

CRYONICS

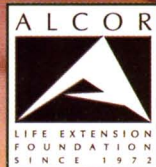
MAR / APR 2005 A PUBLICATION OF THE ALCOR LIFE EXTENSION FOUNDATION Volume 26:2

EMERGENCY RESPONSE TRAINING

*Member Profile:
Brian Harris*

*Cryopreservation
Case Report:
Patient A-1562*

*Interviews with
Steve Van Sickle & Diane Cremeens*



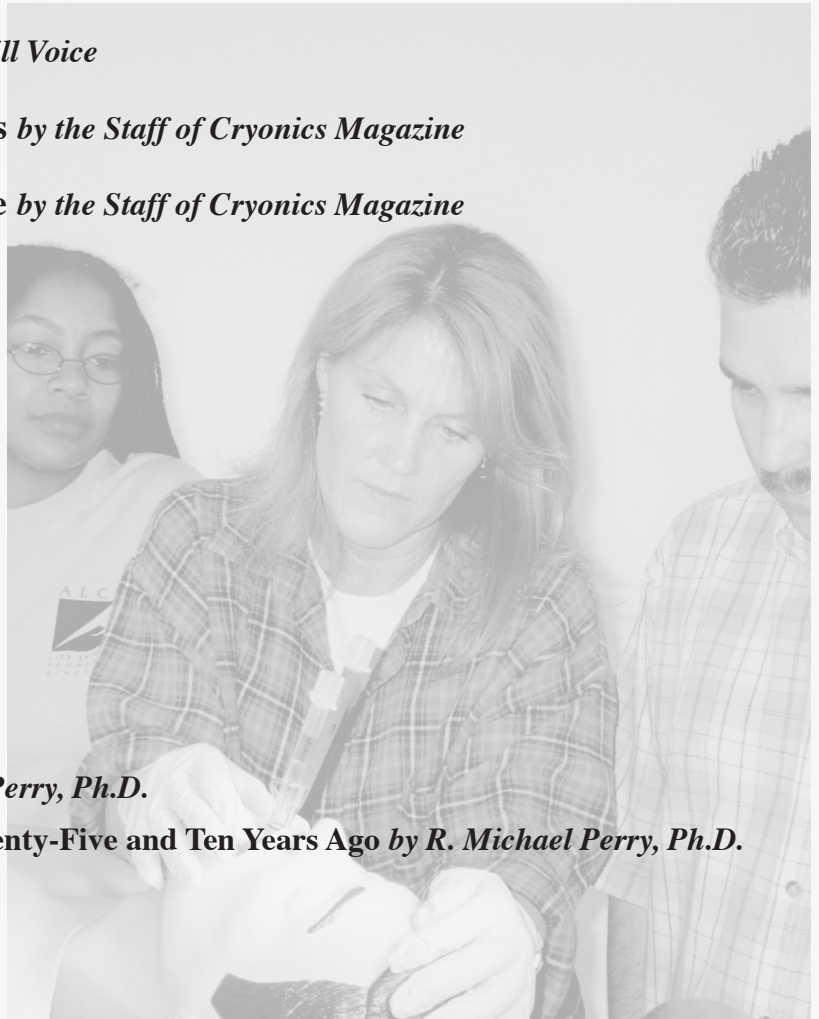
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Cryonics

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To Our Readers

This magazine was given the beginnings of an overhaul with the Jan/Feb issue. A number of visual improvements were made and a few new features were added. One of those new features, **Member Notes**, is a place where our members can quickly access useful, inspiring, and relevant information. In an effort to keep our readers better informed about organizational events, we are also running an ad for Alcor's free electronic newsletter, **Alcor News** (www.alcornews.org). Subscribing is easy...just provide your email address and password, then reply to a confirmation email. We encourage you to join the list today. It's a great source for timely information and is published during the week following the board meeting.

In this issue, we invite you to learn more about Alcor's expert staff by reading our interviews with **Steven Van Sickle**, a previous member of the Board of Directors for five years and new Technical Development Leader, and **Diane Cremeens**, our Membership Coordinator. We also introduce you to **Brian Harris**, a local Alcor member who supports the organization during cryopreservation cases, participates in media interviews, and assists with recruiting new members. You rely on the Alcor staff to care for your future. We want to get to know one another. If you're interested in participating in a member profile, contact us today.

All told, a significant amount of work was put into the last few issues, and it has taken a bit longer than anticipated to get them completed. We appreciate your patience and assure you we are working hard to make improvements and get back onto a regular mailing schedule. Expanding our list of authors is a priority, so any potential writers are welcome to contact us for content ideas.

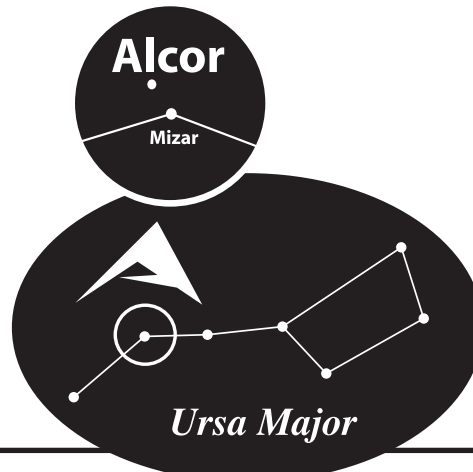
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Letters to the Editor

Letters or questions for the Editor are most welcome on all topics, including counterpoint on previously published materials and suggestions for future content. We especially invite questions about cryopreservation or reanimation that are original and far-reaching. Email your feedback to articles@alcor.org. If you are seeking information about Alcor, visit our website (www.alcor.org).

Alcor: Seen By Few

Did you know "Alcor" is a star? A star barely within the threshold of human vision, Alcor is located in the Big Dipper's handle. Only with excellent vision can one see Alcor, which is quite close to, but dimmer than, Mizar. The name Alcor, chosen for its symbolism and its historical use as a test for vision and focus, serves as a reminder that the distant dreams seen by few today may become the reality of tomorrow.



Cryonics

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Editor
The Alcor Staff

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Submissions may be sent via e-mail (articles@alcor.org) in ASCII, Word, or PageMaker format. Mailed submissions should include a PC diskette with the file in any previously mentioned format (although printed text alone will be considered). All submitted media become property of the Alcor Life Extension Foundation unless accompanied by a self-addressed stamped envelope. The Alcor Life Extension Foundation assumes no responsibility for unsolicited manuscripts, photographs, or art. Send all correspondence and submissions to:

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Visit us on the Web at www.alcor.org

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Your research is finally complete. You browsed our web site (www.alcor.org), presented your questions to our Membership Coordinator, and toured our facility. Now you are ready to establish your membership with the Alcor Foundation.

Congratulations and welcome!

Upon receipt of your completed application for membership and \$150 application charge, Alcor will send you various membership documents (samples available upon request). After reviewing these documents, you will need to sign them in the presence of two signing witnesses. At least one document requires the services of a notary public. After returning all of your documents to Alcor for approval, you can expect to receive one original copy of each for your personal records.

Most people use life insurance to fund their cryopreservation, although cash prepayment is also acceptable. If you do not already have an insurance policy, Alcor recommends that you apply for one at your earliest convenience, as the underwriting process can last several weeks. Diane Cremeens, Membership Coordinator, can provide you with a list of insurance agents who have previously written policies for this purpose. These agents can assist you with satisfying Alcor's various funding requirements, such as naming Alcor as the owner and irrevocable beneficiary of your policy and ensuring that your benefit amount is sufficient.

With your membership documents completed and your funding approved by Alcor, you will be issued emergency identification tags engraved with your personal Cryopreservation Number. This is your confirmation that Alcor will respond, should our emergency technicians ever receive a call on your behalf. Certainly, Alcor hopes that you will not need us anytime soon, but as a member you can feel confident that our organization will care for you and your future to the best of our ability. Please call 877-462-5267 ext. 132 today to request your application.



Attention All Members and Applicants

Please! Please! Please! When you move, change phone numbers (work number as well), change e-mail addresses, or plan to undergo any medical procedure where general anesthesia is used, please inform us as far ahead of time as you can.

Too many times we have tried to contact our members and found out the contact information we have is no longer valid. Other times we find out well after the fact that a member has undergone a medical procedure with life threatening potential.

Help us to serve you better! Keep in touch!



Alcor Membership Status

Alcor has 728 Cryopreservation Members (including 114 Life Members) and 67 cryopreservation patients. These numbers are broken down by country below.

Country	Members			Applicants			Subscribers		
	M	A	S	M	A	S	M	A	S
Argentina	0	0	1	1	4	1	0	0	1
Australia	8	2	3	0	0	1	0	0	2
Austria	0	0	1	0	0	1	0	0	1
Canada	22	9	13	0	0	1	0	4	0
France	0	0	1	0	1	2	0	0	1
Germany	3	1	2	0	0	1	0	0	1
Italy	1	3	3	0	0	1	0	0	1
Japan	0	0	2	0	0	2	16	9	9
Lebanon	0	0	1	0	0	1	673	82	501
Mexico	2	0	1	0	0	2	728	113	547
Monaco	2	0	0	0	0	0			
TOTALS									



An Interview With

Brian Harris

Alcor Member

Brian Harris is currently serving on active duty as a Chief Warrant Officer supporting the Army Reserve in the Phoenix area. He was born in 1976 in St. Louis, Missouri, earned a BA in psychology from Rhodes College and is currently working on an MBA from Webster University. He has been happily married for five years to Katie Harris, who lives with him in Phoenix, Arizona, along with their son Alexander. He welcomes comments and questions at bharris@alcor.org.

CM: *Tell us about your first exposure to cryonics.*

BH: I was working at Northwestern Mutual as a college intern when my mentor showed me a peculiar owner for an insurance policy, a small cryonics firm named Alcor. At the time, I remember scratching my head and thinking, “That’s interesting,” but I didn’t give it much further thought. Several years later, I read James Halperin’s book *The First Immortal*, and suddenly it clicked and made sense to me. This book was really critical to my decision to sign up for cryonics; it gave me a positive vision for the future, a sort of mental framework to hang my own vision on. At the same time, the book also explored many of the fascinating legal, ethical, and societal challenges that are likely to arise if/when cryonics works.

I think my experience as an insurance agent is a tremendous benefit to me from a cryonics standpoint; since my early 20’s, I’ve had substantial amounts of insurance, and I’ve never been hesitant about confronting my own mortality. I realized, as I was telling my clients, that you never know when you’ll step out in the street and get hit by a bus. This made me open to signing up for cryonics at a relatively early age (26).

CM: *How has your interest evolved over the years?*

BH: I’ve become increasingly involved with Alcor over the years. The military offered me an opportunity to move to Phoenix to support some reserve units, and I jumped on it. Not only do I like the southwest, but it also gave me the opportunity to volunteer at Alcor. Since I moved here two years ago, I’ve assisted with five cryopreservations, performed about four interviews with the media from around the world, and I’m currently helping to follow up with prospective members.

I’m really excited to be a volunteer with Alcor. I see the organization as absolutely cutting edge; they’re making a heroic, last ditch effort to preserve life. If it works, I believe that one day those of us involved in the early stages will be seen as pioneers and visionaries.

The nice thing about cryonics is that if we’re right, we’ll be

here to congratulate each other in the future. If we’re wrong... we’ll be dead like everyone else and we won’t ever know the difference!

CM: *When did you join Alcor and what motivated you to become a member?*

BH: I joined Alcor in October of 2002. Before joining, I made sure to do my homework; I visited the Alcor facility and was very impressed with both the staff and facilities. I also spent a lot of time researching cryonics as both a science and an industry, and it became clear to me that cryonics does have a chance of working, and that if it does ever work, Alcor’s procedures give us the best possible chance of seeing the future.

CM: *How does your membership impact your life plans or lifestyle?*

BH: Being a cryonicist continues to affect just about every aspect of my life. I’m involved with Alcor on a volunteer basis, I’m pretty meticulous about keeping wills and life insurance up to date, and I’m very careful to watch what I eat and exercise on a regular basis. I’m hoping I’ll live long enough and never need Alcor’s services. I like being prepared, though. As they say, “Getting frozen is the second worst thing that can happen to you.”

I’m very “out” about being signed up with Alcor, and I’ve generally had positive reactions. Most of the people I meet are either curious or indifferent. I haven’t had any really negative reactions. My current military command all know about my cryopreservation wishes, and most of them have visited Alcor to see what it’s all about.

