

ALCOR LIFE EXTENSION FOUNDATION

CRYONICS

4TH QUARTER 2010 • VOLUME 31:4

MEMBER
PROFILE:
BONNIE MAGEE

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SIGNING UP
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CRYONICS

4TH QUARTER 2010 · VOLUME 31:4



COVER STORY: PAGE 7

Member Profile: *Bonnie Magee*

The second installment of Alcor staff member profiles features Alcor Finance Director Bonnie Magee. Meet this committed, hoop dancing, cryonicist who watches over our finances.

Cover Photo: A far cry from living in the desert: Bonnie in the winter wonderland of her hometown of Waterford, Connecticut.

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Why do we write case reports in cryonics? How can case reports be used to improve the care for Alcor patients? How should case reports be written for a cryonics organization with an increasing number of cases? Aschwin de Wolf writes the first opinion article *about* case reports for *Cryonics* magazine.

9 Signing Up Your Relatives

You have made your cryonics arrangements. But many of your relatives have never given thought to the idea of cryonics, or even reject it. This can be especially challenging if they become terminally ill. Alcor Board member Ralph Merkle discusses some of the objections that relatives might raise and how to address them.

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FROM THE EDITOR

As 2010 is drawing to a close it is time to look back on some of our achievements and challenges. Since late 2009 Alcor members, Directors and other cryonics observers have weighed in on what strategic, financial and operational changes Alcor needs to make to remain financially healthy as our organizations grows. Some of the changes will affect the cost of making and retaining cryonics arrangements. We are confident that you will recognize the necessity of these decisions and think with us how to make Alcor even more financially sound.

In terms of membership growth 2010 was not the best year for Alcor. Not unlike other non-profit organizations we, too, are feeling the effects of the financial meltdown, high unemployment and insecurity about finances. It is important to realize that joining a cryonics organization is more than becoming the “consumer” of a product called cryonics. Joining a cryonics organization entails a decision to participate in a collaborative effort to make meaningful life extension possible. Cryonics is a life-and-death matter and we hope that it remains among your top personal and financial priorities.

When you are young you think there is still enough time to make cryonics arrangements...at some point in the future. And when you are old you have become tired of life or lack the resources to make cryonics arrangements. The time never seems right. Board Member Ralph Merkle discusses one of the toughest challenges of all, persuading relatives to make cryonics arrangements, or even more challenging, persuading them to do so when they have come terminally ill. Cryonicists have to walk a fine line between respecting the opinion of their relatives and pricking through the predictable rationalizations for choosing death. Cryonicists are sometimes accused of being self-centered, but can the same not be said about family members who are steadfast in leaving their family behind when human cryopreservation allows them a second opinion from a future physician?

For more than 30 years Alcor has made available public reports of its cryopreservation cases. But why do we write such reports, and what is the best way to write them? In an opinion piece about case reporting in cryonics, I review the most important reasons for documenting our cases and offer substantial and stylistic suggestions how to improve and use them. As a recent published case report for Alcor patient A-1097* shows, a thorough case report can be a rather demanding and labor-intensive affair. This raises the question how we can keep up publishing timely case reports without sacrificing important technical information. In my article, I take a first shot at this difficult problem as well.

In his review of *The Sociopath Next Door: the Ruthless versus the Rest of Us*, Mike Perry discusses the disturbing phenomenon of the “sociopath,” a dangerous personality type that can cause great mischief, in particular in a fragile field like cryonics.

I am always glad when we can do a member profile of an Alcor staff member or Director. In this issue you will meet Alcor's Finance Director Bonnie Magee, who has made a successful journey to arrive at the place where she can combine her professional skills and desire to extend and improve life.

* <http://www.alcor.org/Library/pdfs/casereportA1097.pdf>

Aschwin de Wolf

Case Reports in Cryonics

By Aschwin de Wolf

"The history of case report writing in cryonics shows an erratic potpourri of approaches and styles."



Introduction

The most important reasons for writing case reports are:

1. *To provide a transparent and detailed description of procedures and techniques for members of the cryonics organization and the general public.* A cryonics organization that never writes anything about its cases and procedures should be treated with more caution than an organization that does.
2. *To validate current protocol and procedures in general, and its actual implementation in particular.* A case report should not only record what happened but should be used for guidance as to what should happen in the future. A detailed case report, especially when a variety of physiological data has been collected, contains a wealth of information that can be analyzed for the team members' and patient's benefit. Cryonics cases are relatively rare (compared with other medical procedures), so we should try to learn as much as we can from the cases we perform.
3. *To serve as a medical record to assist with future attempts to revive the patient.* Although advanced future medical technologies may make it possible to determine the physiological condition of the patient down to the molecular level, it is important to provide as much medical information as possible to help in efforts to revive patients. Having a detailed record of the patient's condition prior to pronouncement, subsequent stabilization, and cryoprotection, may also help the organization in establishing the desired sequence of revival attempts.

4. To gain more scientific credibility. If we want scientists and physicians to take us seriously, we need to convince them that we attempting to cryopreserve our patients in a scientific manner. Professional case reports can provide this kind of credibility.

This article will mainly concern itself with the general question of how a case report can help a cryonics organization in improving protocol, techniques and skills.

Protocol

To be able to assess the quality of patient care in a cryonics case, it is important to specify what the intended protocol was prior to writing about the case. Only if we know what the organization was *supposed* to do will we be able to assess how successful the care was. For example, if there is no mention of collecting (and analyzing) blood gases during a case this may have been because it is currently not a part of the organization's protocol, but it may also be the result of a shortage of skilled personnel, defective equipment, or other problems or deficiencies. Unless the writer of the report specifies what should have happened, it is difficult to assess the quality of preparation and performance. If preparation for the case was poor and there was no (functional) extracorporeal perfusion equipment available, the case report should not simply state that the organization attempted to do a case without substituting the blood with an organ preservation solution, but also why the blood washout was not attempted.

In reality there will be many deviations between the organization's protocol and what actually happens. Human cryopreservation cases are not controlled laboratory experiments, and as many people who

have extensive experience doing cases know, unique situations present themselves, including frustrating events that are beyond the control of even the most skilled medical professional. Nevertheless, the inherent unpredictability and uniqueness of cryonics cases is too often used as an excuse or justification for failing to follow established protocol, or for serious errors and omissions in the care of the patient. Documenting the prospective protocol will help us to gain a more systematic understanding of what is possible (or essential) and within our control, versus that which is not.

Detail

The importance of writing detailed descriptions of the procedures and techniques employed during a case cannot be overestimated. This not only enables the reader to gain a comprehensive understanding of the techniques used, it also allows detailed analysis of the difficulties that were encountered during a case that would not have been noticed if there is only a brief mention of it. For example, instead of simply noting that medications were administered, providing comprehensive details is essential. There are many reasons why this is the case.

Case reports should be prepared with the possibility in mind that what may seem mysterious, or inexplicable, to the writer may

be crystal clear to an expert or perceptive reader when provided with sufficient detail.

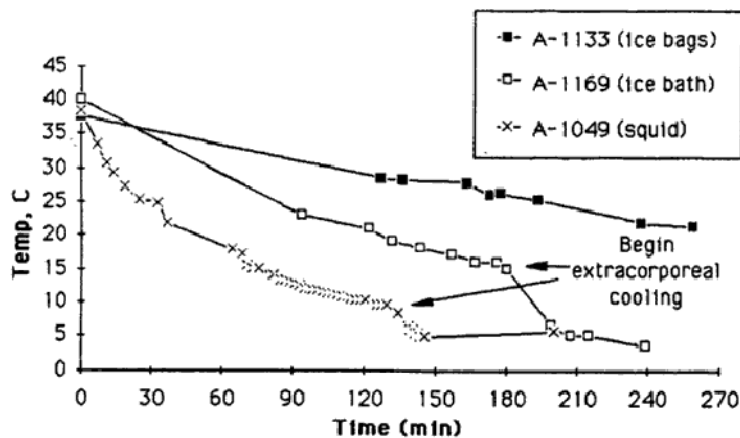
Providing as much detail as possible also serves to allow for replication of the techniques used by others. This is a critical component of the scientific method. Other investigators or practitioners must be able to duplicate the procedures and obtain the same outcome. Yet another consideration is that factors not now perceived or considered to be important may become so in the future. There are many examples of this in the history of cryonics that have proved essential to improving patient care. For example¹, in the early days of cryonics bags of ice were used to facilitate external cooling. It was not until comprehensive and consistent core cooling data were collected that it became apparent that this technique required 6-8 hours to cool a patient to ~+20°C (room temperature!) with the patient cooling at a rate of 0.064°C/min. Documentation of these appallingly slow cooling rates provided powerful incentive to develop stirred water ice baths which increased cooling rates to between 0.15°C/min and 0.33°C/min, allowing cooling to ~15°C within 90 minutes to 2 hours after the start of cardiopulmonary support (CPS) (see graph below).

This example is even more instructive because continued diligent and comprehensive monitoring of cooling in multiple

patients made clear other factors that were critically important to good outcome or, conversely, prohibited it. A large-framed obese male with heavy fat cover and a large amount of thermal inertia will not cool at anywhere near the rate that an emaciated, petite woman will. Evaluating the patient for fat cover and body mass index before deanimation allows reasonably accurate prediction of the cooling rate and may suggest the need for the addition of other cooling modalities such as peritoneal lavage with chilled fluid. Favorable results from application of peritoneal cooling in turn will suggest that even greater rates of cooling are possible for all patients and lead to the addition of the modality as a standard part of the protocol.

Failure to gather and promptly analyze data as basic as cooling rate precludes realization that problems exist as well as any possibility of solving them.

It is important to note that an incomplete case report doesn't necessarily indicate failure on the part of a cryonics organization. In a case where the number of team members is limited, all resources may have to be devoted to *doing* the case, instead of collecting data, or assigning an essential person to the job of taking notes. In the case of limited personnel it is better to do a good case without documentation than to document a bad case. To some degree this conflict between tasks can be avoided by having some of the team members (the team leader, paramedic, etc.) use a voice recorder with a clip-on microphone. But if the number of team members is insufficient, and data collection is not possible, this should be reported in the case report and recommendations should be made and implemented to prevent this situation from occurring again in the future. Good data acquisition and scribe work are essential for a good case report and, if feasible, should be a full-time job during a case.



