS NUMBER ONE IN SCIENTIFIC RESEARCH

Alcor conducts basic scientific research into the effects of today's cryonic suspension methods, especially on the brain. Alcor has documented much of the injury caused by current methods and is conducting several types of research to solve these problems.

Alcor's research has already contributed to reliable, fully-reversible method of liquid-state suspended animation in dogs. In these experiments, the blood of the dogs was replaced with an artificial tissue preservative solution and they were cooled to 35øF, just above the freezing point.

Animals treated in this way for up to 4 hours recovered fully, and went on to lead normal lives with their memories and personalities intact.

Alcor's research to evaluate the quality of patient care has demonstrated that cryonic suspension preserves the structural integrity of cells. Alcor has taken special care to document that the structure of the brain -- including cell membrane and synapse integrity -- is well preserved during the suspension process. Neurobiologists believe that the synapse, which is the connecting area between brain cells, plays a critical role in learning, memory, and other cognitive functions.

PROTECTING AGAINST FREEZING INJURY

Although Alcor is confident that future medical science will be able to repair the chemical and mechanical injury caused by today's cryonic suspension methods, its long-term research goal is to achieve full-fledged suspended animation, which would permit the cryonics care of terminal patients before legal "death." In order to move toward this goal, Alcor is focusing on an exciting new area of research called vitrification.

Vitrification involves the use of high concentrations of anti-freeze compounds in a high-pressure environment. Vitrification completely protects biological systems against damaging ice crystals, the major cause of injury in today's suspension patients. Living systems can be vitrified to hundreds of degrees below zero without the formation of any ice whatsoever!

Many biologic systems have been successfully vitrified, including red and white blood cells, corneas, and mammalian embryos. A growing number of systems (including pig embryos), which suffer serious injury when frozen, can now be vitrified with complete success. Current vitrification research aims at the preservation of kidneys, hearts, and livers for transplant. Alcor is planning (in conjunction with private enterprise) vitrification experiments in mammals to achieve solid-state suspended animation of the human brain.

Alcor's research program has one overall objective: the continuous improvement of patient care so that its members can enter suspension under the best possible conditions whenever the need arises.

ALCOR IS NUMBER ONE IN DEDICATION AND COMMITMENT

Alcor is totally committed to placing and maintaining its members in cryonic suspension and in working to develop the technology to bring them back to life, health, and youthful vigor. Its track record in this area is unparalleled.

Alcor has never failed to meet its obligations to its members or its patients. When other cryonics organizations have failed to do so, Alcor has rescued patients who were at risk and today maintains these patients at its facility in Riverside, California.

Alcor is now caring for Prof. James H. Bedford, for example, the first man ever frozen (on Jan. 12, 1967). Dr. Bedford was originally placed into suspension by the Cryonics Society of California, which subsequently went out of business. Alcor rescued Dr. Bedford in 1982, is caring for him today, and is committed to continue doing so until it becomes possible to restore him to life.

Alcor also undertook the care of two patients who were about to be

abandoned by another cryonics organization. Alcor took full responsibility for these patients and is committed to their continuing care until it becomes possible to restore them to life.

ALCOR'S LEGAL STATUS

When the coroner of Riverside County wanted to autopsy one of Alcor's members (Dora Kent) who had just been placed into suspension, Alcor refused to turn her over to him and mounted a legal challenge to obtain an unprecedented court order that stopped the coroner in his tracks. When the coroner retaliated by seizing Alcor property and charging Alcor (in the press) with "homicide" and "grand theft," Alcor responded with potent legal and political action that succeeded in obtaining legal protection for every one of Alcor's patients.

When the hospital in which an Alcor patient was staying refused to cooperate with Alcor to provide the patient (Dick Clair) with appropriate treatment immediately after legal "death," Alcor obtained a court order to force the hospital to allow Alcor personnel to administer treatment in the hospital. The patient was suspended under optimal conditions and is now being cared for at Alcor's Riverside facility.

When the Health Department of the state of California arbitrarily declared that cryonic suspension is "illegal," Alcor took the health department to court to force the health department to back off. No other cryonics organization in the state of California even lifted a finger to fight this critical battle.

Alcor has fought (and will continue to fight) with fierce determination to protect its patients and members against hostile authorities because of Alcor's extraordinary dedication and commitment to human life.

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inquire about Alcor and cryonics. While it was conceived of as a follow-up mailer, it is also in reality an excellent tool for introducing people to both Alcor and cryonics. The brochure features a softer approach which emphasizes warmth, family, and togetherness and it offers information in modular, easy-to-digest segments. These allow the reader to select areas of which are of special concern to him or her and absorb them without having to wade through our literature at length.

This feature was made possible due to the unique organization of the brochure. The brochure itself consists of a tri-fold on heavy card stock with high production value three-color printing and a pocket on the third segment of the brochure for inserts. The material on the tri-fold is general in nature; introductory information about cryonics and about Alcor which is unlikely to change or need updating soon. The insert cards (currently four, printed on both sides), are more topical and can be changed to reflect the unique needs or concerns of the audience being targeted. So, for instance, if we are distributing the brochure at a space development conference or a financial planner's meeting we can insert a supplemental card(s) tailored to that audience. The cards also let us address issues which are "breaking" or "transient" in nature. Thus, as legal developments occur or research breakthroughs materialize, we can easily and economically supplement the brochure with an appropriate insert.

The initial response to the brochures has been very positive among members and newcomers who have seen them so far (the first comprehensive

follow-up mailing has not been done yet). If you haven't received one of the new brochures already, you will soon, since a mailing to all Suspension Members and subscribers to Cryonics is expected to go out at about the same time this issue of Cryonics does.

Let us know what you think of the new brochure. Also, if you want copies for distribution to friends and family, let us know. We have very limited quantities available free upon request, and bulk quantities are also available to members at cost: \$0.70 each for ten or more.

* * * * *

SPEND-DOWN AND LIFE INSURANCE

In the January issue of Cryonics we detailed the case of an elderly Suspension Member ("Richard Leibee") who has found himself in the position of "spending down" trust monies set aside to fund his cryonic suspension.

We wish to point out that this problem is not confined to just those who have revocable trusts. It can also affect any of our members who have life insurance funding but have not executed a collateral agreement or made Alcor the owner of the policy.

In California, MediCal (and similar plans in many other states) is requiring that the cash value of life insurance policies owned by the patient be used to pay medical bills before the person becomes eligible for MediCal assistance. Thus, if an elderly person needs nursing home care, the state will demand that his or her life insurance policies be cashed out before they will provide any coverage.

Clearly, no one is obligated to accept nursing home care if they are competent to refuse (you can always stay at home and refuse food and fluids and "get it over with"). However, for many people the court may be making this decision and there is every indication that the court will require that life insurance policies be cashed out to cover such support.

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The message here is clear: If you have life insurance policies or other funding you must be certain that there is either a collateral agreement or that Alcor has ownership of the policy.

It is also very important to note that even a collateral agreement may not protect the policy from the state. It is conceivable that the state would regard cryonics as just another burial arrangement and thus require that no assets in the estate be over \$2000 (the currently allowed amount for burial) before providing for chronic, inpatient care.

We hope to get some clarifying advice on this point in the near

future and when we do, we'll update you.

In the meantime, make sure that Alcor is the owner of the policy or has a collateral agreement or designation of irrevocable beneficiary. Otherwise you may find yourself in the same unfortunate position as "Richard Leibee."

* * * * *

ALCOR UK: A Status Report

by Luigi Warren
photographs courtesy
of Alan Sinclair

What a difference a year makes! The British cryonics group, Mizar, was barely ticking over as we entered 1989. Typical attendance at the monthly meetings in London was a less than spectacular three, up from two at the beginning of the previous year. Aside from occasional TV and radio appearances by our members and an irregularly published newsletter, very little was happening. Yet by the end of the year, Alcor UK (our new name) had a dedicated facility comparable to the best the U.S. has to offer, an ambulance, an air shipment unit suitable for transporting patients after perfusion and cool-down to the solid state, and greatly improved, FAX-based communications with Alcor. The group had also established connections with several medical and mortuary professionals, experienced in areas such as cardiopulmonary support, perfusion, and the international air transport of bodies. Aside from their technical expertise, our new contacts provide us with the entree into the establishment of hospitals, coroners, and so on which we sorely lacked in the past.

The Alcor UK facility is located about two hours out of London, on the South-East coast. It is a brand new unit in a light industrial complex, very similar in character to Alcor's own headquarters in Riverside. The 2400 sq. ft. building contains an impressive front office, an operating room, living quarters with a kitchen and a shower, a vehicle bay with roll-up doors, and masses of extra space which could be used as a conference area or for storage.

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** PHOTO SPACE
** CAPTIONS --

"Exterior view of the Alcor U.K. facility."

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"The Alcor U.K. ambulance."

**

"The spacious operating room and the air shipment box."

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** PHOTO SPACE **
** CAPTION --

"British Patient Shipment Box for air transport of patients at -79°C. The box is fiberglass/urethane foam construction and was built by British Oxygen Co.

**

We owe the acquisition of the new facility, along with most of the other purchases that have been made in the last year, to one of our newest members, Alan Sinclair. In addition to purchasing the building, Alan planned the interior division and did much of the interior construction himself. The results have impressed everyone who has visited the facility. As the accompanying photographs show, Alan hasn't skimped on the appearance of the facility: the facade of the unit and the ambulance which now sits in the vehicle bay present a solid, hi-tech image.

All the equipment necessary to perform a suspension is now either in the U.K. or en route from Cryovita Laboratories. We know that there is a potential for a delay of up to several days in obtaining the paperwork required for air transport of patients to the United States. As this could lead to significant deterioration in patients stored above freezing, we intend to implement a full perfusion capability in the UK. Patients will be cooled to dry ice temperature for shipment. A custom-built air freight container has been acquired for this purpose (see photo this page).

1989 was a breakthrough year for cryonics in Europe. 1990 promises to be another year of rapid progress. Key Alcor personnel will be flying to the U.K. in the spring to complete the installation of our O.R. and provide training in cryonics procedures. We expect to be ready with a fully equipped facility and trained personnel in time for the cryonics conference Saul Kent is planning for London in the autumn. The conference will be a springboard from which to expand our membership base and to publicize cryonics throughout Europe. In the 1990's Alcor will have the opportunity to spread its wings and become a truly international organization.

* * * * *

MEMBERSHIP STATUS

Alcor now has 157 Suspension Members, 297 Associate Members, and 13 members in suspension.

AMERICAN CRYONICS SOCIETY ELECTS NEW BOARD

by Saul Kent

A slate of five "reform candidates" won a landslide victory in the annual election of the Board of Governors of the American Cryonics Society (ACS). The reform slate -- which is comprised of John Day, Jim Yount, Jerry White, Kent Cullers, Ph. D., and Margaret Bradshaw -- received vote totals ranging from 60 to 66, while the vote totals of the opposing candidates ranged from 21 to 31. The other two Governors elected were Avi Ben-Abraham, M.D., who received 62 votes, and Dick Marsh, who received 48 votes.

The meeting at which the election results was announced was held at the home of Ed Mikels in San Mateo, California on Sunday afternoon, January 21, 1990. The votes were counted in private by Election Commissioners Norm Lewis and David L. Crockett, while the candidates tensely awaited the results of what had become a hotly contested election among an unprecedented twelve candidates.

The overwhelming magnitude of the "reform" slate victory ended all disputes over several election issues that threatened to make the election results controversial if it had been a close decision. "No one can challenge the results of this election," said Jim Yount with assurance, "The reform candidates have received a clear mandate to carry out their program."

Erosion Of Patient Suspension Funds

The major issue in the "reform" slate's platform was a controversial \$5,000 charge that ACS had been taking from the suspension funds of patients in its care. The "reform" candidates alleged that this charge was an unethical policy that could easily lead to further erosion of suspended patients' funds, and that it should be ended immediately. Other candidates either defended the \$5,000 charge as necessary for the operation of ACS or for research, failed to make their position clear on this issue, or failed to comment on it at all.

ACS Officers For 1990

The first move of the new ACS Board was to elect the following officers for 1990.

President -- Avi Ben-Abraham
Vice-President -- Jerry White
Secretary -- Jim Yount
Treasurer -- John Day

Margaret Bradshaw was then appointed ACS representative to the Federation of Cryonics Societies (FOCS), a new organization spearheaded by Fred and Linda Chamberlain that aims to coordinate and provide political

representation for all cryonics organizations.

Cancellation Of Contracts

The Board voted to cancel all contracts with other organizations and individuals, except for the ACS suspension and storage agreements with Trans Time, Inc. The canceled contracts included a marketing agreement with Trans Time, a marketing agreement with Cryonics Coordinators of America (headed by Irving Rand), and agreements with attorney Jack Zinn and biologist Paul Segall, Ph.D. "It's time for a 'fresh start' with regard to all ACS policies and activities," commented Jim Yount in explaining the new Board's decision to cancel these contracts.

Zinn and Segall were the most notable Governors dropped from the ACS Board as a result of the election. Zinn is a past president of ACS who has performed considerable organizational and legal work for the society, while Segall has been in charge of the society's low temperature research program, while also serving as an officer of the organization.

Editor Of ACS Journal Resigns

Another noteworthy event at the meeting was the resignation of Dick Marsh as editor of the ACS Journal. Marsh said that he regretted having to give up his editorship of the Journal, but felt that he had to do so for "personal reasons." A search has begun to find a new editor for the ACS Journal.

Resignation Of Trans Time Officers

Three of the new ACS Governors -- John Day, Jim Yount, and Jerry White - resigned from the Board of Directors of Trans Time (a for-profit company that provides cryonics services to ACS) at that organization's monthly meeting, which was held right after the ACS meeting. One of the empty seats on the Trans Time Board was filled by the appointment of Don Everett (one of the losing candidates in the ACS election) and the names of several possible candidates to fill the remaining two seats were discussed, but no one was appointed.

Trans Time President Art Quaife announced at the meeting that the company will soon making a stock offering, the major purpose of which will be to raise money for a new Trans Time cryonics facility in the San Francisco Bay area.

by Saul Kent

Cryonics is based on the expectation that future technological advances will enable doctors to restore cryonic patients to life, health, and youthful vigor. Fortunately, the "future" is developing so rapidly that we thought it was time to hold a conference devoted primarily to recent scientific developments leading to the ability to reanimate cryonics patients and speculation about what the future might be like when we're revived.

The Reanimation Conference will start with an informal evening on Friday, May 4, 1990. It will go into high gear on Saturday, May 5, when there will be ten fascinating talks about revival from cryonics and its consequences and a two-hour panel discussion led by eminent futurists and science fiction writers.

How Will You Be Restored To Life?

It was only a few years ago that speculation about how cryonics patients might be revived was based largely on imagination and hope. But today, with the rapid advancement of the biological sciences and the sudden emergence of nanotechnology, there is a solid scientific foundation for speculation about revival.

A major focus of the Reanimation Conference will be a review of the remarkable scientific advances of the past few years that herald the coming of new technologies to repair biological damage caused by injury, disease, and aging. At the conference, Dr. Ralph Merkle of Xerox PARC in Palo Alto, California will discuss the scientific basis of nanotechnology and how it may be used to revive cryonics patients; Mark Voelker of the University of Arizona at Tucson will reveal the latest work in scanning tunneling microscopy (STM), one of the most exciting new technologies in the field; and Mike Darwin of Alcor will predict how these emerging technologies may actually be used to restore patients to life.

