Longevity Through Technology

Volume 47 - Number 02 - 2ND QUARTER 2015

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Why should You join the Cryonics Institute?

The Cryonics Institute is the world’s leading non-profit cryonics organization bringing state of the art cryonic suspensions to the public at the most affordable price. CI was founded by the “father of cryonics,” Robert C.W. Ettinger in 1976 as a means to preserve life at liquid nitrogen temperatures. It is hoped that as the future unveils newer and more sophisticated medical nanotechnology, people preserved by CI may be restored to youth and health.

1) **Cryonic Preservation**
Membership qualifies you to arrange and fund a vitrification (anti-crystallization) perfusion and cooling upon legal death, followed by long-term storage in liquid nitrogen. Instead of certain death, you and your loved ones could have a chance at rejuvenated, healthy physical revival.

2) **Affordable Cryopreservation**
The Cryonics Institute (CI) offers full-body cryopreservation for as little as $28,000.

3) **Affordable Membership**
Become a Lifetime Member for a one-time payment of only $1,250, with no dues to pay. Or join as a Yearly Member with a $75 initiation fee and dues of just $120 per year, payable by check, credit card or PayPal.

4) **Lower Prices for Spouses and Children**
The cost of a Lifetime Membership for a spouse of a Lifetime Member is half-price and minor children of a Lifetime Member receive membership free of charge.

5) **Quality of Treatment**
CI employed a Ph.D level cryobiologist to develop CI-VM-1, CI’s vitrification mixture which can help prevent crystalline formation at cryogenic temperatures.

6) **Locally-Trained Funeral Directors**
CI’s use of Locally-Trained Funeral Directors means that our members can get knowledgeable, licensed care. Or members can arrange for professional cryonics standby and transport by subcontracting with Suspended Animation, Inc.

7) **Funding Programs**
Cryopreservation with CI can be funded through life insurance policies issued in the USA or other countries. Prepayment and other options for funding are also available to CI members.

8) **Cutting-Edge Cryonics Information**
Members currently receive free access to Long Life Magazine online or an optional paid print subscription, as well as access to our exclusive members-only email discussion forum.

9) **Additional Preservation Services**
CI offers a sampling kit, shipping and long-term liquid nitrogen storage of tissues and DNA from members, their families or pets for just $98.

10) **Support Education and Research**
Membership fees help CI to fund important cryonics research and public outreach, education and information programs to advance the science of cryonics.

11) **Member Ownership and Control**
CI Members are the ultimate authority in the organization and own all CI assets. They elect the Board of Directors, from whom are chosen our officers. CI members also can change the Bylaws of the organization (except for corporate purposes).

The choice is clear: Irreversible physical death, dissolution and decay, or the possibility of a vibrant and joyful renewed life. Don’t you want that chance for yourself, your spouse, parents and children?

To get started, contact us at:
(586) 791-5961 • email: cihq@aol.com
Visit us online at www.cryonics.org
LONG LIFE MAGAZINE
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You’ve signed up for Cryonics
Now what should you do?

Welcome Aboard! You have taken the first critical step in preparing for the future and possibly ensuring your own survival. Now what should you do? People often ask “What can I do to make sure I have an optimal suspension?” Here’s a checklist of important steps to consider.

☐ Become a fully funded member through life insurance or easy pre-payments

Some members use term life and invest or pay off the difference at regular intervals. Some use whole life or just prepay the costs outright. You have to decide what is best for you, but it is best to act sooner rather than later as insurance prices tend to rise as you get older and some people become uninsurable because of unforeseen health issues. You may even consider making CI the owner of your life insurance policy.

☐ Keep CI informed on a regular basis about your health status or address changes. Make sure your CI paperwork and funding are always up to date. CI cannot help you if we do not know you need help.

☐ Keep your family and friends up to date on your wishes to be cryopreserved. Being reclusive about cryonics can be costly and cause catastrophic results.

☐ Keep your doctor, lawyer, and funeral director up to date on your wishes to be cryopreserved. The right approach to the right professionals can be an asset.

☐ Prepare and execute a Living Will and Power of Attorney for Health Care that reflects your cryonics-related wishes. Make sure that CI is updated at regular intervals as well.

☐ Consider joining or forming a local standby group to support your cryonics wishes. This may be one of the most important decisions you can make after you are fully funded. As they say—“Failing to plan is planning to fail”.

☐ Always wear your cryonics bracelet or necklace identifying your wishes should you become incapacitated. Keep a wallet card as well. If aren’t around people who support your wishes and you can’t speak for yourself a medical bracelet can help save you.

☐ Get involved! If you can, donate time and money. Cryonics is not a turnkey operation. Pay attention and look for further tips and advice to make both your personal arrangements and cryonics as a whole a success.

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Hello everyone. I am very excited about all the new things happening in cryonics. There continues to be exceptional growth in terms of membership at CI and with an overall growing interest in cryonics. There are many people overseas expressing interest in cryonics operations where they reside. There are additional cryonics standby groups and facilities sprouting up within the United States and abroad. I think that mutual aid relationships with sister organizations can only serve to strengthen the combined mission goals we have. Standby needs to be looked at in the same way that emergency services help one another from community to community. All over the world police, fire and ambulance agencies cooperate to protect life and personal property. Our members are just too few not to join together on the issues we can agree on. There is much work to accomplish and as a good friend once told me “everyone in cryonics has ideas on what everyone else should be doing but few are actually willing to put forth the personal time or money to realize those ideas”. I commend those who do more than suggest or pontificate but rather roll up their sleeves and get to work. I also commend those who look beyond disagreements and see what can be agreed upon. I also commend those who put their own house in order before they suggest other do the same. I hope I can live up to those standards and lead by example. That is why I look hard at my own standby and critique my own plans so that not only may I help myself but I may be able to share what I have learned to benefit others.

Congratulations to the newly formed Cryonics Oregon. I know that the laws of Oregon provide a very unique environment for those who may be suffering from degenerative brain diseases when it comes to ending one’s own life. I also know that the leadership of Cryonics Oregon, like the Cryonics Institute, are committed to helping each other’s members in a time of need. As I have said before, standby should be universal and everywhere that cryonicists live or deanimate. Good luck to you all and keep up the good work!

Congratulations also to Long Life for making a clean and sharp transition to the electronic paperless format. Clearly such efforts are an intelligent change. They will save both money and represent a greener and more efficient trend that seems to be spreading through the business environment. CI and the Immortalist society have prided themselves as being independent of each other and yet willing to help each other’s missions along. The Immortalist Societies’ Long Life really is a magazine for all cryonicists who seek longevity and enlightenment.

Inspired by the success and transition that Long Life has made, there are many who have suggested that the Cryonics Institute form its own direct organizational publication. I agree and think CI should have its own voice. Therefore, I am happy to announce that CI will also have its own electronic newsletter to share with and update its members with the latest of CI news and events. I hope to still work with and be a contributor to Long Life magazine and welcome Long Life to submit articles to the new CI quarterly. The new and improved electronic format affords us the ability to provide twice the content and information at an even more affordable production price than the original magazine. I hope you will all enjoy this new improvement.

Continues on Page 8
As of August 2015, the Cryonics Institute has 1,203 members, up 15 from our last report. Of the 1,203 Members, 584 have arrangements for Suspended Animation Standby and Transport.

There are 133 human patients and 112 pet patients in cryopreservation at CI’s Michigan facility.

CI continues to be an industry leader in terms of both membership and practical affordability for all.
AUSTRALIA: The Cryonics Association of Australia offers support for Australians, or residents of other nearby countries seeking information about cryonics. caa@prix.pricom.com.au. Their Public Relations Officer is Philip Rhoades. phil@pricom.com.au GPO Box 3411, Sydney, NSW 2001 Australia. Phone: +6128001 6204 (office) or +61 2 99226979 (home.)

BELGIUM: Cryonics Belgium is an organisation that exists to inform interested parties and, if desired, can assist with handling the paperwork for a cryonic suspension. The website can be found at www.cryonicsbelgium.com. To get in touch, please send an email to info@cryonicsbelgium.com.

BHUTAN: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Thimphou & Paro. Contacts: Jamyang Palden & Tenzin Rabgay / Emails: palde002@um.edu or jamgannett@hotmail.co Ph: Jamyang / 975-2-32-66-50 & Tenzin / 975-2-77-21-01-87

CANADA: This is a very active group that participated in Toronto’s first cryopreservation. President, Christine Gaspar; Vice President, Gary Tripp. Visit them at: http://www.cryocdn.org/. There is a subgroup called the Toronto Local Group. Meeting dates and other conversations are held via the Yahoo group. This is a closed group. To join write: csc4@cryocdn.org

QUEBEC: Contact: Stephan Beauregard, C.I. Volunteer & Official Administrator of the Cryonics Institute Facebook Page. For more information about Cryonics in French & English: stephanbeauregard@yahoo.ca

DENMARK: A Danish support group is online. Contact them at: david.stodolsky@socialinformatics.com

FINLAND: The Finnish Cryonics Society, (KRYOFIN) is a new organization that will be working closely with KrioRus. They would like to hear from fellow cryonicists. Contact them at: kryonikka.fi Their President is Antti Peltonen.