Comparison of Cooling Methods: Above are actual cooling curves for three adult human cryopreservation patients on Thumper support, using ice bags, the Portable Ice Bath (PIB), and the PIB augmented by SCCD (squid) cooling. Patient A-1133 weighed 56.8 kg, patient A-1169 weighed 57.3 kg, and patient A-1049 weighed 36.4 kg. As this data indicates PIB cooling is approximately twice as efficient as ice bag cooling. The SCCD appears to increase the rate of cooling by an additional 50% over that of the PIB (roughly adjusting for the difference in the patients' body mass).

Analysis

Specifying the protocol and describing the case in great detail is necessary but is not sufficient. A critical review of the information and data culminating in a list of desired changes and specific plans to address them should complement this. Ideally every discrepancy between protocol and reality that has been observed during the case should be discussed. Even in a case where stabilization

¹ I am grateful to Mike Darwin for this example and for reviewing earlier drafts of this article.

started promptly after pronouncement, and the protocol was followed to the letter, there is still a lot of (physiological) data that, once analyzed, may require a change in the protocol in future cases.

To assess skills, identify critical failures, formulate solutions, and compare cases in a meaningful and valid way, a consistent and systematic format of reporting cases is essential. A typical case report should be divided into sections describing protocol, patient assessment, preparation and deployment of standby assets, the details of the case (divided in sections such as airway management, cardiopulmonary support, external and other cooling methods, blood washout, cryoprotective perfusion, and cooling to storage temperature), analysis, recommendations, and a variety of (public or non-public) appendices. Such appendices should include time-lines and graphic presentation of data, medications, cryoprotectants, and statistical analysis and comparisons to other cases.

Each case report should not only present solutions, or suggest tests and experiments to identify solutions, but provide a plan of action as to how these things can be accomplished. One approach to ensure that research and tests to validate solutions are implemented, and appropriate remedial action is taken, is to appoint an officer in the organization who is responsible for quality assurance and quality control. This individual's job will be to ensure that case reports are written in a manner consistent with the guidelines as outlined by the organization, as well as to ensure implementation of required changes.

Another critical role of case reports is to educate the organization's staff as well as consultants and, where appropriate, the patients' physicians and other health care providers about protocol, procedures and techniques. Although case reports are not and should not be a substitute for comprehensive written protocols, standard operating procedures (SOPs), and thorough training of personnel, sometimes solutions to problems can only be found in case reports where a team member was presented with an unusual problem. Consistent and systematic organization of case reports will greatly enhance the utility of case reports for this purpose. For example, if a reader wants to know about surgical techniques, and problems encountered in gaining access to the circulatory system for blood washout, consulting a case report will be far easier if

they're organized in a consistent and predictable manner.

Answering Objections

One objection to writing up a case report is that it is not a controlled experiment and at best provides only anecdotal evidence. This is not the case for the following reasons.

Not all the mistakes and issues identified are of a hypothesis testing nature. For example, if a patient presents the human cryopreservation team members with a problem that could not be managed with the equipment at hand, the cryonics organization doesn't necessarily need a larger number of cases to decide to make a change to their equipment, and to start teaching employees the necessary skills.

"To assess skills, identify critical failures, formulate solutions, and compare cases in a meaningful and valid way, a consistent and systematic format of reporting cases is essential."

Similarly, what may be perceived as anecdotal evidence for the cryonics organization may be a consistent finding in nearly identical settings in mainstream medicine. For example, some issues during a human cryopreservation case may be well known in hemodynamic management of potential organ donors in hospitals, or, for example, a medication in the protocol that is undergoing trial as a stroke therapy may demonstrate the same adverse effects observed during transport of a cryonics patient.

Of course, such lessons are impossible to learn without both broad and deep knowledge of medicine and the relevant research literature. Considering the ever growing number of publications and hyper-specialization, case reports may increasingly become collaborations between numbers of people with expertise in diverse areas. The individuals with the most valuable input do not necessarily have to be the ones who did the case. A physician dealing with similar issues in a neuro-intensive care unit may identify problems and propose solutions not

obvious to those delivering cryonics care to the patient.

Monitoring

We don't know how our patient is going to fare in the future but we can know a lot about how our patient fared up to the point of long term low temperature care *if* we monitor his condition continuously. This starts from collecting detailed pre-mortem medical data to monitoring fracturing events during cooldown.

It is tempting to say that a case went very well if all the steps of the protocol were followed in a timely manner. This is not unreasonable because one would expect a strong correlation between an evidence based protocol and optimal care. But it is important to keep in mind that the goal of stabilization and cryopreservation is to treat the *patient* and not the book (as a saying in emergency medicine goes).

Without comprehensive monitoring of the patient through all parts of the procedures a case report will only document a predictable series of mechanical steps and some crude visual indicators of (relative) success at best. The things we are really interested in, like (quantitative) end-tidal CO₂ measurements, cardiac output, pH, and cerebral oxygenation, cannot be observed without sophisticated equipment.

Not only do we want to know how the patient is doing after the fact, we would also like to be able to intervene *during* a case if we observe a trend that suggests (alternative) treatment. Only in-depth reporting and analysis combined with a sound understanding of the physiopathology and available treatments will enable us to do so.

Presentation

A comprehensive list of dos and don'ts in writing case reports is not something that can be explored in this article, but some things are worth mentioning. Stylistically, a human cryopreservation report should resemble a medical or research report rather than a sensationalized adventure for the patient or the standby team. This should apply to the organization of the material as well as the choosing of words. As a general rule mainstream medical terminology should be used instead of cryonics jargon. Editorializing should be limited, and if perceived necessary, be moved to the proper section of the report. For example, jumping from a technical description of procedures to quarrelling among relatives or com-

plaining about government regulation doesn't look very professional.

Protocol, procedures and techniques should be the subject of the report, not people. Cryonics preparation and procedures are very demanding and exhausting for all people involved and mistakes are made and will be made. Errors should be presented as dispassionately as possible to avoid a culture of blame and personal conflict. Experience also teaches that (potential) participants are more open to transparent reporting if a case report will not single out individuals in describing procedures.

No matter how competent the writer of the report is, each report should be proofread by most or all individuals who were involved in the case and, if possible, a variety of outsiders with appropriate technical and medical knowledge, before it is released to the general public.

Patient Care

Writing case reports as presented in this article may be more demanding and time-consuming than generally has been done in human cryopreservation, but the results may improve patient care to a degree not previously seen. Ultimately, the most ambitious use of case reports will be one in which the case reports are analyzed as a series, measurements are compared, and patterns are established. Reading (and evaluating) a series of case reports in a systematic manner will even enable us to answer some very fundamental questions as to whether, or the degree to which, protocol, procedures and techniques have improved over the years.

Providing the best patient care possible for current and future patients is the reason why cryonics organizations exist, and considering how powerful a tool a good case report can be, a responsible cryonics organization should devote considerable resources and time to writing them.

As our members and resources increase, and human cryopreservation gradually becomes a part of mainstream medicine, the successful transition from basic algorithm, volunteer driven case to evidence-based cryonics will be an important mandate.

Case reports and increasing caseload

One of the biggest challenges facing a growing cryonics organization is that the organization will be faced with a growing

number of cases per year. This challenge is further amplified if all these cases need to be documented. As a consequence, a cryonics organization will find itself allocating an increasing amount of time to writing case reports and falling behind publication schedule. One of the most unfortunate responses to such a development would be to make an attempt to keep writing case reports in the old style but to lower standards and take short cuts.

"Although advanced future medical technologies may make it possible to determine the physiological condition of the patient down to the molecular level, it is important to provide as much medical information as possible to help in efforts to revive patients."

An alternative approach is to develop a new format for case reports that allows for a shorter report but still captures the essential objectives of case reporting. One approach is to eliminate all the narrative that is not essential for following the mechanics of the case and evaluating the quality of care. In the past there have been a number of case reports with excessive narrative but little technical reporting or analysis. For a cryonics organization with a growing caseload the opposite approach should be followed. Another approach is to eliminate detail about procedures that were performed without deviations from past protocol and expectations, provided that this is made explicit in the report. As a result, case reports will increasingly read as a description and commentary on events that diverged from protocol or new observations about existing procedures.

To establish a template for such case reports the following approach can be followed. First, it is established what kind of

information is essential for doing a meta-analysis of all cryonics cases. Then these parameters are reverse-engineered to create a template for writing case reports that reconcile the need for economy of expression and documenting all the relevant aspects of a case. One important advantage of producing such case reports is they permit easier consultation of the technical details of the case and still meet the fundamental objectives of writing case reports.

The history of case report writing in cryonics shows an erratic potpourri of approaches and styles. One of the most unfortunate casualties has been the objective of using case reports to improve the practice of human cryopreservation and to formulate meaningful research questions for the sciences that inform cryonics. But if systematic thought is given to the objectives of case reporting outlined in this document, steps can be taken to leave this unsatisfactory situation behind while meeting the needs of a growing cryonics organization. ■



About the Author

Aschwin de Wolf

Aschwin de Wolf is the editor of *Cryonics*, advisor to the Alcor Board of Directors and cryonics researcher. He also writes for the blog Depressed Metabolism: <http://www.depressedmetabolism.com/>



MEMBER PROFILE:

BONNIE MAGEE ALCOR FINANCE DIRECTOR

By Chana de Wolf

Bonnie Magee has served as Finance Director since 2009, overseeing Alcor's accounting and financial reporting. She also organizes the Phoenix Cryonics Meetup and participates in local Alcor cases.

It is a comforting thought to know that your cryonics organization's interests are being looked out for by someone with the same priorities as yourself; so it was with great enthusiasm that Alcor welcomed accountant and Alcor member Bonnie Magee as Finance Director in October 2009. The feeling is mutual – Bonnie has, as you will see, made significant changes in her life in to follow her own path to Alcor's door, where she is happy to put her talents to good use for the worthy cause of saving lives.

Bonnie was born and grew up in Waterford, Connecticut. After high school she skipped down the road to the University of Connecticut, where she majored in physics for a couple of years before transferring to the School of Business. Bonnie explains, "I liked science but decided I didn't want to stay in physics. At the time, I thought I might want to run my own business someday, so accounting seemed like a logical choice." So she obtained a bachelor's degree in accounting in 2001 and ventured into the wide world of finance. Bonnie worked as an auditor at a public accounting firm in Glastonbury, Connecticut for six years, taking a few graduate courses along the way.