CM: *What do you consider the most challenging aspect of cryonics?*

BH: The most challenging aspect is changing the public paradigm that death is a natural part of life and should just be accepted. If people would really confront their own mortality instead of trying to ignore it, they’d be more open to looking into things like cryonics. Having worked in the insurance industry for several years, I believe this is a major hurdle for cryonics organizations. This comparison between life insurance and cryonics only goes so far, however. The insurance industry has been very successful at getting people to purchase life insurance to protect their loved ones. For a cryonics organization, however, you’re trying to “sell” people on an unproven science.

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CM: *What areas of Alcor's program would you like to see developed over the next 5-10 years?*

BH: Membership, membership, membership! There is strength in numbers, and right now we don't even have 1,000 people. As someone once put it, we're a 30-year startup company, which makes no sense to me since there are no other alternatives if you want even a remote chance of living to see the future.

I would love to see Alcor's numbers grow to 5,000 or more in the next 10 years. This would give Alcor more discretionary budget for research, facility upgrades, staff, marketing, lobbying, building a financial reserve, etc. It would also give us a bit more political clout, especially if the members continue to be concentrated in the Phoenix area.

CM: *What kind of lasting contribution would you like to make?*

BH: I'd love to be the first person successfully revived!!! In all seriousness, whoever is the first one out of that dewar is going to have incredible responsibilities. They'll represent cryonics to the world and will likely have the most complex legal problems of anyone in history. Whoever it is, they'll be blazing a trail for the rest of us.

CM: *How do you think the media affects the cryonics movement?*

BH: The media has a huge impact on just about every movement. I think Alcor has made some great strides forward in the recent years with their marketing efforts. These efforts are going to be critical to move us even further into the mainstream.

CM: *I understand one of your hobbies is participating in a medieval re-enactment group. Tell us about that.*

BH: My wife and I are heavily involved in the Society for Creative Anachronism (www.sca.org). There is, in my mind, a certain



Brian with newborn son

irony in a cryonicist being involved in a medieval re-enactment group, but it brings up a very important philosophical point. There is a concern from some bioethicists that extreme life extension will somehow dehumanize us. Extreme

life extension is not something we want forced on anyone, but rather it is a choice open to everyone. Ultimately, it will make available a broader range of human experiences. Two hundred years ago, for example, there were no medieval re-enactment groups, post-modern art, Andrew Lloyd Webber, commercial space travel, swing dancing or Sponge Bob Squarepants®. I would argue that our 70 some odd years is not nearly enough to experience all of the wonders that both science and culture have to offer, March/April 2005

and the breadth of choices gets larger every year. In the end, it is our experiences which make us so much more human.

CM: *What do your friends and family members think about your cryopreservation arrangements?*

BH: Most of my family has visited Alcor, and we've discussed cryonics extensively. They are all supportive of my decision, but none of them have signed up yet. I'm trying not to "hard sell" them, but rather I continue to talk about how excited I am about cryonics and why I believe it may work one day.

My suspicion is that most people who apply for membership do so because they know a cryonicist who has spoken to them about Alcor. This personal contact is what allows people to see Alcor less as a fringe activity and more as a legitimate effort to preserve life. We have to try to convey our enthusiasm to prospective members while debunking many of the popular misunderstandings that have arisen about cryonics over the years.

CM: *Have you had a chance to meet other members?*

BH: I've met more cryonicists than most. I had the pleasure of meeting some of our international members from Canada and England while I was attending standby training, and I've met a variety of others at local social gatherings. I continue to be impressed with their openness to new ideas and zeal for life.

CM: *What could Alcor do that would benefit you as a member?*

BH: Again, build the membership. The larger and more stable the organization, the more services they'll be able to offer at lower cost. Following up on the previous question, this needs to be a joint effort with the existing membership. We all have a tremendous impact on how strong we are.

CM: *What do you think of Comprehensive Member Standby?*

BH: I've been on the standby team for about two years, so I understand the criticality of getting to a patient quickly. Comprehensive Member Standby will allow us to guarantee that we'll be there in the timeliest manner possible without risking the financial health of Alcor.

CM: *What would you like to say to other members reading this interview?*

BH: I'm thrilled to be a member of Alcor with you. Regardless of whether or not this actually works, we should all be proud of our collective pioneering spirit. Not only are we on the forefront of scientific advancement, but we are also challenging literally thousands of years of assumptions about what it means to be human and what our ultimate destiny is. This takes a tremendous amount of courage.

Always keep your eye on what we're trying to accomplish. Our efforts together could one day provide a bridge to the future for millions of people who otherwise will be abandoned by current



CEO Report

As much as I love my job, sometimes it can be a little frustrating. I recently learned that a very small number of individuals were unhappy about the Nov/Dec 2004 CEO Update I wrote. It seems that some were not happy with the report because it was “too rosy.”

Cryonicists are a skeptical bunch, as well they should be. We are pioneering new technology, and everything we do is based on theory. We must always check and recheck our facts as well as encourage feedback from as many knowledgeable sources as possible to produce the most accurate data we can. Through such practices we will continue to build confidence among the membership and scientific community. But sometimes I think we look for problems where none really exist.

Like the two faces of comedy and tragedy we seem to have the two faces of optimists and pessimists in the cryonics community.

“I prefer to focus on our strengths and channel those resources into positive actions that... bring value to the members.”

Caution is always wise when pioneering a new industry, but undue pessimism is unhealthy. On the bright side, I am happy to report that I also received many congratulatory messages praising Alcor for its

bold 2005 agenda. Fortunately, there are far more members who appreciate the great positive work being done. Some of the well-wishers even tried to console me in advance by saying, “Don’t be disappointed if you can’t accomplish everything you wrote.” While I appreciate the concern, let’s not write off our goals just yet! I can be a stubborn cuss when necessary, and when it comes to meeting objectives, I am as stubborn as they come.

Self Examination

Alcor has its share of problems. To say anything less would be untruthful. However, Alcor also does many things right, and we should be just as eager to celebrate our successes as we are to analyze our faults.

In the pages of *Cryonics* you will find plenty of self-analysis about areas of responsibility in which Alcor can improve its operations. For example, each case report details the good, the bad, and the ugly of a cryopreservation. Then we publish the findings for the entire world to examine. How many other cryonics organizations do that at the same meticulous level of detail as

Alcor?

Then there are rumblings about how Alcor manages its finances. Yet, we now have the most conservative fiscal policies in the industry. By publishing our financial statements each month in excruciating detail for all to see, once again, Alcor leads the industry in financial disclosure. I challenge anyone to find another cryonics organization that is as open about its finances as we are. To further illustrate my point, Alcor just went through an exhaustive financial review by the *New York Times*. Not only were no discrepancies found, they actually wrote a pretty balanced article about us! Now this is coming from the newspaper that three years ago wrote about how we were allegedly “mutilating” patients. It’s amazing how far a little research goes.

Finally, the rumor mill seems to be working overtime. There are so many conspiracy theories, cover-up stories, and outright falsehoods floating around on the Internet that I have given up reading the blogs (although I still regularly read CryoNet). I find it much more productive and satisfying to focus my attention on addressing and correcting real issues facing the organization rather than refuting the latest rumor. Don’t get me wrong. I suppose I enjoy a good conspiracy theory as much as the next guy. I just haven’t heard any good ones lately.

Given the above assessment, I guess the only rational thing for a blatant optimist like me to do at this point is to delight the readership by reporting more good news.

What’s Happening Now

Alcor is making great progress on its 2005 objectives. Staffing levels are such that we are able to move steadily forward with each of the major projects outlined in the Nov/Dec CEO Update in *Cryonics*. Daily operations are also being handled smoothly.

On the project front, **Steve Van Sickle** and **Bill Voice** have initiated design improvements to the Ziegler containers used to ship patients that have dramatically improved internal temperature control. This will allow us to safely ship patients on water ice for 24 hours or more without the fear of warming or sweating the box. Steve has also resumed the Intermediate Temperature Storage (ITS) shakeout of the neurovitrification storage unit purchased from 21st Century Medicine, plus he has come up with new equipment recommendations that will improve our field data collection capability.

Mathew Sullivan has just completed an exhaustive effort to identify and document every physical component used in the
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stabilization, standby, transport, cryopreservation, cooldown, and transfer of a patient. This vastly improves our ability to understand and control the true costs of our operation through proper billing, chargeback, and inventory management of capital equipment and consumable supplies. He is also beefing up our field kits readiness as well as operating room consumable and supplies inventory in anticipation of a heavy caseload in the second half of the year.

Tim Reeves continues to work miracles in the Accounting Department. He has this wonderful knack of ferreting out unnecessary expenses and squashing them into oblivion. Tim really knows how to make a penny scream. I hope you enjoyed his profile from the last issue of *Cryonics*. Currently Tim is working with Mathew to identify and recommend a new inventory management system that integrates well with our accounting system.

Tanya Jones has tackled the retrofit of the Transport Vehicle with a vengeance. It is looking sharp and sparkles with her own special design modifications. It is not unusual to find a crew of employees and volunteers under the watchful eye of Tanya working under, inside, or on top of the vehicle, busily integrating power generators and the ice machine, supervising the cabinetry installation, securing the refrigerator, and who knows what else. Whew! The next issue of *Cryonics* will host a feature-by-feature exposé on the entire project. You can bet it will be great.

Bill Voice has already revamped a large part of the training curriculum, recommended and field tested a new training mannequin, conducted three field training sessions, and performed acupuncture therapy on

me to cure a splitting migraine I developed while writing this column. It sure is great having a 20-year veteran paramedic on staff. By the way, Bill is the source of inspiration for the Ziegler modifications being developed by Steve.

Jennifer Chapman is doing a great job putting the magazine schedule back on track, upgrading the content, and improving the overall aesthetics. Check out the new masthead for this column and new look for the editor's page. In addition, she has expanded the circulation to 1,200 copies per issue. All the while she has contracted with Google to advertise Alcor whenever someone searches for cryonics-related information on the Internet.

Diane Cremeens continues to crank out membership finalizations by the dozen each month. (Well, she did 10 last month, which is not too far from a dozen.) Our best projections tell us that our membership base will swell to more than 800 members this year. We are really pleased to have Diane on board because she is doing a fantastic job.

Hugh Hixon is busy being our all around "go to guy" as he pitch-hits for the technical team, filling in their gaps with his vast storehouse of institutional knowledge. Hugh spends the majority of his time assisting Steve with development projects.

And of course, we must not forget **Mike Perry** who is busy

settling into the expanded responsibilities added to the facility Patient Caretaker position, such as becoming our patient records archive custodian. Our patients have never been in better hands, and we are certainly lucky to have Mike on our team.

As for me, I continue to fight the battle of the budget to ensure that the organization has ample resources to carry out its mission. I am working closely with Jennifer to institute a long-term fundraising effort that will provide ongoing revenue for future operations. I continue to represent Alcor at the state legislature to guard against future "surprise" interest in our organization. In addition, I have secured funding for a multi-year tenure of a full-time researcher equipped with a medical degree to join the staff. I am also leading the Facility Expansion Project to increase our Patient Care Bay space from 350 square feet to 1,800 square feet and to nearly double the size of our Operating Room.

You will be pleased to learn that participation by professional emergency response personnel on our field standby teams is on the rise. We just finished a training session in Southern California that included several new faces, including an experienced emergency room nurse who is eager to get involved. In addition, several veteran emergency medical personnel in Nevada have become available to our ACT Network.

Conclusion

Celebrating our successes is the sign of a healthy and growing organization. But problems should always be brought to the light of day so that the collective feedback from the membership can help us discover resolutions more quickly and more efficiently. Here at Alcor, we never forget that our membership is comprised of some of the most brilliant minds in the world. We consider our members our greatest asset while our patients are our most precious responsibility.

Are there "problems" facing Alcor? Sure. For example, I wish we could have had the Transport Vehicle done last year instead of this year. I wish we could have hired a researcher last year, too. I sure would like to see our membership at 2,000 instead of 800. I want ITS yesterday. And I want whole-body vitrification the day before that. These are all very well-known and thoroughly documented issues that receive our constant attention. Furthermore, you can be certain that any serious threats to Alcor or to Alcor's ability to deliver quality cryopreservations will be immediately and fully reported to the membership.

Yes, I can harp all day long about what we do not do as well as we would like. Instead, I prefer to focus on our strengths and channel those resources into positive actions that correct our deficiencies and bring value to the members. Naysayers aside, it is a great time to be an Alcor member!