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Taking Your Money With You

Afterwards, Saul Kent of the Reanimation Foundation in Vaduz, Liechtenstein will explain what you need to do to continue your life in the future in comfort and wealth. He will tell you how you can take your money with you, how it will grow while you're in suspension, how it will be used to help restore you to life, and what it will do for you when you're revived. He will also provide the necessary forms to start your own reanimation account that very day.

What Will The Future Be Like?

The final segment of the conference will feature authoritative talks and free-wheeling discussion about what it will be like when you're restored to life in 50-150 years. Among the featured speakers and panelists will be Fred and Linda Chamberlain, Dave Pizer, space activist Duncan Forbes, futurist F.M. 2030 (formerly Esfandiary), L-5 Society founder Keith Henson, aerospace scientist Rand Simberg, and science fiction writer and physicist Gregory Benford, Ph.D.

The Right To Be Suspended Before "Death"

A special feature at the Reanimation Conference will be a talk by attorney Christopher Ashworth about the legal and constitutional issues that confront those who wish to obtain the right to be cryonically suspended before being pronounced "dead" by a physician. A recent decision by Judge Robert J. Timlin of the Riverside Superior Court stated that we have the right to have the suspension process started prior to "death." Ashworth will explore the strategy he may be using to make this right a reality.

Alcor Tour, Business Meeting, And Festivities

The final day of the conference -- Sunday, May 6 -- will start with a comprehensive tour of the Alcor facility, which will include a discussion of Alcor's plans for the development of a larger, more attractive cryonics research and care facility in the future.

The Alcor Business Meeting for May will be held at Saul Kent's, beginning at 1 PM.

The conference will end with a leisurely, informal, and festive gathering at the home of Saul Kent and JoAnn Martin in Riverside. Everyone is invited to swim, frolic, and enjoy other recreational activities.

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Registration And Lodging

The Reanimation Conference will be held on May 4-6, 1990, at the Clarion Hotel at Ontario Airport. Ontario, California. The registration fee is \$15 per person or \$25 per couple if you register by mail or by phone prior to the conference. The registration fee at the door will be \$25 per person and \$40 per couple. Please send registration fees for the conference to: The Reanimation Foundation; 16280 Whispering Spur; Riverside, CA 92504. Or call toll-free: 1-800-841-5433.

Rooms at the beautiful Clarion Hotel are available for only \$67 per night for a single or double. For reservations call: 1-800-284-8811. Make sure to say you'll be attending the Reanimation Conference.

* * * * *

SUSPENSION TRANSPORT TEAM TRAINING COURSE

It has been over two years since there has been formal training for the Suspension Transport Team. To remedy this situation Alcor will be offering a comprehensive 40-hour training session in transport techniques at the Alcor facility in Riverside, CA. The course will cover every aspect of suspension patient transport and care including:

- Alcor Administrative Procedures
- Obtaining Hospital Cooperation
- Options for Cardiopulmonary Support: CPR Certification
- Evaluation of the Efficacy of Cardiopulmonary Support
- Use of The Heart-Lung Resuscitator: Conventional, SCV-CPR, and High Impulse CPR
- Temperature Monitoring
- External Cooling
- Establishing Intravenous Access
- Pharmacology and Administration of Transport Medications
- Collection of Blood Samples
- Air and Ground Transport of Patients

The course will begin on Saturday, April 28 with CPR certification. This will be offered by an outside service and those who are already certified (i.e., have a current CPR card) in Basic Cardiac Life Support (BCLS) need not attend it. The actual Transport Course itself will be held over two weekends in May: the weekend of the 12-13th and the weekend of the 19-20th. Classes will begin at 9:00 AM and run through 5:00 PM with a 45-minute break for lunch. A continental breakfast and a box lunch will be provided at no expense to all who attend. There will also be copious amounts of coffee available (and soft drinks too) along with snack foods for caloric support during the course of the day.

For those coming in from Los Angeles or areas further away, Saul Kent will open his home on both Saturday nights as an "overnighter." Saul can house six people who are willing to accept "doubles" accommodations and reservations for these spaces will be on a first-come, first-served basis. So, if you think you would like to attend the classes, please let us know as soon as possible, particularly if you are going to need overnight housing.

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The course will end with a mock "transport," during which the skills learned in the classroom will hopefully be translated into a real ability to successfully transport and stabilize cryonic suspension patients.

Those who successfully complete the course (and who pass the written and practical exams) will be Certified as Alcor Transport Technicians.

The course will be open only to Alcor Suspension Members or those who are in the sign-up process with Alcor. If you are interested in participating in the Alcor Suspension Team, this is the perfect place to begin, since additional Southern California Suspension Team members will be drawn from the Transport Team pool.

If you interested in attending the Transport Team Training Course please contact Mike Darwin at Alcor, (714) 736-1703. The cutoff date for registration is March 20, 1990.

* * * * *

TURKEY ROAST AND WRIGHTWOOD
CONFERENCE: WHAT A WEEKEND!

by Mike Darwin

To say anything but that Alcor closed the decade with a bang would be a gross understatement. And the Alcor Turkey Roast was no exception. What a party! We estimate that during the course of the day there were well over a hundred people who attended the event at Saul Kent's home in Riverside. At one point a count of people in the house alone yielded a number of 90. And that didn't include those who were lounging in the pool/jacuzzi or wandering the grounds.

Nor was it just raw numbers. Conversation was hot and heavy and interesting to boot. Prominent libertarian thinker/writer John Dettinger showed up, as well as noted science fiction author Gregory Benford and nationally syndicated humorist Ashleigh Brilliant (whose reflections we print later in this issue). The place was packed! The noise level from heated conversations was in the hundred decibel range.

The only thing that equaled the good talk was the good food. Despite the fact that we had forgotten to advertise it as a pitch-in, the food just kept coming -- turkeys, cakes, pies, side dishes, and salads. It was a first-class smorgasbord right down the line.

But we're getting ahead of ourselves just a little: what about the Wrightwood retreat weekend which preceded the Turkey Roast? Well, it went OK too. A little too OK in fact. What we had figured on (that it would be a modestly attended, intimate "work-shop" weekend) turned into a 40+ overflow which taxed the facilities of the Pizers and the stamina of Mike Darwin. We expected maybe 30 people, tops, and got over 40. (In fact, we understand that there were 50 people present for the sit-down dinner on Saturday, December 2nd!)

** PHOTO SPACE **
** CAPTION --

"Caught in conversation: Fred Chamberlain IV, Jerry Leaf, and ACS Secretary Jim Yount."

**

The Pizers were forced to move the event on very short notice, first from Cabin 10 of their motel to their home, and then to two local meeting halls. Dave and Trudy Pizer deserve a medal for flexibility and maximum effort under adverse conditions.

And the results were great! Dave and Trudy laid a wonderful spread of food starting with the reception on Friday and running through breakfast and dinner on Saturday. Trudy prepared a home-cooked barbecue for the Saturday dinner that got rave reviews from everybody but the vegetarians; and they had her macaroni-and-cheese casserole to rave about.

The programming for the conference itself went well, with Saul Kent

leading off with a discussion of the Reanimation Foundation (RF). Saul had some high-quality brochures to pass around and gave a progress report on RF's legal status: they are just short of being up and running, now having cooperation from the Union Bank of Switzerland (one of the largest) and a Liechtenstein law firm where RF is headquartered.

Saul also spoke at some length about an exciting new anti-aging drug called L-Deprenyl (brand name Eldepryl) which has just been approved by the FDA for distribution in the United States. Eldepryl is an antiparkinsonian and antidepressant drug which has dramatically extended both the mean and maximum lifespan of aged mice, as well as sexually rejuvenating them. We will not report in detail on Saul's talk here since a more comprehensive article on L-Deprenyl and some early experience with its use by American cryonicists will hopefully be printed in the next month or two in Cryonics.

Mike Darwin then outlined Alcor's Coordinator Program and demonstrated recent advances, such as our in-house medications packaging program and new high impulse CPR machine. Mike also spent quite a bit of time talking about things that members could do to improve their local situation if they live remote from Alcor's facilities, such as purchasing or constructing an air shipping box and making advance arrangements with a

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local mortician.

From 11:00 AM till 4:00 PM everybody headed for the hills for a little R&R. A fair number of people went skiing, although some went back to Cabin 10 of the Pizer's Mountain View Motel to talk (something cryonicists never seem to tire of doing)!

** PHOTO SPACE **
** CAPTION --

"Youngest Alcor Suspension
Member: Edward Tesla Gregory."

**

From 4:00 PM to 6:00 PM was the "peak experience" presentation of the day. The man who argued our case in Kent vs. Carrillo, Christopher Ashworth, Esq., gave a presentation entitled "Update On The Legal Status Of Cryonics." His lucid and humorous account of our current situation, followed by a lengthy Q&A. Chris expressed cautious optimism on the prospect of our winning Alcor vs. Mitchell and also discussed a possible pending case wherein an Alcor member who is suffering from an inoperable brain tumor may petition the court to allow his pre-mortem suspension. (Yes, this is a real case, and the similarity with "L.A. Law" is not coincidence.)

The day wrapped up with a lively panel discussion entitled "Where Do We Go From Here." It would be futile to even try to begin to summarize the range of topics discussed. Suffice it

to say that the consensus was: Forward, And As Fast As Possible!

All in all, it was great weekend for most and we hope to do it again next year. One of the most gratifying things about the weekend was the opportunity it afforded for people to meet and interact. This has always been a valuable feature of Alcor get-togethers, but it has become even more important than in the past because of Alcor's explosive growth. There was a time when every one of us in "management" knew every suspension member and almost every associate member on the mailing list. This is not the case today. Indeed, far from it. I was pleasantly surprised to find that I did not know the majority of the people at the Turkey Roast. And while I find it exciting, I also find it a bit disconcerting that I no longer know every Suspension Member personally. Indeed, at the rate at which we are now adding members, I know relatively few of the new members at all (especially since I (thankfully!) no longer handle sign-ups)!

These get-togethers provide a chance to help remedy that situation not just for me, but for everyone else too.

It was a great weekend and a gratifying weekend. Not simply because there were so many new faces, but because there were so many new faces attached to truly high quality, interesting people whose company it was a pleasure to be in.

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NANOTECHNOLOGY UPDATE

There was a time a scant few years ago when Cryonics magazine actually tried to keep track of what was happening in nanotechnology. Happily, those days are long gone and things are happening so fast that it would be impossible for us to even begin to cover them in any detail. That's a good sign and we're glad it has happened.

Nevertheless, it is worthwhile to give a quick, albeit incomplete, summary of events in this area and pass along to our readers information on resources which may be of special use.

It goes without saying that nanotechnology is the enabling technology that will make recovery of injured cryonics patients possible. Increasing positive public perception of the benefits and capabilities of this technology is thus critical to the growth and success of cryonics as well.

To this end there is much good news to report. There has been a voluminous amount of media coverage of nanotechnology on almost every level from the sublime to the absurd. Star Trek has had an episode featuring nanotechnology (the absurd), and several good summary articles have appeared in popular publications such as the L.A. Reader, The Economist, and Science News. So many newspaper and other popular magazine articles have appeared on the subject recently that it would be impossible to list them here, let alone review them all!

But several articles and information resources stand out and are worth mentioning: Perhaps the best of these is an introductory article produced as part of the Encyclopedia Britannica's Science And The Future Yearbook, 1990. This article by Eric Drexler is a nice summary of the prospects for nanotechnology and serves as an excellent introduction. It is marred by some garish and rather poorly-done opening illustrations, but these are more

than offset by some fine illustrations within the body of the article.

The Foresight Institute (FI) has a limited number of these available upon request and we highly recommend them. To receive one of the offprints send a large, self-addressed envelope with 65 cents postage to:

The Foresight Institute
Box 61058
Palo Alto, CA 94306

It would also be good if you could enclose a small contribution to cover their handling expenses (this request is being made by the Editors of Cryonics).

While on the subject of the Foresight Institute, we would be remiss if we didn't mention Foresight Update, FI's publication that covers issues and events related to nanotechnology, and its companion Foresight Background which is designed to orient newcomers to nanotechnology. Foresight Update is available from

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FI by sending \$25.00 to the FI address given above.

Finally, there is a nanotechnology computer bulletin board available via USENET (former ARPANET). This BBS is a news/discussion group format and can be accessed by anyone with a USENET account. For further information on sci. nanotech, send email to moderator Josh Hall at josh@aramis.rutgers.edu.

The good thing about the nanotech press is that most of it has been positive. The Equinox people in Britain (the same folks who did the Living Dead documentary about Alcor) recently aired an hour-long documentary on nanotechnology entitled "Little by Little." This was a solid, if somewhat unimaginative piece featuring Eric Drexler, Nobel Laureate chemist Jean-Marie Lehn, and John Foster of IBM Almaden. The best thing about this documentary was that it treated nanotechnology seriously, presented it in a credible and positive light, and provided a good overview and background. It will serve as a useful knowledge base for persuading people of the utility not only of pursuing nanotechnology, but of pursuing cryonics as well (although cryonics was not mentioned directly).

All of this is very good news for us cryonicists. As more and more people come to understand the word nanotechnology, we'll have less and less of the most basic education to do about how we expect to bring people back. That will let us focus on the really important issue for today: getting them suspended in the first place so that they can be brought back!

* * * * *

LETTERS TO THE EDITORS

To the Editors:

I was basically pleased by the publication in Cryonics of my article in the January, 1990 issue ("What Are The Real Computational Problems Of Cryonics?"). However, based both on editorial comments and Ralph's reply I must have failed to make a few simple issues clear. I would like to make a few brief clarifications.

First, my ideas on repair are heavily influenced by biochemistry, cell physiology, and other such biological ideas. This does not mean that I wish to exclude any other tools from repair. It means that looking at how cell chemistry actually works has convinced me that its basic ideas can achieve repair far more efficiently than Drexler-Merkle nanorobots. In that sense I am as "unbiological" as Ralph. People should also know that Ralph (and even Hans Moravec) do not represent the sole approach to AI in computer science itself. Carver Mead of Caltech, who is making silicon models of retinas and ears, has spoken very eloquently of how much biology has to teach us. Unlike him, I am thinking about cell repair rather than retinas. But the principle is the same, and the

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principle is important.

Secondly, computer "power" needs far more skepticism and analysis than it has received. Ralph himself knows that for any computer he gives me, I can provide a problem for it which would take it a million years to solve. I am therefore extremely uneasy with an approach in cryonics (or AI, either!) which simply says: well, someday we can provide a teraflop computer, or a googolflop computer, or. . . Certainly so. But those are the words of the salesman in the Priority One store. "Whiz whiz bang!" he says. "Get your work done in SECONDS!" without even bothering to ask just what work I needed doing, and what is the problem involved.

Molecular repair of brains sounds wonderful. That is, until we notice that virtually all critical brain molecules won't need any repair. To work out what is really needed is much harder. Computations may be more, they may be less, but molecular repair solves the wrong problem. If you went to a restorer for him to repair your valuable Renaissance painting, would your confidence in him increase when he asserts that he can repair every molecule of the painting? (Not just one, not two, but every single molecule!).