Somewhere along the way, around 2003, a friend of Bonnie's introduced her to the idea of cryonics. "I knew immediately that I wanted to sign up," she said, "but waited for a couple years before sending in the paperwork." She joined Alcor in 2005, citing a love for life and an intense curiosity about the future as major motivators.

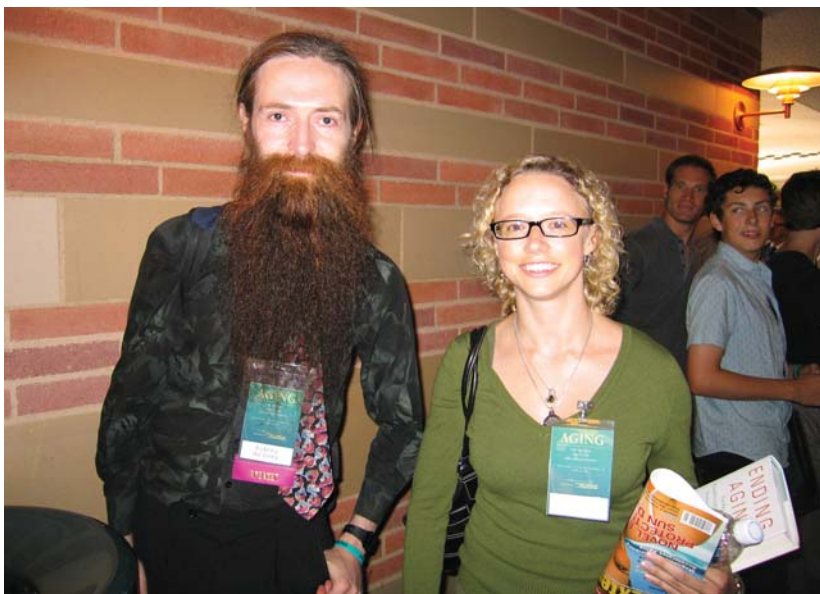
In stark contrast to her excitement for the future, however, Bonnie began feeling increasingly suffocated in the present. "I was born, grew

up, went to college, and was working in Connecticut. I felt like life wasn't going the way I wanted," she recalls. "Now I was an Alcor member and I wanted to meet other cryonicists, but I think there was only one other cryonicist in Connecticut at the time. I felt extremely isolated – also for being transhumanist, atheist, and vegan, as well as a cryonicist, and open about all of those things. I didn't [know] many people who understood my perspectives."

Fortunately, not long after Bonnie became a member, a New England cryonics meetup group got underway in Boston, which she attended regularly. She was also able to attend the 2006 Alcor



Bonnie at a 2006 meeting of the Boston cryonics group.



Bonnie with aging researcher Aubrey de Grey at the 2009 Ending Aging conference in Los Angeles, California.

Conference, which she describes as “one of the best experiences I had ever had. I felt very much at home in that group of people.”

Hoping to integrate that kind of like-minded camaraderie into her life on a permanent basis, Bonnie ventured west in early 2008 to San Diego, where her older brother Leon had lived for a few years. She started work at an accounting firm and began looking for like-minded friends. Bonnie attended the Ending Aging conference in Los Angeles where she met other Alcor members. She quickly joined the Alcor Southern California standby and stabilization team and began driving to LA to attend training sessions.

Living in San Diego, Bonnie was also finally able to meet other transhumanists and began volunteering her accounting skills for Humanity+ (formerly the World Transhumanist Association). Through her ever-increasing network of cryonicist and transhumanist friends, Bonnie was offered the opportunity to work for Alcor and moved to Scottsdale, Arizona, in October 2009 to become Alcor’s Finance Director.

In this position Bonnie strives to improve the financial stability of Alcor. “We need money to improve our capabilities,” she explains, “and a more stable income to ensure that we will be viable for the very long term. I feel that this is the best place for me to apply my skills, the most rewarding accounting job I could have. Although I honestly hope to never need to be cryopreserved myself, it’s an honor to help provide that option to others.” Besides minding the numbers, Bonnie also participates

in cases, hosts the local Phoenix Cryonics Meetup group, and frequently socializes with other Alcor members. Having moved across the country to become more actively involved in cryonics, it comes as no surprise that Bonnie is a shoo-in for organizing such gatherings. “I greatly enjoy the company of other cryonicists,” she explains, “and love the idea that I may know them for thousands of years.”

In the meantime, Bonnie continues to remain true to herself and is open about her cryonics arrangements with friends and family, both for her own protection and in the hope of convincing others to sign up. She maintains connections with non-cryonicist friends back in Connecticut, and while all are supportive of her wishes, she is disappointed that so far none have signed up.

Outside of cryonics, Bonnie’s major hobby is keeping two large freshwater tropical aquariums. “Keeping the aquariums has always been an outlet for my scientific side, which I haven’t been able to take advantage of [as] an accountant,” she says. “I also have two cats. When I moved from Connecticut to California I drove across the country with forty fish, two cats, and my Mom in the car with me. We all made it despite my car breaking down in Texas! I made it through that trip largely with the help of my parents, it was quite an adventure. I am constantly trying to convince them to sign up with Alcor, so that we can continue the adventures indefinitely.” Bonnie also enjoys gardening, bicycling, snorkeling, and has recently taken up hoop dancing.

Bonnie has just begun her cryonics adventure, but she is obviously committed to the cause and to helping out in any way she can. She encourages others to do the same, and especially to visit Scottsdale to see the Alcor facility and meet other Alcor members. Ever cognizant of inviting everyone to the party, she reminds us that “All members are welcome to attend the monthly cryonics meetup group, and are welcome to contact me anytime.”

Who knows – like Bonnie, you may just find what you’ve been looking for! ■



Hoop it up! Bonnie has recently taken up hooping, which she enjoys practicing here in an Arizona park.

Signing Up Your Relatives

By Ralph C. Merkle

Introduction

You've thought about cryonics for quite a while, analyzed the issues pro and con, checked out the organizations, finally got all the paperwork taken care of and ... congratulations! You're now a member in good standing!

Time to relax and enjoy the fruits of your labor, right? Well, almost. What about mom and dad? Or your spouse? Or that special brother or sister, or uncle or niece or cousin? Or your closest friends?

Even if they decide cryonics is something they want to do, *everybody* procrastinates, so how long will it take them to actually sign up? There's no guarantee they will *ever* decide to do it. They might procrastinate until it's too late.

Which means you should help the process along. You need to introduce them to this new set of ideas slowly, gradually, but effectively. Where to start? What's the best approach?

Let's pick a name – you're trying to get Pat (who could be either Patrick or Patricia, husband or wife, brother or sister, father or mother, uncle or aunt, niece or nephew, or any close friend or relative) to sign up. You care about Pat, and hopefully Pat cares about you. But Pat might or might not see eye-to-eye with you on a variety of issues, cryonics included.

Starting Out Logically

Before you even begin, you need to understand that simply asking “would you like to sign up with Alcor?” carries with it the risk that Pat might say “no.” Once Pat says “no,” it's harder to get to “yes” than if you had never asked.

So unless you are pretty sure the answer is going to be “yes,” don't ask. Instead, start understanding Pat's views on cryonics, or perhaps more cautiously start with life extension in general. Where you start depends a lot on Pat's sensitivities and how much time you have. If Pat is terminal you'll have to accelerate the schedule even at the risk of hearing “no.” But normally you'll have time to approach the subject more carefully.

One of the safer approaches is to discuss your own interests in cryonics. If you and Pat share similar outlooks this approach also has the advantage that the perspective that persuaded you is likely to work with Pat. It also lets Pat see how the various issues cryonics raises can be worked through on a familiar example: you. At the same time, you aren't asking Pat to reach any conclusions or make any decisions, you are only asking Pat to listen to a story: your story. Most people are willing to listen to a story, particularly one about life, death, science, technology, the future, and the amazing possibilities that wait ahead for all of us in the coming decades.

If Pat likes books or videos there are plenty to recommend. YouTube and the web offer a wealth of possibilities. The Alcor FAQ at www.alcor.org/FAQs/ or the cryonics page at www.merkle.com/cryo offer some excellent suggestions. If Pat doesn't have much enthusiasm for cryonics, you can try the nanotechnology approach. Amazing computers! Astonishing medical technology! Type “Merkle Nanotechnology” into one of the video search engines and select an “Introduction to Molecular Nanotechnology” for a good overall intro-

duction to that area. You can also check out [LessWrong](#) or [OvercomingBias](#) for free-for-all discussions of cryonics, technology, and the many foibles in human thought; or www.FirstImmortal.com for a free download of an entertaining and thought-provoking pro-cryonics novel.

Friends and Family

More social approaches involve friends, social interactions, lunches, meetings, movies, or conferences that are cryonics-friendly. Depending on where you live getting involved in these can range from easy to very difficult. Cryonics groups with regular meetings now exist in several areas, and more are on the way. It's a lot easier to make a decision if you do it with others, so any friendly social support you can create will help not only you and your friends and relatives, but everyone else in the area as well.

A common concern, which Pat might share, is fear of waking up in a future with no friends. At the very least you can reassure Pat that you plan on being there. If there are any children or grandchildren that Pat is fond of, they can also be brought into the picture. Let's say Pat is fond of young Dorothy.

“And what about Dorothy? She adores you. You'll be able to talk with her when she's grown up. You'll be able to pass on the family history, to find out what she's done with her life.” Advances in medical technology in the next 60 years will almost certainly greatly extend human life span, implying that Dorothy, who can reasonably expect to live for 60 more years without any further advances at all, will have access to

remarkable technologies and will have a very long and very healthy life indeed – long enough to be there when Pat is revived. Of course, you’ll have to persuade Pat that this is plausible – but the same set of technologies required to revive Pat will have earlier demonstrated their abilities on easier problems – like keeping Dorothy alive and healthy well beyond what is possible today. If Pat thinks cryonics has some credibility, then keeping young Dorothy alive long enough is likely to have similar credibility.