Creatures Frozen for 32,000 Years Still Alive. A new type of organism discovered in an Arctic tunnel came to life in the lab after being frozen for 32,000 years. The deep-freeze bacteria could point to new methods of cryogenics, and they are the sort of biology scientists say might exist on Mars and other planets and moons. The bacteria, called *Carnobacterium pleistocenium*, might also be interesting to medical researchers. “The enzymes and proteins it possesses, which give it the ability to spring to life after such long periods of dormancy, might hold the key to long-term, cryogenic—or very low temperature—storage of living cells, tissues and perhaps even complex life forms,” said Richard Hoover, an astrobiologist at NASA’s Marshall Space Flight Center. (*MSNBC News* 2/24/05) <http://www.msnbc.msn.com/id/7019473>.

Chemists Escape Labs via Mobiles. A blend of mobile technology and award-winning software is letting scientists finally escape the lab. The software, called “middleware,” lets different computer systems talk to each other securely and instantaneously. As part of a national e-Science project in the UK, it is being used to let Southampton University chemists monitor experiment conditions from mobiles. Sensors in the lab pick up any changes in the environment so the system can alert chemists, wherever they are. The door is opened to participation by experts collaborating all over the world. (*BBC News* 2/4/05) <http://news.bbc.co.uk/1/hi/sci/tech/4233757.stm>.

Dolly Expert to Clone Human Embryos. The creator of Dolly the sheep has been granted a license to clone human embryos for medical research. Professor Ian Wilmut and Kings College London scientists will clone early stage embryos to study motor neurone disease (MND). This is the second time the Human Fertilisation and Embryology Authority (UK) has given such permission. Professor Wilmut said it will mean MND can be studied in unprecedented detail. (*BBC News* 2/8/05) <http://news.bbc.co.uk/1/hi/health/4245267.stm>.

Key to Intelligence Questioned. Cleverness and language might not be as closely connected as once thought. Thought might not be dependent on language, according to new research published in the Proceedings of the National Academy of Sciences. A UK team has shown that patients who have lost the ability to understand grammar can still complete hard sums. This suggests mathematical reasoning can exist without language. The study undermines the assumption that language is the key quality that makes our thought processes more advanced than those of other animals. (*BBC News* 2/15/05) <http://news.bbc.co.uk/1/hi/sci/tech/4265763.stm>.

Deep-Freeze Project to Save Fruit. The common Cavendish banana is under threat. Scientists in Derby, England are using deep-freeze technology to help protect banana production in Malaysia. Plant specialists from the University of Derby are studying a deadly fungus that attacks bananas. One part of the project involves freezing different varieties of banana using cryopreservation so they can be thawed later and used for research. (*BBC News* 2/16/05) <http://news.bbc.co.uk/1/hi/england/derbyshire/4270119.stm>.

PCs Do Thousands of Years of Work. Grids let ordinary desktops play a big role in helping humankind. A global network of computer users has clocked up more than 4,000 years worth of computer calculations in under three months as part of a huge grid project. Since November, thousands have joined the World Community Grid (WCG) which uses idle computer time to help solve serious health and social problems. Over 4,000 “teams” have been running a simple program which processes proteins for the Institute of Systems Biology. (*BBC News* 2/17/05) <http://news.bbc.co.uk/1/hi/sci/tech/4270241.stm>.

Chilling Treatment Offers Hope for Stroke Victims. Denver, Colorado-based Medivance is working to offer stroke victims hope not just of survival but of a better recovery using controlled hypothermia. The company’s Arctic Sun, a non-invasive device with special cooling pads, chills the body to as low as 91.4 degrees and keeps it there sometimes for as long as 24 hours. Clinical trials at Washington Hospital Center, Washington, D.C. have been promising. “The theory is that as you allow the brain to get cooler—or normothermic—then therefore the brain rests,” said Dr. Dan Herr, Chief of Critical Care at WHC. “And the amount of damage that can progress from the stroke will be limited.” (*CNBC* 2/18/05) <http://www.msnbc.msn.com/id/6981429/>.

Robots Hit Stride with Human Walk. The latest robots that walk like humans—that familiar staple of science fiction films—have been demonstrated by scientists from the US and Holland. Though machines like those in the film *I, Robot* are still a long way off, robots using this method of walking could have uses in dangerous space missions or in cleaning up nuclear and toxic waste. The work could transform the way humanoid robots are built and brings the prospect of robotic replacement limbs a step closer. (*BBC News* 2/18/05) <http://news.bbc.co.uk/1/hi/sci/tech/4275815.stm>.

High-Tech Cancer Fighter Based on Folk Treatment. Researchers at the University of Washington have blended the past with the present in the fight against cancer, synthesizing a

promising new compound from an ancient Chinese remedy that uses cancer cells' rapacious appetite for iron to make them a target. The substance, artemisinin, is derived from the wormwood plant and has been used in China since ancient times to treat malaria. Earlier work by Henry Lai and Narendra Singh, both UW bioengineers, indicated that artemisinin alone could selectively kill cancer cells while leaving normal cells unharmed. The new compound appears to vastly improve that deadly selectivity. (*Science Daily* 2/20/05) <http://www.sciencedaily.com/releases/2005/02/050212193252.htm>.

Global Digital Divide “Narrowing.” A fund to boost IT take up has been established. The “digital divide” between rich and poor nations is narrowing fast, according to a World Bank report. (*BBC News* 2/25/05) <http://news.bbc.co.uk/1/hi/technology/4296919.stm>.

Brain Controls Robot Arm in Monkey. University of Pittsburgh researchers report that a monkey outfitted with a child-sized robotic arm controlled directly by its own brain signals is able to feed itself chunks of fruits and vegetables. The neural prosthesis moves much like a natural arm, with a fully mobile shoulder and elbow and a simple gripper that allows the monkey to grasp and hold food while its own arms are restrained. Computer software interprets signals picked up by tiny probes inserted into neuronal pathways in the monkey's motor cortex, a brain region where voluntary movement originates as electrical impulses. (*Science Daily* 2/27/05) <http://www.sciencedaily.com/releases/2005/02/050223135857.htm>.

Intervention Cuts Nerve Damage, Boosts Life Span. A novel genetic manipulation significantly extends the life spans of flies by reducing the amount of wear and tear suffered by nerve cells in adults, according to new work published in *Cell Metabolism*. The findings support the idea that therapies designed to protect the adult nervous system by curbing the production of damaging free radicals might effectively increase longevity in other animals, including humans, the researchers said. (*Science Daily* 2/27/05) <http://www.sciencedaily.com/releases/2005/02/050222191307.htm>.

Lack Of Specific Collagen Type Leads To Osteoarthritis. Duke University Medical Center researchers (Durham, NC) have found that joints whose cartilage lacks a specific type of collagen will develop osteoarthritis—the so-called “wear-and-tear” form of the disease—at a greatly accelerated rate. The results of their experiments with mice provide new insights that could lead to potential treatments for a disease that afflicts more than 40 million Americans, said the researchers. (*Science Daily* 2/27/05) <http://www.sciencedaily.com/releases/2005/02/050223161951.htm>.

Toward More Efficient Computers. For millions of users of computer devices requiring frequent recharging such as cell phones, PDAs, and MP3 players, new technology developed at

Georgia Tech could mean they are no longer tethered to their chargers. Dr. Krishna Palem announces that he has confirmed his probabilistic bits discovery from last spring by producing a device based on this cutting-edge new approach to making computer chips significantly more energy efficient. The validation of probabilistic bits or PBITs is most significant in the area of reduced power consumption and increased processing speeds. (*Science Daily* 3/5/05) <http://www.sciencedaily.com/releases/2005/02/050213131043.htm>.

Biomolecular Electronics Breakthrough. The successful test of a single-molecule switch has opened the door to biomolecular electronics. A team of scientists led by biophysicist Stuart Lindsay from the Biodesign Institute at Arizona State University has created the first reproducible single molecule negative differential resistor—and in the process has developed a groundbreaking experimental technique that provides a “roadmap” for designing single-molecule devices based on biochemistry. (*Science Daily* 3/6/05) <http://www.sciencedaily.com/releases/2005/02/050223124237.htm>.

Cytoplasm Affects Clone Skeleton. The March 2005 issue of *Biology of Reproduction* contains a report of some intriguing findings in cloned offspring created when nuclei from one genus of fish were transplanted to enucleated eggs of another genus of fish. The seven offspring, cloned from nuclei of common carp and egg cytoplasm of goldfish, were virtually identical to the nuclear donor species, *Cyprinus carpio*, in appearance and in most physical traits. The number of vertebrae in the clones, however, was in the range of the recipient species, *Carassius auratus*. (*Science Daily* 3/6/05) <http://www.sciencedaily.com/releases/2005/02/050223162409.htm>.

Protecting Public Spaces From Terror. Since the 2001 anthrax attacks, research has focused on developing improved sensors to detect potential chemical or biological terror agents. But these devices themselves cannot head off terrorist attacks, and while they should be part of an overall protection strategy, reliance on such technology can create a false sense of security, warns Jiri (Art) Janata, a Georgia Institute of Technology researcher and chemistry professor. Protection for closed public spaces such as airport terminals and shopping malls therefore needs a new paradigm: a “systems engineering” approach, argues Janata. That would include central command centers, response strategies tailored to the facility, protection of water and air circulation systems—and neutralizing and sterilizing chambers built into air-circulation systems to limit the spread of terror agents. (*Science Daily* 3/7/05) <http://www.sciencedaily.com/releases/2005/02/050223145741.htm>.



Cryopreservation Case Report: *The Cryopreservation of Patient A-1562*

by Tanya Jones

Background

A 39-year old man when he was pronounced legally dead, A-1562 joined Alcor nearly ten years before he needed our help. At the time he signed the donation paperwork, he had received treatment for AIDS for nearly ten years. His condition was under control for a long time, before his immune system finally began to succumb to the disease. Throughout his final months, the patient became increasingly reluctant to discuss his condition, even with his closest family. In the weeks prior to the case, however, his significant other (who is also an Alcor member) grew concerned and fortunately remained in close contact with Alcor. We were informed that we could be needed again in Florida before too much time had passed.

Alcor's emergency response system was activated by the patient's significant other for the final time in mid-April of 2004. Complications had manifested. In addition to his AIDS, the patient was suffering from a host of other diseases as part of this terminal decline, including: a recent diagnosis of Hodgkin's lymphoma, hepatitis B and C, liver and renal failure, and sepsis. He was admitted to the hospital during his final weeks for a radically enlarged liver and testicles. Additional symptoms included fatigue, fevers, anemia, lactic acidosis, and jaundice. His doctors were unsure of the cause of this decline but were suspicious that they related to experimental medications the patient was taking. They were not confident about the chances for our patient surviving both the chemotherapy he needed and any additional treatment for the new symptoms.

Stabilization and Transport

The transport and cryoprotection teams were notified of the known infectious risk. Universal precautions were expanded to include coveralls and goggles for all team members and the use of puncture-resistant nitrile gloves underneath the standard latex gloves.

When Alcor was contacted about this latest hospitalization, the patient's physicians were not expecting him to survive more than a day or two. We informed our Florida team of the situation on April 19, 2004, and launched a standby of four paramedics that lasted two days. During this time, I discussed Alcor procedures with the hospital staff, including the patient's primary care physician and charge nurses.

As with all such cases, our preparations included

communicating with the hospital staff on what they could do if the patient's heart stopped prior to the arrival and preparation of the standby team. We faxed a copy of our Emergency Stabilization Instructions to the doctor, which included an introduction to cryonics and the procedures we use during stabilization. These instructions request hospital personnel administer intravenous medications (diprivan, heparin, streptokinase, epinephrine, and gentamicin) while performing chest compressions for several minutes to circulate them, administer Maalox through a nasogastric tube to prevent internal bleeding, and surround the patient in ice.

As many medical personnel do, the nurses at this hospital felt uncomfortable providing treatment to a legally dead individual, and the patient's physician chose to refer our directives to the hospital administrators. After a legal department and ethical review, the application of this protocol was approved, and the orders entered in the patient's chart.

During this time, the patient had been scheduled for chemotherapy, but his doctor felt he was too weak for the procedure. The treatment was postponed, and the patient began to recover. Our standby team was sent home after a couple of days, as his condition stabilized.

On April 23, we received an urgent call from the hospital informing us that the patient's condition was worsening once more, and we directed the Florida team to the Miami hospital again. Once on-site, team members spoke with the patient's significant other

A-1562 Fracture Events

date	time	time, post-pronouncement	temperature	max voltage
4/30/2004	3:58:26	71.553	-128.4	0.1
°	4:01:45	71.611	-128.4	0.04
°	4:59:01	72.576	-129.1	0.44
°	5:10:10	72.763	-129.4	0.4
°	6:54:52	74.496	-131.6	0.19
°	10:37:23	78.204	-134.7	0.3
°	12:57:03	79.258	-136.2	1.2
°	12:57:03	79.258	-136.2	0.15
°	12:57:03	79.258	-136.2	0.6
°	12:57:03	79.258	-136.2	0.07
°	20:28:34	88.054	-145.2	0.12
°	0:12:14	91.837	-157.3	0.42
°	0:48:04	92.375	-166.9	0.15
°	2:05:54	93.697	-172.5	0.09
°	2:24:20	93.977	-172.9	0.15

and verified the hospital and funeral home arrangements were in place. Medication doses were calculated, drawn, and placed on ice; and the team settled in to wait nearby.