It is quite wrong for us to take the approach of that kind of salesman. Ultimately it shows a lack of seriousness towards the real problems of cryonics, which will not impress "customers" for long. I confess that on first reading of Merkle's essay I too thought his arguments might waken interest in cryonics among outsiders. I now feel I was wrong in that. The most impressive way of all to attract people to Cryonics (rather than the purchase of the latest 80XXX computer) is to have a body of people seriously working on and discussing its problems. This means experiments on dogs and continual work on improving technique. It also means active work on theory: just what are the paths to our goal, and how much would it take to follow those paths?

Thank you for allowing this reply.

Thomas Donaldson
Sunnyvale, CA

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Dear Cryonics,

Please allow me to respond to Mike Darwin's article on abortion and the death penalty in the December, 1989 issue of Cryonics.

I'm sure everyone is familiar with the arguments on both sides of the abortion issue. Since cryonic suspension can be seen as something that is both "pro-life" and "pro-choice," I'm not convinced that having a given position on the issue of protecting fetal life is relevant to cryonics.

However, there is one area directly relevant to cryonics: the idea of deliberately preventing fetal brain development, so that the resulting anencephalic babies can be used as hosts for the neurosuspended, is repulsive to most people. Such a proposal, besides being technologically premature (no pun intended) shows complete lack of regard for one of the oldest and most basic of Western ideas -- respect for human life. It should be avoided as a matter of policy, if not of principle.

Regarding the death penalty, I favor it on moral grounds. I cannot see how anything but death can be appropriate for certain crimes. For example, there have been serial

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killers who have kidnaped children and tortured them to death. They recorded their victim's screams of agony, and then mailed the tapes to the kid's parents. Do you really want your tax dollars used to provide food for such creatures?

Of course, this does not touch on the issue of wrongful execution, which will almost inevitably occur where capital punishment exists. Mike Darwin argues that capital punishment should thus be abolished to prevent the death of those who are innocent and wrongly convicted, so that "human life is held sacrosanct."

Wrong, for two reasons.

Before I go into them, I would like to emphasize that I believe that every effort should be made to prevent the execution of innocents. Such efforts should include review boards, non-frivolous appeal procedures, due process, etc. In fact, the evidence suggest that the number of those wrongly executed is rather small. One exhaustive review of nearly 7,000 executions since 1892 found only eight cases where a probably innocent person was put to death. That's barely more than one in a thousand executions. This review was performed by Hugo Adam Bedau, a leading opponent of capital punishment.

The first reason Mike Darwin's analysis is wrong is specific deterrence; i.e., dead men commit no crimes. The latest serial killer captured in New York was a paroled child-killer. Think about that. "Paroled" is an adjective that should never precede "child-killer." The man killed eleven women after being released.

In New York City in 1976 and 1977, eighty-five people arrested for homicide had a previous arrest for murder. That is eighty-five innocent

people whose lives might have been saved by capital punishment. One of those arrested had four previous murder arrests.

Another released murderer, Richard Biegenwald, killed four innocent people two years after leaving prison. That act by just one man is equal to half the total number of innocents killed by capital punishment in the whole United States over a period of close to a century.

Life imprisonment without parole as the answer? Be serious. The average murderer spends ten years in jail.

Execution may also provide a general deterrence on other murderers, something that imprisonment does not do. This may be especially true for serial murderers, something that imprisonment does not do. Six percent of murders were "motiveless" in 1966; by 1982 eighteen percent were motiveless.

Of course, sociologists will say that general deterrence is not established scientifically. Then again, eighty percent of sociologists classify themselves as left-of-center. They voted for Mondale and Dukakis, believe in "social" programs, think poverty causes crime, prefer socialism to capitalism, etc. They will never accept any study that contradicts their politics.

In 1976, one study concluded, using statistical regressions comparing states with frequent executions those without, that every execution probably saves about eight lives.

Let's assume for a moment that both this study and Bedau's review were completely accurate, and let's combine them. What can we conclude?

For every innocent person saved from wrongful death by the abolition of the death penalty, seven thousand equally innocent people are murdered as a result of removing its

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deterrent effect.

Most people today realize that "life in prison" means ten or twenty years. Thus the specific deterrent effects of capital punishment would mean that it saves many more innocent lives than it takes. If the general deterrent effect is within several orders of magnitude of what the above study found, then the case for execution, even with occasional mistakes, is overwhelming.

Finally, allow me to recommend William Tucker's "Vigilante: the Backlash Against Crime In America," from which I took some of the above examples.

Sincerely,
Al Roca
Laramie, WY

* * *

Dear Mr. Darwin,

In your latest issue of Cryonics you asked if non-members should be suspended. The answer is yes. Under any circumstances that meet the approval of the Alcor Directors. And you should always charge 25% extra for these cases because some of them are going to cost Alcor some money.

Trying to set specific guidelines for serving non-members will prove impossible; you will always find exceptions to the rules. But you should charge extra in these cases because some of them are going to cause trouble. And you should definitely not encourage non-members to be suspended; developing a formal network of morticians would guarantee that you get burnt. Playing hard-to-get reduces the chances that the relatives will change their minds at a critical moment.

Would you please note that I am attempting to start a Boston cryonics discussion group. My fax number is (508) 667-1269. I also have CompuServe, Genie, Usenet, Plink, and BIX accounts. If you wish to contact me through one of these, let me know and I'll supply the account number. One day, Alcor may wish to start a discussion group on USENET. This is the largest network in the world and you can get free or nearly free access to people across the world. I run an electronic Diplomacy zine that in one year has picked up about 150 players, 130 from the U.S., 10 from Canada, and 20 more across Europe. This is impressive considering that there are only 1000 people in the U.S./Canada Diplomacy hobby. I believe that USENET has around half a million subscribers.

On the highly speculative side, I am trying to get an SF show off the ground. If I succeed, cryonics will get some good press in the show. I'll let you know if anything ever comes of this.

Sincerely,
Eric Klien
1 Sinai Circle, B10
Chelmsford, MA 01824
(508) 663-5480 work
(508) 250-0820 home

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To the Editors, Cryonics,

Mike Darwin's comments in "Frozen Embryos: Round One Is Over" (Cryonics, December, 1989), and before that Steve Harris's article, address vital issues concerning personhood and the importance of philosophical clarity in an area of legal controversy. I would like to make a few points here, though without pretense of completeness.

Mike rightly links the issues of capital punishment, abortion, frozen embryos, and biostasis patients. He suggests that we should oppose capital punishment on the grounds of the possibility of error. Mike further suggests that this cautious approach should make us carefully consider the conservative position on abortion. To deny personhood to a fetus may make it hard for us to argue that biostasis patients are persons and have rights. I'd like to argue that while fetuses have no moral (non-legal) rights, biostasis patients do have (limited) rights.

Firstly, a distinction needs to be made between something being alive and something being a person (Mike is one of the very few people who seem

to recognize this distinction). The abortion argument usually proceeds over the question "Is the fetus living or not?" Well, of course it is alive in some reasonable sense. It is not fully alive in Ayn Rand's sense of being a self-sustaining and self-generated creature, yet it clearly shares many of the features of developed humans.

Secondly, much time is wasted over another argument: Is a fetus human or not? The assumption on both sides is that if a fetus is human, then it must have rights; this assumption I reject. It is helpful to distinguish three senses of "human": (a) Human in the genetic sense. In this sense even the newly fertilized egg is human; (b) Human in the sense of having all the major physical components of a developed human. This stage is not reached until the cortex -- the primary higher reasoning structure -- has developed (somewhere around two-thirds of the way through pregnancy), and; (c) Human in the moralized sense, i.e., human understood as person. It is misleading to call this a conception of humanity at all.

My suggestion is that senses (a) and (b) are irrelevant to the question of whether an organism has rights, since they are neither necessary nor sufficient conditions. Rights are not metaphysically self-subsistent entities. They are constructs whose justification is their role in protecting and promoting the pursuit of interest in a context of scarce resources and varied and sometimes conflicting goals. Decisions about what rights we have, if they are to be rational, must be based on this consideration. [This approach to rights is developed in David Gauthier's *Morals Agreement* and Jan Narveson's "The Libertarian Idea."] Humanity in the first two senses is irrelevant to rights because intelligent, rational, goal-seeking non-humans fulfill the conditions for having rights. True artificial intelligence and intelligent extra-terrestrials would have rights just as we do. Humanity is therefore not necessary for possessing rights.

Neither is humanity sufficient for rights: rights attach to persons and not to humans as such. Being a thing which has human genes is not enough for the possession of rights. An organism must also be capable of consciously pursuing goals, bargaining and making exchanges to mutual benefit with other persons, and restraining its pursuit of goals in order to accommodate the interest of others. Creatures which are human but not persons do not fulfill these conditions and so have no rights. My view is that humans do not acquire rights until about one year after birth (birth itself is quite arbitrary). This is not to say that we should not attach moral weight to human fetuses. A general respect for life (which applies also to animals) and a recognition that, as carriers of our genes, they

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embody part of our identity, is enough to accord them more respect than most other objects which are non-persons. Neither does it follow that anyone can do what they want to someone's fetus or baby -- for the creators of the life have rights over it, until it develops autonomy.

What does this view imply for biostasis patients? Are they persons? Here more distinctions are required. Persons can be actual, potential, or inactivate. Fetuses are potential persons: my view is that potentiality alone is insufficient for rights (to existence or anything else), though it does give some moral weight to continued development (a right is a moral claim that may legitimately be enforced by coercive means). Something cannot be both potential and actual at the same time in the same respect. It can be both actual and inactivate at once though. An inactivate person

is an organism with a history in which it developed all the attributes of personhood mentioned above, but which is currently non-functional. This includes comatose patients both of the conventional types and of the biostasis variety.

Though it seems senseless to accord rights to merely potential persons, the same is not true of inactivate persons. For the latter have an enormous investment in life -- especially those who strongly want to live and took the proper cryonic precautions. By exercising their capacity for pursuing interests and by actualizing their values in the world, they have established their status as members of an intelligent community with a claim on future activity and interaction. This does not mean they have a right to be maintained at the expense of others (no one has such a right), but it does mean that anyone who, contrary to their arrangements, forces the discontinuation of their preservation is morally guilty of first-degree murder.

It is not my intention to present a complicated argument here, since there is much more to be said. I intend to submit a detailed version of this suggestion to philosophy journals which deal with issues in moral philosophy. Comments are therefore welcomed.

Max O'Connor
Los Angeles, CA

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Dear friends,

This is very short letter only regarding the non-member suspension you performed. [In September, 1989]

With all the precautions you took, I feel that you did the right thing. The parents wanted the suspension and have really been thoroughly informed about all possible negative points. Therefore, it would have been an unnecessary cruelty if you would have refused. And furthermore, being a European myself, I am very happy about the additional experience Alcor has gained in the course of events.

Sincerely yours,
Dr. Ernst Fasan
Neunkirchen, Austria

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Dear Mike and Carlos,

This is in response to the article "Worst Case Scenario" in the November issue of Cryonics, and your request for input on how you handled the Laura Toms case.

To state it bluntly, I am quite surprised and concerned about how it was handled. I feel you acted irresponsibly in exposing Alcor to the risks which you outlined in your article, compared to the benefits gained. I am particularly concerned about the implications for the future, and how Alcor regards its obligations to Suspension Members.

I am surprised at your willingness to accept Laura based largely on the "determination" of her family, versus the long-standing Alcor policy which was adopted precisely to avoid the risks you undertook. This opens a Pandora's Box relative to non-members who may be "determined" to suspend their relatives. I also question the value of what Alcor may have learned transporting someone internationally. Yes, some people are dishonest, and yes, some U.S. government officials can be cooperative. This guarantees nothing about the next time you deal with a different forensic official in another country, or a different U.S. government bureaucrat.

I'm concerned most about the implications for Suspension Members. First, you devoted a tremendous amount of time and energy (and money, which there was a great risk would not be reimbursed) to this case. What would have happened if a member would have required a suspension at just this time? You were embroiled in a very risky situation requiring utmost attention (up to your ears in alligators!): you were all probably exhausted (and I wonder if you keep more than one dewar around at a time for whole body suspensions). I really doubt [an additional] patient would have gotten care up to Alcor's usual standards.

Moreover, this seems to imply that I can cease membership, stop paying my \$200 per year, and just make sure my relatives are "determined" enough when I'm about to de-animate. You would certainly know enough about my knowledge and commitment to cryonics as a prior Member to justify implied, if not explicit consent. I'll just keep my paperwork in order and my insurance policy in force, and I can save some money.

Really, I don't want to do this. I think the policy of not accepting non-members is sound and should remain in force. I hope on further examination you will affirm this policy, set some more specific guidelines, and not deviate again in the future. (If nothing else, you really hung the organization out on a limb there for a while!)

Best regards,
Mike Anzis
Irvine, CA

* * *

To whom it may concern:

There are two matters arising from the January issue of Cryonics that I want to respond to briefly.

1) In Saul Kent's article it is suggested that members make themselves available for talk shows. I want to be sure that you know that I am very willing to do this if you feel I would be an appropriate person for a particular show.

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2) Mike requested input on issues arising from the case of "Richard Leibe." I don't have any suggestions as to how to avoid the spend-down problem, if someone refuses to set up an irrevocable trust. This is obviously very important, since many people who are too old for life insurance will, quite understandably in current circumstances, be unwilling to put so much money at risk.

People must stand by the consequences of their actions, however. I am therefore opposed to increasing dues or suspension fees on everybody in order to pay for an emergency fund. That way lies a free-rider program and rapidly rising costs. It is unreasonable to make some people pay for the higher risks of others. If there is to be an emergency fund, it should be funded by voluntary donations specified for that purpose. It should also be made available only to those with revocable trusts only if they have made every effort to avoid problems arising -- such as appointing a Durable Power Of Attorney, and perhaps prepaying a certain portion of the suspension expenses.

I realize that this is not an extensive commentary or analysis, but since you asked for feedback, I'm assuming that some is better than none.

Keep up the good work,
Max O'Connor
Los Angeles, CA

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Dear Mr. Darwin,

Good to see that you are starting to promote your magazine. Remember to take some big ads out for it in Longevity. This would be a very good idea.

The "L.A. Law" show was pretty good. With the exception of cutting off heads for possible placement in different bodies, it was actually factual. First thing that I have taped in four years that I won't erase.

I am amazed that Alcor has not yet experienced a case like the "L.A. Law" show, especially considering that AIDS does cause brain damage. Here are two other ideas that could be tried besides trying to make suicide legal as they did in the show. 1) Argue that the legal definition of death is wrong and should be changed. Point out that someone who has no brain or heart activity can be returned to normal, as this has been proven on animals. (Even though they were cooled, not frozen.) But no animal whose brain has been destroyed has never been returned to normal, nor is there reason to expect this to happen. So you are asking for the court not to order capital punishment against an innocent person; you are not asking for permission to kill someone. 2) Send the person to a country where euthanasia is legal, first confirming that you will be able to ship that person out of the country at dry ice temperature.

And of course, you should first pick the best judge that you can find because most judges in the U.S. would rule against you.

Sincerely,
Eric Klien
Chelmsford, MA

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To the Editors:

In one of your recent issues you brought up that the issue of cryonics was going to appear on the January 4th episode of "L.A. Law." I watched it and was, for the most part, very pleased.