If you’ve persuaded any other friends or family members to join Alcor you can tell Pat about them, and you can also introduce Pat to any friends in the area who are already members. If Pat wakes up in the future, anyone else who has signed up should wake up with her. Any existing social ties with people who are either (a) very young or (b) already members of Alcor can help reassure Pat that the future will have at least some familiar faces.

The purpose of this first phase is to answer all the basic questions and to provide all the information that you can, and to get Pat used to the idea of cryonics in a non-confrontational atmosphere. There’s no need to get into any emotionally charged discussions if Pat hasn’t heard that cryonics is paid for with life insurance, or that vitrification eliminates ice formation, or that tissue preserved in liquid nitrogen is effectively unchanged for thousands of years, or that you think it’s a good idea, or that there are reasonable people (hopefully friends that Pat can meet) who are already signed up.

Should You Ask?

At some point you’ll have to make a decision: should you move forwards and ask about Pat’s personal interest in cryonics, or should you continue with the soft sell?

While it would seem that there is no choice, that you have to ask whether Pat is interested or Pat has no chance of being cryopreserved, this is not strictly true. If you don’t ask, then the legal decision might well fall to Pat’s kin following Pat’s legal death. There are very specific laws governing who has (or does not have) the authority to make “post-mortem” arrangements to cryopreserve Pat. Specific legal documents left by Pat would normally take precedence. In their absence, legal authority falls in a specific order on surviving relatives – typically the spouse, then the children, then the parents, then the siblings, then more distant relatives – but this might vary depending on the jurisdiction.

If you ask, and the answer is no, then Pat will not be cryopreserved. If you do not ask then the answer is often no, but it really depends on very specific details: exactly who will make the decision? Do the people making the decision understand cryonics? Can they give informed consent? Exactly where will the funding come from? Are there relatives who will object? While it’s possible Pat will be cryopreserved if you don’t ask, this path is fraught with dangers and the actual answer depends on the exact circumstances and events at the time of legal death.

Facing Mortality

People sometimes become more flexible when they find themselves facing their own mortality. When your doctor tells you you’re dying, or you need a biopsy on that lump to see if it’s malignant, or you wake up in the hospital and everyone is oh-so-reassuring, you can sometimes be more willing to listen to new options. Maybe that vegetarian diet and exercise program wouldn’t be so bad. And that cryonics business – OK, maybe you’ll listen. These moments are not to be squandered, and they come on their own schedule.

So let us imagine that you visit Pat in such a moment, in the hospital, and out of the blue Pat says “I almost didn’t make it. I’ve been thinking about what you said, and I’ve decided to sign up with Alcor. Once I’ve recovered I’ll fill out the forms. What’s involved?”

Success! But wait, Pat is in the hospital. People *die* in hospitals. And what was that about “once I’ve recovered...”? How long will it take to recover? And add to that all the time it takes to make all the decisions (neuro is so much less expensive but do I really want to tell everyone that’s what I’ve done?) *and* get all the paperwork filled out and notarized and witnessed. Exactly how healthy is Pat? How bad was that surgery? How big is the risk that Pat will die before every “i” is dotted and every “t” crossed? The fact that Pat just had a brush with death means there’s more risk than either of you want to think about.

Durable Power of Attorney for Cryopreservation

But you are prepared, right? You say “That’s great! I just happen to have a Durable Power of Attorney for Cryopreservation with me that you can sign right now. This hospital probably has a

Notary Public on staff, and if not we can look one up in the yellow pages and for a small fee (perhaps ~\$80 on short notice) they’ll drive over *right now*. And we’ll need two witnesses. Two nurses will do just fine!”

While it might be legally possible to get away without the notary, consider the circumstances under which this form might be used – there are likely to be no other records and no other “neutral” witnesses to Pat’s intent, and it’s quite possible that Pat had previously expressed disinterest in cryonics. So don’t skimp. And make sure the witnesses talk with Pat and understand that Pat understands what’s going on. If there are any questions later, you want the witnesses to say “Yes, it was very clear that Pat wanted to be cryopreserved, and was aware and alert, and completely rational. No, no signs of dementia or delirium. Yes, Pat understood exactly what it meant, we all talked about it.”

While the precise form and requirements for a Durable Power of Attorney vary from state to state, the general idea is illustrated in the form shown here, which is for California.

This form and the associated legal rituals involved in witnessing and notarizing it do several things. First, it declares Pat’s desire to be cryopreserved, and provides witnesses who can attest to this. Second, it gifts Pat’s human remains to Alcor. Third, it creates a power of attorney so that you can carry out Pat’s wishes. Fourth, it makes that power durable so that even if Pat suffers from mental decline (all too common in a hospital setting for a variety of reasons) or is simply too weak to cope with the task, you will still be able to carry out Pat’s wishes. And fifth, at least in the example given here, you are paying for Pat’s cryopreservation (which eliminates one reason Pat might have for saying “no”).

Scenarios

Once you’ve gotten the Durable Power of Attorney for Cryopreservation signed, notarized, and witnessed there are three likely scenarios.

The first and best scenario is that Pat recovers uneventfully, completes the Alcor paperwork, and becomes an Alcor member. The Power of Attorney is not needed.

The second scenario is that Pat becomes mentally incompetent (likely from a medical problem related to but secondary to the cause of hospitalization). The Power of Attorney is critical in completing Pat’s signup. Congratulations on being prepared!

The third scenario is that Pat suffers legal death either in the hospital or shortly after discharge but before completing the sign up process. At this point, the Power of Attorney is rendered null and void because that is their nature. They cease to be effective upon the death of the principal. The notarized and witnessed declaration of Pat's desire to be cryopreserved remains valid, as does the gift of Pat's human remains to Alcor. These, coupled with the subsequent written agreement of the next of kin and the financing that was secured (in large part because everyone agreed that the notarized and witnessed document provided clear evidence of Pat's wishes, and everyone wanted to honor Pat's wishes) were sufficient to carry the day. Again, congratulations on being prepared!

If you didn't get the Durable Power of Attorney for Cryopreservation signed, notarized and witnessed there are two likely scenarios. The first scenario is the same as before: Pat recovers uneventfully and joins Alcor. You just dodged a bullet.

The second scenario is painful even to think about: you watch Pat die knowing that Pat wanted to be cryopreserved but having neither a legal basis to make the arrangements nor even evidence to convince anyone else that Pat had actually wanted to be cryopreserved. Pat was either buried or cremated. Our condolences.

Pat is Not Convinced

The preceding scenarios assumed that a brush with mortality was enough to convince Pat to sign up with Alcor. This is not always the case. Sometimes, even after years of reasonable rational discussion, Pat isn't convinced. In this particular scenario, your hand is forced because Pat is terminal and time is running out.

Again, you visit Pat in the hospital.

You arrive, and Pat says "It's nice to see you. I'm feeling better today. They've got some new kind of painkiller that's just marvelous."

"That's right, you can have all the marijuana you want now, right?"

"Yeah, but it leaves my brain kind of foggy. I like the new stuff. It's expensive, but it leaves my brain clear and the insurance pays for it."

"Well, I'm glad to hear your brain is clear. Look, I'd like to talk with you about something."

"No, I don't want cryonics."

An Emotional Argument

Well, you've tried all the soft sell approaches. You've used all the rational arguments. You've pointed out all the simple, easy, straightforward reasons why Pat should choose cryonics. They haven't worked. It's time to try something with a bit more punch:

"How would you feel if I put a shotgun in my mouth and blew out my brains?"

"What?"

Pat might well try to evade answering the question. The obvious counter to any attempt at evasion is to simply repeat the question (possibly in shortened form or possibly after acknowledging Pat's attempted counter but then saying that doesn't answer the question):

"How would you feel if I put a shotgun in my mouth and blew out my brains?"

It seems unlikely that Pat would feel at all good in response to your hypothetical action, so we can reasonably assume that Pat eventually provides some variant of the following answer:

"Terrible!"

At which point you can say:

"That's how I feel about what you're doing. Look, it's easy for *you* to say you don't want cryonics. You won't have to grieve over your own death – but I will. Remember when <beloved relative> died? Remember how you felt? Well, that's how I'm going to feel if you aren't cryopreserved. And I'm going to keep grieving for you for the rest of my life. Is that what you want to leave me, a lifetime of grief?"

If Pat has conceded that cryonics has some chance of working you can make an even stronger argument: "Even worse, think about what happens if cryonics is successful and I'm revived and rejuvenated: the rest of my life could be thousands of years or even longer. I'm scared I'll never stop thinking about you and wishing you were with me, going over this conversation we're having right now again and again in my mind, and blaming myself for not being more persuasive, for not trying harder, and for eventually giving up."

The primary purpose of the opening question and the essentially forced response is to snap Pat out of the "this is my decision and nobody else has a say in it" mind set. Pat's decision influences more people than

just Pat (if Pat cares about anyone else who supports cryonics, mention them as well). It's also appealing to an implicit notion of fairness. If there's some important reason Pat should be buried or cremated rather than cryopreserved, now is the time for Pat to explain it – otherwise Pat is just hurting people for a whim, and most people most of the time try to avoid hurting others, even if it means they can't do exactly what they want.

The emotional argument being made is quite simple and is based on few assumptions. Stated explicitly, it is: "Pat, if you are buried or cremated your loved ones (at least those of us who think cryonics is a good idea) will suffer and grieve for decades, if not a lot longer. If you're cryopreserved, we won't. Is being buried or cremated really so important to you that you are willing to put us through that kind of pain? For what reason?"

This emotional argument is valid regardless of Pat's skepticism or doubts about cryonics – because it's *your belief* in cryonics that makes it work, not Pat's doubts.

Distractions: It Won't Work

Pat might try to distract from the core emotional argument by any of several techniques. For example, Pat might say:

"So you say, but nobody thinks this cryonics stuff is going to work."

While I normally love a technical argument – because I enjoy winning – at this point Pat is using the technical argument to divert attention away from the emotional argument, which Pat is losing. There are two obvious counter arguments. The first counter is to refuse to engage in a technical discussion at all by saying something like "But I believe cryonics works. So if you are cryopreserved I won't grieve your death. Perhaps I am wrong, but right now, today, based on the currently available evidence, I believe cryonics works." This can be used by itself if you are not comfortable with a technical counter.