After the midnight shift change among the team members, one paramedic remained with the patient, while another took a now off-duty member home. At about 06:00 (EST), we received a call that the patient had taken a turn for the worse. The patient's doctors had decided to cease most treatment and to allow the natural progression of the diseases to take their inevitable course. By the time the absent team member returned, the patient had been pronounced legally dead. The hospital staff administered the emergency stabilization protocol as agreed.

The local funeral home provided transport of the patient from the hospital to their facility. Upon the arrival at the funeral home, two team members donned personal protective equipment to protect them from the infections this patient carried and administered the rest of the transport medications. Because of the limited number of personnel at the scene, no notes were taken on this stage of the protocol administration. The local coordinator reports that all medications were administered and chest compressions continued for the specified length of time, and then the patient was prepared for transport to Arizona. We had been fortunate to have local funeral home contacts ready, available, and experienced in cryonics transport, as the result of all the activity in Florida that year.

No field washout was performed in this case for two reasons. The first reason was the patient's rapid decline. The team felt it likely the patient would be pronounced while they were en route to the funeral home, and setting up the equipment would then take time away from more urgent patient care. The second reason was the patient's highly infectious status. More time was needed to properly prepare the field equipment and operating area to

minimize the health risks to the staff.

The patient was prepared for transport, but the team neglected to include the DuaLogR recording device, so there are no transport temperatures for this case. This is an oversight that has occurred in several cases in recent years, so Alcor is working to find a data collection solution that will eliminate this critical loss of data.

Cryoprotection

After changing planes once in Atlanta, the patient landed safely at the Phoenix Sky Harbor airport at 20:35 (MST). He was transported to the Alcor facility by our local funeral director within 36 minutes of the plane's landing. Prior to his arrival, we held an infection control meeting with the operating room personnel. Though we hold similar meetings on a regular basis, we felt it useful to remind everyone of the necessary precautions for safely handling contaminated material or sharps, for minimizing the number of personnel in the operating room, and for the effective use of engineering controls and personal protective equipment.

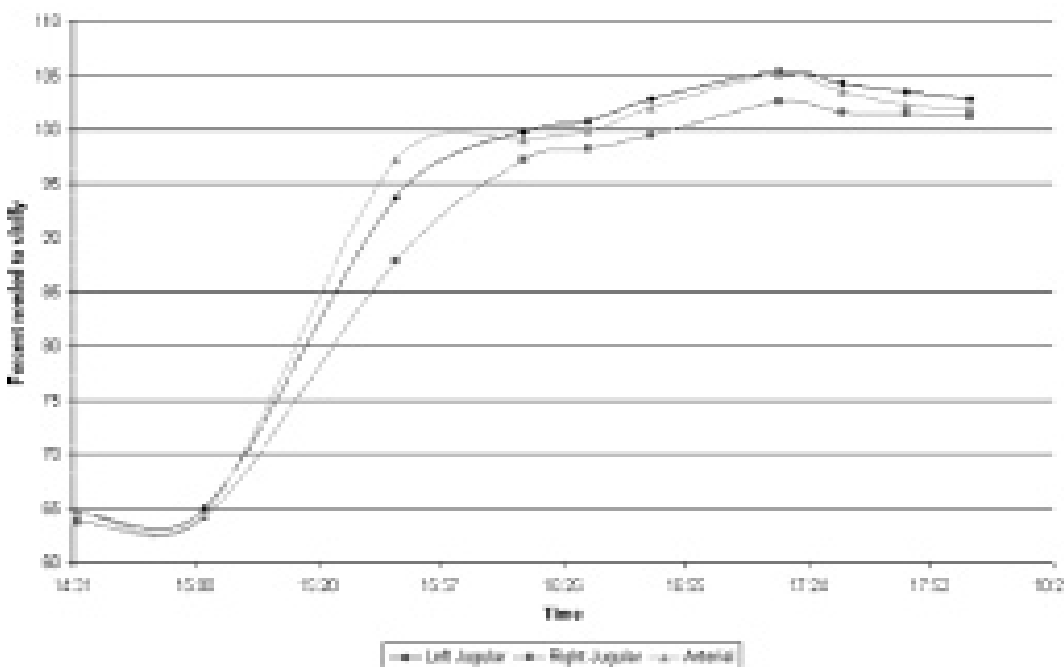
Once the patient was delivered to our door, it took about 20 minutes to complete the preparations for surgery. Though improved coordination has happened since this case, the operating table was lacking in ice; and the lifting straps were not ready when the patient arrived. Furthermore, a thermocouple was not placed because the transport team had failed to communicate the lack of temperature recording to the operating room personnel. Suction was also missing from the general preparations, and though it didn't compromise the quality of patient care in this case, its temporary absence made the surgeon's job slightly more difficult.

Cannulation of the major vessels and the cephalic isolation both went smoothly and were completed in 20 minutes. When the patient's head was transferred to the cephalon enclosure,

we learned his head was of a smaller diameter than most. The retaining halo screws in the enclosure were just barely long enough to secure the patient. We have since lengthened those screws to prevent a future need to improvise for smaller patients.

Small changes were also made to the perfusion circuit to protect the staff from infectious hazards. These changes became a standard part of the protocol after this case and included replacing the dump reservoir with a bladder. In adding the bladder, we quickly learned that the nature of the venous return system required that a vent be added to the circuit to prevent the bladder from filling with air. Once the

A-1563 Cryoprotection



blood washout had been started, the burr holes were created. In previous cases, we had drilled the holes during the isolation because detritus has a tendency to clog the perfusate filters. In this case, it was decided that beginning the washout with less delay was better for the patient than the couple of minutes required later to change a filter. There was a brief stall during the burr hole drilling because the internal mechanisms of the perforator seized. Once the components were properly lubricated, the device functioned properly.

Clots were observed exiting the vertebral arteries, primarily from the right side, immediately upon the initiation of perfusion. The number and size of the clots were more than we typically see, but they also stopped earlier than anticipated.

In terms of fluid dynamics, this perfusion seemed almost ideal. High flow rates (at each cryoprotectant concentration level and temperature) were sustained throughout the procedure. Venous concentrations remained close to the arterial inputs at all points.

Substantial cerebral shrinkage was observed during the first part of the perfusion and swelling in the second part, to the point where the brain was nearing its original volume. Final equilibrium was obtained fairly rapidly. The changes inherent in this shrink/swell cycle were reflected in the combined reservoir volumes in the circuit.

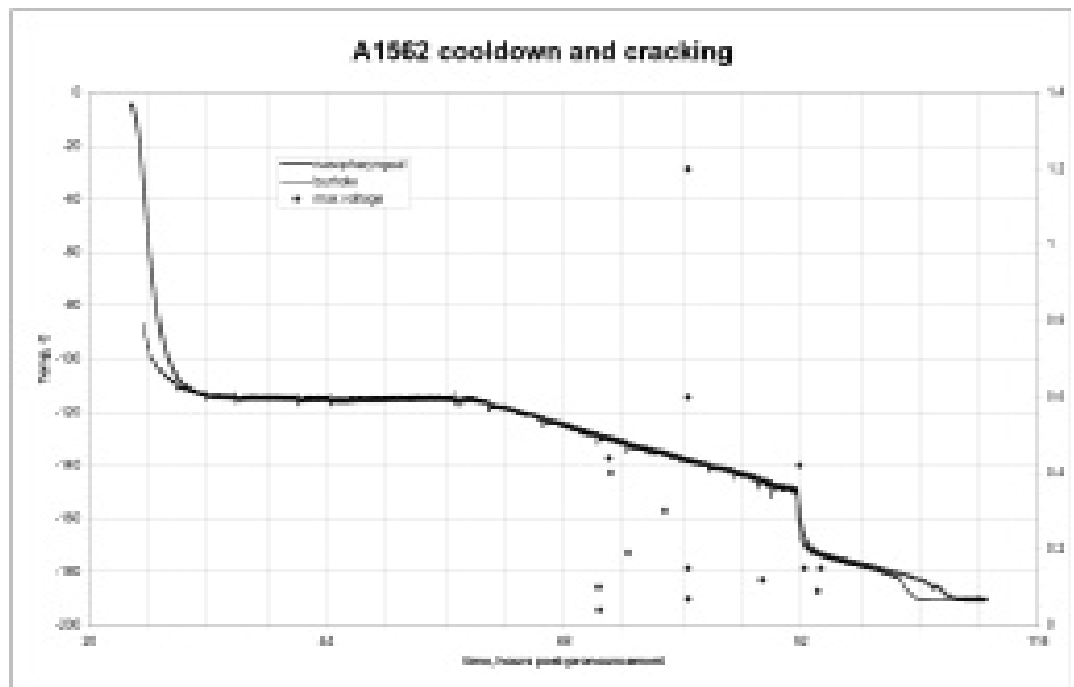
Target concentrations were reached bilaterally in the patient, with the left jugular achieving target concentrations first. Total perfusion time neared three and a half hours, with the left jugular having achieved equilibrated target concentration one hour and 45 minutes prior to the cessation of perfusion. The right jugular reached that point at one hour and 15 minutes prior to stop.

Despite less-than-ideal circumstances surrounding the transport, cryoprotection data indicates this was an excellent perfusion. This surprisingly good result continued throughout the cooling stage as well.

Cooling and Fracture Data

The patient entered the cooldown stage on April 28 at 04:46, following the initial prescribed cooling curve without incident, arriving at the final temperature of -196°C in approximately three and a half days. The rapidity of the overall cooling resulted because of a computer error.

On the date change from 30 April to 01 May, the cool-down controller added 24 hours to the ramp and proceeded to drop



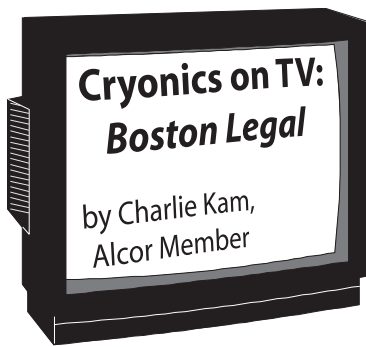
the vapor temperature a full 24 degrees at once, plunging the internal dewar temperature from -148°C to -172°C in the space of a few minutes. The full effects of this plunge are unknown, but four cracking events occurred during the 24 degree interval, where the core temperature of the brain dropped over the course of several hours. Interestingly, there were no further fracturing events detected after those four. Also of interest is that the events did not occur until the patient's temperature had already dropped 6 degrees.

Seventeen fracture events were recorded in the temperature descent, with the first at -128.4°C and the last at -172.9°C. Four of the fracture events occurred in significantly less than a second at -136.2°C, a cascading cracking sequence the likes of which we have not seen before. In previous cases, there have rarely been two fracture events occurring within a second, but they have happened. Four events in such a short period of time is a new result.

A-1562: PATIENT PROFILE

- Confidential member
- 39-year old male
- AIDS patient for 20 years
- Residing in Florida
- Significant other an Alcor member
- Cause of death: cardiopulmonary arrest, lymphoma, AIDS





On Sunday, March 13, 2005, the ABC television network series *Boston Legal* aired an episode involving the subject of cryonics. ABC, as you may know, is owned by Disney, which was once headed by Walt Disney, or to re-phrase that, Disney's head (*sorry, but I couldn't resist*). This series

is classified as a "Dramedy" which in the entertainment world is defined as either a comedy interlaced with drama or vice-versa. If you have not seen the series before, it is about a high-profile law firm set in Boston with storylines revolving around the main characters portrayed by three big stars: William Shatner as Denny Crane, a once outstanding and powerful attorney who is now losing some of his mental faculties; Candice Bergen as Shirley Schmidt, the level-headed senior partner; and James Spader as the quirky, but highly effective, associate.

In this episode, Carl Reiner makes a guest appearance as 78 year-old attorney Milton Bombay, who comes to the firm asking his old friend Denny Crane to represent him before the courts in an attempt to obtain permission to euthanize and cryopreserve himself before ALS ravages his body. Crane's initial reaction to Bombay was classically hilarious and perfectly representative

of the majority of our society's take on the matter in that he had no idea what Bombay was talking about. Schmidt's reaction of skeptical ignorance coupled with snide remarks represented most of the rest of the public.