FRANCE: SOCIETE CRYONICS de FRANCE Roland Missionnier would like to hear from cryonicists in Switzerland, Luxembourg and Monte Carlo, CELL: (0033) 6 64 90 98 41, FAX: (0033) 477 46 9612 or rolandmissionnier@yahoo.fr Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authority in Toulouse Area. Contact : Gregory Gosselin de Benicourt / Email : cryonics@benicourt.com Phone : 09.52.05.40.15

GERMANY: There are a number of cryonicists in Germany. Their homepage is: www.biostase.de (English version in preparation.) If there are further questions, contact Prof. Klaus Sames: sames@uke.uni-hamburg.de.

GREECE: Greek Cryonics Support Group. Sotiris Dedeloudis is the Administrator. Find them at: http://www.cryonics.gr/

INDIA: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authority in Bangalore & Vellore Area. Contacts: Br Sankeerth & Bloster Vignesh / Email: vicky23101994@gmail.com / Ph: Bloster / 918148049058 & Br Sankeerth / 917795115939

ITALY: The Italian Cryonics Group (inside the Life Extension Research Group (LIFEXT Research Group)) www.lifext.org and relative forum: forum.lifext.org. The founder is Bruno Lenzi, contact him at bruno.lenzi88@gmail.com or Giovanni Ranzo at: giovanni1410@gmail.com

JAPAN: Hikaru Midorikawa is President Japan Cryonics Association. Formed in 1998, our goals are to disseminate cryonics information in Japan, to provide cryonics services in Japan, and eventually, to allow cryonics to take root in the Japanese society. Contact mid_hikaru@yahoo.co.jp or http://www.cryonics.jp/index.html

NEPAL: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Kathmandu. Contact : Suresh K. Shrestha / Email: toursuresh@gmail.com Phone : 977-985-1071364 / PO Box 14480 Kathmandu.

NETHERLANDS: The Dutch Cryonics Organization (http://www.cryonisme.nl) is the local standby group and welcomes new enthusiasts. Contact Secretary Japie Hoekstra at +31(0)653213893 or email: jhr@hoekstraamedia.nl. * Can help Cryonics Institute Members who need help, funeral home, transport & hospital explanation about the cryonics procedure to the Dr and authority at Amsterdam with branches in other cities. Contact: Koos Van Daalen / Phone (24 Hours) +31-20-646-0606 or +31-70-345-4810

NORWAY: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr, funeral home and authority at Sandvika. Contacts: Gunnar Hammersmark Sandvika Begegravelsesbyraa / Phones : 011-47-2279-7736

PORTUGAL: Nuno & Diogo Martins with Rui Freitas have formed a group to aid Alcor members in Portugal. Contact: nmartins@nmartins.com or visit www.cryonics.com.pt/

RUSSIA: KrioRus is a Russian cryonics organization operating in Russia, CIS and Eastern Europe that exists to help arrange cryopreservation and longterm suspension locally, or with CI or Alcor. Please contact kriorus@mail.ru or daola.medve-dev@mail.ru for additional information or visit http://www.kriorus.ru. Phone: 79057680457

SPAIN: Giulio Prisco is Secretary of the Spanish Cryonics Society. Website is http://www.cronica.org.sec. He lives in Madrid and he’s a life member of CI and is willing to serve as a contact point for Europeans. He can be contacted at: cell phone (34)610 536144 or gijuilo@gmail.com

SWITZERLAND: www.CryonicsSwitzerland.com or www.ria.edu/cs

UNITED KINGDOM: Cryonics UK is a nonprofit UK based standby group. http://www.cryonicsuk.org/ Cryonics UK can be contacted via the following people: Tim Gibson: phone: 07905 371495, email: tim.gibson@cryonics-uk.org. Victoria Stevens: phone: 01287 669201, email: vicstevens@hotmail.co.uk. Graham Hijkiss: phone: 0115 8492179 / 07752 251 564, email: ghijkiss@hotmail.com. Alan Sinclair: phone: 01273 587 660 / 07719 820715, email: cryoservices@yahoo.co.uk Can help Cryonics Institute Members who need help, funeral home, transport at London. Contact: F.A. Albin & Sons / Arthur Stanley House Phone: 020-7237-3637

Being a Cryonics Twenty

By Anthony Lamot

Recently, the sixth edition of the annual Cryonics T2 (short for “Teens & Twenties”) took place. A few dozen young cryonicists gathered from across the globe in Las Vegas for a weekend to meet and reconnect.

The event has become a personal favorite. It was the 4th time in a row that I attended, and I felt uplifted by it. T2 is summarized best by its own slogan: “Getting to Know You - You Getting to Know Each Other - All While Being Updated on the Latest Scientific Research”.

Getting to Know You

I have it on good authority that in the early days cryonicists were a very tight community. Everyone knew each other and many met almost daily. But then, these early pioneers were only a handful.

Things are somewhat different now. We are still a minority, yet our numbers have been growing steadily, and several more cryonics-related organizations were founded. Today, cryonicists are also more distributed geographically and culturally diverse – I am from Belgium myself. This entails certain “growing pains” for our movement.

More recent generations of cryonicists often find out about the subject through internet or media. If they have the courage and foresight, they sign up for suspension. But that does not mean they automatically connect with others like them. In spite of technological advances, social media or email are poor substitutes for face-to-face interaction. There are more of us, but we are not all so well connected.

It is this kind of “growing pain” which T2’s organizers began addressing six years ago. They foresaw a weekend of activities built around socializing and sharing of information relevant to cryonics. About 40 scholarships were granted for young cryonicists (up to age 30), and the event took place in Fort Lauderdale, Florida.

The model has remained the same over the years. At the latest edition, nearly 60 participants attended, while the location shifted to Las Vegas. In addition to the attending teens and twenties, there were also representatives who have made particular contributions to cryonics or longevity – some in fact “T2 alumni” by now: Cairn Idun (organizer, Alcor), Bill Falloon (sponsor, Life Extension Foundation), Doug Baldwin (Alcor), Joe Kowalsky (CI), Nuno Martins (Eucrio), Michael Perry (Alcor), John Schloendorn (Gene and Cell Technologies), and Neal VanDeRee (Church of Perpetual Life). Mark Voelker (Alcor) unfortunately fell ill and had to be excused.

You Getting to Know Each Other

T2 was not just designed to get the earlier generations in touch with the recent one. As mentioned, we are spread out geographically these days, and some of us do not get to meet many like-minded peers that often.

I do not go to T2 anymore to “meet some other cryonicists”. I go to meet my friends again and hear how they have been doing. After 4 years, I have got to know some truly fantastic people – not to mention that coach-surfing across the globe has become very convenient!

Before I signed up for cryonics, I knew very few people who were interested in anything related to longevity or transhumanism. My first attendance to T2 in 2012 blew my mind. I remember one conversation in a hot tub that ran across immortality, rationality, bio-tech, A.I., business, and many more subjects. Ironically, it was also during that first meeting in Florida that I received contact details from other longevists back in Belgium! My network has been expanding since.

This year I flew in early - yes, the organizers do permit such flexibility! This not only allowed for some tourism on my part, but I actually used the opportunity to visit Alcor in Scottsdale (AZ), where I was kindly offered a tour. I signed up with CI myself, but think it is still useful to learn from other organizations - and the people behind them. It is also great fun playing with liquid nitrogen!

After arriving in Las Vegas, I had a great time with a few fellow “young cryonicists” before the T2 event took off. We enjoyed many different kinds of attractions the city had to offer. There is no better way to bond but to have some fun together. I figure it is good...
to get along with the people who one day might have to take care of your suspension. Or even later, of your rejuvenation.

All While Being Updated on the Latest Scientific Research

The presentations were one of the usual highlights, taking place on Saturday evening.

John Schloendorn presented earlier findings related to cancer-fighting cells. Anyone in biotech with too much time on their hands (I know, there are none) should probably get in touch with John. He simply needs to divide his effort across too many projects to give this project the attention it probably deserves.

Xiaoxi Wei presented her recent startup involving applied cryobiology. She wants to commercialize cryonics technology in fields such as cosmetics, and yes, even ice cream. Her enthusiastic delivery of the presentation was quite rightful: I see commercialization in such ordinary aspects of life as an excellent way of getting more capital into the science of cryobiology, and making cryonics more “mainstream”.

Robert McIntyre presented images of his work at MIT that showed virtually unharmed cells after being cryogenically preserved. This is extremely encouraging, since this has been one of the hardest challenges from the early days of cryonics on.