The second counter is to use a simple technical argument and get back to the emotional argument. Something like: "You've had plenty of time to check out cryonics, and didn't. We both know the published technical literature on cryonics supports it, I've told you this before. I'll repeat it: *there are technical articles and credible technical arguments that support*

¹ Jim Halperin, author of *The First Immortal*, the most insightful novel about cryonics ever published, gave this description when he reviewed an earlier draft and said "This is the exact argument that finally convinced my dad earlier this year after countless unsuccessful attempts over the previous 15 years."

cryonics. There are no credible technical arguments against the feasibility of cryonics. Name *one* credible technical argument that cryonics won't work. Just one."

If Pat tries to counter with the usual shallow newspaper coverage that says cryonics is "controversial" the counter is "That's not a technical argument." Optionally, you can either point out that the newspaper has presented no argument at all, or explain why the "argument" that it presents is nonsense. You can also counter with "Do you have a reference for that?" This is useful when someone says "I heard somewhere that someone said that some scientist found that freezing brains causes them to explode."

Normally this sort of cheap "name one" argument relies on the fact that average folk can't name much of anything. In this case, though, there literally are no technical arguments against cryonics that can withstand even a moment's scrutiny. The technical literature is bereft of any credible argument that cryonics won't work. This is a short, easy and very strong argument. You should verify this personally so that you can use this argument with some confidence. To use it most effectively you should be prepared to counter the more common myths, falsehoods, and outright lies – (the brain dies after five minutes, frozen cells look like hamburger, all the molecules are destroyed, etc.) that are commonly used to dismiss cryonics. Most of them can be found in Alcor's FAQs.

Perhaps most effectively, you can use both counter arguments. Firstly, this is not about whether cryonics actually works, it is about the fact that you *believe* cryonics works; and secondly, the technical literature says cryonics should work, which is a major reason that you believe it works.

Other Distractions

At this point, Pat is pretty much reduced to the "it's too expensive" argument and the "it would look strange" argument.

The simplest counter to the "it's too expensive" argument is "I'll pay for it." Of course, there are some issues with this. If Pat is your spouse, it's not clear this makes much difference as you and Pat likely share your finances anyway. Pat can also counter with "I won't let you take on such a burden for my sake." There is also the problem that it is expensive and it is a burden. Depending on your circumstances, and how close you are to Pat, this might be a serious consideration.

It's best to have thought this through before entering into the discussion. If you have decided you'd rather cryopreserve Pat than have the money, then the counter is "Your life is worth more than the money." This can be phrased in various ways – you might want to think about which way will best persuade Pat. An aggressive phrasing is "Do you really think I'd be happier letting you die to make a few bucks?" More politely, "I can always make more money, but once you're dead, you're dead." You can avoid explicit discussion of money entirely and simply say "I'd rather have a future with you than without you."

Pat might fear what the other relatives, or the neighbors, or the sewing circle, or whoever will say about being cryopreserved. First, you can promise to be discreet. You won't tell them, there will be a memorial service, it will be very tasteful, etc. Second, Pat can always tell them it's a favor to you – which it is. Pat can claim to have graciously decided to honor your deeply held concerns by being cryopreserved, and need not confess to anyone that cryonics was starting to sound pretty attractive, especially when compared with the ever more imminent and rather unattractive alternatives. And finally, if you've secured any support from other family members or the relevant social groups, you can cheerfully announce that they think cryonics is just fine!

If Pat says "yes" at any point during the previous discussions you should immediately get Pat's witnessed and notarized signature on the Durable Power of Attorney for Cryopreservation. Don't forget to review and revise this document with an attorney to create a version that is valid for your jurisdiction, and to review and perhaps revise the funding mechanism to be consistent with your circumstances. After that is done, you can sign up Pat with Alcor.

If Pat never says yes, you are up against some deep seated prejudices. There's not much more to do, particularly if time is limited. If Pat denies it will work, doesn't care if she ever meets a grown-up Dorothy, doesn't care if you spend the rest of your life grieving, is terrified of what Aunt Sophy thinks (even after Aunt Sophy says she doesn't care), and thinks dying is (for some mysterious reason) a very attractive option, then it's pretty much over. If you have enough money you might try a \$1M bribe to Pat's favorite charity, but at some point we have to confess that we are not going to win all the battles.

Conclusion

Persuading Pat to sign up starts out slow, cautious, and logical. It begins with gentle probes, providing easily digestible material that explains what's going on and provides more in-depth coverage of those areas where Pat is curious, or has doubts, or wants deeper understanding. Connect Pat with the relevant social networks and research communities that are exploring the concepts of life extension, cryonics, nanomedicine, nanotechnology, and other related areas that might be of interest. Go for the easy wins and the simple arguments first. Life insurance is cheap. Cryonics is about saving lives. The science is there. There are no credible technical arguments against it. You'll wake up healthy, not old and feeble. You'll make your cryonics friends and relatives happy.

When that process has gone as far as it can, see if it has influenced Pat to take personal action. If not, move to more emotionally based arguments that appeal more directly to more basic motives, eventually moving to the most basic and raw motives.

Best of luck. ■

About the Author

Ralph C. Merkle

Ralph C. Merkle received his Ph.D. from Stanford University in 1979

where he co-invented public key cryptography. He joined Xerox PARC in 1988, where he pursued research in security and computational nanotechnology until 1999. He was a Nanotechnology Theorist at Zyvex until 2003, when he joined the Georgia Institute of Technology as a Professor of Computing until 2006. He is now a Senior Research Fellow at the Institute for Molecular Manufacturing. He chaired the Fourth and Fifth Foresight Conferences on Nanotechnology. He was co-recipient of the 1998 Feynman Prize for Nanotechnology for theory, co-recipient of the ACM's Kanellakis Award for Theory and Practice and the 2000 RSA Award in Mathematics. Dr. Merkle has fourteen patents and has published extensively. His home page is at www.merkle.com.



DURABLE POWER OF ATTORNEY FOR CRYOPRESERVATION and gift of human remains

Notice as required by California Probate Code Section 4128:

Notice to Person Executing Durable Power of Attorney

A durable power of attorney is an important legal document. By signing the durable power of attorney, you are authorizing another person to act for you, the principal. Before you sign this durable power of attorney, you should know these important facts:

Your agent (attorney-in-fact) has no duty to act unless you and your agent agree otherwise in writing.

This document gives your agent the powers to manage, dispose of, sell, and convey your real and personal property, and to use your property as security if your agent borrows money on your behalf. This document does not give your agent the power to accept or receive any of your property, in trust or otherwise, as a gift, unless you specifically authorize the agent to accept or receive a gift.

Your agent will have the right to receive reasonable payment for services provided under this durable power of attorney unless you provide otherwise in this power of attorney.

The powers you give your agent will continue to exist for your entire lifetime, unless you state that the durable power of attorney will last for a shorter period of time or unless you otherwise terminate the durable power of attorney. The powers you give your agent in this durable power of attorney will continue to exist even if you can no longer make your own decisions respecting the management of your property.

You can amend or change this durable power of attorney only by executing a new durable power of attorney or by executing an amendment through the same formalities as an original. You have the right to revoke or terminate this durable power of attorney at any time, so long as you are competent.

This durable power of attorney must be dated and must be acknowledged before a notary public or signed by two witnesses. If it is signed by two witnesses, they must witness either (1) the signing of the power of attorney or (2) the principal's signing or acknowledgment of his or her signature. A durable power of attorney that may affect real property should be acknowledged before a notary public so that it may easily be recorded.

You should read this durable power of attorney carefully. When effective, this durable power of attorney will give your agent the right to deal with property that you now have or might acquire in the future. The durable power of attorney is important to you. If you do not understand the durable power of attorney, or any provision of it, then you should obtain the assistance of an attorney or other qualified person.

NOTICE: The validity of this form in any state or jurisdiction other than the State of California has not been reviewed or evaluated and should not be relied upon for any purpose.

**DURABLE POWER OF ATTORNEY FOR CRYOPRESERVATION
and gift of human remains**

Notice as required by California Probate Code Section 4128:

Notice to Person Accepting the Appointment as Attorney-in-Fact

By acting or agreeing to act as the agent (attorney-in-fact) under this power of attorney you assume the fiduciary and other legal responsibilities of an agent. These responsibilities include:

1. The legal duty to act solely in the interest of the principal and to avoid conflicts of interest.
2. The legal duty to keep the principal's property separate and distinct from any other property owned or controlled by you.

You may not transfer the principal's property to yourself without full and adequate consideration or accept a gift of the principal's property unless this power of attorney specifically authorizes you to transfer property to yourself or accept a gift of the principal's property. If you transfer the principal's property to yourself without specific authorization in the power of attorney, you may be prosecuted for fraud and/or embezzlement. If the principal is 65 years of age or older at the time that the property is transferred to you without authority, you may also be prosecuted for elder abuse under Penal Code Section 368. In addition to criminal prosecution, you may also be sued in civil court.

I have read the foregoing notice and I understand the legal and fiduciary duties that I assume by acting or agreeing to act as the agent (attorney-in-fact) under the terms of this power of attorney.

Date: _____

(Signature of agent)

(Print name of agent)

NOTICE: The validity of this form in any state or jurisdiction other than the State of California has not been reviewed or evaluated and should not be relied upon for any purpose.

DURABLE POWER OF ATTORNEY FOR CRYOPRESERVATION
and gift of human remains

It is my desire to be cryopreserved (a process in which some or all of my human remains are cooled and preserved at low temperatures, particularly including the temperature of boiling liquid nitrogen) and, if future medical technology should eventually allow, to be revived to a state of good health. I understand that this process, called cryonics, is not accepted by current medical practice and is not accepted by most physicians and scientists.

To further this objective I, [Print name] _____,

appoint [Print name] _____, as my agent (attorney-in-fact) to act for me in any lawful way with respect to the initiation or making cryonics arrangements for me or modification of my cryonics arrangements once such arrangements are made. Without limitation I authorize my agent (my Cryopreservation Agent) to make any and all decisions concerning my cryopreservation and cryonics arrangements. Without limitation I grant my agent the power to sign any documents in my name, to consult with, employ, hire, or otherwise contract with any and all cryonics organizations, hospitals, hospices, nurses, mortuaries, physicians, morticians, or any other person(s) or organization(s) as might be needed for the purpose of effectuating my cryopreservation or cryonics arrangements.