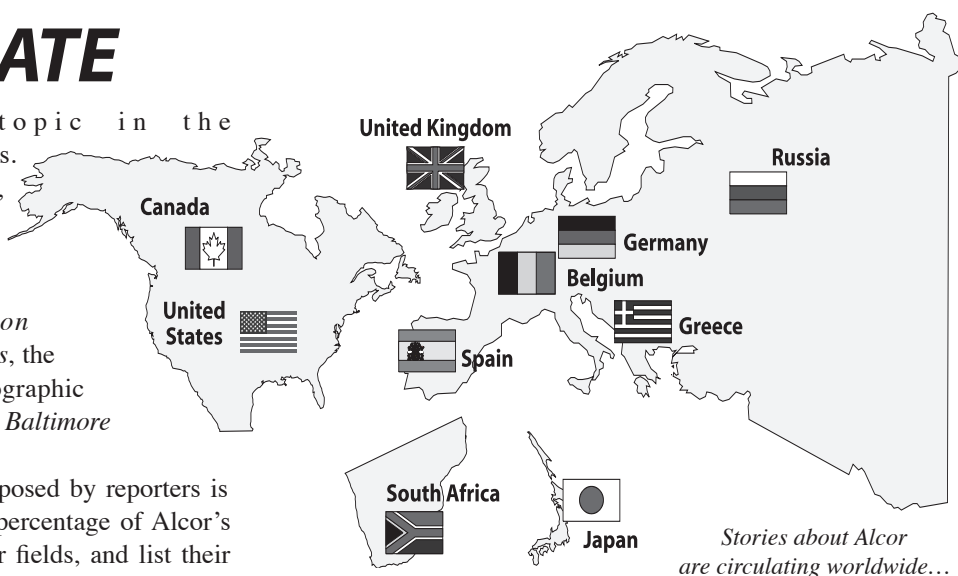
As I watched the show, I realized that cryonics was merely a backdrop to the real legal issue of euthanasia. The good news is that cryonics was presented in a very intelligent manner when Bombay first explained why he thought it was such a good idea. He discussed the ongoing advances in science and pointed out that a hundred years ago no one knew of cloning or the human genome. Another favorable portrayal was when a doctor took the stand to explain the scientific plausibility of cryonics, citing the natural capability of a wood-frog to allow itself to be frozen and then thawed back to life on a seasonal basis, as well as actual instances of frozen tissues and organs being successfully recovered in labs and hospitals. They also made reference to the development of nanotechnology.

Oh sure, there were freezing jokes throughout the show but they were rather funny and not degrading to cryonicists. And although the show never mentioned Alcor by name, there were at least two references that directly implied it was Alcor they were talking about: when Bombay mentioned being laid to rest next to Ted Williams and when it was mentioned that the company was in Arizona. Overall, I would say the writers at the ABC show kept an open mind toward cryonics, so I suppose the head of Disney isn't quite so frigid after all.

MEDIA UPDATE

Cryonics is a hot topic in the international media these days. Over the last few months, Alcor has scheduled or participated in interviews to be published or broadcast in many countries. Interviews have been requested from Telemundo, the *London Sunday Times*, MTV2, the *New York Times*, the *Sunday Herald Magazine*, National Geographic News Online, Discovery Channel, and the *Baltimore Sun*.

One of the most common questions posed by reporters is what kind of people join Alcor? A high percentage of Alcor's members work in scientific and computer fields, and list their profession as: physician, chiropractor, R.N., physicist, scientist, molecular biologist, professor, software developer, software programmer, and database analyst. Other common professions are: engineer, attorney, advertising, graphics, motion picture director, sound engineer, insurance agent, and teacher.



Some of the well-known scientists who are public members of Alcor include:



Dr. K. Eric Drexler, Dr. Ralph Merkle, Dr. Marvin Minsky, and Dr. Aubrey de Grey.

EMERGENCY RESPONSE TRAINING

In 2005, Alcor is dramatically improving the quality of the stabilization and patient care its regional teams provide by taking on an aggressive training schedule, expanding its training modules, and adding more sophisticated training tools to its program. Members in California, Nevada and Florida can feel especially comforted by the accelerated training schedule, and we plan to expand the schedule next year to include more regions. Further, with the improved training in the membership and the addition of EMTs and paramedics to our team roster, the quality of training and cryopreservation procedures will improve overall.

New training equipment

Two new tools were recently added to our training resources. The first is the Combitube™, a double-lumen tube with one blind end functioning as an esophageal obturator airway and the other end functioning as a standard cuffed endotracheal tube. It is inserted blindly and “seals” the oral and nasal pharyngeal cavities, which is important because it reduces the risk of aspiration of the gastric contents.

The advantages include:

- Minimal training required for use
- May be more useful in non-dehydrated patients
- Successful passage and ventilation in many patients via esophageal route
- Portable, useful in remote settings
- Blind placement (without laryngoscope)
- Unique design provides access to the airway with either esophageal or tracheal placement

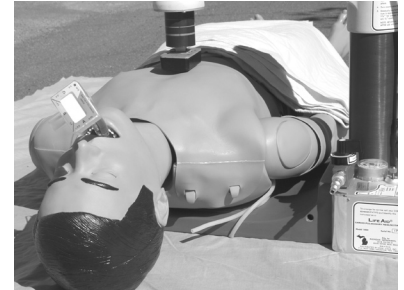


New mannequin intubated with Combitube™ and end tidal CO₂ detector

Tracheal intubation has always been the best means of airway management, however it is a skill that must be learned and maintained with practice. Alcor technicians who are properly trained will choose tracheal intubation as a first choice, but the Combitube™ is a great back up or even a first choice for those not

well-trained in tracheal intubation.

The design of the double lumen device allows easier passage of the nasogastric tube to the stomach to deliver medications that neutralize digestive acids. It can be used while positive pressure ventilation is taking place, and simultaneous measurement of the carbon dioxide exhaled by the patient using an end tidal CO₂ detector is also possible.



Mannequin with airway and thumper in place

The second training tool recently acquired is a new full body mannequin from Laerdal Medical Corporation. This mannequin allows the majority of the required emergency response skills to be practiced in a single setting, making for a more “real life” experience. Skills that can be practiced include basic and advanced airway management, nasogastric tube placement, intravenous access and placement, intramuscular injections, surface cooling, and cardiopulmonary support. The mannequin is made from a very durable plastic with articulating limbs and can be submerged in water and packed in ice for surface cooling; plus it weighs a more realistic 60 pounds. It is being tested for ATP washouts, but may require some modification before team members can use it for this kind of training.

New training modules

Sixteen modules have been compiled to enable transport teams to more effectively discuss lecture series:

- **Bloodborne Pathogens and Communicable Diseases** covers subjects within OSHA guidelines and Alcor’s safety documentation and discusses diseases that team members may encounter
- **Basic Airway Management** covers the basic skills of head position, airway adjuncts such as the oral pharyngeal airway, positive pressure ventilation with bag valve mask, suctioning of foreign material from the airway, and oxygen delivery
- **Combitube™** discusses the advantages and placement of this airway device

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- **Advanced Airway Management** covers endotracheal intubation and airway support
- **Cardiopulmonary Support** deals with manual delivery of chest compressions using the Ambu cardio pump and mechanical delivery with the Thumper™
- **Patient Assessment** helps team members evaluate the patient status prior to legal death and during the stabilization phase to assess how well the procedures are proceeding
- **Surface Cooling** covers the importance of rapid cooling to prevent ischemia and discusses major anatomical landmarks and methods used to achieve this rapid cooling
- **Medication Administration** explains protocol changes and allows the student to become very familiar with the current medications and delivery methods, such as intravenous push or intravenous piggy back
- **Shipping the Patient** deals with the requirements of completing the proper paperwork and preparation of the patient for flight or ground transport
- **Data Collection** overviews the information that is gathered prior to legal death and throughout the application of the stabilization protocol
- **Moving the Patient** covers lifting and moving the patient properly so team members do not injure themselves or the patient
- **Air Transportable Perfusion (ATP)** covers the setup and operation of the ATP pump and discusses the fluids that will be infused into the patient
- **Latex Allergies** covers the signs and symptoms that team members or patients experience with allergic reactions
- **Rectal Occlusion Device** covers the importance of limiting spread of bloodborne pathogens and teaches team members the technique of using the device
- **Intravenous Management** discusses the techniques of intravenous placement of the catheters
- **Autopsy and Special Cases** covers situations which

team members may face that are not ideal and offers guidance to help provide the best possible treatment for the patient

Training sessions held

So far this year, transport team training has taken place in Northern California, Southern California and Laughlin, Nevada. Additional training is scheduled for later in the year for those same regions, Florida, and Scottsdale; plus, an October training date is being reserved for the formation of a new regional group.



Joe Waynick and Steve Van Sickle join Bob Newport in practicing airway management.

Ten student team members participated in the Northern California training, ten students participated in the Southern California training, and nine EMTs participated in the



Keith Dugue ventilates a "patient" after intubation.

Laughlin training session. Subjects covered included protection from bloodborne pathogens, basic airway and oxygen therapy, Combitube™ placement, and medication administration. The Laughlin students were also able to practice airway management on the new mannequin. This was the first trial run for the new mannequin, and it worked out very well.

On the second day of Laughlin training, the students were able to bring their skills together in a realistic practical. During this mock cryopreservation, team members placed the patient in the portable

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ice bath, performed manual cardiopulmonary support, inserted the Combitube™ and continued ventilation. Meanwhile other team members were setting up the Michigan Instruments Thumper™,



Michael Geisen and Louise Gold become more familiar with the medication protocol, while Bill Voice observes their technique.

a mechanical device that performs cardiopulmonary support automatically, thus freeing up team members for other important tasks. They simulated intravenous access and proceeded with the medication protocol.

All the team members took the practical very seriously, were

energized from working hard, and indeed performed quite well. They were pleased with the new and refreshed knowledge from the two-day training. Since then, team members have been given a set of medications to practice preparing and drawing from ampoules and vials. They also practiced “spiking the bag” for intravenous piggy back. This practice helps the team members practice the current medication protocol and increases the speed and accuracy of medication delivery to the patient.

Training sessions scheduled

Northern California	April 23
Southern California	May 21
Florida	June 18
Scottsdale	July 15-17
Northern California	August 27
Southern California	September 17
Location to be determined	October 15
Scottsdale	November 11-13

Alcor would like to extend a special thanks to Regina Pancake for allowing training to take place in her Culver City facility and Peter Voss for organizational support. Attendance of training sessions is limited to Alcor ACT members or volunteers seeking ACT certification who have been prescreened and authorized to join the class. If you're interested in participating, email tanya@alcor.org.



The Emergency Phone Line Rings...

Have you ever wondered what happens when Alcor receives a call that a member is having a medical emergency?

Imagine a paramedic has seen the member's medical emergency ID and called Alcor. The 24-hour emergency phone line is answered, and information is taken regarding the nature of the member's distress. Alcor's emergency protocol is set into action. Verification of membership status is determined, and the Transport Coordinator speaks with the attending physician to make a determination regarding the deployment of a standby team.



Once death is pronounced, medications are administered by I.V. to prevent blood clotting and other forms of damage that

naturally happen when a person's heart stops. Cooling is done by packing the patient in ice and performing chest compressions to circulate blood, which additionally promotes more rapid cooling. With an organ preservation solution, the patient is rushed to Alcor Central in Scottsdale. After a brief surgical operation, the blood is replaced with organ preservation solutions, and the patient is rushed to Alcor Central in Scottsdale.



The operating room at Alcor's Scottsdale, Arizona, facility.

During this process, staff at Alcor have been busy making preparations. Alcor uses standard operating room procedure and sterile technique. Upon arrival at Alcor, the patient is quickly



A bank of heart-lung machine roller pumps circulate cryoprotectant solution into the patient in gradually increasing

wheeled into the operating suite. This specialized room is equipped like one in any major hospital, complete with adjustable overhead surgical lights, an operating table, several computers, and a heart-lung machine to pump the cryoprotective perfusate.

The cryopreservation team is present in sterile gowns, gloves, and masks, and uses surgical instruments from a sterile tray. The patient is perfused with cryoprotectants and ice blockers; and the core temperature is taken down to -4 degrees C for neurosuspension patients and +10 degrees C for whole body patients (which takes 6-11 hours). Next, the patient is moved to the cooldown area and is constantly monitored for 7-12 days while the temperature is slowly lowered to that of liquid nitrogen (-196 degrees C). At this point the patient is transferred into a large dewar for long-term care in liquid nitrogen.

