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LONG LIFE

Longevity Through Technology

Volume 48 - Number 04

If I Had a Million Dollars p20

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CRYONICS INSTITUTE
Technology for Life

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 inititation 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 until the child turns 18 years of age.

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 approved 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, among other things, 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


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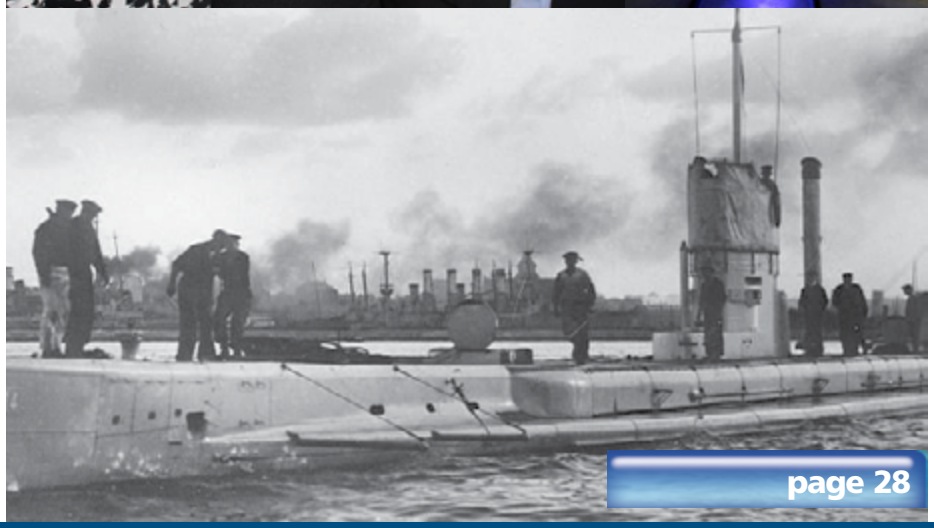
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LONG LIFE MAGAZINE

A publication of the Immortalist Society

ORGANIZATION NEWS

FEATURE STORIES

ONLINE PDF HYPERLINK COMPATIBILTY

Since different browser configurations handle pdf links differently, if you have trouble opening any hyperlink(s) in the magazine, try these steps:

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3. Change PDF viewing settings / extensions on your browser (*advanced users only*)
4. Try a different browser (especially if you're using Internet Explorer.) We recommend Google Chrome.

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 then 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.

CRYONICS INSTITUTE
Technology for Life

LONG LIFE

A quarterly publication of the

Immortalist Society

24355 Sorrentino Ct. Clinton Township MI 48035-3239

President: York W. Porter Vice-President: Debbie Fleming
Secretary: Royse Brown • Treasurer: Rich Medalie

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CI EXECUTIVE REPORT

Dennis Kowalski - President, Cryonics Institute

"Hello All!" I hope everyone had a happy holiday season and that we can all look forward to a prosperous and successful 2017.

Recapping 2016, I can't help but notice that our membership growth has exceeded expectations and continues to grow at a record pace. I certainly want this upward trend to continue and look forward to working hard to insure that it does in 2017 and beyond.

CI's 2016 AGM was another successful and well-attended event. It was a real pleasure seeing many old friends and meeting new ones this year. However, the meetings seem to be growing larger every year while the space at CI grows smaller as we add more cryostats. With that in mind, we've made the decision to host the 2017 AGM offsite at the ConCorde Inn Hotel and Conference Center rather than at the facility. For complete details, please see the AGM article in this issue of *Long Life*.

As you know, we elect our annual rotating slate of Directors at the AGM. Congratulations to all the sitting directors who were re-elected as well as our newest Director, Kevin Doyle (Canada.) Welcome aboard Kevin! For those who are interested in the specifics, the vote totals were as follows: Debbie Fleming - 105 votes, Marta Sandberg - 104 votes, Kevin Doyle - 103 votes, Alan Mole - 63 votes, Phillipe Vitu - 56 votes and John Strickland - 55 votes.

Thanks go out to all our candidates and a special note of thanks and appreciation to outgoing Director John Strickland for his service to CI and to the Board. Thanks also to Phillipe Vitu for putting his hat in the ring and running for the Board. To the elected Directors, I'm looking forward to working with all of you to keep CI moving forward with our many initiatives.

One of those initiatives has been improvements to our facility. I'm proud to announce that we have completed a major milestone with the completed renovations of our facility's front office area, file room and the Boardroom / Tribute Room. The building is looking great and we only have minor upgrades planned for next year. So far the feedback has been very positive regarding the new and improved image. This was especially important in relation to the "media blitz" we experienced recently. Folks who have watched the coverage probably noticed there were a number of reporters on-site for interviews, so I am very happy that our facility was looking top-notch for the cameras and the public at large.

The media attention I mentioned was inspired by the admission of a young 14-yr old girl from England. This particular case caused quite a stir, with renewed interest in cryonics driving media personalities to all the major cryonics organizations for questions and interviews. At first, CI was reluctant to even disclose the admission of the girl at our facility out of respect for family privacy. However, after proper clearance, we were allowed to talk about the fact that the girl was, in fact, a CI patient, but still released very little in terms of personal details about the patient. We recognize how important it is to protect our members' privacy and to respect their wishes, therefore we are always very careful to keep confidential information secure, whether talking to the media or the general public. Thanks to the efforts of Cryonics UK and others the girl received an excellent suspension. This case was also a landmark event, protecting the wishes of people to be cryopreserved in the face of attempted legal opposition to those efforts and those who would attempt to deny us our essential rights to have our last wishes respected.

We have a winner in our scale model CI Cryostat contest from the last issue of *CI Magazine*. This model will be used as an illustrative display for CI visitors and can also be used at trade shows or conventions to help show how our patients are stored in cryonic suspension and some of the features of our cryostat construction. This will be a useful learning tool for the annual science-related field trip we host for high school biology classes looking to understand our world and the scientific method. Cryonics provides the perfect illustration for seeing what is possible by asking questions and running the ultimate clinical trial.

In closing, I've taken note of some exciting stories in the news regarding potentially game-changing new developments in both AI and genetic engineering. These are both fields that are of keen interest to cryonicists. It may take a very advanced AI system to work out the monumental challenges we face in cryonics revival, and recent strides show that AI progress is expanding exponentially in power and ability. This makes me think that the first successful cryonics revival may very well be sooner rather than later. However, the beauty of cryonics is that we have all the time in the world to wait for scientific breakthroughs.

In the field of genetic engineering there's a lot of buzz surrounding the revolutionary new crispr-cas9 technology that has catapulted genetic engineering ahead by making the process cheaper, simpler and faster than ever before. Basically, scientists have found that they could use the immune system of bacteria as a very precise engineering tool to remove and place DNA within a genome. This is very exciting news and opens doors to developing other technologies that could lead to repairing and reviving cryonics patients someday. Even more promising is the fact that these types of technologies might someday be used to even hack into and reverse the damage of aging itself. Wouldn't it be nice to simply solve the problem of death by shutting down or reversing aging altogether? This type of technology is very exciting and encouraging, but again, the beauty of cryonics is that if these things don't pan out in time for us individually, each of us has a logical hedge and an extraordinary "second chance" life insurance policy called cryonics.

Cryonics Institute Membership Statistics:

As of August 2016, the Cryonics Institute has 1,350 members, up 42 from our last report. Of the 1,350 Members, 211 have arrangements for Suspended Animation Standby and Transport.

There are 145 human patients and 129 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.