As is tradition by now, Bill Falloon also gave a presentation. It ranged from the history of cryonics, to the progress that has been made, to new projects such as Timeship and collaborations with famous longevity advocates such as Peter Nygård. There was also some attention for the “time capsule”, an underground house in Vegas which we visited on Sunday.

Aside from these presentations, there was also room for some entertainment and performances brought by some of the attendees. It is good to see cryonics is still cool.

Bring Your Friends

I warmly recommend any “cryonics teen or twenty” to attend future T2 events, especially if you have not yet done so.

But it does not have to stop there. At home, I talked with longevists about T2, who were already on the fence about signing up. This allowed me to give these “cryo-castrinators” that little push they needed to actually do the paperwork! I know from personal experience it can be hard to make this decision - it took me some years to sign up myself. With T2, it might be psychologically easier, knowing you will be able to show off an awesome trip to friends and family once a year.

T2 continues to be effective at reaching its goals. I dare say the event has had a positive impact on my own life. My knowledge about longevity and cryonics has grown, and I have gained the friendship of some fascinating folks who had the foresight to sign up too.

By the time I arrived home from a racking 20-hour trip, I found some new emails from this year’s attendees in my inbox. Some new initiatives have already started, following fresh discussions and encounters at the event itself.

I already look forward to next year. Who knows – maybe we’ll meet there!
Woman’s Brain Chemically Preserved by Oregon Cryonics; OC Now Offering Both Cryonics and Chemical Preservation Services

by Jim Yount

Oregon Cryonics Chemically Preserves the Brain of 61-year old Woman

On April 10th, 2015, Oregon Cryonics ("OC") received the brain of a 61-year-old woman at its Salem, Oregon facility. The woman had died from lung cancer. OC technicians have now completed chemical preservation procedures for this patient who is now being kept in secure storage at the Oregon facility. The hope of family members who requested this procedure is that future scientific advances will make it possible to use information preserved in the woman’s brain to restore or “re-actualize” her so she may live again at some future time.

As far as I know, this is the first time that a cryonics company has included in its preservation “menu” options the chemical preservation and long-term custodial storage of a human brain. This is not, of course, the first time that chemical preservation has been considered as an alternative to cryonics. The Berkowit family, in or around 1983, apparently had that in mind when they took back custody of Sam Berkowitz after he had been in cryonic suspension for some years at the Trans Time facility, then located in Emeryville, California (see Ettinger article reprint in this issue). I do not know if the family actually went ahead with those plans.

There is also at least one case where chemical preservation and storage of the brain of a relative was undertaken by a cryonicist, but not as part of standard choices of services offered by a cryonics company. This case is documented by Mike Perry in The Road Less Traveled: Alternative to Cryonics featured on page 21 in Cryonics Magazine, Third Quarter 2007. There are also several cryonics cases where chemical preservation was first applied to a brain and the brain was later frozen.
Historically, chemically preserved human brains have been used for laboratory research, often including dissection, which is a good thing. Dissection and study of these preserved brains has been very valuable in training future neurosurgeons, for example. Almost everyone knows that Albert Einstein’s brain was thus preserved. Many people also have passing knowledge of The Brain Preservation Foundation’s offering of a prize, now valued at $100,000 or more, to promote research and development into proving the efficacy of brain preservation in relationship to future restoration of function. See the url [http://www.brainpreservation.org/index.php?path=prize](http://www.brainpreservation.org/index.php?path=prize).

As people living today seek the prospect of immortality, there are at least two obvious questions the chemical preservation advocates need answered: 1) Is chemical preservation superior to cryonic preparation as a means to our reanimation? and 2) Is there any prospect at all for the reanimation of a human with memories reasonably intact who has undergone brain chemical preservation?

This second question relates to one asked by the Brain Foundation. The Brain Foundation’s website documents the fine biological structure that can be observed by an electron microscope. The procedures used to prepare such slides might well be sufficient to preserve encoded memory. The Brain Foundation website than asks the question: “Can the standard chemical fixation and plastic embedding technique used for electron microscopic investigation of brain circuitry be adapted to preserve the synaptic connectivity of an entire human brain?”

Should such fixative procedures, or those discussed later under “plasticization” prove effective, or even superior to cryonics, I am sure cryonics companies would be quick to adopt them. The chemical procedures used to prepare brain slices for observation differ significantly from those used by OC in the preparation of the 61 year-old woman’s brain. That said, the observation of the structural integrity of chemically preserved brain slices documented by electron microscopy suggests that there is indeed more than a zero chance of some form of eventual revival/reanimation/reconstitution of identity from chemically preserved brains.

Oregon Cryonics website makes several statements relative to the question of chances of revival starting only with a chemically preserved brain: “In the extreme case of chemical fixation, viability is sacrificed very early in the procedure, locking the cellular structure in place before any degradation can occur.”

Also on the Oregon Cryonics website: Under Services; Chemical Preservation Procedures; Prognosis:

> “The chance of revival is unknown, but probably poor. Certainly there will be memory deficit due to imperfect preservation and long term degradation. Long term degradation is a real concern over a span of 100-200 years, and the extent of that degradation is currently unknown. By comparison, cryopreserved patients will not experience any degradation over long timespans.”

The OC website distinguishes between various degrees of “death” and damage, making the point that unless there is Information-Theoretic Death to the brain, there may be some techniques that do not violate the laws of physics that could conceivably be applied to retrieve the information still structurally preserved. It may be that there is zero viability in a biological structure if taken to mean the ability to be alive (such as growing new cell cultures through incubation). But if the structure still has the potential to be a source of information that could lead to remaking a working structure through some as-yet discovered techniques, perhaps through advances in nanotechnology, as an example, the term viable could still apply.

Let’s assume, for the purpose of further discussion, that 1) cryonic preparation is superior to chemical preservation (at least as now practiced) but that, 2) there is a greater than zero chance that chemically preserved brains can be used as a source of information to possibly reconstitute the subject with some of his/her memories intact.

If that assumption is correct, then chemical preservation of brains may well be a service very valuable to the cryonics community. This seems especially so when made available to people of very limited means or where the conditions of death and deterioration of the subject does not seem to justify the considerable cost for cryonics preparation and long-term LN2 storage.

Oregon Cryonics is offering brain chemical preparation for a remarkably low price: $900. This price is good for occasions when the brain is extracted elsewhere and shipped to the Oregon technicians. If the

"Before we conquered Earth I thought humans were jerks, but look how they have so lovingly chemically preserved our little green brothers.”

Lazarus L. Frog
whole body arrives, and Oregon Cryonics must do the surgical procedure to remove the brain and then dispose of the rest of the remains by cremation, then an additional fee of $1,600 is applied. I would assume that there would be added costs if a long period of chemical soaking and monitoring under refrigeration is needed. Even considering those possible added costs, anyone with a reasonable balance still on his Visa card could afford this service.

For chemical preservation applied to that of the brain of a pet the keep forever or until reanimation cost is $600. The Oregon Cryonics website makes no distinction between kinds of animals, though they probably have mostly dogs and cats in mind.

How Chemical Preservation is Done

There are at least two ways that preserving chemicals can be integrated into a brain: 1) perfusion and 2) diffusion. Perfusion is where the body’s circulatory system is used to deliver chemicals to the tissues through the walls of the capillaries (the smallest blood vessels). Diffusion is where the chemical solution is exposed directly to the tissues. If a brain that has been removed from the skull and is then left to soak in a chemical solution, some of the chemicals would enter the surface of the brain as they “soak” into it.

The Oregon website describes how perfusion could be used to get the preserving chemicals into the brain. The fixative preferred by OC is 10% Neutral Buffered Formalin. This process would only work if the brain had not been removed from the body. A more common case may be where the brain has been removed by a medical examiner as part of a typical autopsy procedure.

In the cases I know of where the brain has been removed and chemical diffusion is used, the brain is immersed and soaked in the chemical preservative at a temperature just above freezing. The soaking goes on for a long time. Soaking the brain at a higher temperatures will speed-up the diffusion process, but the brain can deteriorate (literally “rot”) from the “inside-out” before the protecting chemicals can penetrate. The low temperature retards this deterioration but also slows-down the penetration of the chemicals into the tissues of the brain. The process can take a year or more to complete, and is monitored by a technician. The technician’s duty is to make sure the chemical solution is kept at an appropriate strength, since water will come out of the brain and dilute the solution. In the cases I know of, the technician also insures that the refrigeration is kept going and the appropriate cold temperature maintained.

The OC website makes mention of two other procedures that can be used for chemical preservation, as adjuncts to those described above. One: fixative solution can be injected by hypodermic syringe into the brain, either into the arteries and veins that supply blood to the brain or directly into the tissues of the brain; and two: the skull-cap can be removed from a patient and the soaking chemical solution literally poured into the rest of the skull that encloses the brain.