For more information about Alcor's procedures, visit this link: <http://www.alcor.org/procedures.html>

WHO KNOWS ABOUT ALCOR NEWS?

Did you know that for over two years Alcor has been issuing regular news bulletins via its **FREE** electronic Newsletter? *Alcor News* gives its readers an inside look at the monthly happenings at the Alcor Foundation.

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REGULAR TECHNICAL UPDATES...

“The northern California transport team recruiting meeting was held as planned. It was not as well-attended as the southern California meeting, but still provided a valuable opportunity for local members to meet our CEO. We still hope that some new volunteers will step forward to participate in transport activities.”

- Excerpt from November 13, 2004 Alcor News

“As a result of a lack of cryoprotections done in the two recent straight-frozen cases, where only a limited amount of supplies were used, the operating room received something of a shakedown to ensure a higher state of readiness.”

- Excerpt from December 10, 2004 Alcor News

UPDATES ON ADMINISTRATIVE MATTERS...

“Our new Transport Coordinator, William Voice, formally joined the staff this past Monday. Already, he’s becoming familiar with cryonics operations and is enthusiastically diving into the development of upgraded training materials and standard operating procedures.”

- Excerpt from January 12, 2005 Alcor News

“As of January 1, 2005, U.S. and Canadian members are no longer required to fund emergency-based standby coverage via credit card authorization or prepayment (does not include elective standby). Instead, each member contributes \$10 per month to a pooled Standby Fund that will cover standby costs



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An Interview With

Diane Cremeens

Membership Coordinator

Since taking on the role of Membership Coordinator six months ago, Diane Cremeens, has processed over 100 applications, approved 70 memberships, and met a lot of new people. Her daily support is integral to the continued success of the organization, and we had the pleasure of candidly discussing her experiences thus far. Here's what Diane had to say:

CM: *Diane, before starting at Alcor you worked at Community Care Network (CCN), a medical insurance company. How was your work there similar to and different from your position at Alcor?*

DC: At CCN I started out in the Provider Networks Department. This department negotiated payment rates with providers (physicians, chiropractors, etc) and medical facilities (hospitals, pathology labs and radiology labs). Part of my responsibility was to verify that all contracts were completed and the data was entered into the database accurately. As with Alcor, I am responsible for ensuring all contracts are completed and performing data entry. The differences are that at Alcor the cryopreservation minimums are set and do not change from year-to-year or from state-to-state as with medical providers. Also, Alcor is a much smaller company, as compared to CCN. I prefer to work in a smaller company. Everyone here treats everyone else respectfully and not like some nameless employee from a huge department.

CM: *You also owned a sewing business. What experiences have you drawn from to help you in your role as Membership Coordinator?*

DC: I learned time management skills as my own boss. People like to have their business taken care of in the timeliest manner possible. I learned to do the best job I am capable of and to complete my responsibilities as quickly as possible. I believe one of the most important things I learned as a business owner is to always answer the phone with a smile. People can hear that in your voice and would rather talk to someone smiling than someone who sounds like they are in a bad mood.

CM: *What made you want to be involved with Alcor and when did you start here?*

DC: I started with Alcor in August 2004 as a temporary employee. I knew about Alcor but had never really looked into what Alcor did. Alcor is the most interesting company I have worked for. This is the first company I have worked for that has given me the opportunity to meet and speak with some of the most intelligent

people the human race has to offer.

CM: *You work quite heavily with Alcor's clients, mainly assisting applicants with their membership requirements. What are the challenges you've faced?*

DC: The most challenging part of working with applicants is tracking the steps each applicant has yet to complete in order to become a member. We have over 100 applicants in our system at this time. Each applicant is at a different step in the process. Fortunately for me, Jennifer Chapman had an excellent tracking system in place when I started. Another aspect I find challenging is answering the emails from our overseas prospects. Since different countries have different views on cryonics I have to explain that each person must look into what laws their country has and any other special requirements. Language barriers and explaining Alcor's requirements are the two most difficult challenges I handle in that regard.

Other issues I deal with are special funding arrangements with applicants. I have to review trusts that have already been established and recommend to applicants the most effective way to meet everyone's needs. Trusts can be complicated and must be dealt with using a close eye for details. Unfortunately, I have found that applicants who live outside the US and want to sign up their children as members have difficulty obtaining life insurance for them.

CM: *What is the most interesting facet of your job or Alcor in general?*

DC: The part of my job that I find the most interesting is learning about the cryonics procedures and the research that goes into advancing the technology. I enjoy talking to the people who do the research and learning about what they do and how it integrates with the cryonics procedure. I have always had a great admiration for people who do scientific research. I have studied great scientists such as Leonardo Di Vinci and Benjamin Franklin (two of my favorites). They were men who wanted to know how and why things worked and since no one else knew at the time, they set out to figure it out for themselves. These men were before their time and on the cutting edge of science. Everyone today has benefited from their quest for knowledge. I believe the people of Alcor fall into that same category.

I also find it very interesting to learn about how other countries view cryonics. Some countries are very open to it like the US and others have just outlawed it completely. I think one

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of the best parts of my job is being able to speak or email with people from all over the world.

CM: *During your time here, Alcor initiated its first cryopreservation minimum increase in 10 years and a large influx of new applicants resulted. How is that process progressing?*

DC: The process is going very well. Approximately 20% of the applicants have already become members. The vast majority of the applicants who applied to get the previous cryopreservation minimums are moving along in the process nicely. I'm hoping to complete most of them before the April 30th deadline.

CM: *How do you view cryonics?*

DC: I think it's fascinating. To me it's a great scientific research project in, essentially, stopping time for a person. The idea of being revived in a different century and seeing how people and culture has evolved is intriguing.

CM: *Do you ever discuss cryonics with your friends and family? How do they feel about your job at Alcor?*

DC: Most of my friends and family have not really thought of cryonics as an alternative to the standard arrangements people make for themselves. I have talked to some of them extensively and some of them seem truly interested. I have a fairly large extended family, and I'm convinced that I will eventually get a few of them to become Alcor members.

CM: *What is the most common misconception about cryonics that arises during your discussions with people who inquire about Alcor?*

DC: I have found it interesting how many times I get an email or phone call regarding if we can suspend someone before they are legally declared deceased. Some ask just out of curiosity and others ask because they or a loved one has just been diagnosed with an illness, such as Alzheimer's disease.

Another misconception is most people think that it's a quick and easy process to become a member of Alcor. I believe when the



public sees that it's not a quick process they begin to understand that people who choose cryonics have done a lot of research and given a lot of thought to what they have decided.

CM: *There's a lot to learn with your position. What are the main subjects you've learned about during your training?*

DC: I have learned quite a bit about working with life insurance
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companies. Another challenging aspect of my job is learning to work out trust agreements. I did not realize before working at Alcor how intricate trust agreements can be. This is knowledge I'm very happy to gain.

CM: *What do you hope will be your lasting contribution to Alcor?*

DC: I have made it my personal goal to complete as many memberships as I possibly can for Alcor. I feel a sense of personal achievement each month when I meet the goals I set for myself. I want people to think of me as someone who works really hard and gets the job done.

CM: *What accomplishments have you had so far?*

DC: When I first started at Alcor, Joe Waynick set a goal of finalizing 30 new members before the end of the year. I am proud to say that not only did I meet that goal, but I surpassed it.

CM: *What kind of interests do you have outside of work? What do you like to do?*

DC: My family and I are avid campers. All of my children were camping before they were the age of one. I love being outdoors; I find that being outdoors is truly relaxing. We have been all over the state of Arizona. We are lucky to live a mile from Tonto National Forest, which allows us to camp in the desert close to home. In the summers when desert camping is not advisable we head out to the mountains.

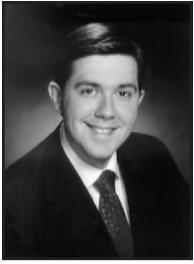
About 15 years ago a good friend of mine brought me to a "Quilt in a Day" class. She knew I liked to sew and thought I would enjoy this aspect of it. I had never tried quilting before and since that day I have been hooked. Everyone in my family now has their own custom quilt. My love for sewing and quilting eventually evolved into my sewing business.

CM: *What do you like most about working at Alcor?*

DC: I enjoy the relaxed atmosphere of the office. Everyone here takes their job seriously without the unpleasant office politics that some companies have. I like working in an office where you can take people at face value and know they are being sincere.

For someone brand new to cryonics, Diane has proven herself to be a quick study and hard worker. So many of you have or will come in contact with Diane during your association with the organization, we thought a more formal introduction was warranted. We hope you enjoyed it and truly look forward to her many contributions!





An Interview With

Steve Van Sickle

Technical Development Leader

This month we have the pleasure of profiling one of the newest members of the Alcor team: **Steve Van Sickle**. Steve is no stranger to Alcor or to cryonics. As a former member of the Board of Directors for five years, we expect that he will have many great ideas for helping us improve our technical capability. We managed to catch up with Steve and ask him a few questions. Here is how he responded:

CM: *Steve, tell us what made you want to be involved with cryonics?*

SVS: Like so many people involved in cryonics today, it was by pure chance, by picking up a copy of K. Eric Drexler's *Engines of Creation*. The scenarios that it painted of not just a world of plenty, but one where there were plausible technologies capable of reversing appalling levels of damage was a major eye opener for me as well as many other people. For the first time it moved the whole idea of cryonics from the category of "crazy but harmless" to "crazy but might work".

CM: *How has your education, training, and experience led you to Scottsdale to join the team at Alcor?*

SVS: My background is somewhat eclectic. I served in the US Army, attended the University of New Orleans where I got something of an engineering background, but got most of the hard-headed knowledge of engineering working for Shell Oil, Inc. aboard the RV Shell America doing seismic oil explorations. My background in this was a big assist in helping interpret the first crackphone signatures recorded at Alcor, and I have been volunteering ever since. My subsequent interests took me toward graduate work in molecular neurobiology (large conductance potassium channels, for those who are interested.)

CM: *Did you get interviewed or were you simply hired on-the-spot?*

SVS: Definitely interviewed...twice, as a matter of fact. I was grilled pretty thoroughly. The days of hiring someone to work for Alcor just because they walked in the door and didn't run away are over. We are large and well-known enough now that we can attract some pretty well qualified talent. That is not to say that my 12-year involvement in cryonics was not a large point in my favor. I come to the job "pre-educated", so to speak, a process that could take months or years for someone coming into cryonics cold (no pun intended).

CM: *What were you thinking when the interview was over?*

SVS: Mostly I thought, "boy, am I in for it now".

CM: *What was your early involvement with cryonics like?*

SVS: I became a member about 12 years ago. Mine were the first sets of paperwork signed by Steve Bridge when he first began as President. This was, of course, only after the years of procrastination most people go through. Within a few years I had taken a transport course, assisted in engineering Hugh Hixon's crackphone and Tanya Jones' ATP (Air Transportable Perfusion) system, and putting myself to good use here during vacations.

CM: *Everyone wants to know what you are working on now. Tell us about some of the projects you are currently tackling.*

SVS: The first item I am tackling is a grant proposal for what I call "Quick Wins." These are items that can be simply purchased off the shelf and used with little or no training to increase the amount of data being collected for each cryopreservation case, particularly in the field. Field data collection has always been a tough nut to crack, since many things happen simultaneously, under high stress, with sometimes less than fully trained people. The various "plug and play" solutions I am looking at should help this greatly. It is my hope that the next transport and cryopreservation will be the most thoroughly documented in history.

Second, and in parallel with the first project, is testing out the ITS (Intermediate Temperature Storage) system. There has been a lot of interest in this, since there is a strong desire to eliminate the fracturing that occurs during descent to liquid nitrogen temperatures. The idea is that by simply storing at a higher temperature (such as -140°C), the problem can be avoided. There are two difficulties with this, though. First, storing at these higher and possibly individualized temperatures safely and economically is not a trivial exercise. Second, there still appear to be acoustic events indicative of fracturing before you even get to the glass transition temperature, a much higher temperature than you want for long-term storage.

We seem now to have a good handle on the physical storage problem...a prototype purchased from 21st Century Medicine seems to be doing well once the bugs have been wrung out, with room for even more improvement. But we also need to find the

best way to get to a safe storage temperature, probably by some combination of slow cooling and annealing (annealing is a process whereby stresses are relieved by a brief warming period or warm soak). Until and unless this problem is addressed, intermediate temperature storage is still something of a speculation. I am constructing a new instrument that I believe will allow us to quantify the problem, and converge on a solution to avoid even this level of fracturing, if such a solution exists.