CI MEMBERSHIP

Increase in Membership since last issue

New Country

Members	1,350	Pets	129
Assoc. Members	135	DNA/Tissue	242
Patients	145	SA	211

TOTAL **1,630**

Worldwide Cryonics Groups

AUSTRALIA: The Cryonics Association of Australasia offers support for Australians, or residents of other nearby countries seeking information about cryonics. caalist@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@umn.edu or jamgarnett@hotmail.co Phones : 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.org

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: kryoniikka.fi Their President is Antti Peltonen.

FRANCE:
SOCIETE CRYONICS DE FRANCE is a non profit French organization working closely withEuropean cryonics groups. For more information : J.R. Missonnier: phone: 33 (0) 6 64 90 98 41or e-mail: cryonics news.inpi@yahoo.fr.

Can help Cryonics Institute Members who need help for the transport & hospital explication about the cryonics procedure to the Dr and authority in Toulouse Area. Contact : Gregory Gossellin de Bénicourt / Email : cryonics@benicourt.com Phone : 09.52.05.40.15

GERMANY: There are a number of cryonicists in Germany. Their organization is called "Deutsche Gesellschaft für Angewandte Biostase e.V.", or short "DGAB". More information on their homepage at www.biostase.de. If there are further questions, contact their Board at vorstand@biostase.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 explication about the cryonics procedure to the Dr and authority in Bangalore & Vellore Area. Contacts : Br Sankeerth & Bioster Vignesh / Email : vicky23101994@gmail.com Phones : Bioster / 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 brunolenzi88@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: jb@hoekstramedia.nl

* Can help Cryonics Institute Members who need help, funeral home, transport & hospital explication 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 explication 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 daoila.medvedev@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.crionica.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 giulio@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 Hipkiss**: phone: 0115 8492179 / 07752 251 564, email: ghipkiss@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

INTERNATIONAL: The Cryonics Society is a global cryonics advocacy organization. Website is www.CryonicsSociety.org. They publish an e-newsletter *FutureNews*. Phone: 1-585-643-1167.

Please note, this list is provided as an information resource only. Inclusion on the list does not constitute an endorsement by Long Life magazine or our affiliated organizations. We urge our readers to use this list as a starting point to research groups that may meet their own individual needs. We further note that readers should always use their own informed judgment and a reasonable amount of caution in dealing with any organization and/or individual listed.

Annual Meetings Election Results/Photos

York W. Porter - Immortalist Society President

The annual meetings of the Cryonics Institute and the Immortalist Society were held as scheduled on Sunday, Sept. 11, 2016, at the CI facility in Clinton Township, Michigan. A dinner was held the night before at a local restaurant. Both the dinner and the meeting were reasonably well attended with folks renewing old acquaintances and friendships as well as having the opportunity to meet some new people as well.

In terms of actual business before the two organizations, the most important news involved the election of members of the Board of Directors in both organizations. In the case of the Cryonics Institute, one third of the Board of Directors is elected each year. This year was one in which continued interest in service was evident as there were six candidates vying for the four positions that were "up for grabs". The ballot results were as follows:

The top four vote getters were elected. A "semi-new" person on the Board will be Kevin Doyle. He and present CI director Stephan Beauregard tied in last year's election which is, to this writer's knowledge, the first time this has ever happened in a CI election. Under an agreement reached then, Kevin served as a non-voting board member. Now, of course, Kevin will be a full voting member of the CI board for a full three year term.

The two unsuccessful candidates include John Strickland, a long-time CI board member and Phillipe Vitu, a first time candidate. Thanks to both of these folks are in order for their willingness to run and for John's long and honorable service on the CI board. It is good to know that CI has folks who are willing to make themselves available for an entirely voluntary and sometimes onerous job of making sure Robert Ettinger's dream continues to prosper through the years ahead through an organization that Mr. Ettinger was instrumental in founding.

In the case of the Immortalist Society, there was slight "twist" to the usual order of things. The IS bylaws provide that the entire Board of Directors of the Immortalist Society is to be elected on an annual basis. These offices are President, Vice-President, Secretary, and Treasurer. In addition, the IS bylaws allow the election of so-called "Board Members at Large". This last position is entirely optional and it is entirely up to the voting membership of IS that are present at the annual meeting to determine whether one or none or a dozen, etc., Board Members at Large are elected. In the past we have had one Board Member at Large, had one circumstance in which an individual nominated himself for election as a Board Member at Large but the membership decided none were needed and, therefore, no election was held and, at this particular meeting, the membership decided to elect Stephan Beauregard to be the sole IS Board Member elected under this provision. So, the 2017 officers of the Immortalist Society that shall be taking office January 01, 2017 are as follows:

President: York W. Porter

Vice-President: Debbie Fleming

Secretary: Royse Brown

Treasurer: Rich Medalie

Board Member at Large: Stephan Beauregard

One can note that all of the members, other than Mr. Beauregard, were incumbents that were returned to their present positions in the organization.

NEXT YEAR'S MEETING TO BE AT NEW LOCATION

Way in the past, the meetings of the Immortalist Society and the Cryonics Institute were held at the very lovely home of David and Connie Ettinger. Then, in part, as membership and attendance gradually grew, they began to be held at the CI facility at Clinton Township, Michigan. Continued success at gaining members, coupled with the increasing numbers of patients now under the care of the Cryonics Institute, has resulted in another change in location. Next year's annual meetings will be held on Sunday, September 10th, 2017, at the Concorde Inn Hotel and Conference Center, which is located in Clinton Township, Michigan. The meeting times will be from 3 pm till 7 p.m. Tours of the CI facility will be held between noon and 2 pm on that same Sunday. A dinner is also planned but more details on that will be forthcoming later. Visit http://www.concordeinns.com for further particular info on the meeting place itself. Their telephone number is 586.493.7300.

Make sure you go ahead and mark your calendars so you'll be able to make these important meetings and events. For those of you that like to take advantage of better rates on airline tickets, etc. this advance notice should be more than enough to allow you to benefit from those. Please note that any organization is only as strong as its members allow it to be through their active participation and attendance so your attendance and participation is both wanted and needed. Trust me, you'll enjoy the fellowship and the chance to meeting some folks who, like yourself, believe that the vision of Robert Ettinger is well worth pursuing in a real and meaningful way.

The meeting next year will also include, as mentioned above, an opportunity to go to and through the CI facility and see for yourself the outstanding work that is being done there. Looking forward to seeing you in the Fall of 2017!

For your enjoyment, a few photos from the 2016 annual meetings are shown below:

Complete Photo Gallery at:

https://goo.gl/photos/XYxPSnJj1umFmMC37

IMMORTALIST SOCIETY ANNUAL MEETING MINUTES

Secretary's Report - September 11, 2016

By R A Brown, IS Secretary

Please note that: The Immortalist Society is a non-profit , 501{c}3, 1967-founded corporation, pursuing educational and research objectives in the field of cryonics, publishing the journal *Long Life: Longevity through Technology*, and maintaining a website of www.immortalistsociety.com as part of its mission. The IRS recognizes IS as tax-exempt, so your donations are deductible for federal income tax purposes.

The Annual General Meeting began at 4:01PM, immediately following the Cryonics Institute meeting. Presiding: IS President York W. Porter.