Plastination

As mentioned earlier in this article, yet another form of chemical preservation is plastination which is a process where the water and fat in tissues is replaced by plastic. If that technique can be shown to preserve brain structure, it might prove superior to preservation by formalin. The prime advantage of plastination is that a brain thus preserved will likely not degrade over time as much as “wet” chemical preparations. There are quite a number of disadvantages as well, including the fact that any incomplete plastination of the tissues of the brain would leave the non-plastinated portion subject to decay. The scope of such discussion goes beyond what can readily be treated in this article. Oregon Cryonics does not intend to pursue that form of chemical preservation and Jordan Sparks sees no prospects in plastination as a possible substitute for current chemical preservation procedures. Benjamin Medlen of ACS is looking further into plastination as a possible alternative procedure and is preparing an article to appear in either this or an upcoming issue of Long Life magazine.

Storage of Chemically Preserved Brains

In an interview with Oregon Cryonics Executive Director Jordan Sparks, I learned that there has recently been much interest by news media and the public in both the chemical and cryopreservation procedures now offered by Oregon Cryonics. I asked Jordan where the chemically preserved brains were to be kept. He replied that current plans call for them to be kept on shelves in a cabinet at the facility.
A couple of relative “newcomers” to the Cryonics Institute are Stephan Beauregard and his lovely and personable wife, Magali. Running for the CI Board of Directors in the last election held in the Fall of 2014, Stephan wound up in a tie vote with candidate Kevin Doyle. This had never before happened in the history of the organization. After an amicable agreement was reached in which Stephan would act as the voting board member, with Kevin as a non-voting board member, Stephan set about getting himself involved in the operations of CI. Further, along with Magali’s capable assistance, Stephan has worked hard at spreading the word about both cryonics and about the Cryonics Institute.

A Little Background About Stephan and Magali

Stephan is an only child born of French Canadian parents at LaSalle (Quebec) in Canada in February of 1969. He describes himself as being, back in his childhood days, “always a passionate and determined boy who loved animals, nature, music of the 50’s & 60’s (in particular, Elvis Presley), robots & planets.” His lifelong love of music led Stephan to get up at four-thirty every morning during one of his early years in order to sell newspapers so he could save up money to buy a drum.

This was the start of a life in which Stephan would hold many jobs, from waiting on tables to working for Pinkerton of Canada and also for the Royal Bank of Canada. One position was with Ensam, a prestigious engineering school in France. He also pursued his love of music, at one point giving up a very good job to do singing at various festivals and doing some recording as well as several other music related work assignments. This meant moving from a regular and steady job to coping with the “ups and downs” that are associated with the music business. Stephan still says, though, of his initial experience in the world of work selling newspapers, “I learned to be perseverant to achieve my goals and I learned the value of money.”

Magali was born at Amboise in the castles area of the Loire Valley in France, in May of 1979. Growing up in a small village in the countryside, Magali attributes her upbringing in that setting to her love of animals and nature.

At the age of 16 years, Magali began to have some serious health problems. One of those was a hypophyseal tumor which involved many surgeries and radiotherapies. Further, an eye condition known as keracotonus lead to surgery in May of 2007. A maxillary embolization for a broken artery occurred in September 2013. Of her experiences, Magali simply says, “I know what pain means and how life is so precious and how it is important to enjoy life everyday and to avoid losing one single minute of a day!”

Stephan’s life hasn’t been without challenges itself. In one he was a passenger in a serious car wreck. In another, he had a close friend who was the lead singer in a band that Stephan was in. His dear friend lost his life in a motorcycle wreck. Stephan says, “I was traumatized and sad with these two experiences and I learned that life is very precious and can stop at any time. So after that, I decided to be always be positive as long as I live.” In another traumatic experience, a boss at a job where Stephan worked took his own life only a day after having what seemed to be a normal conversation with Stephan. Things, as one can tell, haven’t always been “roses” but there have been interesting and uplifting experiences along the way as well.

One of Stephan’s more interesting experiences in the business world is one in which he obtained a sales job by simply being bold.
with the folks in charge, who wanted someone with “more experience”. They also wanted someone a little older. Stephan was fifteen years under the age they initially had in mind but he told them: “Try me for one week! Send me in the worst area where you don’t want to go and don’t pay me! You have nothing to lose!” Stephan proudly reports that within two years, he was one of the top salesmen in the company. After two years and a half, he was the 4th best salesman in the company, among the fifty-five sales people there.

In recent years, work wise, Stephan and Magali created their own business, Annuaire du Quebec (2003) Inc. It is a different type of phone directory with pictures and lots of colors. It is also on the web. In 2015, that makes 12 years that Stephan has spent selling ads and Magali has spent making the infography of the phone directory book/online version. They both say that they love their work and that their business venture has left them time to travel worldwide, to live lots of experiences, and to meet people such as personalities like the Dalai Lama, and Neil Armstrong ... and talk to people about veganism & cryonics

A few questions for Stephan and Magali and their replies follow:

**How did you two meet?**

*We met when Stephan went to Nouvelles Frontieres, a travel agency, to buy a flight ticket to come back to Montreal from France. Magali was working there for one year. We married on August 9, 2003 at Beauregards’ Castle in France.*

**When did you first become acquainted with cryonics?**

*Stephan first read about cryonics 22 years ago when he moved from Quebec to France. He found the article very interesting but at that time he wasn’t perfectly bilingual and there was no internet to find out more about the topic. So, the article was simply kept on his mind during many years. After we met in 2001, Magali read the article. She found that interesting. Later we watched Vanilla Sky and Forever Young on television, as well as checking things out on the internet.*

**Why did you ultimately choose cryonics?**

*We chose cryonics because we believe in science, technology & the future. We know that we will not have enough time in present day society to accomplish all that we want to do. Also, simply, we want to see the future. We know that people can change the way of life of humans even in a century and we want to see that. We want to see how humanity will be in 100, 200 years or more.*

*We also hope to explore other planets or galaxies. It’s not possible now because we are not at the right century but cryonics can help us to realize all our dreams! We talked about that in French & English on social networks, TV & radio in Quebec and in France in the past few years. We even put some of them on Youtube.*

**Have you had any negative feedback from people?**

*A lot of people told us : “... but in the future, you will know nobody, so why do you want to come back ?”. We always answer that we will probably have the chance to meet people that we can’t meet now because they are not born yet! Why be afraid of the future, it is always better! Just think, would you prefer to come back in 500 or 1000 B.C.? Personally, for us, not at all! Even the modern day miracles that already exist of electricity, the internet, modern medicine ... all we can say is “Wow!”.*

**What about the possibility that cryonics may not work?**

*We know that we may, at worst, only have a small chance to be perfectly preserved and come back, since no one knows exactly what the future will bring, but why not take that chance?! We prefer to know that our husband or our wife is also cryopreserved in the hopes of seeing them in the future due to cryonics coupled with the advancement of science and technology.*

**What has your experience been like with the Cryonics Institute?**

*We believe a lot in the Cryonics Institute because there are very good people who constitute the Board of Directors. They work hard and are able to make the right choices and to make good decisions on behalf of the membership as a whole. If you have a suggestion, don’t hesitate to talk to them, they are very open! That’s one of the other reasons why we decided to become Life Members of the Cryonics Institute. People at CI are very kind, warm and competent.*

*That’s the philosophy of CI!* **What’s your general approach to life?**

*We’re very positive and we enjoy life every single day. We love to put sunshine and color into our lives. We love to help and meet people all around the world and make of the world a better world, to the degree we can.*

**How have things been going lately?**

*In August 2015, we will celebrate 14 years together and our twelfth wedding anniversary as well. Magali has now double citizenship (French & Canadian) and is proud to live in North America. She knows how it’s important to speak English in North America. So, that’s one of the reasons why we decided to stay many months in Arizona during the winter time.*
What are some of the things one or both of you have been involved in while trying to help out the cause of cryonics in general and/or the cause of the Cryonics Institute?

One of the most rewarding things is just to help convince persons to become CI members and to help guide them through the process. Another helping opportunity was to translate the CI membership agreement and related documents into French. These are now used on the CI website. There have been people that have been contacted in various countries and in some hospitals that are now willing to help cryonicists in those various geographic areas where little or no help existed before. The countries include Bhutan, France, India, and Nepal. People from those countries, as well as others, are welcome to contact us for information and advice. If we don't know the answer, we'll try to put them in contact with the people who do. We intend to continue our efforts in as many other countries/hospitals as we are able. A big challenge, yes, of course! But cryonics and the fine people associated with the Cryonics Institute are well worth it!