Some people in the cryonics community may disagree, but I think the overall presentation was fairly good. Yes, there were some drawbacks, such as when the representative from the fictional life extension organization used the terminology of "thawing out dead people to bring them back to life" in the future. There were also the usual objections by the D.A. and his "expert" witnesses about "chopping off heads," "draining fluids from bodies," and that such actions would be "socially irresponsible" because of currently underfunded AIDS and cancer research. The writers of this episode apparently did some homework on the subject, since the point was made that it was none other than Benjamin Franklin who made public the desire to be preserved for future revival.

Odds are that a case similar to the one on "L.A. Law" (where a woman, with an incurable brain tumor that would slowly eat away her brain and eventually destroy it, asks for a court order to allow the cryonics organization to freeze her before the tumor runs its course) will be the first step to a day where the law will allow cryonics procedures prior to legal death. We can only hope that when this type of case finally does go to court for the first time (I am a new cryonics member and am unaware of any such legal case before now) that we will have a judge like the one portrayed on this episode who recognizes the constitutional right of a person to control his or her own destiny.

Sincerely,
Tom Hazard

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Dear Alcorians:

I don't think I've ever seen as positive a TV treatment of cryonics as the January 4th episode of "L.A. Law." It's not quite what we might have made if we had full editorial control, but maybe it's better. The touchy-feely aspect was handled better than a bunch of wildly technophilic computer jockeys might have.

Maybe it's just the difficulty of maintaining a pessimistic attitude for years on end, but things seem to be looking up lately. Nanotechnology seems to be coming along faster than Drexler originally thought. This Deprenyl looks almost too good to be true. (Are Harris and all going to be starting a mouse experiment on this one? I'll adopt a couple more mice if they do.) Vitrification looks like it will be workable soon. Hey, it was even predicted on Adam Smith's Money World that medicine would give us 150-year life expectancies in the 1990's.

Well, so long for now. Hope to see you all at the NSS conference!

Brett Paul Bellmore
Capac, MI

P.S. If I were going to put an ad for Alcor in a Michigan Libertarian newsletter with a circulation of about 1000, what would be the do's and don'ts? It might be worthwhile to consider providing some sample ads for members who want to advertise.

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Sometimes we screw up, consistently. Sometimes we get sued. Consider this letter we received recently which resulted in a hefty out-of-court settlement. Listen, if you've got problems with Alcor, we urge not to handle them like this:

Canwe, Milkem, & Howe
Attorneys At Law

Alcor Life Extension Foundation
12327 Doherty Street
Riverside, California 92503

October 18, 1989

Re: Donovan vs. Alcor

Dear Sirs,

Cyndi Donovan, hereinafter known as "our client" or "Cyndi," has retained our services and is fully prepared to file suit in the Federal Court of Injustice against all cryonicists in Riverside, California, hereinafter known collectively as "Alcor," "the Foundation" or "those freezer people out West."

Cyndi informs us that Alcor thrives on legal actions and we would, first of all, like to extend our sincere appreciation to you for your enthusiasm in the pursuit of justice. It is a rare opportunity indeed for us to deal with people who enjoy the legal system so thoroughly and who have the extra time and money to invest in such a worthwhile venture. We are thus extremely anxious to "give you the business."

Our client has voluminous evidence showing that Alcor has incorrectly spelled her first name. There are magazine labels, mailing labels, correspondence letters, and even an entire magazine article to support her case (all of which are now in our possession).

One two separate occasions, once in writing (copy not available) and once verbally, on October 4, 1989, our client made an effort to correct this error. These contacts were specifically to one Myke Darwyn (a.k.a. Miek Federowitch). Both of these efforts proved fruitless.

On October 16, 1989, our client received yet another mailing from the Foundation on which her name was once again misspelled. This caused her extreme mental distress, agitation, and occasional dandruff. Due to this final insult, our client is now residing at the Acme Institution for the Mentally Insane and Holistic Car Wash. Cyndi's psychiatrist/car buffer has diagnosed her as suffering from a severe identity crisis and an inability to correctly place the letter "y" in any given word.

This seemingly blatant disregard for her true identity has forced her to demand the following in restitution:

- 1) World Peace.
- 2) \$1.2 million for pain, suffering, medical care, and shampoo.

3) An additional \$2.4 million, just for the hell of it.

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4) An all-expense-paid, three-week vacation for two, each year for the rest of her life (which she says could be a very long time).

5) One pound of red licorice.

6) An apology on the front page of every major local newspaper, worldwide, that is printed in the English language.

7) That her name be spelled correctly from this day forward.

Our client's well documented charges will be filed at the end of this month unless we hear from you beforehand.

We have advised our client not to settle out of court, however, she insists we notify you that we will drop all demands if the Foundation fulfills item #7, as stated above. Cyndi will not expound on her reasons for settling for so little, but when we press her for details, she only mumbles something about "Alcor holdyng one of her relaytive's hostage" and something about "turnyng up the heat"???

We await your response.

Litgiously Yours,
Sure Canwe
Canwe, Milkem, & Howe
123 Litigation Lane
Seeyou-incourt, MI 48204

Please rest assured that a settlement was reached with Cyndi Donovan for an undisclosed amount of red licorice and future adherence to Item #7. - MD

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A DREAM IN HIS POCKET:
THE CRYONIC SUSPENSION OF EUGENE T. DONOVAN

by Cyndi Donovan, with Jim Donovan

Until recently, cryonics was something we rarely heard about and vaguely knew about. Now it's a daily household topic. In March, 1989, my husband and I participated in the cryonic suspension of his father, Dr. Eugene T. Donovan.

My name is Cyndi Donovan. I am a 38-year-old veterinary technician. My husband, Jim, is a computer analyst. This is our story about our introduction to cryonics.

Jim's step-mother, Dele, died in October of 1988 after a 15-year fight against breast cancer. We spent many long hours taking care of her and the last few days we were there with her 24 hours a day. She died at home with her family. Her death was hard for us, but little did we know then that

our emotional ordeal was just beginning.

In September, just one month before Dele died, Jim's father, Gene, was diagnosed as having esophageal cancer. His prognosis was six months to one year. Our first reaction was one of disbelief -- then sadness -- then an anger relating to, "How can we go through this again? How can this happen to us right now?" We hadn't had time to recover from our first loss and now another one would be coming directly behind it! Dele had been cremated and buried; Jim's father had a totally different idea for what he wanted.

Gene was 71 years old. He was a psychiatrist and was still working at the time. He

** PHOTO SPACE **

** CAPTION --

"Dr. Eugene Donovan in a photo taken a few months before his cryonic suspension in March of 1989."

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appeared to take his illness in stride, although he naturally vacillated between denial, optimism, and total despair. He was also still trying to deal with the death of his wife, whom he loved more than anyone in the entire world.

Jim and I both knew that Gene had always wished for immortality. He believed that science and medicine would someday provide for it but he also believed that it would never be within his personal reach.

When Gene first spoke to Jim and I about cryonics, we thought it more a passing fancy -- one of his "long shots," a denial of death or maybe he was just crazy. We didn't know what to think! We had both heard about cryonics, but we certainly weren't educated about it on anything more than a superficial level.

Sometime during the beginning of January, 1989, Gene told us that he'd been in contact with "this place out in California." He'd talked with them about suspensions and they would be sending him literature. He explained as much as he could to us and said that he felt this was what he wanted. He had also contacted other cryonic facilities but was not as impressed with them. To be honest, Jim and I did not believe there was even a remote possibility that Gene would actually follow through with this -- so we didn't encourage him. In fact, there were many times when we actually tried to discourage him and would take the negative side of the issue.

Gene contacted "the place" again and again. He received literature and relayed all the information to us. We finally realized that he was serious. He gave "the place" a name: Alcor. He gave the voice on the phone a name: Mike Darwin. Jim and I began getting involved. We read everything Gene had received from Alcor and I read Ettinger's book, "The Prospect of Immortality." We both struggled with "Engines of Creation," by Drexler and I'll admit that neither one of us has yet finished it. But now we knew what cryonics was all about. If we were going to support Gene, we wanted to be informed and prepared. We still weren't sold on the idea yet - - but we were willing to consider it as valid.

Now, Dr. Eugene T. Donovan, you must understand, is historically the world's greatest procrastinator. If he is going to leave on a one month vacation at 9:00 A.M., you can bet money that he'll be just starting to pack at 7:00 A.M. that same morning -- and I do not exaggerate! With his failing health and his deep-seated procrastination, Jim and I knew that, if cryonic suspension turned out to be an option for him, we'd have to help. So it came as no surprise when Gene asked us if we'd talk to Mike. And, aside from needing our help, I'm sure that Gene especially wanted support and approval from Jim.

The beginning of our first conversation with Mike was loaded with pessimism on all our parts. Mike had said that Alcor doesn't generally accept spur-of-the-moment, "I'm dying" members. He warned us that there would be a lot to do and that, even if they did accept Gene, we might not be able to get everything done in time. Then, on top of that, there's be the added emotional aspect of a cryonic suspension.

Mike said, though, that he was impressed with Gene's knowledge and understanding of cryonics (but not nearly, I'm sure, as impressed or awed as Gene was of Mike's cryonic, medical, and general knowledge). Gene's wish for suspension was not your ordinary middle of the night, death-bed request, Mike said. He was going into this with his eyes wide open and he'd thought about it for a long time so his chances of being accepted were better than most.

Gene was excited that Alcor was at least considering his request but, in turn, he was very frightened that he might get turned down. The day the phone call came to give us the "go ahead" to try and make the arrangements, Gene was like a little boy in a candy store.

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All of us felt good.

Now, I am your basic I-can-do-anything type person. I am also quite stubborn. If someone gives me a challenge, I jump right in. But, Mike's cautions had impressed me. So, although I didn't expect to fail -- I wasn't confident of succeeding, either.

Jim and I discussed everything at home that night without Gene. If Gene had any hope of doing this, we'd have to push him when he didn't feel good -- we'd have to do a lot of it in our own. But, Gene was dying. Gene wanted to be suspended and Gene needed to die with what I called a "dream in his pocket." So we decided that night to do everything possible to make that dream come true.

All of us knew the risks and the great uncertainty -- our decision was made with that knowledge in mind. If Gene did not get his immortality -- he said that he'd still be satisfied to know that he might contribute, in any way he could, to advance cryonics and to allow someone else to benefit from what might be learned from his suspension.

Mike spoke of funding -- we didn't feel that would present any problem. "Paperwork," he said -- that sounded quite innocuous -- so we began. Gene's application arrived, he filled it out, we sent it back -- "What's the big deal here, Mike? We thought this would be WORK!" Then -- one morning, this accurately described "mountain" of paperwork arrived. Federal Express listed it as 4+ pounds!! Mike, I will never doubt you again.

Gene was still working and was very tired most of the time. Jim and I took over everything possible. We spent long days and nights reading forms, making copies, typing, calling attorneys, doctors, and hospitals, mailing and delivering information and forms to various places, doctors, and relatives and having long talks with Gene. We replaced our telephone memo pad with a full-sized legal pad to accommodate all the incoming and outgoing information and to list all the questions we had to ask Mike on our next, almost daily, phone conversation. Mike did not lie -- he did not even exaggerate about the amount of work involved! We finally set up a filing system to keep everything straight and made twice-daily lists of things to be done. Something would inevitably slip through our attempt at perfect organization -- but we'd always manage to catch it later.

Dealing with the other family members turned out to be the most agonizing of all our efforts. Gene had four natural children: Diane, Gene III, Ray, and Jim. He also had three step-children from his marriage to Dele. The seven children ranged in age from 30 to 49. Gene had personally explained, but not in depth, his wish for cryonic suspension to each child and his choice for neuro-isolation and asked for their support. The oldest three natural children (Jim is the fourth and youngest) all had thoughts similar to ours at the start but they told their father that they would agree with whatever he chose to do. Once Jim and I had talked with them in more depth about cryonics and Gene's choice, they were with us 100%. This was not to imply that they personally supported cryonics, but that they would support Gene's decision, and they all offered to help do whatever they could. Ray even admitted that he thought the whole idea was crazy but, "if it's what dad wants, then he should have it." Diane and Gene III had the same feelings. All three of them readily signed and returned the Relatives' Affidavit, but, of course their questions continued.

The three step-children were a different matter. They had all told Gene that his decision was okay with them, but Jim and I immediately started hearing their complaints. Not all of them had the same objections or concerns*, but this was the general overview:

* Since I am unable to identify them here, I must group their complaints together. Although it may seem that they were all "unreasonable," this was certainly not the case.

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** PHOTO SPACE **
** CAPTION --

"The Donovan children. L to R: Ray, Jim, Gene III, and Diane. Far left, the hospice nurse."

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They would not try to stop Gene (at first) but neither did any of them want to be involved in any way. That was fine. Jim and I respected their decisions and honesty. As Mike had told us, "cryonics is not for everyone." Then the problems began. A valid concern was, "Who is Alcor and what qualifies them to do this?" This question, obviously, would have been better-answered by an Alcor member -- but we explained the best we could. The cost of suspension became a major issue. We heard that it was a "waste," a "rip-off," "it's money that should be mine after he dies."

This angered Jim and I very much. Our attitude from the start was that Gene had worked his entire life for what he had and he had the right to spend his money however he wanted. It was okay from their standpoint, for example, if he bought a sports car (we could sell it later), or even if he donated it to the American Cancer Foundation (that's a legitimate organization) but NOT cryonics! Sadly enough, it had also been suggested by one of them that we merely pretend to Gene that he would be suspended and then to not follow through with it after his death.

A rift began in the family and Jim and I tried our best to remain open-minded, fair, and objective. We could rationalize a lot of it away as emotional stress with their mother having just died, and now Gene, but Jim and I were experiencing the same emotional stress they were. Dele had been as much of a mother to Jim as Gene was a father to them and yet their reactions were so different. The complaints mounted and we were spending precious time on the phone trying to placate them and help them understand. It took its toll on Jim and I personally because one or the other of us would be frustrated or angry at one of them, and by trying to be nice and understanding with them we'd end up taking our anger out on each other. Once we realized that this was affecting our personal relationship, we found many different ways to diffuse our anger more productively.

At one point, we were asked to stop helping Gene because everyone knew that he couldn't succeed without us. We, of course, refused and made our position very clear to everyone -- but that particular request never ceased until the paperwork was finished that gave Alcor the legal right to Gene's remains and we were able to tell them so.

One child felt that Gene could, in fact, be crazy, and discussed having him declared mentally incompetent. Prior to that, we had discussed having Gene undergo a psychiatric evaluation to protect against just such a possibility. So we immediately scheduled the interview, which, it later gave us great pleasure to report, he passed with flying colors.

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Another was embarrassed by the whole thing -- "people will laugh at him -- they'll laugh at me!" We tried to explain the various reactions we had encountered from people we had told (from one extreme to the other) and said that it's not our problem if other people can't deal with it. It didn't help. So we said that if they're so concerned with what other people will think, then don't tell them.

They had the persecution complex -- "Why is he doing this to me?" We'd say that Gene was acting on his own desires and beliefs and he's doing this to himself, not to you. Jim and I constantly felt we were being asked to take sides and, although we tried not to, Gene took priority.

Another objection was the all-out release of Alcor from any legal obligations for the suspension. "They could basically take the money and not do it and we'd have no legal recourse." We agreed that this was a very valid point. But, Gene, Jim, and I had a "relationship" now with Mike and Alcor and we trusted them.