(1) Buffet / Social / Facility Tours. A. As has been the custom for many years a catered buffet, this year emphasizing Italian fare, was provided for all participants. B. It has also been the custom for many years for interested guests and members to meet at a restaurant (this year, IKE's) near the facility the night before the meeting. C. Informal tours were also provided before and after the meeting. These tours strive to be supportive especially for those patients remaining in deanimation at the Cryonics Institute (the facility where the IS annual meeting was held). D. These pre- luminaries help provide pleasant forums for meeting, co-operation, and resolution.

(2) Secretary's Report. Copies of the "Immortalist Society Annual General Meeting…September 12, 2015" were produced by IS President York W. Porter, with IS Secretary Royse Brown indicating the eleven agenda therein. This document is published in the IS journal Long Life, Fourth Quarter, 2015 issue (Volume 47, Number 4), pages 7 and 8. Royse remarked on the short history of IS from its beginning as the Cryonics Society of Michigan.

(3) President's Report. A. IS President York W. Porter remarked on distributed copies of pictures of cryonics founder Robert Ettinger; and of Long Life Editors Emeriti Mae Ettinger and John Bull (Vol.47,No.4,p.5). B. York suggested he could be e-mailed by anyone having extensive questions. C. CI Director Joe Kowalski, Esq. reported on the Cryoprize project. Joe: "I learned from York to keep things long."… "Because this is a volunteer organization…everything that you do is what makes this organization work." Joe explained Cryoprize. He emphasized that "we need more funding. Talk to me, please…I've been knocking on a lot of doors." Amazon Smiles Foundation's funding was then discussed, wherein 0.5% of the price of eligible purchases go to the charitable organizations like IS selected by customers.

(4) Treasurer's Report. Copies of the "Immortalist Society Treasurer's Report (Sept. 2015 through Aug. 2016)" by IS Treasurer Rick Medalie were passed out.

1st. (9/11/16) Draft: 2016 Annual Meeting Minutes at Cryonics Institute, Detroit, Michigan

IMMORTALIST SOCIETY MEETING MINUTES, SEPTEMBER 11, 2016: PAGE 2

(4) IS Treasurer's Report, cont. The receipts (mainly donations and advertising revenue) totaled $15,764. The expenditures (mainly magazine printing / layout, and $2,000 funding of Advanced Neural Biosciences, Inc.) totaled $7,223, This left a cash balance of $31,934 as of August 11, 2016. (This might be compaired to Cryonics Institute's June 30, 2016 Total Investments Balance of $4,506,051.)

(5-6) Old and New Business. No additional business came before the society.

(7) Board and Officer Elections. The following were reelected as officers / directors, by unanimous acclaimation, upon motion by Connie Ettinger, and second by Joe Kowalsky: President, York Porter; Vice-President, Debbie Fleming; Treasurer, Rick Medalie; Secretary, Royse Brown; and such (one year) members at large as shall be required. (The elected serve, unlike board members of the Cryonics Institute, one year terms, starting January 1 of the upcoming 2017 year.)

(8) Adjournment. At 5:28 PM, upon motion by Rich Medalie, and second by Kevin Doyle.

Respectfully Submitted, Royse A. Brown, Secretary

Cryonics News Interviews Roland Missionier

In this reprint from "Cryonics News", Long Life Magazine publishes an interview held a short while back with Roland Missonnier. Mr. Missonnier has been involved in cryonics since the 1960's and his perspective offers a viewpoint about how cryonics is going in the French region. (Please note that the article which follows may be edited slightly for clarity/grammatical purposes. Any errors due to that editing is entirely that of Long Life Magazine and not of Cryonics News).The reprint of this article, which is published here by permission, is a beginning attempt in what Long Life Magazine hopes is a regular effort to get input from across the world as to how various organizations are faring and to gain information about their individual efforts. Please note that the views expressed herein are those of Mr. Missonnier/Cryonics News and that Long Life is simply acting as a conduit in providing reports which we think may be of interest and/or use to our readers Please note that some of the information might be slightly dated due to the delay between the original publication date and it's publication in Long Life. .

CRYONICS NEWS interviews Roland Missonnier, the man who originated the cryonics movement in France and participated in the European press (1) in its development between 1966 - 1970 in Europe.

Cryonics News : What's new in France ?

Roland Missonnier: I met Damien Casoni on June 18!h 2014 in Paris. He came from Noumea in New Caledonia where he lives to visit Europe, which he wasn't intimately familiar with. We were to meet in: "le Select", a bar situated at 99 Boulevard Montparnasse, in the 6th arrondissement of Paris. I was very happy to meet him. He belongs to the new generation which wants to develop cryonics suspension in France. He is a member of the Cryonics Institute.

We decided Damien and me, during this meeting, would work to reactivate the French Cryonics society. We decided to discuss all this with Mrs Taya Mäki in Dresden in Germany during the Scientific Symposium on cryonics between the 4th and 5th October 2014, where we were to meet. Mrs Taya Mäki is a Canadian cryonicist, who lives in France and she is also a member of the Cryonics Institute.

The three of us think we need a cryonics society in France which would combine the persons wishing to be cryopreserved in order to defend our interests and to find solutions to the problems inherent in our future cryopreservation at our clinical death without being obliged to emigrate to the United States.

We think we can find the solution to our problems through our European partners which are mainly Cryonics UK, Deutsche Gesellschaft Für Angewandte Biostasie (DGAB), the Finnish Cryonics Society as well as a group of Swiss cryonicists.

Cryonics News: What did happen in Dresden ?

Roland Missonnier: I asked Damien Casoni to become General Secretary of Société Cryonics de France and Mrs Taya Mäki to be the President for the next four years. We asked her during the symposium in Dresden (Germany) if she was willing to and she agreed. We decided Damien,

Taya and myself would file for new statutes for the Société Cryonics de France. I wrote the statutes and sent them to Taya Mäki who submitted them to the sous-Prefecture of Aix in Provence. The new statute's books of the Société Cryonics de France were registered by the French State on April 14 2015.

The objective of our association is life extension and to help its members to benefit from all the techniques which can contribute to the extension of physical life. The address of its head office is La Cride, 553 chemin de la Gardure, 13160 Le Puy Sainte-Réparade. Damien opened a site on the web and drew the new logo of the Société Cryonics de France. I'll send a copy of the statutes of our association (Law 1901) to any member who will ask for it.

Cryonics News: And now what's going to happen ?

Roland Missonnier: Our Society is going to collaborate with the other cryonics societies in Europe to create in the future a cryonics facility where the bodies of cryopreserved persons can be stored for decades or centuries, at least this is what I hope. Several projects of cryonicx facilities offering such services should see the light in Europe within the next fifteen years.

To realize this we must find big donors. The Australian cryonicists collected 500,000 Australian Dollar (340,000 EUR) before carrying out their project and according to my information, they're still struggling to collect the funds they need. We shouldn't forget Alan Sinclair's unfortunate experience who bought premises in Eastbourne in East Sussex to open an Alcor UK facility in 1990 with a group of UK Alcor cryonics members. This cryonics facility then closed down ten years later for lack of money.

Cryonics News: And in France, wasn't there in the past a project to open a cryonics facility which failed ?

Roland Missonnier: In 1970, at the request of Mr. André Billon, mayor of Beauvoir-sur-Mer, the town council voted unanimously for the attribution of a piece of land of 1100 square meters to Société Cryonics de France in exchange for a symbolic franc (20 U.S. cents) with the right to build a cryotorium on top of it. The sub-prefect of the department located in the city of Les Sables-d'Olonne also agreed. Mr. Andre Billon then passed on the case to the Prefect of Vendee who asked the advice of the Secretary of the Interior to take a decision concerning the construction of a cryotorium on the land of Beauvoir-sur-Mer. The reply was negative (cf. Cryonics News Archives 1970 - 1980).