Finally, I am looking into the long delayed plans for automatic control and data collection during cryoprotective perfusion here in Scottsdale. While Hugh Hixon and Tanya Jones have done a wonderful job designing and constructing the new whole body perfusion enclosure, further work to make it easier, safer, and more informative to use will only improve things. Data collection in the OR hasn't been as bad a problem as in the field, but anything I can do to make matters even more transparent will just be all to the better.

CM: *What other accomplishments have you had so far? I know you have only been here a short time.*

SVS: I have been doing tests on the ITS storage system and have just recently placed it into a fully cryogenic environment for testing. I am also well on the way to completing my "Quick Wins" grant proposal. I also attended the training session for the Los Angeles rescue team, but with such wonderful people that hardly counts as work.

CM: *What type of projects or ideas do you have that you would like to see accomplished at Alcor that would improve our capability?*

SVS: Other than what I have mentioned already specifically, I want to be able to measure and document exactly what we are or are not doing with our patients. So much of cryonics has been by guess and by golly, often by necessity under the pressure of the moment as much as anything else. By making physiological data collection easier and more comprehensive, we can make a much better case for what we are doing and how it just might work. Every case that comes up is an unrepeatable experience; there is so much we can learn from each case, but if the data is not collected it is gone forever. Data we need so we can do that much better when it's your time.

CM: *Ultimately, what do you want to be doing five years from now?*

SVS: Five years from now, I'd like to see Alcor move past engineering development and move into more basic research. I think it will take only a couple years for us to improve our equipment and procedures to the point where incremental improvements are only possible (and I'm sure I will be eating those words). But once you get a good handle on equipment and procedures it is time to turn to more fundamental questions. What parts of the brain are being preserved well? Not so well? What of the structures involving memory? Can we restore at least partial

electrical activity (as Suda did over 40 years ago)? How about using molecular techniques to pinpoint damage at the sub-cellular level? The range of possible directions is huge.

CM: *What kind of hobbies and entertainment do you enjoy?*

SVS: Working at Alcor? Hobbies? Who has time for hobbies? Well, I do enjoy Scottish country dance, though I haven't met up with a group here yet. And yes, I do wear a kilt, Prince Charlie and bow tie, and no, I'm not saying what goes on under the kilt. It's a tradition you don't tell.

CM: *How do your friends and family feel about your job at Alcor?*

SVS: All my friends and family are happy I am working here. They have known of my interest for a long time. I do suspect I won't be getting many out of town visitors during the summer, though.

CM: *Finally, what do you hope will be your lasting contribution to Alcor?*

SVS: If, just once, I can shake the hand of a person I helped perfuse, cooldown, and store, that will make everything I have ever done for Alcor worthwhile. That ought to be a contribution that lasts long enough for anyone.

Yes, Steve, we agree. With your help Alcor will become bigger, stronger, and more capable than ever as the world's premier cryonics organization.

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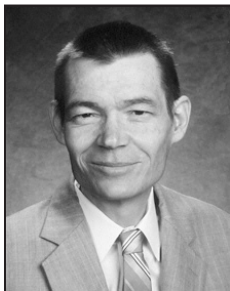
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The advertisement features a black and white photograph of a group of cyclists riding across a vast, open landscape under a cloudy sky. The text is overlaid on the image, with the Alcor logo and tagline prominently displayed.



In and Around Alcor: Twenty-Five and Ten Years Ago

by R. Michael Perry, Ph.D.

Alcor has been in business since 1972, only a few years after cryonics got its start in the mid-1960s. In the early years the organization was very small and limited. Much of what was important to it was actually concerned with other, associated groups or people who were not then members of Alcor but did, or soon would, play an important part in Alcor affairs. The Indiana-based Institute for Advanced Biological Studies (IABS), a non-profit cryopreservation organization headed by Steve Bridge, would merge with then California-based Alcor in 1982. At this time its for-profit sister organization which provided cryopreservation services, Soma, Inc., also Indiana-based, would disband and its president, Mike Darwin, would become president of Alcor. Another important future Alcor member, Jerry Leaf, headed the for-profit company Cryovita which did cryopreservations for California cryonics organizations, including Alcor and Trans Time. Within a few years, Cryovita's operations would be entirely devoted to Alcor.

By 1995 many changes had occurred. Alcor had grown enormously since 1980 and had moved to its present location in Scottsdale, Arizona. Steve Bridge was president. Jerry Leaf, so important to Alcor's operations in the 1980s, had been cryopreserved and Cryovita had become inactive. Alcor was now a fully stand-alone operation offering the complete range of cryonics services itself (though still non-profit), including patient transport, cryoprotective perfusion, and long-term storage.

1980

In 1980 Alcor consisted of approximately two dozen members, including the president, Laurence Gale, whose tenure had started in 1977 and would continue into 1982. Alcor's only cryonic cryopreservation to this date had been performed some four years previously. (This was Fred Chamberlain Jr., father of Fred who with Linda, his wife, founded Alcor.) Then in Glendale, Calif., the organization did not actually do cryopreservations directly but used the services of Trans Time, based up north in Emeryville, for both cryopreservations and patient storage. Fred and Linda Chamberlain were on the Trans Time cryopreservation team, which was headed by Jerry Leaf.

A dozen people, not all of them members, were designated

as Alcor Representatives who had authority to accept anatomical donations (patients) on Alcor's behalf and to represent Alcor and the donor in working with hospitals or other institutions to gain their support and cooperation. Among the Representatives were Fred and Linda Chamberlain; Laurence Gale; Emmy award winner Dick Jones, cryopreserved by Alcor in 1988; and Hugh Hixon, not yet a member but soon to become one and now (2005) an Alcor staff member for more than two decades.

There were no cryopreservations of Alcor members in 1980, but two nearly simultaneous cryopreservations occurred at Trans Time in mid-January, which involved three individuals who were or would soon be playing important roles in Alcor: Mike Darwin, Jerry Leaf, and Hugh Hixon. The team had barely finished with the first case when the second arrived. Cryopreservations were a difficult, time-consuming process then as now. I remember Mike Darwin commenting, a few years later, that the exhausted team at this point had no recourse but to see that the second patient was well-packed in ice and take an 8-hour rest before continuing.

While two patients were cryopreserved at one location, it was an unfortunate occurrence in this primitive cryonics era that two others were removed from cryopreservation at another site and buried. This was the outcome of Nick DeBlasio's ill-starred operation in Butler, New Jersey, which had started under recommendations from Robert Nelson

to minimize expenses. DeBlasio's wife, Ann, had been cryopreserved in 1969 by the Cryonics Society of New

York. After about a year and a half at their facility, she had been transferred in her upright container to his newly-constructed underground vault; a few months later another patient was added to the container. By 1980 the capsule had failed through mishandling and neglect. Mike Darwin and Joe Allen of Soma, Inc. were called in to deal with the situation and in particular reclaim the capsule if possible. (It was reclaimed and found its way to Trans Time;

"A man whose judgement I admired said, 'This is not a hobby or conversation piece. It is the principal activity of this phase of our lives'... With action comes responsibility."

Joe along with Mike, meanwhile, would soon join Alcor.) Mike's graphic account of this incident in *Cryonics #8* (Mar. 1981) is worth quoting from here.

"When we arrived on the scene, we found a mass of foil, paper and organic debris in the bottom three feet of a large, open-mouth cryogenic dewar. The supporting ropes which had originally held the bodies cryopreserved in the container now held only aluminum foil and skin which had slipped off of the bodies as they decomposed. A further discussion of the condition of the remains is not appropriate for this publication. Suffice it to say that it took a



Animal body washout (initial stage of perfusion) experiment at Soma, Inc., 1979.

crew of six Soma and mortuary personnel approximately 24 hours of more or less round-the-clock effort to successfully remove the remains of the two 'cryopreservation patients' from the bottom of the container. Special isolation equipment and an outside oxygen supply were required in order to enter the container. Despite these precautions, Soma personnel were repeatedly contaminated with DMSO [cryoprotectant] from the decomposed remains."¹

In another paragraph Mike offers more general comments. "It is difficult for me to describe my emotional state as I write this. Two human being[s] who loved the present and wanted the future have lost their chances. As I handed them into drab gray Ziegler cases for burial, I was enraged by the wrongness of it all. There are a million excuses for what happened. Not a one of those excuses is worth a damn. What happened to those two poor souls was inexcusable, avoidable and unnecessary. The amount of unthinkable stupidity required to produce the mess we found still awes me as I sit here at the typewriter. My experience with this case has filled me with anger and has further broken down my tolerance for those who would pursue cryonics with anything but good sense and complete commitment. A man whose judgement I admired said, 'This is not a hobby or conversation piece. It is the principal activity of this phase of our lives.' That statement is still true. Cryonics is very unforgiving of errors. A miss is as good as a mile. This experience should galvanize every cryonics organization to make absolutely sure that they can deliver the services they March/April 2005

contract for, that they have the capabilities they advertise and that they are not unrealistically undercutting or minimizing the real cost of undertaking cryopreservations properly. To fail to insure that this is the case is not only a fraud on the public but also one on ourselves. With action comes responsibility. Those of us who are offering cryonics services owe it to ourselves, to our current and future patients and to the memories of those several unfortunate people who have permanently lost their chance, to insure that minimum standards are set and enforced."²

It was only the previous year (1979) that the abandonment and loss of the nine patients at Chatsworth (Robert Nelson's operation) had become generally known. At that point most cryonic cryopreservations that had ever been started had ended in failure, and the cryonics community was deeply worried, including many of those who were important to Alcor's operations. Mike would become president of Alcor in 1982, effectively absorbing his earlier organization, Soma, into Alcor (though there was no formal merger; as noted earlier, Soma simply disbanded).

Soma in 1980 was a for-profit cryobiological research corporation set up, among other things, to provide cryonics services on a contractual basis to non-profit membership organizations such as Alcor, and particularly IABS. (In fact this option was never exercised in Soma's short lifetime of approximately five years. The only freezing SOMA did was of a pet in 1978.)

Among the services was maintaining patients in long-term cryogenic storage with expenses to be covered by the contracting (membership) organization. This involved a potential moral dilemma: suppose Soma was maintaining a patient whose contracting organization was unable to continue payments? (Generally lack of funding was an important factor in the numerous cryopreservations that had terminated to that point.) In an interview, Mike gave a response which was paralleled in the policy Alcor itself, doing its own patient maintenance, would exercise in coming years.

"I will state that Soma offers free of charge, a series of fallback positions which non-profit organizations can take advantage of in the event of dwindling or exhausted trust funds. It is our position never to terminate care for a donor so long as we continue to exist as a chartered corporation. For whole body donors we would fall back to neuropreservation in liquid nitrogen, then, if necessary, to dry ice, and finally if all else fails, to chemical preservatives and inexpensive high subzero storage. This cascade of events would apply to neuropreservation donors with exhausted organizational trust funds, as well. We simply do not believe that burial or cremation are acceptable alternatives unless the fallback procedures I've just outlined can be conclusively shown to be worthless, offering no hope of preserving ultrastructure and information content of the donor's central nervous system."³

Fifteen eventful years later, Alcor had left California for Arizona, where the ground was less shaky and the political climate more friendly. (For the record, Alcor was in California for almost exactly 22 years: from its incorporation Feb. 23, 1972, to the day its main operations and patients were moved to Scottsdale, Arizona, Feb. 21, 1994.) Alcor now was much larger, with membership around 360 and more than two dozen patients in storage. The gains were impressive and gratifying but were accompanied by some pains as could be expected. There were the well-remembered legal challenges to cryonics in California which had been successfully resolved before the move (bureaucrats were not always ready to forgive and be friendly, however)—but additional challenges continued. Following the cryopreservation of Jerry Leaf and a subsequent internal dispute, a group had split from Alcor. Staying behind in California and naming themselves CryoCare, they managed any remaining political problems by affecting good relations with the establishment and confronted the earthquake issue with extra concrete and sub-ground-floor storage in their new patient facility. (Actually this facility was operated by another newly-formed company, Cryo-Span which like CryoCare borrowed its name though not its identity from an institution of the 1960s.) Mike Darwin had been one of the major players who left Alcor for CryoCare and worked at an associated research company, 21st Century Medicine, which also had attracted a prominent cryobiologist.

Steve Bridge meanwhile presided over a tranquil scene at Alcor's new home in Scottsdale. Cryopreservations continued on schedule—a notable one was of longtime Alcor member and onetime Vice President Paul Genteman in January—and there would be three others that year.