I guess the final big complaint was that they were upset that Gene had included their names on his initial application and that none of the step-children wanted to be, or have any of their families, connected with Alcor. We explained that Alcor provided them with that option right in the

Relatives' Affidavit -- just check the proper box.

Gene had already been hospitalized once because his esophageal lesion had grown and he began choking on his food. There was talk about placing a celestine tube or performing a gastronomy to place a feeding tube. Gene had quit work by now and was couch-ridden most of the time. We had set up a schedule for his care and eventually, with Diane, two of the step-children, a step-niece, a close friend, and Jim and I, we had 24-hour-a-day care for him. The same hospice nurse that had cared for Dele throughout her illness now came in to care for Gene. Occasionally, we also hired an in-home nursing service.

Mike had encouraged Gene and Jim to fly to California to meet with him and see the facility. Although Gene's health was posing a problem, they flew out on February 3rd. Mike was leaving for a one-month trip to England and he wanted Gene and Jim to meet the other staff members and establish another contact for the time he would be gone.

We had decided ahead of time that Gene would personally take his completed paperwork out to California with him and that cash up front would be the best method for payment. We arranged for a check to Alcor for the full suspension costs and on February 2nd, we set up a "paperwork" night. We hired a notary, got two witnesses, and set up an assembly line in Gene's dining room. Gene was exhausted that night but he said not to worry about him -- he'd do whatever had to be done. Two hours later, we were finished. (Two of the documents turned out to be done incorrectly so we re-executed them later and returned them to Alcor by mail.)

Gene and Jim had by now, I believe, spoken on the phone to Mike Darwin, Jerry Leaf, Hugh Hixon, and Mike Perry. But the trip to California was truly the deciding factor. They were both impressed (to make an understatement). Jim said that IF this was, in fact, a sham, it was the most elaborate one he'd ever seen and he definitely did not believe that it was. He described having the "warm fuzzies" for Alcor and its members -- which translates in English to, he liked them very much and felt good about them. "These are," he said, "very dedicated people who believe in what they're doing." Gene not only returned very satisfied with what he'd seen but as a full member of Alcor -- complete with ID bracelet which he proudly showed to everyone.

Jim had taken notes on the facility and on each person he met so he could describe them to me when they came home. The only real judgments I could make then were that Gene and Jim

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believed it was good, that I liked the people I had personally spoken with over the phone, and that Jim had his "warm fuzzies" -- so, we became even more determined to see it through.

On February 6th, the day after their return from California, Gene could no longer take food orally. He was admitted to the hospital and scheduled for a feeding gastronomy on February 9th. Gene was in good spirits about it and hoped it would buy him more time. Diane, Jim, and I sat together through the surgery and Gene's recovery. He did very well and returned home a few days later, being fed a high protein, high caloric liquid diet via the gastric tube. At the hospital, they had fed him using a metered pump, but the doctors felt that Gene would do fine at home with the quicker "push feedings." All of us learned how to feed him, but Gene basically did

everything himself with just our assistance.

During Gene's hospitalization, the step-children once again had another problem. They had all by now read the entire Relative's Affidavit and were unhappy about being asked to send it in. "I told Gene that I'd sign a paper saying that I wouldn't try to stop him, but I never agreed to sign something with all this other stuff in it," one of them said.

We called Alcor and Mike told us that while they would really like to have the RAs from the step-children, it wasn't necessary from a legal standpoint; especially since all four of the natural children's affidavits were completed and returned. Jim and I seriously considered just telling the three of them to forget it, but we still felt it worth the effort to try to keep the family together and work it out. We felt it was important, especially now, that they be included. Once again though, valuable time was slipping away. We called a family meeting on February 12th between Jim, myself, and the step-children. All the previous problems and some new ones were discussed again and again. Since Jim had been to California he tried to relieve some of their skepticism. The effort may have been worthwhile on a personal level but we didn't feel that we gained any ground where Gene's beliefs or wishes were concerned. They still all agreed that they wouldn't try to stop him. We ended up telling them to edit the Affidavits to their liking, rewrite them completely, or throw them away. But we also told them that we personally felt it was important for them to do them if for no other reason than to show Gene that they would support him.

Our only anger at any of them now is that none of them seemed to have made an honest effort to understand cryonics or how Gene really felt about it. Sure, Jim and I answered their questions the best we could, but none of them read the literature to any extent or educated themselves about it. Their opinions were emotionally based. They believe that Gene went to California to have his head cut off and frozen thinking that someday he'll be able to come back to life. And, I agree that that's the idea in a nutshell but it grossly negates the scientific basis, the research, and the emotions. All we ever wanted was their support for Gene -- and we didn't get it. We were able to keep a lot of these problems to ourselves, but if Gene asked, we would tell him what was happening. It would upset him a great deal, but we always assured him that none of it would interfere with his goal.

One last request was made of us from the step-children and that was that we would not actually participate in or observe the procedure in any way, not with the transport, and especially not with the suspension itself. We were asked not to go with Gene's remains to California. Jim told them that he might not even be able to help, but if he felt he could or that he wanted to, that he would and so would I.

I guess, for me personally, Alcor still seemed a remote place that provided just voices over the phone and tons of paperwork. We seemed to be filling our time with distractions while waiting for Gene to die. We had a lot more yet to do but it still didn't feel "real" to me. Then, in one fell swoop, Alcor was very real. Eight hundred pounds of Alcor equipment was delivered to my home. Eight hundred pounds!! It was the remote standby/transport kit. There were seven big, bright yellow boxes and one gigantic orange

body transport box. Alcor had just materialized in front of me. The freight truck driver had been looking at the address labels as he unloaded the crates -- Alcor Life Extension Foundation -- and when he finally unloaded the body box, he jokingly asked me if this was my husband. I said "yes" as matter-of-factly as I could and you'd think the guy had seen a ghost. He said he was running late -- had to go. I got quite a kick out of it.

Everyone knows that humor is a wonderful release from tension and emotional pain. As morbid as this may seem to some people, we constantly joked about Gene's death and his upcoming suspension. Usually Gene was the best one for coming up with things to make us all laugh. When we talked about the money for the suspension, he asked if we couldn't just stick him in our freezer and store him in our barn to save maintenance costs. From that remark, Gene III started calling him "popsicle" and we made t-shirts that said, "I love my Popsicle." One night, Gene said that he was ready to be suspended -- he was still at the time in fairly good health. Jim got up saying, "I'll get the chainsaw." Gene asked what he wanted a chainsaw for and when Jim replied that it was for the neuro-isolation, Gene burst out laughing. We discussed buying stock in Fridgidare. Gene III suggested that, when he died, he would have only his body suspended -- then, when the people in the future brought them back, they would put the father's head on the son's body and thus keep the "genes" together. Jim and I got a coffee mug that pictured a man in the winter, walking his dog. The dog and his leash were frozen solid and extending straight out into the sky. The caption read, "Greetings from colder than you can imagine, U.S.A." . Gene told us to buy a bunch of them and send them to his family and friends this coming Christmas and sign his name to the card. The jokes went on and on and they kept us going a lot of the time.

We still hadn't been able to coordinate a hospital and doctor yet, which, in turn, prevented us from getting a mortuary lined up, since location was of critical importance. After extensive phone calls, mailing of information, and many personal deliveries, we finally got a cooperative hospital. Then we got a doctor, but at a different hospital -- no good. We couldn't get the doctor's hospital to approve the procedure and we hadn't found a doctor at the other hospital to accept Gene as a patient, with his plans for suspension. We were stuck and time was running out.

Jim and I spent most of our time with Gene discussing Alcor plans and trying to get his estate in order (another time-consuming chore). I was working only part-time and Jim took a lot of time off work. If we weren't with Gene, we were almost always doing things related to Alcor or to Gene. We came to greatly appreciate the few times we were able to sit and watch TV, or read a book, or take the dogs to the park. I guess that's another problem that Jim and I had -- the dogs. We had two -- Schooner and Jesse. We had been gone a lot during Dele's illness and we were gone even more when we were taking care of Gene. There was a lot of emotional stress and our dogs picked up on it, and, as they had done several times in the past, they began fighting. We tried everything to stop them and, with me being an animal behavior consultant at work, I mean it when I say we tried everything. On December 4, 1988, between the deaths of Jim's parents, we had to euthanize Jesse. We both know that, given the circumstances, it was the best and only choice we had. But neither Jim or I have yet come to terms with that loss.

On February 16th, Steve Bridge flew up from Indiana to help us check our plans, to check the Alcor equipment, and to meet us and Gene and whatever other family members who would be available. We invited him to stay at our house, which worked out great because it gave us more time to

get to know each other and to be further educated about cryonics. Steve met with Gene and Diane and had a chance to talk with both of them. We drove to Ann Arbor to check out locations and met with the mortician we had chosen, who was located between the two hospitals we were "negotiating" with. Steve stayed two days and left, satisfied with what he'd seen and also left us with a list of things to do.

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By now, Gene's liver was grossly enlarged -- the cancer had spread not only to his liver but his bones, abdomen, and jaw. He wasn't gaining weight; in fact, he was losing both weight and strength. He developed diarrhea and the esophageal lesion had begun to bleed a small to moderate amount. We all feared a massive hemorrhage or even heart failure. Gene had a history of heart problems, along with chronic obstructive pulmonary disease (he smoked up to the day he died). He had started getting radiation therapy in hopes of reducing the size of the lesion, but it didn't do much good. He returned to the hospital for a few days so they could regulate his feeding using a metered pump like before. This cleared up his diarrhea and he returned home a few days later. He continued to lose weight, though. We were acutely aware that a sudden death at this time would be highly detrimental to his plans for suspension -- but we tried to remain optimistic. We were constantly in touch with Mike and Jerry, not only regarding the progress of our plans but about the status of Gene's health.

By now, Mike was in England. He'd promised to come back if we needed him, but we still felt a bit lost with him gone. Jerry had taken over our phone calls and we did feel secure with him, but Gene constantly counted the days until Mike's return. Gene also by now had a telephone unit sent out from Alcor that would dial them direct and send an emergency message in case the need arose.

Then, somehow, everything fell into place. Our hospice nurse worked out of Ann Arbor, in Washtenaw County. We had told her about our doctor/hospital dilemma (in fact we kept her up to date on everything) and she, in turn, brought it up to her supervisor. They discussed our problem at their next staff meeting, at which the Washtenaw County Medical Examiner was present. Her supervisor came up with what turned out to be a brilliant idea of which the M.E. approved. In Oakland County, where Gene lived, and where Dele had died at home, an "in-home" death involves not only a police report and confirmation from the hospice nurse and the attending physician, but also an EEG sent by an Emergency Medical Technician to a local hospital doctor -- obviously a process that wastes precious time! But, in Washtenaw County, a hospice nurse may contact the attending physician to pronounce death by phone, and Alcor can take over immediately. This seemed perfect. We decided to move to Ann Arbor. We called Alcor. We called Gene's physician and we reconfirmed the plan with our hospice nurse. Everyone said yes!

The next few days for Jim and I were consumed with phone calls and trips to Ann Arbor. We ended up with a two-bedroom "executive" apartment on a month-to-month lease (we all knew we'd probably never use up that 1st month, though). The apartment wasn't ideal in that it was on a "garden" level, six or seven steps down from the first floor with a questionable turn at the top of the stairs for a gurney. However, the windows were large enough that we hoped we could carry Gene out when the time came if the stairs proved unnegotiable.

Gene, Jim, Diane, and I moved into the Ann Arbor apartment on March 10th, after Gene's final doctor's appointment. Gene immediately wanted the Alcor team to come out. Mike was now back from England and we were basically ready. The equipment and transport box were at the mortuary and not much else had to be done on our part. Jim and I were both a bit leery about calling Alcor out because it seemed too soon. Mike said it very succinctly later when he said that it's just like Gene to procrastinate his death. But Gene's apprehension and anxiety rubbed off on us. After all the work and effort, none of us wanted to miss the ideal circumstances for the best possible suspension. Jim called Alcor on March 11th and asked that, if it was at all possible, could someone come out now? Jerry flew in on March 12th and we all felt a lot better. By the time Jerry arrived, Gene's other two sons, Gene III and Ray, had moved in. Mike arrived on the 15th. Eventually, there were eight of us living (and waiting) in this not very large apartment. Our hospice nurse began staying 24 hours a day on the 19th and Steve Bridge flew in on the 20th, bringing our total occupancy count to 10. Plus our dog, Schooner, whose company everyone enjoyed. I teased Mike later

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** PHOTO SPACE **
** CAPTION --

"L to R: Jerry Leaf, Ray Donovan, Diane Donovan, and Gene Donovan, III relax and enjoy some coffee during the long wait at the hospice apartment in Ann Arbor, MI."

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because, even in the midst of a heated discussion, (and everyone who knows Mike can picture him in a heated discussion) if Schooner walked by, his hand would automatically drop to pet her. As scientific evidence tells us, petting Schooner probably helped all of us keep our blood pressure and anxiety at acceptable levels.

Gene had one of the two bedrooms. We literally crammed four twin-sized beds in the other bedroom for Mike, Jerry, Ray, and Steve, and the rest of us camped out on couches, chairs, and floors. We briefly discussed getting a

nearby hotel room but none of us wanted to be the ones to be away from the apartment. This might seem to have been a crowded and quite uncomfortable situation to most people, but I didn't find it to be either. We all got along well. We all pitched in with the meals, cleaning, and caring for Gene, and even with the extra assortment of daily visitors, I didn't feel overwhelmed. With that many people, everyone was also free to leave for a while (which we all did) and know that Gene would be in good hands. Of course, Mike and Jerry never left at the same time. Jerry even said to me that it was the most comfortable remote stand-by he'd done and he really enjoyed the good food.

As for the family, it was a time to re-establish bonds that had loosened over the years. Stories and memories were constantly being shared. For Jim and I, this was probably the most valuable aspect of Gene's dying.

Gene had initially refused to see Gene III and Ray after his first visit with them after we had moved into the apartment. They had not kept close contact over the years and maybe Gene was resentful. He first told me and then Jim to tell them to leave. He said that they'd come to see him, fulfilled their filial duties, satisfied their morbid curiosity of seeing a dying old man and now he didn't want them there. Neither Jim nor I could do this. We talked to Diane about it and none of us could come up with a solution. I'm not really sure how Gene III and Ray figured it out, but they knew what was going on and so we all discussed it. Jim told his brothers that it was important for them to be there for him -- he wanted them to stay. Ray finally said, "I'm staying and I don't care if he likes it or not. I just won't go in to see him and he doesn't even have to know that I'm here." Gene III agreed. We all agreed because the family needed each other now -- the family needed the support, the loving, and the sharing of the burden. We all felt bad that Gene felt this way but we decided it was probably more Gene's pride than anything else. His two eldest sons had never really known Gene to be sick or weak or dependent and I suppose Gene felt embarrassed that he now needed help to do even the simplest things. Jim told his father of the decision we'd made and he agreed to let them stay "for Jim's sake."

I don't know for sure what happened, but the next day, Gene called each of his oldest sons into his room and talked with them. Old wounds were healed. He accepted not only

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their presence but their help from then on. He told Jim and I that it was okay for them to stay now. The family was together.