We're now in 2015 and 45 years have gone by. France is a liberticidal country. It forbids a host of things that are legal in other countries. As a result many French people go abroad to perform actions and take advantage of liberties which are forbidden in France. Cryonic suspension (cryopreservation) is no exception to the rule. It will be possible to build a cryotorium in France when in Germany, in England, in Belgium, there are cryotoria where cryopreservation is legally carried out. French Cryonics Society will then be able to turn to European authorities of Brussel and to the European Convention on Human Rights (ECHR) in Strasbourg to attack this serious discrimination.

And like for the other liberties Frenchmen are deprived of, it's Europe that will do away with this prohibition in France and will give us freedom.

Interview references/ for further info

(1) La Tribune de Genève (September 19 1968) daily Swiss newspaper; Courier della Serra (September 29 1968) daily Italian newspaper;

Stern (October 27 1968), German magazine, article with seven pictures ; Quick, German magazine ; Le Soir Illustré (August 6 1970), Belgium weekly magazine ; etc…

And La Revue du Liban (April 18 1970), article with ten pictures, weekly Lebanese magazine in French; Gaceta Illustrate (June 18 1970) with 13 pictures, Spanish weekly magazine; Le Soir Illustré (August 6 1970) Belgian weekly magazine in French language ; Algo (September 1970) Spanish bi-monthly magazine

Article Correction

by: Jim Yount

In the Long Life edition, second quarter 2016, volume 28-02 I wrote an article titled Planet Cryonics: Can We Freeze Everyone On Earth?,which contained several mathematical errors. The most significant of those errors appeared in the last two paragraphs which should read as follows:

Freezing and Storing Everyone Who Ever Lived

According to Haub there have been about 108 billion people who have lived on earth through the entire existence of mankind. It is not clear from my reading if this includes the 7.4 billion now alive. Using the 108 billion figure we would need about 13,558.88 square miles or a square building 116.44 miles on each side (assuming 100 stories for patient storage). That works out to a little bit larger than the state of Maryland.

So... bring us your tired, your poor, your huddled masses yearning to be freeze. We have the room!

Dog Into Superdog

by Theo Rogers

Robert Ettinger began the 1989 preface to his classic Man into Superman by telling us "One of our dogs would like to be human." He goes on to use this idea as a springboard to talk about what humans might like to become. I don't know what happened to that dog, but I can tell you what happened to mine: five years after that preface was written, he went into cryonic suspension. I am reliably told he got the best suspension that had yet been achieved at that time.

This was made possible by two factors: The first is that we had a sympathetic university veterinary hospital willing to help. The second is that because there are no anti-euthanasia laws for animals, we were able to begin the suspension process pre-mortem.

I know many cryonicists would shake their heads at the stupidity of the hidebound laws that prevent this kind of pro-active approach for dying humans. And frankly, I'd agree with them. But as for the fact that it was my dog who got the best suspension then achieved?

The truth is, I would want nothing less for him.

And it seems I'm far from alone: the number of companion animals in cryostasis is very nearly equal to the number of humans. I've always thought this speaks well of cryonicists. After all, it was Ghandi who said that "The greatness of a nation and its moral progress can be judged by the way its animals are treated." As a nation, cryonicists seem to be shaping up okay. For many of us, these animals are family.

But I can't help but wonder how many of us have given serious thought to what will happen to these family members if they make it through successful suspension and resuscitation, but we don't.

From the perspective of the early twenty-first century, we could of course allow funding for their needs in our trust documents. And leave instructions for them to be found good homes if at all possible. But what if by the time resuscitation is possible – or sometime after that – there are broader horizons? If we are prepared to consider the possibility of transhumanism, then how can we fail to at least consider the possibility of transcaninism? And transfelinism? And... well, you get the idea.

What if today's furry or feathery little toddler who can scarcely be allowed to leave the safety of the backyard unsupervised could one day be transformed into a fully autonomous person with faculties at least equal to, and possibly far ahead of our own? A person no longer even remotely in need of what we might now consider "a good home?"

Certainly, on a technical level this poses no special problems beyond those of transhumanism. But the mere fact that something may be technically possible does not mean it is a good idea. Nor does it mean it will be legal. After all, there are no particular technical obstacles to prevent any competent chemist from cooking up a batch of crystal meth. The legal problems, however, are rather more significant. We don't know how any future society would treat non-human animals whose mental faculties have been upgraded to – or beyond – human levels. We cannot with certainty anticipate how well it would be disposed towards them: in either its laws or in the rather murkier arena of mores and prejudice.

These are issues I'm currently grappling with in my own estate planning. Since the dog who died in 1994, I've also put two cats into cryostasis. Sadly, both died unexpectedly, and it was not possible to achieve as good quality a suspension. Nevertheless, I very much hope that all three will one day be resuscitated. To say nothing of a third homeless little kitty whom I more recently adopted, and who is, I am happy to say, still very much alive and well. In the event that he survives me, of course I would want him to be provided for and live out his remaining span. But when his time comes, yes, my plan is that he too should go into suspension.

Then what?

At this stage I am planning for all these animals to remain with me in suspension as long as I have some reasonable hope for resuscitation. If decisions must be made on their behalf, I would prefer to be the one making them. Nevertheless, I do want to plan for the possibility that something may go wrong for me, but they might still be around.

In that event I want the the assets I leave in trust to be used to provide them with the best quality of life sustainably possible. But more than that, yes, I also want them to have the chance for ascension: from dog into superdog, cat into supercat. Or at least, I do if that's what's in their best interests at the time. And finally, if they ever do become fully autonomous persons, I want them to be able to claim

their share of the assets I have left in trust – if that's what they want to do.

Because we cannot know how any future society will view such issues, any instructions we might leave for the treatment of our animal companions must allow scope for the person implementing those instructions to grapple with the kinds of issues I've talked about here, and very likely a few more that we're not going to be able to anticipate. The mere fact that a massive mental upgrade may be possible is no guarantee that it'll turn out to be the optimal path to a long and happy existence.

Nevertheless, provided that there are no huge barriers, no unforseen millstones that would be slung about their necks, then yes, in my absence, I do want my animal companions to be emancipated. To have the chance to grow into fully autonomous beings, capable of taking on the world on their own terms.

Why?

Because I can't help but think of Blanche DuBois' famous last words:

"I have always depended on the kindness of strangers."

All who go into cryonic suspension must, at some point, entrust their very existence to the kindness, or at least dedication, of strangers. But not forever. And not post-resuscitation.

None of us wants these much loved members of our families winding up like Blanche DuBois.

Is Cryonics Worth A Shot?

Cryonics for Absolute Beginners by Theo Rogers

If you were dying and there was a highly experimental procedure that just might save your life, would you choose to undergo that procedure? Knowing with absolute certainty that death was inevitable without it?

You may like to think about that for a moment before continuing…

You see, that's what cryonic suspension is: it's a highly experimental procedure that just might save your life when death is otherwise inevitable. It's an ambulance into the future. That ambulance may or may not make it all the way to a time with the technology to restore you to health. Nobody knows. The one thing we do know for certain is what will happen without cryonics. Given that alternative, some of us choose to roll the dice.

So let's say you're a complete newbie, contemplating cryonics for the first time. Or maybe you're already committed, but you want to convince a friend or loved one to make this choice. Why should you – or anyone else – believe that cryonics is, at the very least, worth a shot?

There are three levels on which this question can be addressed...