This power of attorney shall not be affected by subsequent incapacity of the principal.

I do hereby gift my human remains to Alcor Life Extension Foundation, or to such other cryonics organization as my Cryopreservation Agent might designate. All non-cryopreserved remains are to be disposed of in conformity with the instructions of my Cryopreservation Agent.

Neither I nor my estate shall incur any debts, liabilities, or any other obligations as a consequence of the exercise of this instrument. All such debts are the responsibility of my Cryopreservation Agent.

IN WITNESS WHEREOF, I hereby affix my signature to this instrument this _____ day of _____, _____.

[Sign name] _____

[Witness One sign name] _____

[Witness One print name] _____

[Witness Two sign name] _____

[Witness Two print name] _____

NOTICE: The validity of this form in any state or jurisdiction other than the State of California has not been reviewed or evaluated and should not be relied upon for any purpose.

DURABLE POWER OF ATTORNEY FOR CRYOPRESERVATION
and gift of human remains

STATE OF CALIFORNIA

CITY/COUNTY OF _____

I, the undersigned, a Notary Public in and for the jurisdiction aforesaid do hereby certify that _____, personally known to me to be (or satisfactorily proven to be) the person whose name is signed to the foregoing Durable Power of Attorney for Cryopreservation, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand and seal this _____ day of _____, _____

(SEAL)

NOTARY PUBLIC

My Commission Expires: _____

Registration No. (if applicable): _____

NOTICE: The validity of this form in any state or jurisdiction other than the State of California has not been reviewed or evaluated and should not be relied upon for any purpose.

the sociopath next door

the Ruthless versus the Rest of Us

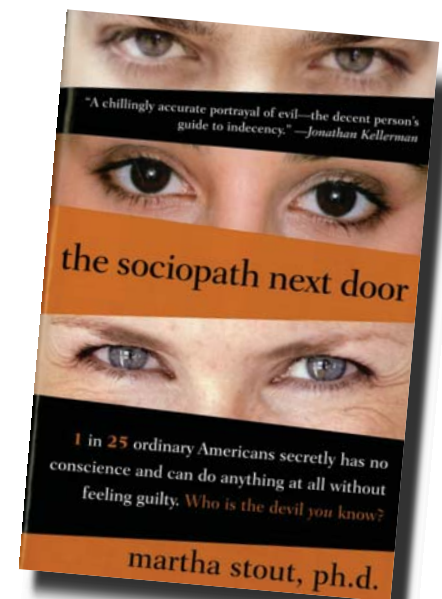
Author: Martha Stout, [New York: Broadway Books, 2005]

BOOK REVIEW BY MIKE PERRY

The cryonics movement is small and vulnerable. We need to be concerned about people who could do us harm and may impress us initially with their intelligence, competence, and apparent eagerness to help. One such personality type is the sociopath, a person with no conscience, the subject of the book here reviewed.

At the start the author asks us to think for ourselves what it would be like to have no conscience, no feeling of guilt or remorse about anything we do, whatever its effect on others, making the point that, for many people it is quite difficult to imagine such a state of uncaring. On the other hand, she tells us, fully four percent of the population has no problem at all with this, since in fact they have no conscience. Sociopaths come in many varieties, however, and while some are heinous criminals or heartless dictators many others choose more legitimate ways of interacting, not out of moral restraints but because they find these other activities more suited to their talents and interests. Thus it is possible that a sociopath is a highly productive person valued by others and not in any way a social menace, though this is not the type of person the book mainly is concerned with. Instead it is the more numerous group who, while not high-profile criminals or political monsters, still do far more harm than good. Unlike their more dangerous counterparts, they are not likely to be apprehended or much hindered in what they do.

A typical sociopath might be highly intelligent and competent, and also able to be engaging and endearing, when it suits



their purpose. They are not, however, mainly concerned with being nice or helpful but with playing dominance games and intimidating or otherwise disadvantaging people, or perhaps gaining some other advantage such as uncompensated support. They are not above using any means of deception to achieve their aims, and if suspicions are raised, have defenses ranging from skillfully pillorying their opponents to arousing pity and sympathy, if the occasion should call for it. As illustrations the book cites three cases (actually composite, fictionalized cases) based on the author's extensive clinical practice: a ruthless (and successful) business executive, a misguided psychotherapist, and

“The cryonics movement is small and vulnerable.

We need to be concerned about people who could do us harm and may impress us initially with their intelligence, competence, and apparent eagerness to help. “

a jobless layabout who freeloads off his pitying wife. Sociopaths are often charming and charismatic, and their victims are sometimes attracted by the convincing case they make to collaborate in a venture with an element of risk. In general people are victimized by a combination of the skills used against them and their own unwillingness to believe that the “nice person” confronting them could actually be so different from what they seem to be. As we noted, people with consciences often have a hard time imagining what it's like not to have one. This lack of insight plus generally good intentions and the desire to avoid nasty confrontations help the sociopath gain the upper hand, or, if they are found out, get started in a new setting far away—such people are rarely pursued.

“Should sociopaths be considered willfully evil? How can they be, if the absence of conscience is as complete as it is said to be? “

The book offers advice on how to deal with sociopaths: generally, learn to recognize them and, once you've made the identification, avoid them as much as possible. I should emphasize that this is the “nuisance” kind of sociopath that is the main focus of the book, rather than others who either are criminals (not likely to be encountered) or are socially acceptable. Avoidance is good advice for many people, especially given that sociopathy appears to be incurable. But it left some questions in my mind. The book presents sociopathy as essentially an on-off dichotomy: either you have it in full strength (permanently), or you don't have it at all. There surely, I thought, must be some middle ground, persons, say, who do have a conscience though it is not one of their strong points. And if the main response for the rest of us is to shun sociopaths, then what shall become of them? Many people, it is true, will not be particularly concerned about a sociopath's well-being, though it

does not seem right that this should be the reaction of everyone. There is something to be said for compassion, even toward those who are unable to feel it themselves. Still, if sociopaths are completely unsuited to ordinary social interactions as the author would have us believe (this includes family and marriage as well as gainful employment), it would seem that they either should be institutionalized or, more leniently, dealt with as disability cases still able to function on the outside.

Should sociopaths be considered willfully evil? How can they be, if the absence of conscience is as complete as it is said to be? This does not mean a sociopath cannot tell what society considers right from what it considers wrong. A sociopath can be perfectly aware of the distinction, and pass tests to prove it, but it will not make them feel as others feel. A person who has no feeling of doing wrong when they hurt someone has done nothing they can be blamed for—it isn't their fault that they are unable to feel that they are at fault. It would be another interesting issue to explore, but the book does not.

Another issue, one that *is* addressed, is whether sociopaths are happy being what they are and even better off than others, feeling-wise. The short answer is no, not really. Even though they escape some of the stresses that affect the rest of us, overall their life tends to be boring and unfulfilling. Be glad if you have a conscience, says the author, even if it does hurt sometimes.

Turning to the cryonics movement, further interesting questions are raised, such as whether sociopaths are especially noteworthy among signups, or ever have been, and whether they have played a major part in negative publicity. This is not the place to discuss these issues. The book makes no sortie into our particular specialty, but it does offer insight about a certain type of mentality we must be prepared for. ■



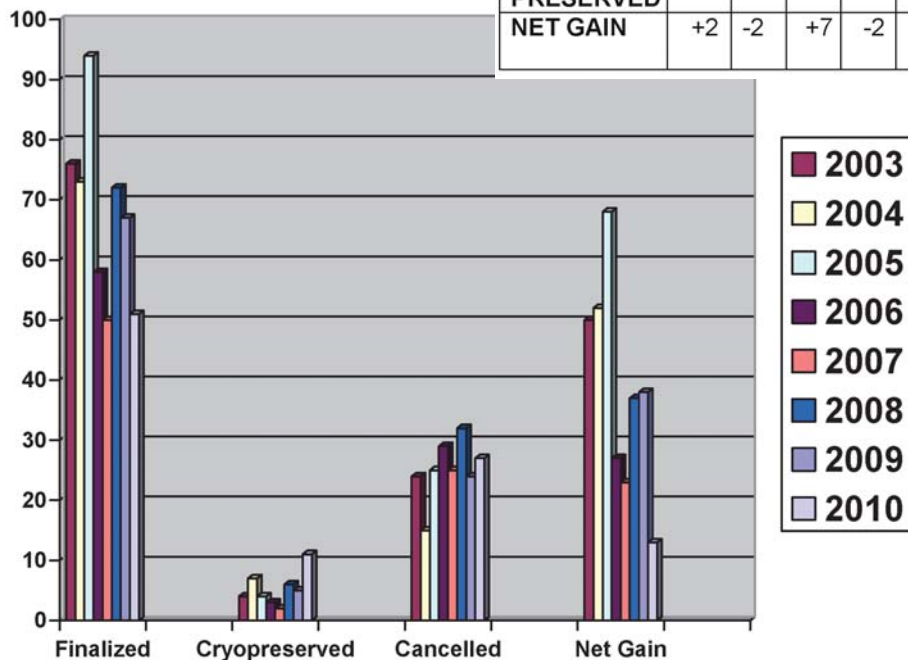
About the Author

Martha Stout, Ph.D.

Martha Stout was trained at the famous McLean psychiatric hospital and is a practicing psychologist and a clinical instructor in the department of psychiatry at Harvard Medical School. She is also the author of *The Myth of Sanity*. She lives on Cape Ann in Massachusetts.

Membership Statistics

2010	01	02	03	04	05	06	07	08	09	10	11	12	
TOTAL	915	913	920	918	923	921	924	929	926				926
FINALIZED	6	3	8	4	6	6	7	6	2				48
REINSTATED	0	0	0	0	0	0	0	2	1				3
CANCELLED	3	3	1	4*	0	5	4	3	4				27
CRYO-PRESERVED	1	2	0	2	1	3	0	0	2				11
NET GAIN	+2	-2	+7	-2	+5	-2	+3	+5	-3				13



On September 30, 2010, Alcor had 926 members on its Emergency Responsibility List. During the first nine months of 2010, 48 memberships were approved, 3 memberships were reinstated, 27 memberships were cancelled and 11 members were cryopreserved. Overall, there was a net gain of 13 members for the year of 2010 to date.