By March 19th, Gene was extremely weak. He slept most of the time and talked very little. We had all discussed discontinuing his feedings as it was agreed that he was no longer benefiting from them. His doctor and hospice nurse agreed. We discontinued the pump that night and the only thing Gene received from then on was small amounts of morphine to control his pain and the Lanoxin and Verapamil he had been taking for his heart. Gene never needed much morphine -- or at least he refused it most of the time because he always wanted to be able to think clearly.

Not only was Gene ready to die now, but he was frustrated (on a conscious level) that he continued to live. (Unconsciously, he was holding onto life with every ounce of strength he could muster.) He just wanted it "to be over," he said. Gene asked several times each day about Alcor and everyone of us kept reassuring him that everything was ready. Jim finally told his father, "all we're waiting for now is the star player." Gene liked that. Knowing that Mike and Jerry were there and to see them every day helped relieve a lot of Gene's fears.

If there were good things that came of Gene's death -- there was also one very bad thing that caused us all much anger and emotional turmoil. Gene was bedridden, weak and in pain. He could not recover from his cancer and he wanted to die now and there wasn't one thing we could do to help him. We, as a society, condone and even encourage euthanasia for our pets and all other animals when all hope is gone. We consider it inhumane and sometimes illegal to allow an animal to suffer, and yet when a human being is in the same position and has the capacity to MAKE THE CHOICE!! we force them to die slowly and suffer terribly in the name of "precious" life. I can't believe those people would feel the same if they had to sit at a

loved one's bedside day after day and night after night and watch that person die. I think of how easily and painlessly our dog Jesse died and it seems so unfair.

Every one of us sat with Gene. I spent many hours in his room. Sometimes we talked (about Alcor, the estate, life, death, the weather) but mostly we just sat together in silence. Or I'd sit on the bed with him and we'd just hold hands. There are two particular instances that I will never forget for as long as I live. Gene sat bolt upright in bed (not an easy feat for a dying man), looked directly at me, and asked, "Am I in California yet?" I told him that he wasn't -- he was still here with us. I reassured him again that he would go to California for sure but he just fell back onto the pillow and stared at the ceiling. Nothing I could say that day seemed to cheer him up. The day before he died, too weak to even lift his head, he opened his eyes and asked me, "Where's my head?" I said that it was still here with us. I could see the disappointment on his face so I quickly said that it wouldn't be long now -- "you're going to California -- we're coming down the home stretch. NOTHING CAN STOP US NOW."

Gene smiled, ear to ear, nodded his head and gave me the OK sign with his hand. At that very moment, I really felt the full importance Gene had placed on his suspension. I had absolutely no doubt that all our hard work and exhaustive efforts were more than worth it. The memory of that smile on his face is all the reward I could ever want and I felt quite proud of myself and Jim and for everyone else who had helped prepare Gene for his last wish.

Outside Gene's room, we had all discussed our particular roles and tried to be prepared. Mike, Jerry, and Steve busily checked and rechecked the equipment. The night of March 20th, Jerry and Steve reconstituted and mixed all the medications as the hospice nurse said that it could "happen at any time now."

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** PHOTO SPACE **
** CAPTION --

"The night before: L to R: Jerry Leaf and Mike Darwin watch as Alcor Midwest Coordinator Steve Bridge draws up medications."

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The day before, we had assembled and tried out the Pizer tank which was out on its first field trip. Using Mike as our "patient," the first problem occurred as the tank separated at the center under his weight. Mike and I made a quick trip to the store for two motorcycle tie-down straps, secured the tank posts with them and it worked fine. The second problem was, as we had feared, that it wouldn't make the turn at the top of the stairs to go outside. Fortunately, we had plenty of manpower to lift the tank out the window. It

was perfect.

Gene died at 8:19 a.m. on the morning of March 21, 1989. All of us were with him. The hospice nurse pronounced death and, from somewhere in the room, someone said, "Let's go!" We all quickly wiped our tears and the transport began.

Jim did manual CPR while Mike and Steve hooked up the HLR. Jerry placed an endotracheal tube, I tried to place an IV catheter and Diane, Gene III, and Ray assisted all of us.

I remember sitting on the floor next to Jim and becoming frustrated at not being able to insert the catheter readily. Jim was counting compressions when I heard his voice start to tremble. He was fighting very hard not to cry. For one brief moment, I thought we'd all just fall apart. I reached up, grabbed Jim's arm and said, "You're okay." He had to stop counting out loud for a few moments but he never missed a compression.

Once the HLR was in place and an airway had been established, the HLR malfunctioned. Actually, it was more a problem of securing it around Gene's chest. Steve had brought a backup unit with him from Indiana and, with a quick change of parts, we were back in business. I, however, was still unsuccessful in placing the IV catheter.

We moved Gene from the bedroom out into the Pizer tank in the living room where Diane, Gene III, and Ray were ready with the ice. Mike now inserted a rectal thermometer and then he and Jerry pitched in to help place the catheter. Gene was so dehydrated that we just couldn't do it.

Even though I am used to working under similar circumstances with animals, I'd never before used a 14-gauge catheter - I'm used to much smaller ones. I needed something more familiar to me. I remembered my animal emergency kit in my van, and Gene III ran out to get it. I didn't have any IV catheters, but I did have some 22-gauge needles. Mike attached a needle to the first drug syringe and, after a couple of tries, I hit a vein and injected the drug. When we changed syringes, I lost the vein. I tried again (new needle,

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different vein) but, although the hit appeared to be good, the medication went perivascular. We discussed doing a cutdown but Mike said the surgery kit was at the mortuary. Fortunately, I had a scalpel blade and a pair of hemostats (the bare necessities) in my emergency kit and Jerry was able to do a nice cutdown. They administered the drugs and started IV fluids. For me, that was the most frustrating part of the transport. We had discussed inserting a catheter before Gene's death but our hospice nurse was "uncomfortable" with the idea so we didn't do it. In retrospect, Jim says that he would have insisted upon it.

The men from the mortuary had arrived, Gene was fully packed in ice, and his temperature was dropping. The Pizer tank with Gene in it went out the window with minor difficulty and we were on our way to the next phase of the transport.

The equipment at the mortuary had been set up the night before. Gene III (the Ice Man) and Ray had about 300 pounds of ice ready and, with Diane, they packaged it all into Ziplock bags. Preparation for the blood washout began. Our funeral director was fully co-operative. In fact, he

basically just left us alone -- offering his help only if we needed it.

The only mistake I can recall was one that I made. I was helping Mike mix the perfusate and I got a bit over-zealous with pouring in the sterile water and he ended up with a more dilute solution than he wanted. Mike said it was okay -- what else could he say? I felt awful. Later, though, Mike told me that it really was all right because Gene had been so dehydrated that the extra fluid had probably even helped. Whew!

I prepped the surgical site for the femoral cutdown while Mike and Jerry did the final setup and scrubbed for surgery. Everyone else helped wherever they could. Jim took pictures to record the procedure in between helping, Steve took notes and monitored Gene's temperature, and I assisted Jerry and Mike with the cutdown and washout.

At the beginning, when Jerry first isolated and incised the femoral artery, there was a clot. I think all three of us cursed at the same time because we knew what that could mean. Jerry removed one long clot of blood and we never found another one. (Another whew!)

** PHOTO SPACE **
** CAPTION --

"Cyndi Donovan, Jerry Leaf, and Mike Darwin during the final stages of connecting Dr. Donovan to the blood pump/oxygenator for blood washout."

**

Blood samples were taken throughout the washout; Mike collected, I recapped the tubes, and Jim and Diane labeled and prepared them for shipping to the lab. Everything went off without a hitch. All of us children agreed that the washout was extremely interesting and we were all glad to have been able to participate thus far.

Gene was placed in the transport box and everyone pitched in with

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** PHOTO SPACE **
** CAPTIONS --

"Ray and Diane immediately after bagging-up a cooler full of ice. The Zip-Loc bags filled with ice were used to refrigerate Dr. Donovan during his subsequent air shipment to Riverside, California."

**

"Jim, Ray, Gene III, Mike, and Jerry (not visible) close the shipping container at the mortuary prior to transport to the

packing the ice. The embalming room was scrubbed, the equipment was cleaned and repacked for shipment back to Alcor and flight reservations had been secured. We all went back to the apartment.

While we had been at the mortuary, our hospice nurse had cleaned the apartment -- just one of the many extra things she

airport."

**

did for us. She was so wonderful. She was not only Gene's nurse, but our friend -- part of the family -- because she had been with us for so long and helped us all through two very difficult times.

Steve got ready to return to Indiana while Mike, Jerry, Jim, and I showered and packed to return to California. Mike had extended the invitation for Jim and I to come back with them and to "watch whatever we could," but I somehow felt that he was a bit leery of that. I hoped now that he felt more comfortable with our decision to go, as we had been of some help up to this point and hadn't fallen apart emotionally. Neither Jim nor I were sure that we could handle the actual suspension, but we both needed to try. We knew that Alcor

would complete it without us -- but, we saw it as the culmination of a long endeavor we had begun more than two months prior. To wait at home for his cremains to be returned and then to bury his ashes just wouldn't do. Gene had said that burial is a finality but freezing is a continuation -- Jim and I needed to see the continuation.

Our plane left Detroit at 6 P.M. EST. We tried to relax. We thought maybe it would be a time to feel all those emotions we'd had to shut out -- but, we were so exhausted and so excited that we either talked about the transport or slept.

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We arrived at LAX about 8 P.M. PST. Jim and I left with Jerry and Carlos Mondragon to head for the facility, while Mike remained at the airport with Scott Greene and Simon Carter to pick up Gene.

** PHOTO SPACE **
** CAPTION --

"Mike, Cyndi, and Jerry after the completion of blood washout at the mortuary in Ann Arbor."

**

When we arrived at Alcor, I was surprised. Jim and Gene had both told me about it after their

trip in February, but their description didn't do it justice. I did not, as Jim told me, expect to find the Mayo Clinic -- but I was, in one word, impressed!

A lot of people were there busily preparing for Gene's suspension. Introductions were made and everyone was friendly and more accepting of our presence than I had expected. Any worries I had about being not wanted or feeling like an outsider were quickly dissolved. Jim took me on a quick tour of the facility. It was much bigger and better equipped than I had expected. Jim did not really miss much in his description to me, but with my being a "medical" person it all just meant a lot more. For example, instead of "a huge room all full of equipment," I could now see a well set-up and equipped surgery room.

Carlos took us out to get our hotel room and to buy more film before things got started.

When we returned, Jim and I were still unsure of what we were supposed to do or where to go so that we'd be out of the way. I asked Jerry -- he said to go put on some scrubs and, at that moment, I knew that we'd be more than just bystanders, that we could help, because Jerry treated me the same way as he had back in Michigan. Sort of the old "get going" attitude. We clarified our positions with other people (i.e. to tell us if we got in the way) but not one person seemed to be concerned that we would be. Everyone took

** PHOTO SPACE **

** CAPTION --

"Cyndi assists with prep of the patient: Mike Darwin indicates area to be shaved."

**

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the time to talk with us and to explain the things they were doing. Jim and I both felt good about that.

I'm sure that Jerry or Mike will write about the technical aspects of Gene's suspension at some future time so I'll just continue with our point of view.

Jim helped to position Gene on the surgery table, we both helped to keep him packed in ice, and Mike let me help with the surgical scrub.

The thoracic surgery was very interesting and Jerry was very patient with us and explained everything he had done. We watched Mike and Jerry drill the burrhole and Mike also led us verbally by the hand whenever we had questions or didn't understand a procedure. We ended up not only

watching but even assisting to a small degree by opening sterile supplies packs, checking ice, and generally playing gophers.

Jim and I had been mostly confident from the start that we could handle the suspension procedures. I routinely assist in veterinary surgery at my work and Jim often has helped me out -- so I knew at least that the procedures wouldn't affect us. We had talked a lot -- even with Gene about maintaining emotional detachment after his death -- the "it's just a body now" sort of thing. But Jim and I began to realize that it was the emotional attachment that was more in control now. We were here for his father -- the living Gene Donovan. We watched everything except for the infusion of the fluorescent dye to check the success of the perfusion. To tell the truth here, Jim and I snuck off during the long perfusion process to catch a short nap. Mike told us that the vessels that were visible through the burrhole in the skull "lit up like a Christmas tree." When the time came for the "neuro-isolation," Mike asked us if we were sure we wanted to be there. We both agreed that we did.

The neuro-isolation was the most satisfying part of the entire procedure. This was the specific act that Gene had focused upon to represent his goal. It's the part he talked about (and joked about) the most. "It's not the body that's important," he said, "it's what's up here. If they can save that, then I've gotten my immortality."

** PHOTO SPACE **
** CAPTION --

"Jim Donovan napping in the Cryovita office near the end of Dr. Donovan's perfusion."

**

Jim helped not only with the neuro-isolation but with the packing of Gene's head into the bag and into the first cooling container. I observed and took pictures. Gene's body was then prepared to be sent out for cremation.

We were tired but we were still so caught up in the suspension that we stayed afterwards and helped with the cleanup.

Mike passed me at the utility sinks as I scrubbed the surgical instruments they had

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used and he said, "You know, you don't have to do that -- it's included in the invoice." We laughed at that because we all knew that Jim and I never needed to help at all. We trusted Alcor and every one of its members that had volunte-

** PHOTO SPACE **
** CAPTION --

"Mike Darwin, Jim Donovan, and Mike Perry secure temperature probes in preparation for cooling of Dr. Donovan to dry ice temperature (-79°C).

**

ered their help that night -- but for Jim and I, it was personal.

We returned to our hotel room but couldn't sleep. We talked about everything that had happened and I wrote notes because we'd promised Diane, Gene III, and Ray a detailed account upon our return.

At 4:00 pm on March 23rd, we returned to Alcor to pick up Gene's cremains. We didn't get back to our hotel until after midnight. Mike took us out to have our pictures developed (he knew a place that wouldn't object to the subject matter) and the three of us went out for dinner. We enjoyed that tremendously because it gave us a chance to know Mike on a more personal level. Once back at Alcor, everyone looked through the pictures we had taken and Alcor kept the duplicate set we had gotten.

At that point, they were very close to transferring Gene from the initial dry ice cooler to the neurocan to start cooling to liquid nitrogen temperature. We decided to stay. It was very interesting and even this "simple" process was well worth viewing. And, once again, we were allowed to help. Jim assisted in the actual transfer, we watched the whole-body dewar being partially filled with liquid nitrogen, and I even got to operate the overhead winch. As before, Jim took pictures.

** PHOTO SPACE **
** CAPTION --

"Jim Donovan with dewar container Dr. Donovan immediately prior to cooling to liquid nitrogen temperature (-196°C)."

**

We finally arrived home from California on Friday, March 24th. We felt great. Exhausted, but great.

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** PHOTO SPACE **
** CAPTION --

"Cyndi recovering from the suspension with the help of Alcor mascots Dixie and Slinkie."

**

Gene's three step-children haven't asked about our trip to California, and I don't expect they ever will. One has requested that we never -- ever mention Alcor or cryonics again in her presence. We

will respect that request.

As for Diane, Gene III, and Ray, the five of us all got together after our return and we told them everything we could remember. They looked through all the pictures, asked questions and we explained everything we could to them.

They are all very glad they had the opportunity to participate in Gene's last wish. Their only regret is that they could not accompany us to California to "finish the job."