1. The first, and simplest, is to ask "Can we resuscitate a cryonically preserved patient with today's medicine?" The answer, of course, is no. No cryonicist I have encountered has ever suggested otherwise. What cryonicists are doing is speculating on what the medicine of the future, decades or even centuries ahead of our own, might be able to accomplish.

2. Given that starting point, the second level on which we might address this question is to observe that if we don't destroy ourselves, the one thing we can be certain of is that the future will see breakthroughs the likes of which we can't even imagine. Picture a physician of 1917 trying to predict the medicine of 2017. Suppose we then put to that same physician some of the things that the medicine the upcoming century would in fact achieve: antibiotics, open heart surgery, organ transplants, gender reassignment, gene therapy... it would all have seemed like science fiction; and even that is putting it politely. More likely, it would have seemed like a complete fantasy. The one thing we can be certain of is that the unimaginable will happen.

Of course, this is not the same as saying that all unimaginable breakthroughs will happen, and so does not mean that the resuscitation of cryonically preserved patients will happen. It only means that it would be foolhardy to claim that it won't.

Everyone knows the track record of respected scientists who choose to claim that certain things are impossible, or predict that they will never happen. It's so abysmal that it inspired "Clarke's First Law," which states that "When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong."

It is very, very easy to find countless examples of highly respected scientists and engineers being proven wrong when they claim that things are impossible. Often within little more than a decade. Here are just two links to get you started:

https://www.newscientist.com/article/dn13556-10-impossibilities-conquered-by-science/

https://news.google.com/newspapers?id=KXhfAAAAIBAJ&sjid=-my8MAAAAIBAJ&pg=3288,6595098&dq=all-that-constitutes-a-wild-dream-worthy-of-jules-verne&hl=en

It's also not hard to find well respected scientists who have gone on the record stating that cryonics is, at the very least, a reasonable thing to try. Sixty-nine eminent researchers and physicians from around the world have been signatories to the following open letter, which states that: "Cryonics is a legitimate science-based endeavor that seeks to preserve human beings, especially the human brain, by the best technology available ... there is a credible possibility that cryonics performed under the best conditions achievable today can preserve sufficient neurological information to permit eventual restoration of a person to full health."

You can read the letter in full here:

http://www.evidencebasedcryonics.org/scientists-open-letter-on-cryonics/

Signatories include:

- Roy Walford, MD: UCLA prof of physiology, expert advisor on immunology to the WHO and senatorial delegate to the White House conference on aging.
- Jain Ravin, MD: Assistant clinical prof in neurology, UCLA
- Peter Gouras, MD: Prof of ophthalmology, Columbia University.
- Marvin Minsky, PhD: MIT prof and one of the founding fathers of cognitive science. Minsky also served as a scientific advisor to the board of Alcor, one of the principle organizations engaged in cryonic preservation today. Following his death it has widely been reported that Minsky himself has been preserved at Alcor, although in accordance with its privacy policy, Alcor will neither confirm or deny the presence of any specific individual within its facilities.

Starting about three quarters of the way down the same page where this open letter appears, there is also a list of scientific papers that can reasonably be interpreted as providing evidence in support of the cryonic endeavor. More on that in the next section.

Again, I stress that none of this is intended to lead to the conclusion that cryonics will work. It does, however, lead us to the conclusion a person contemplating cryonic suspension is in a situation not so different to that of any patient who, faced with certain death, is offered a highly experimental procedure as a last ditch heroic attempt to save their life (and yes, this is where we came in). There is no guarantee that the procedure will work. The only thing that's guaranteed is what will happen without it.

Under such circumstances, I personally choose to roll the dice. I hope you will too.

3. The third level on which we may address this problem is to think in more concrete terms about the kind of technology that would be needed to bring resuscitation about. If you would like to know what peer reviewed science has to say about this problem, I suggest you follow the links at the bottom of the last of the three web pages I linked to above. Starting about three quarters of the way down the page there is a list of articles on point written by people who possess a much better grasp of the fundamental science than I do.

As a layperson I find it difficult to weigh the merits of these different works. But if I were to pick just a few from that list, it does seem to me that some particular highlights include:

First paper showing recovery of brain electrical activity after freezing to -20°C. Suda I, Kito K, Adachi C, in: Nature (1966, vol. 212), "Viability of long term frozen cat brain in vitro", pg. 268-270. http://www.ncbi.nlm.nih.gov/pubmed/5970120

First paper showing partial recovery of brain electrical activity after 7 years of frozen storage: Suda I, Kito K, Adachi C, in: Brain Research (1974, vol. 70), "Bioelectric discharges of isolated cat brain after revival from years of frozen storage", pg. 527-531. https://www.ncbi.nlm.nih.gov/pubmed/4821065

First paper suggesting that nanotechnology could reverse freezing injury: Drexler KE, in: Proceedings of the National Academy of Sciences (1981, vol. 78), "Molecular engineering: An approach to the development of general capabilities for molecular manipulation", pg. 5275-5278. http://www.imm.org/PNAS.html

First paper showing ice-free vitrification of whole brains, the reversibility of prolonged warm ischemic injury without subsequent neurological deficits, and setting forth the present scientific evidence in support of cryonics: Lemler J, Harris SB, Platt C, Huffman T, in: Annals of the New York Academy of Sciences, (2004 vol. 1019), "The Arrest of Biological Time as a Bridge to Engineered Negligible Senescence", pg. 559-563. http://www.ncbi.nlm.nih.gov/pubmed/15247086.

First successful vitrification, transplantation, and long-term survival of a vital mammalian organ: Fahy GM, Wowk B, Pagotan R, Chang A, Phan J, Thomson B, Phan L, in: Organogensis (2009, vol. 5), "Physical and biological aspects of renal vitrification" pg. 167-175. http://www.ncbi.nlm.nih.gov/pubmed/20046680

http://www.21cm.com/pdfs/12FahyORG5-3%5B1%5D.pdf

First demonstration of whole brain vitrification with perfect preservation of neural connectivity ("connectome") throughout the entire brain: McIntyre RM, Fahy GM, in: Cryobiology, (2015, vol. 71), "Aldehyde-stabilized cryopreservation", pg. 448-458. http://www.sciencedirect.com/science/article/pii/S001122401500245X

http://www.21cmpublications.com/PubFiles/102/2015McIntyreFahyASC.pdf

Beyond the specific papers listed above, I encourage you to peruse the full list and decide what makes the most sense to you. This should

give you a decent coverage of the science.

If you'd like to know what I personally think (again speaking as a complete layperson), then this is it:

If brains are simply information processing machines, and cells are simply biological machines built on a molecular level, then brain death, cell death, and indeed, all forms of death are simply the point at which the machine has broken down beyond its own ability to self repair, and beyond the ability of our current technology to repair it, to the point where entropy takes over. To suggest anything beyond this is to revert to the idea of some once-present force that somehow imbued mere matter with the spark of life, but which is now sadly absent. So barring a return to vitalism, what we're left with is the purely technical problem of putting the machine back together in working order. This, of course, is why so many cryoncists have such a keen interest in nanotechnology.

Cryonic suspension itself is merely a means of grinding to a near-halt the march of entropy, in the hope that some future technology will be able to repair what we cannot. The only question then is as to how far our own ability to repair the machine is likely to advance, and on what timetable.