An exciting relatively recent development was working with the Magnus Poirier Funeral Home in Montreal (Canada). Following around ten months of negotiation, the professional team of this funeral home is now available to help with the cryonics procedure (ice bath, perfusion, and local & international transport) for less than $5,000 CDN. Marie-Josee April & Celine Descoteaux, head thanatologists for many years at Magnus Poirier, came to CI near the end of March of this year for a couple of days with the objective of having a meeting with the American team at CI so that both sides could share knowledge and information. The end result of the negotiations and the meeting is that Magnus Poirier is able to offer...
That seems a bit casual and subject to the possibility of various mishaps, including outright theft and holding for ransom. However, the system for security of the subjects can certainly be beefed up over time, and I assume it will be. On a positive note, as described on the OC website, the system for record keeping and cataloging of patients at the OC facility is first-rate, probably the best in the business.

There is one advantage to chemically preserved brains that appears to be overlooked by advocates, including the folks at OC: chemically preserved brains need not be at a facility at all. They can be kept in a cemetery, perhaps in a standard coffin with the rest of the body or buried along with cremated remains. With such an arrangement there must be a legal means available to retrieve the subjects and cemeteries are used to dealing with next of kin, not cryonics societies. However, given the low cost of chemical preservation and a ready place of cheap (free in a way) storage of brains thus preserved it may be that future mortuary practice will include this option.

The Cost of Reanimation and a New-Life Fund

Every cryonist knows that there will be a cost to revive/reanimate patients. It is often assumed that the cost for this future service is included in the fee charged by a cryonics service provider and is lumped in with the cost of cryopreservation and long-term liquid nitrogen storage. That assumption is based on murky speculation at best. No one knows what the cost of reanimation (should reanimation prove possible at all) will be.

A number we can better ascertain is the cost of living for subjects that are reanimated. After all, if we accept subjects for experimental cryo-
onic suspension then, it can be argued, we incur a moral obligation to care for those patients should the experiment succeed. We can’t just reanimate them and then provide them nothing more than the memory of a hardy handshake as they are shown the door.

The capital sum needed to maintain a reasonable standard of living, assuming that the subject cannot work and is entitled to no government subsidies, is mind-numbing. According to the U.S. Department of Health and Human Services website (www.hhs.gov), the 2015 “poverty guideline” for a single person living in the contiguous United States is $11,770. That is the amount of money needed to live at or below the poverty level for a year. Ignoring both inflation and increase in cost of living and assuming a rate of return on investment of 5% per year one would need to invest a principal sum of $235,400 just to live at the poverty level.

I have been told by, and read comments by, a number of people at CI who hold that the $28k per person CI now charges is apt to be adequate to keep reanimated people in oats and clover. That is after keeping them in the tank for X number of years, and after reanima- tion is paid for! Now comes OC that charges $900 for chemical preservation forever! Jordan readily admits that additional funds will be needed for revival and a new-life fund (if such a fund proves needed) for humans revived from chemical preservation under the $900 plan.

Of course, there may be various forms of New Life: oats and clover in virtual reality for example; or maybe we can all live in self-sustaining communes such as the lifestyle enjoyed by medieval monks. Also, CI has in the past benefited from considerable donations from wealthy members who “overfund.” OC might also receive such funding that might benefit all patients, including the chemically preserved ones. Nevertheless this whole topic is one that deserves a great deal more debate, thought, and planning by all cryonics organizations.

Jordan pointed out that for the cryopreserved patients, allowance is made for what I will call a “reserve,” whereby money is put aside for long-term purposes, that might include revival.

What Constitutes Revival?

One of the first things any cryonics newbie should do is to read Chapter Eight of Robert C.W. Ettinger’s The Prospect of Immortality titled: The Problem of Identity. In that chapter Professor Ettinger asks the question(s) “What characterizes an individual? What is the soul, or essence, or ego?” He asks the reader to consider a series of experiments, some of which can actually be performed, others that can merely be visualized. It is clear from this chapter that there is no easy answer as just what constitutes the “self,” but one can’t turn around in the mire of prospects for immortality without bumping into this question.

Sorting though the arguments of just what makes up the “self” will determine which reanimation/revival/reconstitution of identity techniques are acceptable, and which are not. Most cryonicists feel that their clone, while perhaps an interesting fellow, would not be themselves in any meaningful way any more than identical twins are one and the same person. Past this one note of agreement, the cacophony of opinions rage.

Some cryonicists hold that the information that makes up our mind, as stored in memory, makes the self. If the neural pathways of the brain, or whatever constitutes memory and personality, can be scanned and re-encoded (as computer code, for example) then that code is the person or self. This information can later be used to program another version of the self, that proponents of this theory state, is the self.

Other cryonicists believe that some elements of continuity must characterize the self. Molecules are misplaced and scrambled through the process of death and decay. If nanotechnology can put the molecular jigsaw puzzle back into a viable functioning whole, then that technique is acceptable to this second flavor of cryonicists.

Why go to such labor to describe this schism of opinion? Because chemical preservation, as much or more so than cryopreservation, poses such problems of identity. It may be that only a process that can scan the neural weave and “read-out” memories and other elements of “personhood” will be possible with chemically preserved brains.

And who is to make decisions as to just what constitutes identity and, based upon such opinions, decides to revive the chemically preserved patients, as well as the cryopreserved patients?

Perhaps a version of yourself could be achieved in 50 years, but a higher-fidelity version could be achieved in 100 years. Do the people who hold the right to revive reanimate you do so in 50 years or should they wait upon the near certainty that a better version could be achieved in later years? Would the you of 50 years be you in any meaningful sense? What if the 50 years process used to revive a version of you destroys the original material? These are all viable questions.

Jordan tends to brush aside such considerations as being intellectually interesting, but not presently relevant. He describes the cryonic process as consisting of “Phase I” and “Phase II.” Phase I is getting the person to the future in as good a condition as is possible. Phase II is the revival/reanimation of the person and any additional support needed thereafter. He said that he can’t do anything about Phase II, so why worry about it? He can do something to ensure that such patients make it to the future where they then become the responsibility of the Phase II technicians.
Head, Brain and Whole Body Cryopreservation

According to Jordan Sparks, Oregon Cryonics has plans for offering whole body cryopreservation as well as the neuro and brain cryopreservation that are now offered. Jordan rightly observes that some cryonauts and some cryonauts’ relatives find the prospect of their head and body being separated rather distasteful! That is so even though one can put forth some good arguments for neuro-preservation being at least as likely and perhaps more likely to lead to future revival. The full menu of heads and brains and whole body cryopreservation for people and pets (to say nothing of chemo preservation) will put OC directly in competition with CI and Alcor. On the other hand, it will give individuals as well as organizations like ACS, who rely upon the services of other cryonics groups for most cryopreservation services, more choices.

Jordan Sparks, who served as a CI Board member for six years, does not see the entry into the cryopreservation market by OC as necessarily cutting into the market now shared by CI and Alcor. An active cryopreservation company, like OC is becoming, may slice out a piece of the cryonics market pie, but its activism and publicity efforts may also expand the size of the pie.

That said, it is the opinion of Jordan, and OC, generally that the brain is where it’s at! Whether or not that brain is attached to a head or body is almost immaterial, except (of course) for convenience of cryoprotection, with a nod to public perception. The very definition of cryonics by OC, (first sentence of the website) makes that clear:

“Cryonics is the preservation of the brain by cooling to subzero temperatures.”

The website goes on to say:

“The goal of cryonics is to preserve the information in the human mind. This includes the memories, personalities, emotions, and aspirations of the person, everything that makes them a unique individual. If we preserve the physical network of neurons with high enough quality, then the person isn’t really dead. They could be revived with high enough technology.”

Prices for Cryopreservation

For $31,000, a member of OC can buy neuropreservation for “most tissue of the head.” This price includes $6,000 for transportation. Standby Service, the positioning of a field response team at the bedside of an ailing member, is not included in this price.

$14,000 will get you a brain-only cryopreservation, and (as previously stated) $900 buys chemical preservation with indefinite time period storage by OC.

By “indefinite time period” we mean until technological advances allow an attempt at revival or for long periods of time (perhaps several hundred years) in the hope that technological advances will indeed come about.

“Oregon Cryonics does not yet offer whole body preservation,” states the OC website. Jordan Sparks explained that it will probably be at least a year before OC will welcome whole body patients and the cost is likely to be around $250,000. At that price whole body cryopreservation and indefinite LN2 storage will be comparable to that of Alcor.

In addition to the chemical preserved brain of the 61 year-old woman, OC has another patient, Cupcake, a cryopreserved dog. Cupcake’s brain is now in liquid nitrogen storage. OC’s website indicates that its present offerings for cryopreserved pets is only for brain storage. The case report for Cupcake, documented on the OC website, is quite detailed and indicates a dedication to proper documentation: http://www.oregoncryo.com/caseReportPet1.html

Pet brain cryopreservation costs $3,000, while pet brain chemical preservation is priced at $600.