In the time that has passed now, we continue to have contact with Alcor. We celebrated when Mike called to tell us that Gene had reached the -196°C temperature and was placed in "permanent" (or temporary) storage.

There is still more paperwork to be done on our end (and probably a tremendous amount on theirs) but now the pressure is off. Alcor still needs medical files, pictures, and history-related items. Mike says they're "data freaks" so we hope we can supply them with everything they want.

For safekeeping, everything in Gene's file will be duplicated and Jim and I will store copies. Mike says we will be the first "off-site" backup facility.

For all the time we spent, all the pressure and frustration -- we ended up with a grand experience and an even grander reward. We're proud of ourselves, of Gene, and of Alcor. I know that there are many more things I forgot to tell. Just all those special people, important words and many emotions that elude me right now. But Dr. Eugene T. Donovan is now safely in cryonic suspension and whether he knows it or not, his dream is no longer stuffed safely in his pocket -- it's a full-fledged reality.

Gene bought what he referred to as his "lottery ticket." He's taken that one first gigantic step toward his chance for immortality.

We wish him all the Irish luck possible when the drawing comes around. We're glad you made it, Gene!

* * * * *

COLD CUTS

by Ashleigh Brilliant

The Man Who Cut Off His Mother's Head shook my hand warmly when I arrived at his home for the party. It was a big moment for me. For years, ever since giving them permission to reprint some of my works in their newsletter and thereby landing on their mailing list, I had been following

the fortunes and misfortunes of this bizarre group with keen interest; but their installation was hours away in Riverside, and this was the first time I had ever taken the time to attend one of their gatherings.

It was the Annual Turkey Roast of the Alcor Life Extension Society, whose members (some 145 fully paid-up and committed, with hundreds more hangers-on) call themselves cryonicists and believe in the possible future revival of people whose bodies, or at least whose heads, have been preserved by freezing. The man greeting me was one of the founders, Saul Kent, whose own mother, by result of her severed head, recently became one of a claimed 13 members "in suspension." The resulting scandal, arising from questions raised by the local authorities as to whether the 82-year-old lady was legally quite dead at the time of the operation, has been widely publicized, and has not yet entirely been put to rest. Nor indeed, apparently, has the controversial head itself, since neither Mr. Kent nor anybody else will reveal its current location.

I myself felt it hardly discreet, considering that it was our first meeting, to ask "WHERE IS YOUR MOTHER'S HEAD?" and confined our conversation to topics of a more general nature, such as praising the refreshments, which were indeed superb, especially the turkey, which was soon left with very little chance of cryonic resurrection.

I did, however, feel free to inquire about the head of Timothy Leary, the charismatic guru of the 60's. It was not, unfortunately, there at the party, but it is, at this writing, as far as I know, alive and well, and still closely fastened to his body. As I had seen in a news report, however, Leary had recently become a "Suspension Member" of Alcor, and I was interested to learn whether he had chosen to have his whole body frozen, which costs \$100,000, or only his head, at a mere \$35,000.

It was more than idle curiosity, because, despite many reservations, I myself have also been thinking seriously about taking this crazy plunge. But I find that, despite the price difference, I have strong feelings of attachment, not just to my head, but also to the vast majority of my nether parts. Besides, those future scientists upon whose dedication and goodwill the entire scheme depends, would surely prefer the relatively easy task of curing whatever had caused my demise, to the tricky business of connecting-up my head or brain with a whole new body.

A highlight of the party was an organized tour, for first-timers like me, of the small Alcor "facility," located (rather disappointingly) in a nondescript "industrial park" several miles from the Kent home. On the way, I learned from our guide that Leary had, for whatever reason, chosen the \$35,000 "neurosuspension" as opposed to the total job. We were shown the large shiny metal cylinders in which the whole or partial remains of suspended members already repose in liquid nitrogen, awaiting the ultra-modern equivalent of Judgment Day.

It was fascinating to see actually in operation what is still only a beginning rich with promise. Yet, as we stood there hearing the various technicalities explained, all the fun of the day somehow seemed to evaporate. This is what it was all about. I tried to picture myself suspended there in smoggy Riverside for something like forever, instead of being about to drive home to Santa Barbara, -- my "widow" not being sure what to grieve over (except perhaps a departed \$100,000), -- frozen there in a dingy warehouse, crammed

** PHOTO SPACE **
** CAPTION --

"Ashleigh Brilliant"

**

into a tin can, -- perhaps in the same one with the head of Timothy Leary, -
- waiting, waiting, -- our fate totally out of our hands (even more so in
his case than mine, since I at least would still have hands!) and always at
the mercy of whoever controls the precious supply of liquid nitrogen, to
say nothing of whoever, in the undependable shifts of time, administers the
region, governs the country, or rules the planet.

It may still be all very logical, and, for those of us with no faith in
any other kind of after-life, it may be, no matter how slim the chances,
the only way to go. But suddenly, standing there among those cold
cylinders, I felt a renewed determination to keep on going in this life as
long as possible.

* * * * *

CRYONICS "ON TRIAL"

video review by Allen J. Lopp

Slightly over two years after the controversial suspension of Dora
Kent, it is plain that cryonics has left its mark on the legal environment
in California. We have won a restraining order against a coroner
preventing the thawing of our suspended patients, and we have successfully
reaffirmed the illegality of federal-style "use immunity" in a state-level
legal process. Most recently, we received a court ruling in which the
judgment opinion stated that an individual has a Constitutional right to
cryonic suspension, possibly even before natural death. While this opinion
is open to further legal clarification (or reversal), it is more than
significant -- for cryonics, it is virtually of landmark proportions.

It is clear that, for this brief interval at least, the cryonics world
is more successful at establishing new law than new scientific capability.
This, I feel, is an observation that only the most shortsighted cryonics
"techie" might lament; for our

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progress on the scientific
front is truly academic if we
do not have legal access to
apply it and benefit from it.

I am sure the makers of
the hit TV show "L.A. Law" re-
cognized the new legal terri-
tory being explored as they
prepared the episode that
aired the night of January 4,
1990. This installment feat-
ured a law school friend of

one of the regular "L.A. Law" attorneys (played by Joyce Hyser and Blair Underwood, respectively) who is suffering from a brain tumor which will soon kill her and destroy her brain in the process. She asks her friend to argue her case to obtain a court order allowing the "cryonics life extension facility" to place her into cryonic suspension before the advancing tumor does its irreparable damage.

Considering the media treatment Alcor and other cryonics groups have received in the last two years, the notion of such an episode might cause us either hope or dread. As has happened so often, a careless or antagonistic writer could expose another million or so members of the public to another Neanderthal sermon about how cryonics is disgusting, ridiculous, and shouldn't be allowed. Well, my friends, while anti-cryonics arguments were given some play, the makers of "L.A. Law" not only did a responsible job, they did a compassionate, accurate, balanced, and comprehensive job. Oh what the hell, I'll drop my restraint: They did an absolutely excellent job, a superb job, and considering the constraints under which they worked, a virtually flawless job! In case you haven't noticed, I'm totally elated.

On top of that, I expect the millions who do not see their lives tipping in the judicial balance of cryonics found the show entertaining as well. . . .

The writers of the episode, David E. Kelley and Cynthia Saunders, achieved an amazing feat: They concentrated an impartial consideration of the merits and detractions of cryonics into slightly more than 18 minutes of airplay. (As regular viewers may know, "L.A. Law" has several concurrent storylines which are timesliced -- along with commercials, of course -- throughout the viewing hour.) Every scene is dense with arguments and counterarguments, and they leave few stones unturned: They debate the credibility, the speculative nature, and the cost of cryonics, and even present a brief but reasonable introduction to neuropreservation. Most importantly, they argue that, whether likely or not, cryonics is a last resort for someone who otherwise faces certain death.

The debating takes place in a courtroom before the judge requested to issue the court order. A scientist associated with the cryonics facility testifies to the feasibility of cryonics, only to be accused of being a rip-off artist by the state attorney who is fighting the court order. Again later, the state attorney has this exchange with the woman's conventional doctor:

STATE ATTY: But she just wants to try [cryonics], Doctor. Is there anything wrong with that?

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DOCTOR: In my opinion, yes. Cryonics costs \$100,000 a shot, or \$35,000 if you're willing to be decapitated. Now, I don't care if life insurance proceeds are paying for it. The point is, millions of dollars could be flushed away on this futile quest for immortality. And when I see cancer and AIDS research so incredibly lacking in funds, then I find this

whole thing to be socially irresponsible.

(Of course, we have all heard this argument before. In fact, this is an argument I often ponder on my way to work as I dodge in and out of the freeway lanes among those hundreds of "socially irresponsible" Jaguars, BMW's, and 380SL's.)

But the turning point of the show occurs when the woman gets up before the judge and makes her own summary argument. After the state attorney has pointed out that the court order would invite others to request euthanasia, she delivers this solemn plea:

PAULA: I know that it's possible that this technology will never happen, your Honor. And I guess that it is possible that if you let me get frozen that people who are unhappy with the quality of their lives are going to go running to judges to ask for permission to get themselves killed. But that's all speculation, your Honor. Let me tell you what isn't speculation.

The growth in my head is destroying my brain. Today I have periodic dizzy spells. Two months from now I'm going to lose my memory. Three months from now I won't be able to talk, or even recognize the people that I love. I will end up comatose, and then I'll die. That's what the doctors say will definitely happen.

I'm not ready to stop living, your Honor! I have a fantastic family. That's my sister over there. She's the only one I've told about the tumor because the rest of my family's not going to be able to take it. And I have very dear friends, your Honor. And I'm not ready to stop living.

JUDGE: But you realize, if I grant your request, and even if this technology comes true in a hundred years, you'll never see these people again.

PAULA: I know that. But they will forever remind me of what this world has to offer. And that's why I'm here: I'm not asking you for death, I'm begging you for my last chance at life.

The judge (played by Lelia Goldoni) ultimately issues his decision:

JUDGE: Well, I'm not convinced that this cryonics technology will ever be a reality. I am persuaded that many respected members of our scientific community recognize it as a possibility, however remote. But even though we are dealing with tomorrow's science, I must nevertheless apply today's laws. And under today's legal definition of death, when you freeze your body to a point where your heart no longer beats and your brain no longer registers any electrical activity, you're dead. And aiding and abetting in a suicide is against the law. The only means, therefore, for me to grant your court order is for me to declare invalid the law against aiding a suicide.

And believe it or not, that's exactly what I am prepared to do. The right to privacy is a fundamental protection extended by our state and federal Constitutions. It has already been

extended to allow an individual to refuse life-saving medical treatment. And I'm going to extend it even further today. Because, in my view, the right to control our own destiny, as long as it does not affect the rights of others, is the ultimate exercise of this Constitutional guarantee. And it should include the right to enlist the aid of others.

The judge issues the court order, and the state attorney says he wants to appeal and requests a stay. The judge replies, "Denied -- file your appeal in the morning." Knowing that the decision will receive a stay in the morning when the appeal is filed and that her brain will be gone before the appeal process runs its course, Paula sees that she has one night to go into suspension legally and with her brain largely undamaged. In her last scene she says goodbye to her lawyer friend and drives away to the cryonics facility, where "the doctors and technicians are waiting."

While it may be tempting to conclude that this episode was pro-cryonics, I think it would be more accurate to say that it was pro-civil liberties. The judge did not defend Paula's right to be frozen as much as he defended her right to privacy and to choose her own fate. We must be mindful that, even though we cryonicists are deeply grateful for a TV presentation such as this, the makers of "L.A. Law" did not feature a cryonics story as a favor to us or because cryonics is a major pressing legal controversy of the day. They did it because they want high viewer ratings and because a highly entertaining story could be formed around a cryonics theme. And they made it entertaining not by engaging in Frankenstein-type horror voyeurism (as previous TV efforts such as the TV movie "Chiller" did), they did it by placing the sympathies of the viewer on the side of the cryonicist.

For the first time (to my knowledge) a cryonics proponent is a totally positive character. In this sense, "L.A. Law" has handed cryonics a public relations feat that is unequaled. This contrasts strikingly between the Miami Vice cryonics episode in which the cryonicists were bumbling oafs and frauds; or the "Star Trek: The Next Generation" cryonics installment where the two cryonicists were unpleasant and psychologically maladjusted, and the one sympathetic resuscitee clearly would never have chosen cryonics for herself. On "L.A. Law," Paula was not only likable, she was beautiful, intelligent, assertive, courageous, and both lovable and loving. She undoubtedly is nothing less than a heroine.

In fact, if there are any themes I see emerging from the "L.A. Law" treatment, they are courage, compassion, hope, and love. These are elements cryonicists often associate with the cryonics goal, but rarely communicate effectively to the public. In contrast, on "L.A. Law" Paula consistently gets the viewer on her side by highlighting her capacity to love. She hugs her attorney friend repeatedly throughout the show. Before the judge, she confesses her love of life in terms of its potential for experiences of loving families and friendships. (Cryonicists, take note: She does not talk about dodging the grim reaper or her hopes to live forever, hook an 80860 chip directly into her cranium, or explore the craters of Ganymede. She speaks in terms that make little old ladies in Peoria feel sentimental and cause toddlers in Walnut Creek to get misty-eyed while they hug their puppies and kitties.) Moreover, she speaks of her impending death solemnly but totally matter of factly and without a hint of a tear. Dagny Taggart, eat your heart out!

The judge, too, is clearly a man of compassion, unwilling to dash this

woman's last hope. And he shows the courage of his compassion, even though he knows his decision is very unlikely to be upheld in the long run.

So the most profound message I get out of the show isn't about law, it's about public relations: Despite all our insights into the technological wonders of the future, when cryonicists address the public we must speak in their terms, not ours, if we hope to reach them. Fear of death, even the desire to avoid death, is not something they admire, so we

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must sometimes downplay it. Paradoxically, loving life is something to value, but not wanting to die means you are a coward. Moreover, you must love life for the right reasons. Enjoying your family, friends, and watching your grandchildren grow up will win their sentiments. Staying young, getting rich, or enjoying the wealth of the future, and especially wanting to live beyond our "allotted time" are evidence of greed and selfishness that make the respected members of the local Rotary Club want to dig graves twice as deep for us. It has nothing to do with rationality, little to do with law, and everything to do with social values. That's the way it is, and we don't have to like it but we do have to deal with it.

It is this very subtle balancing act that the writers of "L.A. Law" navigated so expertly. And it is the same balancing act we must master in our offerings of cryonics services to the world, when we ask judges to defend our rights, and when we want legislators to hear our concerns.

Finally, it would be great if all you readers out there in Alcorland would write the producer of "L.A. Law" and thank him for such a well-done episode on cryonics. His address is:

Michael M. Robin, Producer
"L.A. Law"
20th Century Fox
P.O. Box 900
Beverly Hills, CA 90213

I've already sent my letter -- send yours now!

[To confirm any naturally-occurring suspicions our readers may have about Alcor's complicity in the "L.A. Law" episode; the writers approached Alcor with the basic plot after reading all our literature. Legal arguments were then supplied by Alcor's Constitutional attorney, Christopher Ashworth, Esq., and Cath Woof and Jerry Leaf provided medical details. This task was unfortunately easy, since the situation is in many respects also that of an Alcor Suspension Member, and this drama is very likely to be re-enacted in a real courtroom within the next year. Unfortunately, we are not privy to the outcome of that case. -- Eds.]