Of course, if we are concerned with resuscitating cryonically preserved patients, we must also deal with the damage done by the preservation process itself. The better the preservation process, the lower the demands we make on future technology. There is no point at which I personally would give up the ghost entirely. Mainstream physics now seriously debates the existence of a "law of conservation of information," which holds that on a quantum level, information can never truly be destroyed. But even if this law is sound on a theoretical level, on a practical level we need to remember that the worse the job we do in the here and now, the more we depend on ever greater advances in future technology – which may or may not eventuate.

As hinted at before, if we are particularly concerned with cell death, and damage on a cellular level, then the most obvious means of repair would be an advanced medical nanotechnology, combined with the massive amounts of computing power required to organize that technology and direct it to repair something as massive and complex as a brain when viewed from a molecular level up.

The important thing to remember here is that this is not on par with something like homeopathy: no new laws of physics are required to make it work. All we need to do is apply the known laws of physics and chemistry in a way that is orders of magnitude more sophisticated than anything we are currently capable of. This kind of improvement – improvements in degree, however vast, as opposed to improvements depending on the invention of some as yet unknown principle – seem particularly likely to occur, and particularly well grounded in reality.

So "all" we need to make this particular vision of resuscitation a reality are a sophisticated medical nanotechnology, and vast amounts of computing power: both of which many distinguished, respectable, and entirely mainstream scientists of today believe will become available sometime this century.

To draw on to an analogy used by others before me, I suspect that right now we're in the same position as an engineer contemplating the possibility of a modern airport, maybe five or ten years before the Wright brothers flew at Kitty Hawk. Say, sometime in the 1890's. Of course the sheer complexity of the thing together with its massive demand for resources would have made it seem completely beyond reach – to say nothing of the leaps of technology required.

And yet, it did happen. It did not happen in a single step. But it did happen.

None of the arguments I have made here are intended to convince the reader that the ultimate resuscitation of cryonically preserved patients will happen. I personally believe it will, but clearly, it would be delusional for me to claim that I know this for a fact. What the arguments presented here are intended to do is convince the reader that cryonics is, at the very least, worth a shot.

This could work ... And consider the alternative.

About the Author

Theo Rogers suffers from chronic fatigue syndrome, and so spends most of his time lying down. However, he's managed to complete a master's in wealth management by distance education. Prior to assuming his present horizontal state, he also achieved degrees in psychology and linguistics at the Australian National University, as well as a graduate certificate in banking and finance.

Theo has completed two non-fiction books: one on the Amazon reviewer subculture and the other on Investing. He is currently working on his third book: a hard science fiction novel with strong posthuman themes.

His interest in cryonics is all-but lifelong: "I still remember the first time I heard about cryonics – I would've been just a toddler. I'm not sure exactly how old. There was a story on TV about a person who was being frozen. As you can see, it made quite an impression. Ever since then, it's always seemed to me that you'd have to be crazy not to have this done. Of course the future will see breakthroughs we can't even imagine. And if there's a chance, why on Earth wouldn't you take it?"

If I Had a Million Dollars

Article concept conceived of and introduced by Jim Yount, Board of Governors, American Cryonics Society

Respected cryonics advocates give their thoughts on how they would use a million to benefit cryonics and themselves

"An anonymous donor is giving you cashier's checks for one million dollars, tax free," or words to that effect says Michael Anthony in every episode of the television series The Millionaire. When the series was originally aired, a million was a significant wad. In those days a nice house in a good neighborhood could be had for less than $20,000.

Even today, a million dollars is not a sum to give a cold shoulder to. With the average home in the US selling for more than $250,000, a million will still go a long way to brighten a fellow's life. A million could also make a significant difference to the future prospect of immortality of a frozen guy or gal. It would fund a fair amount of research, go a long way to purchase a new facility building; or it could be a cushion against possible hard-times for the cryonics industry – or a person might choose to use their million dollars to better insure their own frozen future; maybe make arrangements for a top team of doctors and scientists to give you a good send-off or money to be held for reanimation and a "future life" fund.

There are a significant number of cryonicists who do have a million dollars or more, or whose estates, even after making bequests to relatives, charities, and friends and paying taxes, will be worth a million. Those of us with less than that fabled sum may well be surprised at just how much money we will leave behind. Remember, when we are tucked cozily into our cryostats we will have little use for our cars and houses.

I am often surprised at how modest are the endowments (for cryonics purposes) of wealthy cryonicists, and how little these folks give for cryonics during their lifetimes. Perhaps they don't understand just how important such gifts could be to help them, and their cryonics friends.

We thought we would ask some of the people who are knowledgeable of present cryonics and who have thought a lot about the future as to just how they would want their own million used for cryonics. In asking this question we should keep in mind that cryonics is a personal choice, and expect that people who make that choice will want their money to be used in ways that they and their cryonics family members have the best chance money can buy for ultimate reanimation and future comfortable lives.

Our first two paper millionaires are Marta Sanders and York Porter. We will feature other respected cryonics advocates million dollar plans in future articles. - *Jim Yount*

York W. Porter

York was born in 1952, attended Berea College in Berea, Kentucky for two and a half years and, in the Fall 1974, began working in a rural Kentucky hospital in the Department

of Radiology. Diversifying through the years, Mr. Porter worked for one year on an ambulance crew and spent several years in a hospital laboratory setting, plus about a year doing respiratory therapy work. He has worked fairly continuously in the field of medical radiography, working as a staff tech at various times in four rural Kentucky hospitals, primarily in the fields of general radiography and computed tomography. He has worked on rare occasions at a Magnetic Resonance Imaging (MRI) center. He is the President of the Immortalist Society, at the time of this writing, and serves also as the Executive Editor of Long Life Magazine, the "house publication" of the Immortalist Society.

If I had a Million Dollars

By York Porter

When my friend Jim Yount first proposed an article about what one would do with a million dollars to leave to cryonics, at first I thought, as we say in the hills, "He's blown a fuse on us!" I don't ever expect to have that kind of money or, if I did, it would probably be the result of something where I would need it to help me hide from the authorities for a few years. The more I thought about it, however, the better I liked the idea of thinking about this topic. Many, perhaps most of us, will never have a million dollars to spare from our estate but we may have more than the bare minimum our Cryonics Service Provider (CSP) may require.

The question then becomes just what to do with it. Good question and, like many in cryonics, it is much better answered sooner rather than later. On one's deathbed or having relatives deal with things when we are critically injured or ill isn't, of course, the best timing. Stressful situations for which one hasn't previously prepared tend to not go the way one wants them to. This is, of course, the reason that airline pilots (and other folks like Emergency Services workers) try to think up scenarios in advance and have at least some sort of algorithms prepared in their minds to deal with them. To avoid doing that is to invite disaster when the "real thing" happens. When the plane loses power, or you are called to a mass casualty disaster, isn't the time to make up your mind.

So, I'll take a stab at things. At first I thought the problem would be very simple. Simply divide the pot into three equal parts. Leave one third to the CSP, leave one third to an organization like ACS (which tries to help insure quality control of CSP's), and then leave one third to some sort of asset preservation fund. Simple enough, eh? Well, after I thought about it some more, I didn't think it was that simple.

The first amount, in any event, should go to your CSP. Without utilizing cryonics, the whole concept doesn't do you much good. As in other things in life, one should "shop carefully" and "shop around" to the degree one can. At the moment there are limited options but that shouldn't last forever. As cryonics gains more acceptance, which it is gradually doing, more organizations should form. In my younger days, when I was in the idealistic flower of youth, I envisioned one big organization that would do this. Now, in the Fall of my life, with Winter not far behind, I think it is a better thing that there are several folks providing services and that there should be more in the future. "One size" definitely doesn't "fit all" in the world of cryonics (or much of anywhere else). Choose carefully, as best as your time and financial resources will allow.