OC does not now offer low-temperature storage of tissue or cell samples.

Membership

Unlike most (perhaps all) other cryonics organizations, OC has no membership charges, either initially or annually. Members are people who have completed arrangements to be preserved when they die, and who have provided the needed funds (often by way of life insurance policies).

Oregon Cryonics

Oregon Cryonics is, very much, Jordan Spark’s own little candy store. He is the lone incorporator, sole director and the guy who receives service of process should the company be sued. He calls the shots, makes policy and management decisions, funds projects, hires and fires employees as well as supplies the capital investment and working capital. He is not answerable to a board of directors; he is answerable to himself.

Jordan’s keen interest in cryonics goes back more than twenty years. He credits his reading of the book *Engines of Creation*, by K. Eric Drexler, as a prime stimulus of this interest.
After practicing dentistry for many years, he developed software to serve the needs of himself and other dentists. That software, marketed under his company Open Dental, has given him the means to pursue cryonics full-time.

What motivates a person to devote such time and personal fortune to a cryonics service company? Jordan explained that he wanted high quality cryopreservation for himself and did not want to have to leave Oregon to get it. He believed that he could do better at providing such service than that which was available. If he was to have a better mouse-trap, he would have to build a better mouse-trap. Since a person cannot provide cryopreservation services to himself, this means training others to be cryonics technicians.

Jordan sees an acute current need for cryonics technicians. “There are quite a number of qualified and dedicated people doing cryonics research, and I am very grateful for that fact,” observed Jordan. “But there are not enough people who know how to apply that research to cases.”

While OC is Jordan’s candy store, he is not the only candy-minder in the candy store. The Oregon website lists Operations Manager Mathew Sullivan, Office Administrator Luke Parrish, and Groundskeeper Matthew Deutsch as staff members. Jordan points out that these people have considerable prior experience with cryonics service providers. He has made provisions for people on his staff and other supporters to continue the company should he himself become a customer.

As a company licensed by the state of Oregon under the Uniform Anatomical Gift Act, Oregon Cryonics can legally accept body and tissue donations. While the company is non-profit, it is not a non-profit public charity (a 501c3 corporation). That means any earnings are subject to taxation, though Jordan points out that (like CI) the company is not expected to produce a profit.

The company operates out of a 5,000 square foot building that has assigned space for both chemo and cryo preparation as well as long-term patient care for both chemical and cryonics preserved patients. The building includes a room that can be dedicated, on a short term basis, to any patient who expects soon to terminate phase I of his life. Such termination appears to be covered under provisions of the Oregon state’s “Death with Dignity” law. There are plans to erect additional buildings in or near Salem, Oregon in the near future.

Expansion of Services

Under the topic “Oregon Cryonics Mission” the OC website states: “The primary mission of Oregon Cryonics is to cultivate cryonics clinicians, professionals who directly provide patient care.” Jordan sees himself primarily as a cryonics clinician. Clinicians do need to travel, but it is best that they “work out of an office in their home city.” The mission statement goes on to state: “Many permanent physical branch facilities need to be established, both for clinicians and for the patients themselves.”

The mission statement then presents possible ways to pay for these branches, primarily through dues or donations by the people in the area likely to need cryo or chemo services. Jordan has a unique advantage that most cryonics companies do not have when it comes to financial support of personal in branch offices. In our interview he talked about the possibility of employing cryonic support personnel though his prosperous dental software company. Thus a branch cryonics clinician, when not working on cryonics projects, would work via distance outsource, only needing a proper internet connection to make that happen.

Jordan sees the Seattle area as a logical first location for such a branch. He also mentioned the San Francisco Bay Area (where ACS business office is located), Southern California, and even the Phoenix, Arizona area as possible future branch locations.
The Future of Oregon Cryonics

At this point in time, any long-term expectations for Oregon Cryonics are, very much, tied to the energy, ambitions, and money of Jordan Sparks himself.

CI members of long standing will recall that for many years the Cryonics Institute was highly depended on Robert Ettinger for labor and financial support. Prior to a substantial bequest to Alcor following the death of Dick Jones, Alcor was also dependent upon the efforts and donations of just a few people.

At age 44, Jordan may well have many years ahead in which to establish Oregon Cryonics as one of the prime movers and shakers in the cryonics field. The long-term success of Oregon Cryonics may depend upon how successful Jordan is at finding those additional clinicians, and others willing to use their energies and money to help guide us to immortality.

Are the patients of a start-up cryonics company secure? That depends upon the start-up. OC now appears to be well-run and well financed. Should future fortunes fail and the company can no longer stay in business and properly care for chemical and cryonics patients, then the patients can go to other companies for maintenance. Oregon Cryonics does have options that, as far as I know, are not now being considered by other cryonics providers. Such options come about because Oregon Cryonics has both chemo and cryo preservation. In emergency situations the OC patients could be converted from cryopreserved patients to chemical preserved. Oregon Cryonics knows how to do both.

Plastination

By Benjamin Medlen

A relatively new technique in preservation is seeing widespread use in China and other places. It is that of plastination. First developed in 1977 by Gunther von Hagens, the process at first appeared to be a grotesquerie, with the only practical applications limited strictly to the medical education of observers. It has since seen more acceptance and more than 40 medical schools make use of the process as a learning tool to display dissected specimens. Hagens has established an organization for plastination in Germany, Japan and China, and museums have opened in Florida and Japan.

First the specimen is dissected, and a glutaraldehyde-based solution is used to prevent decomposition. Water and lipids are removed and replaced by plastics. In the process, tissues and organs are apparently perfectly preserved and can be placed in any position. Unlike embalming techniques bodies that have been plastinated are not wet, not do they have an odor. The bodies may also be stored at zero cost, and at any temperature, as well as being far less costly overall. There is also the added benefit of the patients being more easily transportable.

In more recent years, it was inevitable that some people in the cryonics community considered this process as a viable means of preservation for reanimation, such as Giulio Prisco in his essay titled Chemical Brain Preservation: Cryonics for Mind-Uploading. His examination suggests that the process would be irreversible (tissues would be essentially rendered completely useless for re-animation), but would leave important organs like the brain in the ideal condition for scanning and reading should that technology be developed. He advocated converting the brain into sliced sections and preserving them using the plastination process. The smallest structures of the brain can be imaged and recorded by the nanometer even with current level of imaging technology. Perhaps in the future, such techniques may be used for brain uploading from a preserved plastinated brain.

But before you decide that plastination is the way to go, and you are alright with having your personality copied and placed into another body as an alternative to more traditional cryonics, keep in mind that there are serious drawbacks to the process. One being that that plastination has to be 100% perfectly effective in preserving the brain and that has to include all of the brain's tissues. Cryonics on the other hand, is postulated to preserve brain structures smaller than the connectome. Another factor is that plastination is deliberately damaging to the specimen, while cryonics is only incidentally damaging.
Cryonics Procedures May be Initiated Inside the Oregon Cryonics Facility

By Jim Yount

It is apparently possible for a living person to relocate to the Oregon Cryonics (OC) facility where he can take advantage of Oregon's Death With Dignity laws that would enable facility technicians to initiate cryopreservation procedures just after the pre-arranged time of death. Such a service is available for Oregon Cryonics members, but becoming a member is quite easy and promptly becoming an "Oregon resident" for the purpose of taking advantage of this law seems also to be no problem for people now living outside the Beaver State.

In a telephone interview with Jordan Sparks, Executive Director of Oregon Cryonics, Jordan stated that what makes this possible is the legal status of Oregon Cryonics as a state of Oregon Nontransplant Anatomical Recovery Organization (NARRO). OC now has a patient room at its facility for such cases (see photo page 19).

This is a VERY IMPORTANT DEVELOPMENT! It is highly desirable to initiate cryonics preparation very soon after clinical death. There have been relatively few cases where an emergency response cryonics preparation team is able to be on hand at a patient's bedside ready to start the procedure immediately after death. For those few cases the place of deanimation has never been at a cryonics facility. There is one obvious exception to that statement: the Dora Kent case which lead to major problems for our friends at Alcor.

There are several big advantages for patients under this scenario. First: the team of technicians can function in their own facility without having to set up equipment at a temporary location. The team need not, for example, make use of a funeral home's embalming room to wash out and cool the patient prior to sending him to a cryonics facility for cryoprotective perfusion and/or vitrification. The cool-down and vitrification of the patient can be seamless; all done at one location. Second, the patient need experience none of the time-delays between his de-animation and the commence-ment of the cryopreservation procedure that we have come to expect as common. Third: the cryopreservation procedure itself may be used as the means to induce "death with dignity." The process now followed by OC calls for a physician prescribed medication be used to induce death.