The chart on the left displays the year-end monthly average net gain since 2002.

Take a look at the **ALCOR BLOG**

<http://www.alcor.org/blog/>

Your source for news about:

Cryonics technology

Cryopreservation cases

Television programs about cryonics

Speaking events and meetings

Employment opportunities



Graphene Exhibits Bizarre New Behavior Well Suited to Electronic Devices

Graphene, a sheet of pure carbon heralded as a possible replacement for silicon-based semiconductors, has been found to have a unique and amazing property that could make it even more suitable for future electronic devices. Physicists at the University of California, Berkeley, and the Lawrence Berkeley National Laboratory (LBNL) have found that when graphene is stretched in a specific way it sprouts nanobubbles in which electrons behave in a bizarre way, as if they are moving in a strong magnetic field. The energy levels are identical to those that an electron would occupy if it were moving in circles in a very strong magnetic field, as high as 300 tesla, which is bigger than any laboratory can produce except in brief explosions, said Michael Crommie, professor of physics at UC Berkeley and a faculty researcher at LBNL. "By controlling where the electrons bunch up and at what energy, you could cause them to move more easily or less easily through graphene, in effect, controlling their conductivity, optical or microwave properties. Control of electron movement is the most essential part of any electronic device." Crommie and colleagues report the discovery in the July 30 issue of the journal *Science*.

ScienceDaily
7/30/10

<http://www.sciencedaily.com/releases/2010/07/100729141134.htm>

Robots Created That Develop Emotions in Interaction With Humans

The first prototype robots capable of developing emotions as they interact with their human caregivers and expressing a whole range of emotions have been finalized by researchers. Led by Dr. Lola Cañamero at the University of Hertfordshire, and in collaboration with a consortium of universities

and robotic companies across Europe, these robots differ from others in the way that they form attachments, interact and express emotion through bodily expression. Developed as part of the interdisciplinary project FEELIX GROWING (Feel, Interact, eXpress: a Global approach to development with Interdisciplinary Grounding), funded by the European Commission and coordinated by Dr. Cañamero, the robots have been developed so that they learn to interact with and respond to humans in a similar way as children learn to do it, and use the same types of expressive and behavioral cues that babies use to learn to interact socially and emotionally with others. The robots have been created through modeling the early attachment process that human and chimpanzee infants undergo with their caregivers when they develop a preference for a primary caregiver.

ScienceDaily
8/9/10

<http://www.sciencedaily.com/releases/2010/08/100809094527.htm>

Nanosensor Peers Inside Cell

A new virus-sized probe can look deeper into cells than ever before, and finally allows scientists to monitor intracellular activities without disrupting the cells' external membranes, according to a study published today in *Science*. "This is a paper that can bring breakthrough and revolutionary insight into our understanding of intracellular structures," said Zhong Lin Wang, who develops nanotechnologies at the Georgia Institute of Technology but was not involved in the work. The new device is a tiny transistor which detects changes in electrical activity when touching or inserted into a cell. It differs from previous cellular-sized transistors in its unique three-dimensional shape and its small size — smaller than a cell's own microtubules. Additionally, the new probe is coated with a lipid bilayer, which merges with the cell's membrane to allow the tip to penetrate into living cells and

get an inside view of its molecular actions without affecting cellular structure or activity. Charles Lieber, lead author of the study, researches nanotechnology at Harvard University.

The Scientist
8/12/10

<http://www.the-scientist.com/blog/display/57619/>

Memristor Revolution Backed by HP

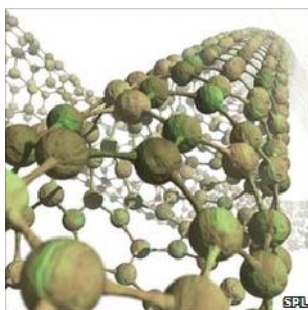
Electronics giant HP has joined the world's second-largest memory chip maker Hynix to manufacture a novel member of the electronics family. The deal will see "memristors"—first demonstrated by HP in 2006—mass produced for the first time. Memristors promise significantly greater memory storage requiring less energy and space, and may eventually also be employed in processors. HP says the first memristors should be widely available in about three years. They are considered to be the "missing link" in electronics, a fourth element to supplement the more familiar resistor, capacitor and inductor that together form the basis of every electronic device yet made. In short, it is a resistor with memory: applying an electric voltage can change how much the device blocks electric current—and memristors can "remember" that level—even when the power is turned off. That makes it a candidate for memory that requires little energy to store information—like the current standard for non-volatile memory, Flash. "Memristor memory chips promise to run at least 10 times faster and use 10 times less power than an equivalent Flash memory chip," said Stan Williams, the HP Fellow who first demonstrated the memristor, in a statement by the firm.

BBC News
9/2/10

<http://www.bbc.co.uk/news/technology-11165087>

Tiny Solar Cells Fix Themselves

Researchers have demonstrated tiny solar cells just billionths of a meter across that can repair themselves, extending their useful lifetime. The cells make use of proteins from the machinery of plants, turning sunlight into electric charges that can do work. The cells simply assemble themselves from a mixture of the proteins, minute tubes of carbon and other materials. The self-repairing mechanism, reported in *Nature Chemistry*, could lead to much longer-lasting solar cells. The design and improvement of solar cells is one of the most vibrant areas of science, in part because sunlight is far and away the planet's most abundant renewable energy source. More than that, nature has already proven that sunlight can be captured and turned into other forms of energy not only with extraordinary efficiency but also with a self-repair mechanism that counteracts the ravages of sunlight. "Sunlight, when it hits oxygen, is very damaging," explained Michael Strano, the Massachusetts Institute of Technology chemical engineer who led the research. "It's the reason why we age, and the reason why when we leave paper or plastic out in the sun, it fades."



The nanotubes are scaffolds on which the light-sensitive proteins can build.

BBC News

9/5/10

<http://www.bbc.co.uk/news/technology-11181753>

Physicists Build a Memory that Stores Entanglement

The first quantum memory that stores and releases entanglement has been built by researchers in Switzerland. Entanglement is the strange, ghostly phenomenon in which quantum particles share the same existence (actually, the same wave function). So a

measurement on one instantaneously influences the other, no matter how far apart they might be. So-called action-at-a-distance lies at the heart of many of modern physics's most dramatic new technologies: quantum cryptography, quantum teleportation and quantum computation all rely on it. That makes entanglement important stuff. "Stuff" is the way many physicists are beginning to think of entanglement: as a resource, rather like water or energy, to be called upon when needed in the new quantum world. These physicists want to be able to create entanglement, use it and store it whenever they need to. The first two of these--creating and using entanglement--has been the subject of intense research for the last 30 or 40 years. But the ability to store entanglement in a useful way has eluded physicists. Until now. Today, Christoph Clausen and buddies at the University of Geneva demonstrate not only how to store entanglement but how to release it again in fully working order.

Technology Review (MIT)

9/6/10

<https://www.technologyreview.com/blog/25718/>

Successful Lengthening of Telomeres to Extend Human Lifespan

Sierra Sciences, in collaboration with TA Sciences, Geron Corporation, PhysioAge, and the Spanish National Cancer Research Center (CNIO), has announced the first compound ever discovered that activates the enzyme telomerase in the human body—a critical prerequisite for technology that could arrest or reverse the aging process in humans. This compound is a natural product derived nutraceutical known as TA-65. These findings appear as a research article entitled "A natural product telomerase activator as part of a health maintenance program," published September 7, 2010 ahead of print in the peer-reviewed journal *Rejuvenation Research*. The article can be found at <http://www.liebertonline.com/doi/abs/10.1089/rej.2010.1085>. Researchers discovered that TA-65 was associated with a statistically significant "age-reversal" effect in the immune system, in that it led to declines in the percentage of senescent cytotoxic T cells and natural killer cells after six to twelve

months of use. In addition, further analysis with automated high-throughput confocal microscopy (HT-qFISH) revealed a decline in the percentage of white blood cells with critically short telomeres after twelve to eighteen months of use.

PRNewswire

9/8/10

<http://www.prnewswire.com/news-releases/sierra-sciences-co-authors-paper-announcing-successful-lengthening-of-telomeres-to-extend-human-lifespan-102480039.html>

Gene Therapy for Blood Disorder a "Success"

Red blood cells The patient suffers from an inherited disorder which affects his body's ability to create red blood cells. Gene therapy has been used for the first time to treat an inherited blood disorder in what doctors say is a major step forward. A man given pioneering treatment to correct a faulty gene has made "remarkable" progress, a US and French team has revealed. Gene therapy is an experimental technique that manipulates genes to treat disease. It has seen some successes, but also setbacks, including a patient's death. Beta thalassemia is an inherited blood disorder that affects the body's ability to create red blood cells. The first gene therapy trial was in an 18-year-old man with a severe form of the condition, who had been receiving regular blood transfusions since the age of three. Stem cells from his bone marrow were treated with a gene to correct for the faulty one. They were then transfused back into his body, where they gradually gave rise to healthy red blood cells. The team doing the procedure was led by Philippe Leboulch of Harvard Medical School in Boston, who said: "At present, approximately three years post-transplantation, the biological and clinical evolution is remarkable and the patient's quality of life is good."



The patient suffers from an inherited disorder which affects his body's ability to create red blood cells.

Two-Photon Walk a Giant Stride for Quantum Computing

Based on research conducted at the University of Bristol, U. K., a number of quantum computing algorithms may soon be able to execute calculations of a complexity far beyond what today's computers allow us to do. The breakthrough involves the use of a specially designed optical chip to perform what's known as a "quantum walk" with two particles. A random walk – a mathematical concept with useful applications in computer science – is the trajectory of an object taking successive steps in a random direction, be it over a line (with only two possible directions) or over a multi-dimensional space. A quantum walk is the same concept, but translated to the world of quantum computing. Quantum walks form an essential part of many of the algorithms that make this new kind of computation so promising, including search algorithms that will perform exponentially faster than the ones we use today. "Using our new technique, a quantum computer could, in less than ten years, be performing calculations that are outside the capabilities of conventional computers," commented Professor Jeremy O'Brien, Director of the Centre for Quantum Photonics. The research will be published in tomorrow's issue of the journal Science.