Down to the topic of a more exact figure on distribution of funds, my first priority would be to somewhat overfund my CSP. If the organization you have trusted to safe keep you for what might turn out to be a few centuries fails, well, to paraphrase what Forrest Gump said when he found himself alone in a combat zone of Vietnam, "This is a bad thing". I don't know if my thinking is based on anything other than an "off the top of my head" guesstimate but I'd like to think in terms of overfunding by around half. That is, for every 1000 dollars the CSP charges, I'd give 1500 instead, if I could. In some cases the fundamental costs of cryonics have turned out to be less than originally thought of. For instance, at the Cryonics Institute, things are to the point where a chart from 2008 that is on the CI website (see http://www.cryonics.org/resources/ci-cryostats) showed the cost of liquid nitrogen running less than a hundred dollars a year per patient. The same chart shows earlier cryostats running, in some cases, around two hundred fifty dollars or so. Dropping this cost is, obviously, a significant savings to CI.

On the other hand though, no one has a crystal ball and can predict, centuries ahead, just what the costs down through the years will be. The provision of an extra fifty percent should, if wisely invested, result in a gradually increasing cushion for CSP's to work with during what may be more expensive times.

After one has that out of the way, I'd probably give two thirds of what was left to the American Cryonics Society. ACS was formed, in part, as a response to a disaster that happened many years ago in cryonics. The purpose of ACS is to try to help with quality control in organizations by working in a cooperative fashion to help insure that those places that are storing ACS members are operating in a reasonable and professional manner and with at least some minimum and basic standards. While ACS efforts aren't the "end all, be all, and cure all" of things in cryonics, they are an attempt to help provide a "floor" in terms of quality cryonics patient care.

This doesn't prevent any organization from having its own internal QC procedures and improvement programs and those are laudable in their own right. In hospitals nationwide, many talented and well educated

health care workers labor on a daily basis to make sure that the important work that goes on in their hospital is done in a high-quality and effective way. This is still augmented by annual Medicare and/or other outside agency inspections that act as a source of "redundancy" in helping prevent potential problems. The approach of ACS is intended to help in such a way.

Finally, there is always the question of whether one should set aside funds for one's own financial security in an unknown future. I would probably set aside the final third of what is left after I give money to my CSP for this purpose. Working in health care, I am well aware of the high costs of present medical care and the fact that in some (thankfully rare) cases, the greed of some healthcare providers takes over and becomes paramount to them. It has been my experience, however, that the overwhelming number of folks in healthcare are, whatever their station in the scheme of things, fairly idealistically motivated and would help anyone they could. I am also, my underlying widespread cynicism about politics and politicians notwithstanding, of the opinion that political leadership, once it becomes crystal clear that cryonics is working, will provide paths for newly resuscitated individuals to reintegrate themselves into society. I'm a "low maintenance" guy and a 8 x 12 room like in my old college days will suit me just fine. In the words of a long time cryonicist who has done very well for himself in life: "If cryonics works and I can come back as a relatively young and healthy person, I don't care if I have a dime in my pocket!" To me, any civilization where the level of nanotechnological development exists that will probably be necessary to revive present cryonics patients will be one in which the resources to support persons revived from cryonics procedures shouldn't be a real problem at all. But, again, a few bucks already in the bank probably wouldn't hurt. With the power of "compound interest", even those few bucks could be a ton of money after a century or two!

Marta Sandberg

Marta Sandberg was bo*rn in Sweden in 1955 and immigrated to Australia as a teenager. Her husband is currently suspended at CI and one day she plans to join him. This gives her a very personal interest in securing the future of cryonics and safeguarding her and her husband's next life. Marta is a director of the Cryonics Institute. She is also a director of Stasis Systems Australia (SSA). She actively promotes cryonics whenever she has a chance and has frequently appeared on TV, newspapers and magazines in Australia and Sweden. Marta holds dual Bachelor's in Accounting and Mathematics. She currently lives on her farm in Bridgetown, working from home as an accountant whilst trying to restore her farm to working condition after a catastrophic fire. Her hobbies include volunteering for the local bush fire brigade and SES (State Emergency Services), running a bookgroup and being part of an international service organization called Zonta.*

If I Had a Million Dollars

By Marta Sandberg

Wow! There is nothing like having a million dollars to make you instantly greedy. After a few heartbeats I realized that I really needed at least two million. Maybe five.

So let's start making plans right now, before I become totally broke. And the first item on my wish list isn't all that expensive. Probably only a five-figured amount.

I'm going for the low hanging fruit – the stuff that nobody have really tried before so a relatively small input can give big results. To do cryonics right so many things must be dealt that it isn't surprising that some areas get left behind. One of those areas is regulations and legislation.

Cryonics has no legal framework in the US. The movement has managed to slip between the rules on the principle that if it isn't explicitly illegal then it is allowed. But it is just a matter of time before the cryonics movement becomes visible enough to draw the attention of lawmakers.

In England there was a recent case of a 14-year old girl who was dying and wanted cryonics. Her mother agreed, but her father wouldn't. In the end the judge decided to respect her withes, but he also made a point of saying that ministers should consider "proper regulation" of cryonic preservation for the future.

Closer to home in an article about Osiris, the proposed cryonics organization in Florida, the journalist contacted the press secretary for the Division of Funeral, Cemetery and Consumers Services for a comment. He said "It's unprecedented for us; these facilities don't operate in Florida. Pursuant to our current laws, you would not be permitted to just freeze people and keep them indefinitely." This probably was only a flash in the pan where a minor official was put on the spot by a journalist and decides to play it safe, but it shows where cryonics is heading. Bureaucrats are naturally cautious and it is safer to say no than to say yes.

Every time the cryonics movement gets hit with a scandal; the day when we will face legislation comes closer. Unfortunate, history shows us that cryonics is scandal prone with one erupting at least every second decade. For people who need to plan for a century ahead, meeting legislative challenges will be important.

It is best to be pro-active. Our community should write sample legislation that the lawmakers can adopt. Politicians are also conservative and it is simpler and safer for them to accept something that already has been written, then to start a long and potentially damaging process of creating everything from scratch. If they can be persuaded to accept what we have drafted, maybe with a few amendments to make them feel good, then we will end up with legislation we can live with. In countries where the politicians and

bureaucrats have been in charge of writing the legislation it has resulted in a total or partial ban on cryonics. Think France and part of Canada.

The next question is how we do this?

The smart way of doing it is using the brainpower and enthusiasm of legal students. Create a competition with a prize for the group that creates the best model legislation. Obviously this has to be run through universities, but if a substantial scholarship to individual students or a grant to the university department is offered, then we should be able to interest universities to cooperate with us. Apart from the money, the process has several advantages to them. Writing mock legislation is an interesting teaching tool and provides a nice dot-point on their students' resumes.

The entries should be judged by a panel of representatives from all cryonics organizations, and it should preferably also be put to the cryonics community for input through various cryonics forums. This way whatever regulations are adopted must be acceptable to most whilst still providing a strong framework to live within.

Obvious areas to be covered are health and safety regulations regarding the storage of dead patients/bodies as well as using dangerous chemicals and compounds. Other areas include good governance, fiscal responsibility, openness and transparency, truthfulness in all public material – including not promising more than can be provided – and respecting the wishes and dignity of both the cryonics members and patients and also their families. As well as clear guidelines for how the patients should be dealt with in case their cryonics organizations hits on hard times. It should be legislation that assures the public and the government that cryonics isn't a scam, but people you can trust.