However, there is certainly the prospect for use of a procedure much the same as laboratory technicians, such as that Mike Darwin has used, to clinically induce hypothermic conditions in laboratory animals. As the body temperature is lowered, first breathing and then heartbeat stop, the heart and lungs are replaced by blood-pumps and oxygenators as the blood itself is replaced by blood-substitutes with increased concentrations of cryoprotectants in step with reduction in temperature.

I asked Jordan if there was the possibility for OC to perform the initial cryopreservation procedure, including vitrification of a whole body, at the Oregon facility in Salem, then the patient moved to the CI facility for long-term storage. He replied that he was open to such a plan, though he doubted if many people would wish to thus combine services. Perhaps Jordan is correct. People often are reluctant to travel to a new location in anticipation of their eminent death. There is also the very practical problem of transport of very cold patients cross-country. This author is certainly quite interested in OC cryopreservation under the Oregon Death with Dignity laws, and long-term cryostorage at the CI facility; and I expect a number of other ACS or CI members will be as well.

Unlike Suspended Animation, Inc., Oregon Cryonics does not offer field response to cryopreservation candidates. That said, OC has the advantage of having one person, Jordan Sparks, clearly in charge. If OC receives a request that falls outside its current policies and procedures it may quickly move to modify those procedures. So always ask!
Robert Ettinger is, rightly so, referred to in most circles as the “Father of Cryonics.” Having the basic idea come to him relatively early in life, he spent years and years researching various related topics until, in the early 1960’s, he wrote his seminal book The Prospect of Immortality. This outstanding piece of work, which still reads extremely well to this day, outlines the basic arguments in favor of, and provides fundamental information about various aspects of cryonics. In the intervening years, and especially with the development of the field of nanotechnology, the arguments in favor of cryonics have only gotten stronger and stronger while several organizations have been formed to make this concept a reality.

Based on the evidence, the long-term placement of individuals, preferably after proper preparation, at what are ultra low (“cryogenic”) temperatures, is an exceedingly rational thing to do. The organizations active in storing patients in this manner continue to make substantial efforts to improve this endeavor and will, no doubt, continue to do so down through the decades. Those efforts are to be soundly applauded.

But what of other approaches that are less technologically intensive or, at least, less involved in terms of long-term storage. Are they viable approaches as well? In the following writings, Robert Ettinger talks about these possibilities in his usual logic oriented and fact driven way. The first article offered is from The Immortalist, the previous name of Long Life, from January of 1984. The second article offered is from Longevity Report No. 93. The entire Longevity Report issue, which involves other topics as well, may be found at http://www.quantium.plus.com/lr/lr94.htm

(A big “thank-you” goes to Mike Perry and John de Rivaz, who tracked down information needed for the writing of this article and/or gave permission for previously published information to be reprinted here).
with our present methods than with cruder ones. Nevertheless, in principle, restoration to life, health, and physical youth should be possible—at some stage in the advancement of science—provided only that enough structure is preserved to make clear what the original configuration was. Pickling denatures tissues (changes their chemical and physical character in ways that are presently irreversible), but does not necessarily make the original structure indecipherable.

Eric Drexler (work in progress) has pointed out that many techniques have been used in biology to “fix” biological structures (preserve them) in ways that make them inoperative but nevertheless readable. In particular, glutaraldehyde perfusion can cross-link molecules in such a way as to preserve essential structures, even though viability is lost.

Arguments against any such strategy are numerous and obvious. Even though a crude preservation may leave rescue possible in principle, still in practice the odds become longer against you when you throw a bigger burden on the future. Relying more heavily on future advances also dims credibility and makes public relations more difficult.

More important still, while a plausible case may be made for the “essential” preservation of structure by chemical fixatives, or drying, or freezing at relatively high temperatures such as that of dry ice, the case hasn’t been proven, as far as I know. As Mr. Drexler points out, it seems likely that the determinants of personality and memory do retain their structure under such treatment, but we don’t yet know enough about the details of personality and memory representation to be certain. (We do know, for example, that rats retain memory and personality after having had half the water in their brains changed to ice for a relatively short period, and there are many other encouraging facts, but they do not yet seem conclusive).

Yet this coin, like most, has another side. We face the brute fact that so far cryonics has only had a few dozen takers, even though many thousands of Americans could easily afford current prices of about $29,000 - $100,000, and a majority could afford it through life insurance and moderate budget sacrifices. Unless something changes, it seems that most people are unwilling to pay substantial sums (even if they are millionaires) for something that lacks prestigious endorsement and imposing buildings.

Many things will change, of course; we are forcing change. But many of us will survive only if procedures become cheap—cheap enough for us, or cheap enough so that many others will participate and strengthen the cryonics movement.

It is a fact—we have examples—that some very bright people will participate if the expense is low, even if the odds are adversely affected in a manner some would consider unacceptable. There are people right now who are preserving relatives by crude methods without help; obviously they, and many others, would join an organization willing to adopt similar methods.

Would such a policy constitute a public relations nightmare? Might the effect be merely to switch some people from high technology to low? Is it our duty to shun such temptations and try to persuade these people to pay for the best? Maybe.

And maybe not. As far as the opinion of the scientific community is concerned, it is already (still) just a micron above nadir; most “authorities” say that revival, even after freezing and storage by our best current methods, has a probability of essentially zero. And who knows whether a mix of high and low technology might not result in higher absolute numbers of high tech procedures?

There are also some psychological factors that, while obscure, may in the end prove important. Some people who could afford current prices for themselves cannot also afford them for their children or parents, and are paralyzed by conscience or guilt from doing anything. There are also people with relatives in mausoleums—mummified—who would be electrified by the thought that, even for these, not all hope is lost. And there is the creeping-commitment scenario: some will commit themselves for a cheap alternative, will stay in touch with the cryonics scene, and will later upgrade those commitments to high tech. (“Getting your feet wet”).

It may also be instructive to recall some Sunday Supplement predictions I read in the newspapers as a boy, 50 years ago or more.
Visionaries were saying that in 50 years we would have (a) family helicopters, and (b) moon rockets. Most people at that time were more skeptical about the moon rockets than the family helicopters—yet we have the moon rockets, and the family helicopters weren’t even on the horizon.

Now consider the crucial questions in cryonics. (a) Will the organizations be financially stable long enough? (b) Will the technology advance far enough? We usually consider (b) more questionable, but it is entirely plausible that (a) may prove more critical. People who believe that might tend to opt with Berkowitz: choose low-tech, with a greater assurance of hanging in there. After all, if your storage has to be ended because the money runs out, it won’t matter how well you were perfused; whereas if you remain in storage long enough, you may eventually be rescued, even if your preparation was crude.

If thinking along those lines were to result in some organization launching a cheap storage program, a new term would be useful, something signifying neither cryonics nor suspended animation, but fixation of structure. Perhaps it could be called lockform or morphostasis: a condition in which viability may be lost but at least the important structures remain readable indefinitely.

The Cryonics Institute, of course, will not be such an organization. We can afford cryogenic storage, although in some cases only after moderate personal financial sacrifice. Since we can afford it, it would be foolhardy to settle for less, just as we do not forgo good medical treatment, even when it comes somewhat burdensome, in favor of home remedies. We believe CI is structured for long-term stability, and our course is set.

In the future, however, if other organizations arise with a bias towards morphostasis, we may have to recognize them as legitimate branches of the immortalist movement.

In May of 1985, Robert Ettinger wrote an article “Mummies and Morphostasis”. Two paragraphs from it are as follows:

We have often reminded readers that freezing preserves biological specimens much better than any other known method of “fixing”, yet other methods—even natural or accidental ones—have in some instances produced a remarkable degree of preservation.

After covering human brains being “well preserved” (at least as reported in the frequently imprecise national news sources) after 8,000 years in a Florida bog, as well as the extreme hardness of DNA (but pointing out that the phrase “extreme hardness” is not exactly detailed), Robert Ettinger finishes as follows:

What emerges more and more clearly...is the sheer difficulty of destroying information. Natural conditions are seldom so fierce as to destroy not only structures but the traces left by those structures, from which their original conditions may be inferred; and once we know what those structures were, advanced technology at some point will be capable of repairing or replacing them.

In September of 1989, Robert Ettinger wrote an article entitled “Cheap Biostasis?”. In this article, Mr. Ettinger reviewed various options ranging from ultrahigh tech (and ultrahighly expensive) to ultralow (and, therefore, basically cosmetic) possibilities. On the lower end of the scale, which he terms “cosmetic interment” (along the lines of Lenin’s Tomb) Mr. Ettinger states:

We would take care not to confuse this with cryonic suspension, and to make no claims or even suggestions of possible future revival.