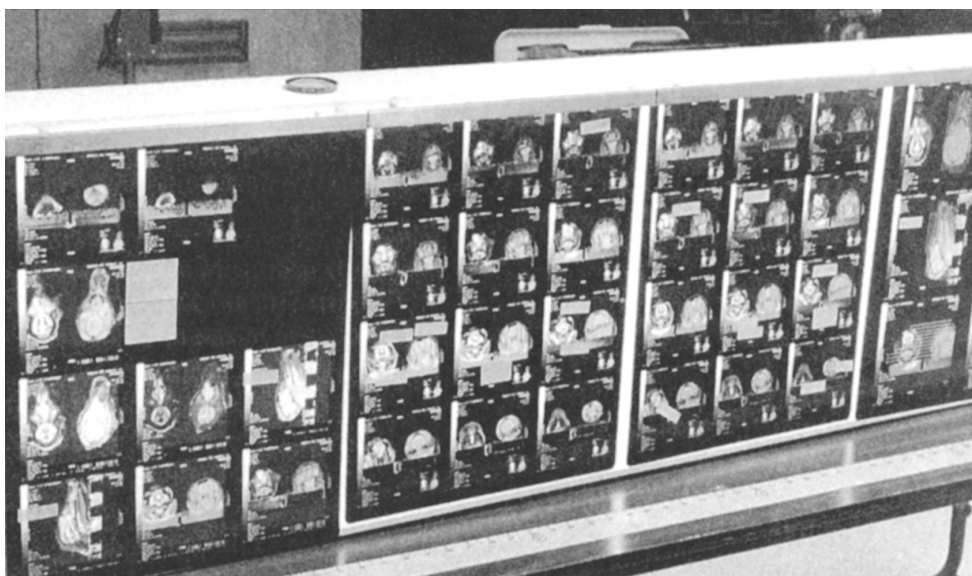
An effort was underway to recover the research initiative which had largely stalled since the legal confrontations began in the late 1980s. An experiment the previous September, reported in the first quarter, 1995 *Cryonics*, used MRI and CT scans to assess perfusion of cryoprotectant in the canine brain, hoping, of course, that it would provide useful insight for human cases. The results were interesting; the MRI in particular showed in detail the considerable brain shrinkage resulting from the glycerol-based cryoprotectant then (but no longer) in use. This appears to be the first use of computerized tomographic imaging in a cryonics experiment.

Another and actually more useful result of the same experiment was a test of a sound-based crack detector devised by Hugh Hixon. Tissue cracking is an ever-present problem in

cooling biological samples down to cryogenic temperatures. In this case the “crackphone” recorded 53 events tentatively identified as cracks, as a canine head was cooled from -99°C to the temperature of liquid nitrogen, -196°C . The crackphone has since been in routine use in Alcor cryopreservations.

Turning from the experimental to the clinical end of cryonics, 1995 was memorable for one cryopreservation that was filmed and featured in a Discovery Channel documentary, *Immortality on Ice*. The case itself is both interesting and public, and it is worth reporting briefly.

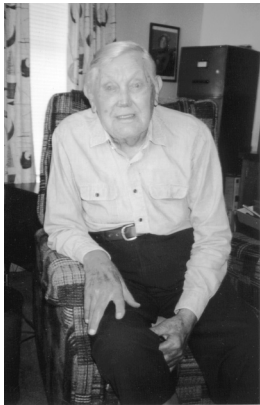
Stanislaw “Stanley” Penksa was born in April 1896, the son of Polish immigrants who came to the US in 1890 and settled in Pennsylvania. In 1912 the family moved to West Virginia. Young Stanley or “Stash” as he was called, worked in coal mines along with his older brother, Walter. At 17 he left home for Washington, D.C. While there he received a patent—his second—for a bathing suit insert that could be used as a flotation device if the



MRI images of glycerolized canine heads and unglycerolized controls.

swimmer tired. He then went to New York and settled into his main profession, contracting, which continued for about 40 years, interspersed with other occupations including raising Christmas trees, newspaper reporting, and, during World War I, some secret activity as an “investigator.”

Stanley lived to the age of 99; he never married or had children. Sometime toward the end of his life he became interested in cryonics and signed up with Alcor. In the summer of 1994 when he was 98 he visited our Scottsdale facility with his medical attendant, flying back home with a copy of Roy Walford's *120 Year Diet*. Stanley was cryopreserved (as a whole body) in November 1995. Other than the filming, the cryopreservation was largely uneventful. One incident of note was a 20-minute delay which occurred in transferring the patient to long-term storage in liquid nitrogen, this being due to a faulty electric winch. The patient did not warm significantly, according to Hugh Hixon's calculations, but a manual lifting system was afterward installed as a backup.



Stanley Penksa at 98, in 1994.

There was an event in December, the Third International Conference on Anti-Aging Medicine and Biomedical Technology, held in Las Vegas, Nevada. Alcor had a booth, and the speaker list included some prominent cryonics sympathizers such as Marvin Minsky and Ralph Merkle. (Merkle, by then an Alcor member of some years standing, is now an Alcor director, and Minsky,

who signed up in 1997, is on the Scientific Advisory Board.) The most important work seemed to be that of Geron Corporation of Menlo Park, Calif. on the role of telomeres and telomerase in both aging and cancer. As for cryonics, Merkle's talk was on nanotechnology and its relevance to the problem of resuscitation from cryopreservation. His optimistic conclusions were supported by a prominent cryobiologist, Gregory Fahy, who had further ideas on cell repair through future nanotech. Minsky focused on "rebuilding ourselves from the ground up"—becoming more than human through future technology and suggested we get motivated to overcome unnecessary restrictions on research.

I'll close this section on a philosophical note, with mention of an article by Thomas Donaldson entitled "Immortalism," which appeared in the 4th Quarter 1995 *Cryonics*. Thomas takes issue with those who feel we ought to downplay our quest for eternal survival by a careful choice of language. "Immortalism is a moral position," he advises. "It is not a statement about what is or is not practical now. Aims are not the same as Reality. Anyone who argues that we should work, say, towards 'life extension' because it is closer and more attainable as a practical achievement mistakes the basis of immortalism. The kind of cryonic cryopreservation we have now takes us only a few steps towards our ultimate goal. Life extension takes us a few steps more. Reversible freezing (or vitrification) is only another step. As immortalists we work toward such achievements not as final goals but because we exist now in a world in which we can take such steps, and know they will take us forward. They are only small steps towards our forever."⁴

2005: Brief Epilogue

The split in Alcor was healed a few years later; CryoCare became inactive, and most of the "rebels" rejoined Alcor, Mike Darwin among them. In 1998, 21st Century Medicine achieved substantial gains in the quality

of their cryopreservation techniques, and also around this time they began working with Alcor. Cryopreservations now done under good conditions at Alcor are vitrifications—of the brain at any rate—though the goal of demonstrated, reversible cryopreservation is still elusive. This and other things we would like to see will take time and patience, but we can as always be hopeful in our persistent efforts.



Notes:

1. Michael Darwin, "A Question of Time," *Cryonics* #8, 4-6 (Mar 1981).
2. Ibid.
3. "Interview with Michael Darwin," *Long Life Magazine* 4 (2) 32-37 (Mar/Apr 1980).
4. Thomas Donaldson, "Immortalism," *Cryonics* 16 (4) 26 (4th Qtr 1995).

Additional Sources:

1. *Cryonics* 16 (1-4; 1st-4th Qtr, 1995); 17 (1; 1st Qtr, 1996).
2. *The Alcor Phoenix* 4 (5), 1 (Aug 1997).
3. R. Michael Perry, "For The Record," *Cryonics* 26 (1), 17-21 (Jan-Feb 2005)
4. Michael Darwin, private communication circa 1987.
5. Hugh Hixon, private communications 4-6 Mar 2005.
6. Alcor archives.

Photo credits:

1. *Long Life Magazine* 4 (2), cover (Mar/Apr 1980).
2. *Cryonics* 16 (1) 27 (1st Qtr 1995).
3. *Cryonics* 17 (1) 12 (1st Qtr 1996).
4. *Cryonics* 17 (1) 22 (1st Qtr 1996).



The Alcor booth at the 1995 antiaging conference.

Left to right: Rhonda Iacuzzo; Derek Ryan; Judy Muhlestein; Steve Bridge; Thomas Munson, M.D.

MEMBER

NOTES

New Grandfathering Policy

At the February 5th Board Meeting, the Alcor Board of Directors approved a change to Alcor's Schedule A contract. It now reads as follows:

V. Changes to Arrangements: All members owe the cryopreservation minimum in effect at the time of membership approval for the elected method of cryopreservation, subject to the provisions of Section II, DUTIES OF ALCOR, Article 2, of the Cryonic Cryopreservation Agreement. If a member changes his or her elected method of cryopreservation the member will owe the cryopreservation minimum in effect at the time of the change.

This is a significant change from the previous policy under which members could alternate back and forth from one method of cryopreservation to another while only owing the rates that were in effect when their memberships were approved. Members who make no changes to their arrangements are not affected by this policy change.

Legislative Update



Barry Aarons

Mr. Barry Aarons, Alcor's lobbyist, stated during the most recent Board Meeting that Alcor may not have to face legislation this year. He is following bills pertaining to cloning, organ donation, and stem cell research, which would only have a tangential impact on Alcor. His opinion is that by offering tours of the facility, Alcor beneficially educated legislators about its operations and goals; Alcor plans to continue encouraging legislators to tour the facility after the current legislative session concludes. Interestingly, Bob Stump, who spearheaded last year's failed efforts to regulate Alcor, is working on a bill that supports stem cell research.

Lifetime CMS

Any US or Canadian member who wants to payoff Standby arrangements can do so with one of these options:

- Lump Sum Payment: \$4,000
- Three Annual Payments: \$1,500 each for a total of \$4,500
- Sixty Monthly Payments: \$100 per month for a total of \$6,000

This is a tremendous savings compared to the out-of-pocket expenses members were facing previously. As with Life Membership, these payments are non-refundable.

Rescission Of Charter Aircraft

Alcor's Board voted to rescind the Charter Aircraft Program until the program could be more thoroughly developed. It is fully expected that the program will be offered again shortly after all aspects are thoroughly vetted.

Web Hits Soar

Alcor's website was visited by over 29,000 distinct computers in February due mainly to a positive New York Times article titled "Please Don't Call the Customers Dead."



Improved Emergency Response

For many years, incoming emergency calls were handled solely by Alcor staff. In order to further professionalize our emergency response system, emergency calls will now be handled by a 24-hour answering service. The answering service staff will gather basic information about the emergency and immediately contact both transport personnel and staff present at the Alcor facility. The facility will still be constantly occupied for security purposes.

New Cryoprotectant Under Consideration

Alcor currently uses B2C cryoprotectants with its vitrification cases, but the Technical Committee is considering an improved cryoprotectant known as M-22. Unfortunately, the world supply of one of the ingredients required to produce M-22 is so small that it is not available in sufficient volumes. Tanya Jones has made arrangements to have a chemical company custom synthesize the ingredient, and it is expected to be delivered sometime in April.

Whole Body Vitrification

Whole body vitrification is progressing. The prototype cryoprotection enclosure that will be used for whole body cases is ready to deploy upon the adoption of the new cryoprotectant. In addition to the anticipated cryoprotectant upgrades, the whole body vitrification perfusion circuit is about ready. Some minor details are being worked on, and the development of a consolidated user interface panel is planned. Look for more updates soon.

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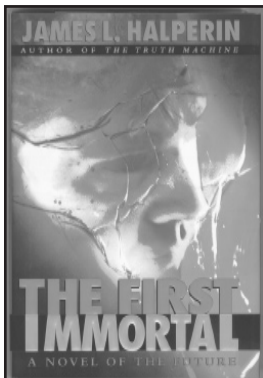
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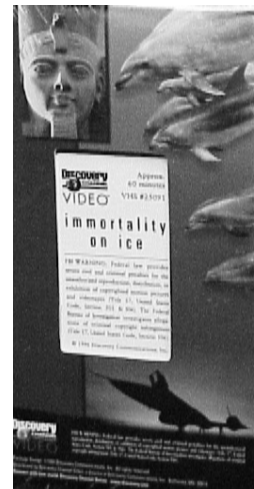
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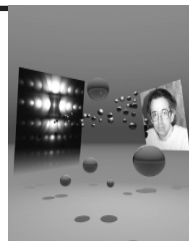
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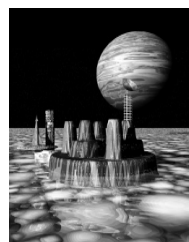
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