* * * * *

The Frozen Frontier, Or:
How Alcor Will Open Up Space

by Rand Simberg

We cannot currently afford to do what many of us would like to do in space. Now that I've gotten your attention (with what I hope is almost as

enticing a statement to many cryonicists as the headline SEX DURING SUSPENSION in great big 48-point, what publishers refer to as "second-coming," type would be) I will explain what I mean and why it is relevant to readers of this periodical.

First of all, many cryonicists are interested in exploring and living in space because they are interested in eventually experiencing all that the universe has to offer, and most (like 99.999999 . . .%) of the universe lies beyond this tiny planet where we happen to have evolved. Also, with the population problem which indefinite lifetimes will inevitably engender, space offers a safety valve for the excess population and a fertile

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environment for the growth of new societies and economies.

However, space enthusiasts, many of whom are cryonicists, have a problem. The current cost of launching stuff (people, cargo, whatever) to orbit is too high to make many nifty space activities (solar power satellites, tourist resort hotels complete with zero-gee you know what, asteroid mines, space colonies) financially feasible. The primary reason for this is the current low launch rates, as determined by government payload requirements. Many studies in recent years, most of which I have played a principal role in, have determined that one of the key reasons that launch costs are so high is that the amount of traffic is too low. Any launch system represents a significant fixed cost per year to maintain and operate it, and if it is not flown very often, the proportional cost per flight of this fixed cost, which must be charged to each launch, is very high.

In other words, we do not have a technology barrier -- we have a market barrier. The Space Transportation Architecture Study, performed for the Air Force and NASA in 1986 and 1987 by Rockwell International Corporation, Martin Marietta Corporation, Boeing Aircraft Company, and General Dynamics, showed that even the Space Shuttle could reduce the cost of launch to low Earth orbit significantly if it could be flown at a high (100 per year plus) flight rate. An entirely new launch system with modern technology, flown at an equally high or higher launch rate, could dramatically reduce costs, perhaps down to the region of one to two hundred dollars per pound. All we need is sufficient launch demand to require high rates, and an intelligently designed launch system, and the costs will come down. Now, you ask, besides the general reasons already stated, why should cryonicists, particularly those who are not space buffs, care?

The answer is very simple.

Cryonicists need space.

And spacers need cryonics.

You see, cryonicists also have a problem (at least one). Assuming that one is comfortable with the current technical credibility of the concept, the biggest concern a cryonicist should have is a societal one. To wit, will society allow Alcor and other cryonics organizations to keep me from thawing out?

There are two issues here. One is purely financial. While the cost of liquid nitrogen is low (roughly equivalent to milk, even at current artificially high rates, as determined by price props from the Department of Agriculture), because of the usage rate, it is not zero. Thus, it is not inconceivable that your friendly neighborhood cryonics group may run into a budget squeeze down the road (due to legal battles or fines or inflation or other statist harassment) that prevents them from topping you off, converting you from a nice crisp corpsicle to a not-so-reanimatable slushie.

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The other problem is what Jim Bennett, director of the Foresight Institute and president of the American Rocket Company, calls the "peasants with pitchforks and torches" scenario. This is the analog to the scene from Frankenstein in which the local neo-Luddites decide that not dying is against the laws of nature and God and decide to help out their omnipotent deity (whose powers are presumably limited from handling the job himself in this particular instance for some reason which passeth understanding) by destroying you and your fellow time travelers by means either sophisticated or crude, the choice of which, of course, being a matter of supreme indifference to the perpetrators of these untender ministrations.

Storage in space has the potential to solve both of these problems simultaneously. The economic issue is dependent upon how long one postulates the necessary duration of storage to be. Depending on launch cost assumptions, there may be some period of time beyond which the initial costs of launch will be paid for by the reduced cost of nitrogen top-off. This would be done by storing the suspension patients in passively radiation-cooled units on orbit, or possibly in caves at the poles of the moon. The former would have shields from the sun and albedo of the earthshine, while presenting radiators to the three degrees Kelvin of deep space to maintain the appropriate storage temperatures. The caves on the moon, if at sufficiently high lunar latitudes (i.e. almost polar) to preclude any sunlight from reaching them, would also maintain the desired low temperatures. Either way, a passive system could be developed which would require little or no maintenance. It may be that this is not economically justifiable in itself, once the future cash flow is discounted back into current dollars and weighed against the up-front launch costs, but it will certainly enhance the chances of survival if events prevented your cryonics organization from attending to your needs for some unspecified period of time. Also, these locations, particularly the moon, would be very difficult and expensive to access by unauthorized persons, with the exception of governments. Private security and defense systems may have to be considered at some point to deal with the latter. The viability of defending such installations will make for a very interesting future article.

In this space-storage scenario, the market potential for space transportation, either to orbit or to the moon, could ultimately be tremendous. For instance, say that the average weight of a cryonically suspended patient is around 120 pounds. Let us assume that the additional requirements for radiation shielding, cooling during launch, etc., add

another thirty pounds per client. If launch costs can be reduced to \$150 per pound, as some proponents of concepts such as the National Aerospace Plane or the Space Ship Experimental claim, this would represent a cost of \$22,500 to launch the patient into low Earth orbit. (The marginal costs of going on to the moon would probably roughly triple this value.) While this may seem to be a lot of money, it is only an additional 22.5% over the \$100,000 which Alcor currently charges for a whole-body suspension. Many patients will be willing to pay this premium for the additional security which space-based storage would provide, even when taking the launch risk into account. (Though there will almost certainly be a subset of clients who insist on remaining on Earth, just as many people refuse to fly.)

As more people become aware of the cryonics option, let us suppose that five percent of the population will avail themselves of it, including space storage. With current mortality rates for the United States alone, this would translate into a market of roughly 100,000 clients per year, for a total launch mass of fifteen million pounds per year to orbit, approximately twenty times our current total NASA and DOD launch requirements (and capabilities), with yearly revenues for the launch provider of at least \$2.25 billion. Adding in demand from the other industrialized countries and the rest of the world could increase this by a significant factor (Double? Triple? Order of magnitude?). If this market potential is even partially realized, there will be more than enough demand to justify the development of low-cost private launch services, not only to low Earth orbit,

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but perhaps to the moon and beyond. This does not include, of course, the market for space tourism, which could add considerably to the demand, particularly when you might be able to combine your two-week weightless orgy with a pilgrimage to visit Uncle Elmer and Aunt Mildred in their orbital dewar built for two. Thus, the combination of cryonicists and tourists could provide both the demand and the financial resources to privately develop space in the near term. While it is possible that either group alone could do so, adding them together provides the redundancy of market demand that may be needed to warm a venture capitalist's heart and open her check book.

So, what needs to be done to make it happen? First of all, the numbers should be refined to better quantify the market. Second, design concepts should be developed for both orbital storage and launch packaging. This will obviously be more of a challenge for whole-body patients than neuros. In fact, neuros may be very cheap to launch, assuming that they can take intense accelerations. This might be an excellent application for some sort of electromagnetic launcher, lofting the patients, (suitably protected from atmospheric drag, of course, perhaps by some spray-on ablator) like so many cannonballs into a suborbit in which a giant catcher's mitt awaited to capture and store

them. However, if this offends sensibilities, more conventional means should work just fine, if somewhat more expensively. Mike Darwin has suggested that a serious consideration for the design of an orbital long-term storage facility will be radiation protection. On orbit, this could be done either actively with superconducting magnetic fields, or passively by piling several feet of shielding on the outside, using perhaps water from the Earth or dirt from the moon, whichever is less costly. In the lunar storage case, the dirt surrounding the polar caves or lava tubes should be more than adequate to provide radiation protection.

With a solid market clearly identified, and basic cargo and storage designs defined, money could then be raised for producing the needed launch system. For example, one of the best near-term candidates for reducing launch costs is the American Rocket Company's hybrid propulsion concept, which uses a solid fuel with liquid oxygen as an oxidizer. Despite the recent setback in their first launch attempt at Vandenberg Air Force Base on October 5, in which the vehicle failed to develop enough thrust to lift off and burned on the launch pad, this technology holds a great deal of promise for reducing launch costs while increasing safety. Significantly, although the rocket was essentially destroyed, the company reports that the payloads survived intact, an almost unheard-of outcome for a launch vehicle failure, and one which demonstrates the inherent safety of the concept. For those cryonicists who believe that opening up the space frontier is important, either for reasons stated in this article or others which were not, this company is worthy of consideration as an investment in the future, not only of space, but of cryonics as well. Those interested should contact Jim Bennett at (805) 987-8970 in Camarillo, California.

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Despite the slightly tongue-in-cheek tone, I hope that this article has gotten some synapses firing, and I would welcome any comments and ideas that people have on this tremendously important subject. These concepts should be developed further in the coming months and years, to ensure not only a future, but a space future, for all of us.

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SCIENCE UPDATES

by Thomas Donaldson

A NEUROLOGICAL DISCOVERY FOR COMPUTER SCIENCE

Besides understanding memory in single nerve cells there is a second problem, now just rising over the horizon, of understanding memory of brains and whole nervous systems. This last memory is memory as we understand it, that which contains at least the direct information part of our personality, the memory of our brother climbing an apple tree. This brain memory must involve thousands of neurons, none of which contain any specific brain memory at all. The brain memory comes from interaction of them all.

However, almost simultaneously with the rise of this problem another entire discipline has arisen, computer science, which should contribute to solving the "brain memory" problem. For a long time it did not, to the bafflement of those who noticed the fact. Computers could not explain our

thinking, either by their architecture or their operation.

But computer scientists have gradually learned that the work of Turing and von Neumann does not define limits of the possible. Computers need not follow these theories. That fact has become extremely important. If you don't follow computer science, then I'll tell you: I'm referring to parallel computing, the idea of putting many little computers simultaneously to work on the same problem. Many little computers? Perhaps these ideas might have something to say about brains, after all. (For computer people who want to argue: yes, we can discuss a parallel computer as a Turing machine. The theory, though, would answer no questions and achieve nothing.)

The leading recent development toward understanding brains has been in the idea of neural networks. If we have many computers linked together in the right pattern, each one following the same "learning algorithm," then it's possible to teach the whole network to do things no computer could do before. Among these, for instance, would be the ability to recognize letters and shapes, no matter how or by whom they were drawn. When this happened, both computer scientists and neurologists started to pay close attention to one another.

To understand brains we need to tie the computer science to the neurology. A recent article in *Nature* (340, 468 (1989)) by three biologists, (S. R. Lockery, G. Wittenberg, and W. B. Kristan, Jr.) and one computer scientist (G. W. Cottrell) makes a significant first step towards this.

Leeches (species not given in the paper) have very simple nervous systems. The circuitry involved in their action is easily traceable. A leech's response to touch on one side or the other is also very well defined. It will withdraw its skin surface away from touch when touched on any surface. The team therefore proposed to imitate this reaction by training a neural net to act the same way. This would give both a model of the function of some neurons of the leech and a test of the computer theory of neural networks to a real, living animal.

After tracing out the circuits involved in skin withdrawal, and actually measuring electrical response in living leeches, Kristan, Cottrell and the other team members found 18 different neurons involved in the skin response. Besides neurons which caused muscles to contract and other neurons which actually responded to touch, the circuit contained nine other neurons which fired when touch happened, even though they were neither sensory

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nor muscle cells. These nine neurons they call interneurons. (There is even a relation with computer science here: for a neural network to learn, it must have another layer of computers between the input and the output layer).

Given this fragment of circuitry, the team trained a computer-simulated neural net to show identical responses to those of the leech. They used a special method to do this, called "back-propagation" (Rumelhart, D. E., et al *Nature*, 323, 533-536 (1986)). The authors of this paper explicitly point out that they are not claiming that the training method has any relation to biological facts. But its results were very interesting. After training a network of 18 simulated neurons to match the input-output

of the leech, they found that the nine simulated interneurons all tended toward synaptic strengths close to the real ones. That is, we can explain the reaction of the leech entirely as a result of behavior in a neural network, an abstract idea from computer science.

This paper is among the earliest, if not the earliest, to produce experimental connections between neural networks and real animals. It tells us that our picture of our brain cells, all as learning in this same global way, will at least work out on a simple system. However it does not answer one major question nonexistent for computer systems: how did it come to be that the leech developed these particular synaptic strengths in its own nervous system? That is, how does learning occur? A full explanation of how our brains work obviously can't omit that issue.

In computer science one major difference between neural nets and ordinary computers is that an ordinary computer can only simulate a neural net running at extremely slow speeds. The speed of a neural network comes from the fact that many processors are doing the calculation. This fact is essential, not accidental. Neural networks will be useless without many processors. For brains we would need far more processors, and simulation on a single-CPU computer becomes a ludicrous dream. Furthermore, the connections of these processors play a large role in memory. No single neuron knows the global response; it simply responds to messages from others. With any other connection network we get nonsense, even if all neurons keep the same response.

I do not know what implications this may have for the issue of transferring memory and personality in a workable form to any other computer. Certainly the information can be stored, as a statement of the network links and a statement of response of each neuron. Getting it to work properly is another thing. At the least, uploading ourselves into a more powerful version would require nontrivial ideas and programming. Porting (transferring) a human to a computer raises much harder problems than even porting an operating system.

I personally am in an odd position because I have spent a good deal of professional time on parallel computing. Everyone in that area is very interested in neural networks for the abilities they can give to computers. Simultaneously I have spent more than a decade in cryonics, looking closely at the neurological, cryobiological, and biological issues of cryonic suspension. These two rivers have now come to a confluence. Perhaps in a few years I too will be able to do these simulations and models, and help answer some of our particular questions.

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Meeting Schedules

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

The MARCH meeting will be held at the home of:

(SUN, 4 MAR, 1990) Virginia Jacobs
29224 Indian Valley Road
Palos Verdes, CA

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Alcor members in the San Francisco Bay area have formed an Alcor chapter, and are aggressively pursuing an improved rescue and suspension capability in that area. Meetings are generally held on the second Sunday of the month, at 4 PM. Meeting locations can be obtained by calling the chapter's Secretary-Treasurer, Thomas Donaldson, at (408) 732-4234 (home), or at work, (415) 593-3200 (ask for Thomas Donaldson).

The MARCH meeting will be held at the home of:

(SUN, 11 MAR, 1990) Ralph Merkle and Carol Shaw
1134 Pimento Ave.
Sunnyvale, CA

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The New York Cryonics Discussion Group of Alcor meets on the the third Saturday of each month at 6:30 PM, at 72nd Street Studios. The address is 131 West 72nd Street (New York), between Columbus and Broadway. Ask for the Alcor group. Subway stop: 72nd Street, on the 1, 2, or 3 trains.

The meeting dates are as follows:

FEBRUARY 17 MARCH 17 APRIL 21 MAY 19

If you live in the New York, Philadelphia, New Jersey, or Boston areas and would like to participate in the rebirth of New York cryonics please contact one or more of the following people:

Gerard Arthus (516) 474-2949
Curtis Henderson (516) 589-4256

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Other Events of Interest

from Foresight Update #7

Nanotechnology, topic of Carnegie-Mellon School of Computer Science Distinguished Lecture. Tentative date March 21, by Eric Drexler.

Multimedia Expo, March 26-28, New York Hilton, NYC. Conference and exhibit of multimedia, hypermedia, and interactive technologies. Contact 212-226-4141.