On the high end of the scale, he says:

Direct benefit to the individual is seemingly maximized by choice of the highest-tech, most nearly state-of-the-art procedures he can afford. Other things equal, this will improve his bottom line, the probability of successful revival. How much his chances will be improved is the all-important question. Some of us think that molecular engineering techniques will be both necessary and sufficient for revival after any kind of freezing now available; if this turns out to be true, money spent on marginal improvements in perfusion, for example, will be wasted insofar as direct benefit to the individual is concerned.

Below is Robert Ettinger’s comment from Longevity Report Volume 16 No. 94. (First published in April of 2003).

Less Costly Alternatives
By: Robert Ettinger

There are advocates of offering cheap alternatives to cryostasis, such as “morphostasis” (attempts to preserve structure without regard to function), which might include fancy embalming, freeze-drying, etc.

They intimate that cryonics organizations may be uninterested in these partly because there isn’t any profit in it. This really isn’t accurate. All of the active cryonics organizations, except Suspended Animation Inc., are non-profit. We are interested only in the benefit of our patients and future patients - which includes growing our numbers.

However, opinions naturally differ on the best ways to maximize the chances of our patients. One of the considerations is our general credibility, which depends in part on the evidence we can adduce, which is greater for better methods of cryostasis and much weaker
for such things as plastination. Another consideration is “paternalistic” - if we offer cheaper but less hopeful methods, some members will be tempted to reduce their chances by buying the cheaper methods, even if they can afford more expensive ones. Another consideration is the “complacency” effect, meaning reduced incentive for progress if current methods are seen as “good enough.”

Alcor’s stance has always leaned toward offering what they have sometimes euphemistically called “state of the art” cryopreservation—meaning the best they were currently able to offer. Suspended Animation Inc. offers what they believe to be the best available anywhere. Cryonics Institute has tried to strike a reasonable balance between cost and effectiveness, with the emphasis on demonstrated effectiveness, and our current research, if its apparent promise is fulfilled, seems likely to provide the best ever in results, with perhaps no increase in cost.

CI also wants to offer its members the widest possible set of options. This means, first, that we are willing to provide storage only, if the member wants someone else to do the initial preparation. It also means we want to explore the cheaper options in a systematic way, and eventually offer those also, but that is a lower priority and not yet on the active list.

Editor’s Note: The above sections briefly lay out Robert Ettinger’s fundamental views on “alternatives to cryonics”. I think it should be noted that, knowing Robert Ettinger as I did, I believe that, first, no basic criticism of Suspended Animation was intended in the paragraph discussing the “profit motive” in cryonics. Rather I believe it was just an attempt to dispel the myth that cryonics organizations that engage in the long-term storage and care of cryonics patients are basically just money driven entities.

Second, I think it should be noted that Mr. Ettinger is indicating that not all forms of effort may turn out to be equal. At this point in history, cryonics isn’t, regrettably, a completely “turnkey” operation where the individual simply fills out a few forms, writes a check, and then walks away with the “heavy lifting” to be done by others. It is very important that one should continue, as is urged on a regular basis in this publication since its inception, to be “pro-active” in one’s efforts and to try to choose the method and organization that gives an individual and their loved ones the best chance.

For virtually all, this is, at present, low temperature storage after proper preparation. The fact that the “Father of Cryonics” himself is a patient under the care of the Cryonics Institute leaves little doubt the approach he thought was best. If other approaches or methods are chosen, it should only be after careful consideration and after as in-depth a review of the pros and cons as the person engaging this very important decision can make. At bottom, though, as stated by Robert Ettinger in the “Cheap Biostasis” article:

All we can do is give it our best shot, and stand ready to regroup if necessary. In the army they always told us that to make a mistake is bad, but to be indecisive is worse.

The key point in this article and, for that matter, what needs to be kept in mind while reading every issue of this magazine, and/or other information about cryonics as well, is to not procrastinate. Remember that a choice beats no choice and the “no choice” option has led to the loss of individuals down through the years, including some that had expressed keen interest in the topic of cryonics. Don’t be one of them. Try to get going in getting actively involved in making your cryonics plans and carrying them out and try to start on that effort in a real and effective way as soon as possible.
I thought about becoming a Methodist minister in my teenage years. The fact that I didn’t is probably a plus for the Methodist church and a minus for cryonics but, of course, life doesn’t always turn out as we think it will in the flower of youth. I have found, however, that Scripture is useful for a whole lot of situations, secular as well as religious, and the above snippet from the book of Matthew is the rough basis for my column this time around. It concerns my friend Jack.

I first met Jack when I needed to have an engine in my wife’s car repaired. An attempt to start it in freezing cold weather, so she could go about her necessary duties as a home health nurse, wound up with a loud clanking sound, which I, in my amateur mechanic status, diagnosed as a broken connecting rod. Turns out I was right, but that was just a lucky guess. The real diagnosis only occurred when someone with some real knowledge of the subject, in this case, my newly found friend Jack, had a chance to listen to it. Like most men, the fact that my mechanical prowess, amateur though it may be, turned out to be right was a source of bragging around the house, much to my beloved wife’s good-humored consternation.

My running into Jack was a matter of luck. The mechanic whom I normally used had decided, after many years of doing so, to stop doing engine rebuilds and replacements. It just wasn’t worth the trouble to him, especially now that his kids were grown. He said there was a boy working in a garage behind the NAPA auto parts store that was still doing that type of work and that I should check with him. Not having much of another choice, I drove off in my wife’s vehicle, clanking sound and all.

When I arrived at the little shop that Jack worked in, I entered the door and there, in a plastic chair beside a well-stoked wood-burning stove, sat the only reasonable hope for repair services in our little town. It was around ten o’clock in the morning and Jack had a cigarette in one hand and a can of beer in the other. “Well, this is going to be interesting,” I thought to myself. Turned out, over the years, that I was right.

Jack had a couple of guys working for him and they all three, plus me, gathered around the vehicle I had brought and they pronounced my diagnosis as probably correct. Jack said that he could do a repair or, if I wished, they could just replace the motor with a rebuilt one. Since my wife was out and about on a daily basis in her 4-wheel drive vehicle in all sorts of weather and all sorts of road conditions, she and I decided the engine replacement route was probably best. The job, beer and all, went smoothly and my wife was “back on the road” in no time flat. My wife and I were so pleased with the job that we gave the mechanics a hundred dollar tip. Jack was absolutely flabbergasted.

Final Thoughts

“But of that day knoweth no man...”

York W. Porter - Executive Editor
Over the next few years, the friendship between Jack and I gradually grew. We began taking repair jobs to him (no tips this time), and he and I began a regular jaunt to Bristol, Tennessee to see the NASCAR race. I’m not a NASCAR fan but Jack, being a mechanic and having done some small-time motorcycle racing back in his day, loved the sport. I mainly went along for the ride and for the fellowship with my friend, whom, it turned out, gradually developed into a “brother from another mother”. For the next few years, I normally saw him at least five days a week, and occasionally on one or two of the other ones.

Jack had some health problems, some hereditary and some self-inflicted. He had a real problem with alcohol that, with some encouragement from myself and the woman he was engaged to, he gradually beat. The cigarette addiction remained, however, which was especially worrisome since he had a history of heart disease and open-heart surgery that went back to before our initial meeting.

Finally, bad luck caught up with him. He went into full-fledged cardiac arrest one night and I stood there in our hospital’s emergency room while they shocked him several times and finally “brought him back”. After a stay in the University of Kentucky Medical Center, he came home. But old habits die hard and his nicotine addiction continued. We had talked about cryonics during our friendship but he never acted on it and I never pressed the subject. Turns out I should have.

As sadly happens in life, he and his woman came to a parting of the ways and he moved back to his home state of West Virginia. We initially kept in touch by telephone and chatted with each other at least once a week. He seemed reasonably satisfied with his moving back to the state he grew up in. He married a high school sweetheart and seemed pretty content with his situation. In the back of my mind, I kept thinking about renewing our conversation about cryonics but never did. Finally the telephone calls dropped off and I misplaced his cell phone number. Since I was normally the one who initiated our calls, which would sometimes last a couple of hours at a time, our talking ceased for a while. Finally, after looking in my basement office for the number repeatedly, I came across it one Wednesday by accident. “Next week I’ll call old Jack,” I thought to myself.

It wasn’t to be. That Saturday morning, his former fiancé, a woman whom Jack correctly referred to as a “good woman” even after their parting of the ways, called and said she had received word from one of Jack’s sisters that my dear friend Jack had passed away. Given the circumstances of my work, my own mistakes, and unexpected difficulty getting information about his funeral, I didn’t, to my eternal regret, make it to his memorial service. I found out later, to add insult to injury, that Jack was cremated.

If you are thinking about cryonics, get involved now! Phone, call, write, e-mail, take a mule train or even walk if you must. As in the loss of my friend Jack, when it comes to the hour of your initial demise, to paraphrase the book of Matthew, “no man knoweth the hour...” We need you and you need us. Don’t hesitate and please, please join us in this life saving effort today!
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