Gizmag

9/16/10

<http://www.gizmag.com/two-photon-walk-quantum-computing/16394/>

Alzheimer's Drug Boosts Perceptual Learning in Healthy Adults

Research on a drug commonly prescribed to Alzheimer's disease patients is helping neuroscientists at the University of California, Berkeley, better understand perceptual learning in healthy adults. In a new study, to be published online Sept. 16 in the journal Current Biology, researchers from UC Berkeley's Helen Wills Neuroscience

Institute and School of Optometry found that study participants showed significantly greater benefits from practice on a task that involved discriminating directions of motion after they took donepezil, sold under the brand name Aricept, compared with a placebo. Neither the researchers nor the participants knew whether they were taking the placebo or donepezil, a cholinesterase inhibitor that enhances the effects of the neurotransmitter acetylcholine in the brain. "We wanted to better understand the biological mechanisms that underlie the ability to learn new tasks and to shed light on which specific neural processes are being enhanced by donepezil," said the study's principal investigator, Michael Silver, UC Berkeley assistant professor of optometry and neuroscience. "This is the first study to show that donepezil can enhance learning of a new skill, even in normal, healthy people."

ScienceDaily

9/18/10

<http://www.sciencedaily.com/releases/2010/09/100916121326.htm>

Researchers Engineer Adult Stem Cells That Do Not Age

Biomedical researchers at the University at Buffalo have engineered adult stem cells that scientists can grow continuously in culture, a discovery that could speed development of cost-effective treatments for diseases including heart disease, diabetes, immune disorders and neurodegenerative diseases. UB scientists created the new cell lines - named "MSC Universal" - by genetically altering mesenchymal stem cells, which are found in bone marrow and can differentiate into cell types including bone, cartilage, muscle, fat, and beta-pancreatic islet cells. The cells that UB researchers modified show no signs of aging in culture, but otherwise appear to function as regular mesenchymal stem cells do - including by conferring therapeutic benefits in an animal study of heart disease. Despite their propensity to proliferate in the laboratory, MSC-Universal cells did not form tumors in animal testing. "Our stem cell research is application-driven," says Techung Lee, PhD, who led the project. "If you want to make stem cell therapies feasible, affordable and reproducible, we know you have to overcome a few hurdles."

Patients to Be Chilled into State of Suspended Animation for Surgery

Patients are to be placed into a state of suspended animation when they undergo surgery by using a ground breaking technique that cools their bodies to the point of death. Researchers are now set to begin the first human trials of the technique, which involves replacing a patient's blood with a cold solution to rapidly chill body temperatures. Surgeons are pioneering a method of inducing extreme hypothermia in trauma patients so that their bodies shut down entirely during major surgery, giving doctors more time to perform operations. The technique helps to reduce the damage done to the brain and other organs while the patient's heart is not beating. It also reduces the need for anesthetic and life support machines. Researchers are now set to begin the first human trials of the technique, which involves replacing a patient's blood with a cold solution to rapidly chill body temperatures. The cold treatment, which is being developed at Harvard Medical School and the Massachusetts General Hospital in Boston and is featured in a BBC Two Horizon documentary, will see patient's bodies being cooled to as low as 10 degrees C. Dr. Hasan Alam, the surgeon who is leading the research, said trials of the technique in animals had shown it to be hugely successful.

Telegraph.co.uk

9/26/10

<http://www.telegraph.co.uk/health/health-news/8024991/Patients-to-be-frozen-into-state-of-suspended-animation-for-surgery.html>

MEETINGS

About the Alcor Foundation

The Alcor Life Extension Foundation is a nonprofit tax-exempt scientific and educational organization dedicated to advancing the science of cryopreservation and promoting cryonics as a rational option. Being an Alcor member means knowing that—should the worst happen—Alcor's Emergency Response Team is ready to respond for you, 24 hours a day, 365 days a year.

Alcor's Emergency Response capability includes specially trained technicians and customized equipment in Arizona, northern California, southern California, and south Florida, as well as many additional certified technicians on-call around the United States. Alcor's Arizona facility includes a full-time staff, and the Patient Care Bay is personally monitored 24 hours a day.

ARIZONA

Scottsdale:

This group meets the third Friday of each month and gatherings are hosted at a home near Alcor. To RSVP, visit <http://cryonics.meetup.com/45/>.

At Alcor:

Alcor Board of Directors Meetings and Facility Tours – Alcor business meetings are generally held on the first Saturday of every month starting at 11:00 AM MST. Guests are welcome. Facility tours are held every Tuesday and Friday at 2:00 PM. For more information or to schedule a tour, call D'Bora Tarrant at (877) 462-5267 x 101 or email dbora@alcor.org.

CALIFORNIA

Los Angeles:

Alcor Southern California Meetings—For information, call Peter Voss at (310) 822-4533 or e-mail him at peter@optimal.org. Although monthly meetings are not held regularly, you can meet Los Angeles Alcor members by contacting Peter.

San Francisco Bay:

Alcor Northern California Meetings are held quarterly in January, April, July, and October. A CryoFeast is held once a year. For information on Northern California meetings, call Mark Galeck at (408) 245-4928 or email Mark_galeck@pacbell.net.

DISTRICT OF COLUMBIA

Life Extension Society, Inc. is a cryonics and life extension group with members from Washington, D.C., Virginia, and Maryland. Meetings are held monthly. Contact Secretary Keith Lynch at kfl@keithlynch.net. For information on LES, see our web site at www.keithlynch.net/les.

FLORIDA

Central Florida Life Extension group meets once a month in the Tampa Bay area (Tampa and St. Petersburg) for discussion and socializing. The group has been active since 2007. Email arcturus12453@yahoo.com for more information.

NEW ENGLAND

Cambridge:

The New England regional group strives to meet monthly in Cambridge, MA – for information or to be added to the AlcorNE mailing list, please contact Bret Kulakovich at 617-824-8982, alcor@bonfireproductions.com, or on FACEBOOK via the Cryonics Special Interest Group.

OREGON

Portland:

Cryonics Oregon holds regular meetings every 2-3 months for members of cryonics organizations living in Portland and the surrounding areas. For informa-

tion, please contact Chana de Wolf at chana.de.wolf@gmail.com or (503) 756-0864. <http://www.cryonicsoregon.com/>

A Yahoo group is also maintained for cryonics activities in the Pacific Northwest at <http://tech.groups.yahoo.com/group/CryonicsNW/>.

ALCOR PORTUGAL

Alcor Portugal is working to have good stabilization and transport capabilities. The group meets every Saturday for two hours. For information about meetings, contact Nuno Martins at n-martins@n-martins.com. The Alcor Portugal website is: www.alcorportugal.com.

TEXAS

Dallas:

North Texas Cryonauts, please sign up for our announcements list for meetings (<http://groups.yahoo.com/group/cryonauts-announce>) or contact David Wallace Croft at (214) 636-3790 for details of upcoming meetings.

Austin/Central Texas:

We meet at least quarterly for training, transport kit updates, and discussion. For information: Steve Jackson, 512-447-7866, sj@sjgames.com.

UNITED KINGDOM

There is an Alcor chapter in England. For information about meetings, contact Alan Sinclair at cryoservices@yahoo.co.uk. See the web site at www.alcor-uk.org.

If you are interested in hosting regular meetings in your area, contact Alcor at 877-462-5267 ext. 113. Meetings are a great way to learn about cryonics, meet others with similar interests, and introduce your friends and family to Alcor members!

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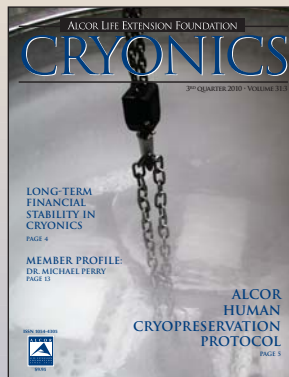


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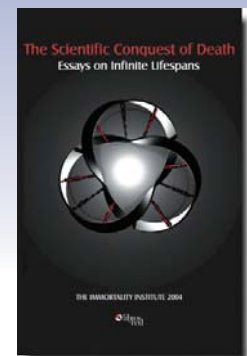
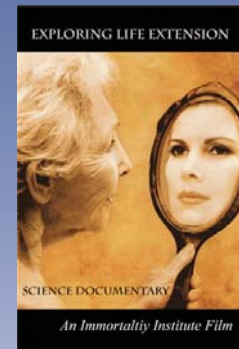
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WHAT IS CRYONICS?

Cryonics is an attempt to preserve and protect human life, not reverse death. It is the practice of using extreme cold to attempt to preserve the life of a person who can no longer be supported by today's medicine. Will future medicine, including mature nanotechnology, have the ability to heal at the cellular and molecular levels? Can cryonics successfully carry the cryopreserved person forward through time, for however many decades or centuries might be necessary, until the cryopreservation process can be reversed and the person restored to full health? While cryonics may sound like science fiction, there is a basis for it in real science. The complete scientific story of cryonics is seldom told in media reports, leaving cryonics widely misunderstood. We invite you to reach your own conclusions.

HOW DO I FIND OUT MORE?

The Alcor Life Extension Foundation is the world leader in cryonics research and technology. Alcor is a non-profit organization located in Scottsdale, Arizona, founded in 1972. Our website is one of the best sources of detailed introductory information about Alcor and cryopreservation (www.alcor.org). We also invite you to request our **FREE** information package on the "Free Information" section of our website. It includes:

- A fully illustrated color brochure
- A sample of our magazine
- An application for membership and brochure explaining how to join
- And more!

Your free package should arrive in 1-2 weeks.

(The complete package will be sent free in the U.S., Canada, and the United Kingdom.)

HOW DO I ENROLL?

Signing up for a cryopreservation is easy!

- Step 1:** Fill out an application and submit it with your \$150 application fee.
- Step 2:** You will then be sent a set of contracts to review and sign.
- Step 3:** Fund your cryopreservation. While most people use life insurance to fund their cryopreservation, other forms of prepayment are also accepted. Alcor's Membership Coordinator can provide you with a list of insurance agents familiar with satisfying Alcor's current funding requirements.
- Finally:** After enrolling, you will wear emergency alert tags or carry a special card in your wallet. This is your confirmation that Alcor will respond immediately to an emergency call on your behalf.

Call toll-free today to start your application:

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