These principles will still allow each organization to have its own character. For example, good governance does not specify if a board is elected by its membership or by existing board members. But it does ensure that the board will act properly and in the best interest of its members and patients.

Now we come to the second step in this process. The existing cryonics organizations should adopt these guidelines before they become laws.

Although cryonics has a history of less than half a century, we have managed to accumulate a number of bad outcomes. Cryonics Society of California and Cryonics Society of New York are just two organizations that have gone under with a great loss of patients' life. We don't want another.

What we want is knowing that all existing cryonics organizations are basically sound so there won't be any unpleasant surprises. We also want standards that all new cryonics organizations should follow. It is good that we multiply, but it should be done the right way without anyone trying for shortcuts. There is also always the risk of a conman thinking that cryonics provide the perfect scam and we need to be able to expose them within the cryonics community before it becomes another scandal. We don't need another Chatsworth.

This can be achieved by certifying cryonics organizations through a cryonics oversight organization and reviewing the certification yearly. It will give certified cryonics organizations public standing and provide its members with some certainly and security. It would also help new cryonics organizations by giving them guidelines of what they need to achieve to be viable whilst discouraging conmen form trying to set up their fake rival organizations – fraudsters are a real threat as both CI and Alcor have accumulated millions of dollars in assets and any conman who looks at this will feel tempted.

American Cryonics Society (ACS) already audits the cryonics organizations that hold their members. Maybe they can take over certifying all cryonics organizations or a new group can be evolved from the judging panel that already have been set up.

Australian cryonics is already moving down this track. When the new cryonics facility, Southern Cryonics, was first suggested it was clear that it would not be allowed to function without explicit legal approval. Therefore a lot of thought was put into finding where it could fit into the existing legal framework. This involved long discussions with regulatory bureaucrats and Australian cryonicists even had input into proposed changes to the storing of biological samples. However, in the end it was decided that a cemetery classification was the best fit for cryonics – not a good fit, but a livable one – and therefore the land purchased had to have cemetery classification. There is also the possibility it might be classified as a mortuary too.

Australia already has a cryonics organization called Cryonics Association of Australasia (CAA) and until now it has been a catch-all for almost everything to do with cryonics. One of its most important functions is to help get cryonics patients to the US. With both Southern Cryonics and Neural Archive Foundation available for cryonics patients in Australia, CAA is seeing its role change and it want to morph into a peak organization that provides the sort of oversight that I am suggesting for US cryonics organizations.

Self-regulate to provide certification that makes certain cryonics is done right and organizations can be trusted provide an easy path for the politicians when they get around to legislating on cryonicss.

. . . and it doesn't have to cost a lot to implement. I estimate it is a five figured amount with most of the manpower needed supplied by volunteer law students who want the experience (and the prize money) as well as dedicated cryonicists willing to give

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Terahertz radiation could help us read closed books

By: Tyler MacDonald: http://newatlas.com/terahertz-radiation-books/45348

Introduction by York W. Porter, President, Immortalist Society

One of the essential attributes of any repair mechanism that will be useful in cryonics is going to be its ability to deal with information and its recovery from less than optimal states. Biological structures can be discerned from information about what their particular configuration is at any one time and, just as importantly, from preexisting knowledge concerning what that configuration "should" be. Long decades of research have led us to an enormous understanding of atomic and molecular structures inside the human body and how they interact. This knowledge is stored in numerous books, papers, and computer systems worldwide. That knowledge base will only continue to increase as the decades roll by.

One of the important things that has been discerned is the hardiness of information and the ability to decipher it, even when one would strongly think otherwise. Leading nanotechnologist Dr. Ralph Merkle has worked in the area of cryptography and has written about the interaction between information and cryonics. Dr. Merkle is, to this writer's understanding, the originator of the phrase "information theoretic death" which is, in various ways, a useful concept within cryonics.

In the following article, researchers have dealt with the problem of reading some information in the raw that would seem, at first glance, to be "impossible" to discern.

You might want to keep your journal in a safer place – with help from their colleagues at the Georgia Institute of Technology, a team of researchers from the Massachusetts Institute of Technology (MIT) has developed a prototype imaging system that aims to read through closed books. In their recent study, the team tested the system using a stack of papers with one letter printed on each and found that it could correctly identify those written on the top nine sheets.

The new system takes advantage of terahertz radiation – the band of electromagnetic radiation that lies between microwaves and infrared light on the electromagnetic spectrum. Although other wave types – such as X-rays – can also penetrate surfaces, the team chose to use terahertz radiation because it can differentiate between ink and blank paper in a way that X-rays cannot. This stems from the fact that different chemicals absorb different terahertz frequencies to varying degrees, giving each chemical – such as those used in ink and paper – a unique frequency signature.

MIT algorithms designed to capture images from each paper use this absorption difference to make the characters as clear as possible. Afterwards, algorithms developed by Georgia Tech were able to interpret the often-distorted images as letters.

"There is a spectral difference in absorption of a blank paper and ink material," Barmak Heshmat, MIT researcher and co-author of the study told New Atlas. "We tune to that spectral contrast using computational methods to enhance the contrast significantly. This will render the letters visible to our next algorithm, which recognizes the characters."

The terahertz camera in the current prototype of the device emits terahertz radiation in ultrashort bursts. These bursts are reflected back to the camera's built-in sensors from the tiny air pockets that are trapped between each of the pages, which have different refractive indexes.

After hitting the sensor, the radiation is analyzed by an algorithm that determines the distance to each individual page of the book using the difference between its emission time and the time at which the reflected radiation returned to the sensor.

Page distances help the algorithm that renders the images filter out the "noise" created by radiation that bounces around the gaps before returning to the sensor. By pinpointing only terahertz signals with arrival times that are suggestive of real reflections, the device combines this data with measures of the reflections' energy and assumptions regarding the energy profiles of these reflections and noise statistics. Ultimately, this allows the device to shed light on the chemical properties of the surfaces that reflected the terahertz radiation and "read" the letters on each page.

The current device can read up to a depth of nine pages in a stack of paper – after this point, the energy of the reflected terahertz signal is too low for the sensors to be able to distinguish between different terahertz frequency signatures, making letter differentiation impossible. Future research will work on achieving deeper penetration through improving detector accuracy and radiation source power, and the technology could one day be used to look inside books that are too old to open without risking severe degradation.

The findings were published in the journal *Nature Communications.*.

Looking Back

Stories From the Archives

Dateline: April, 1973

Mae Junod Writes A Prescient Editorial

Introduction by York W. Porter, Immortalist Society President

Recently, the Immortalist Society Vice-President, Debbie Fleming, made the excellent suggestion that articles of interest from past issues of this magazine be reprinted. So, starting with this issue, we are going to try to have a column generally entitled "Looking Back". This first one is from Mae Ettinger who, prior to her marriage to Robert Ettinger, was Mae A. Junod. In this editorial, which was printed in the April, 1973 issue of The Outlook, which was the name of Long Life back in those days. Mae speaks to the issue of trying to have one national cryonics organization. This has been an idea that has cropped up from time to time. In my younger days, filled with the enthusiasm of youth, it certainly appealed to me. Getting older and, perhaps, somewhat wiser, i finaly realized that "one size fits all" probably wasn't going to work, especially in a field with the number of strong willed people that cryonics has.

In Mae's article one can see the thinking behind the beginnings of the Cryonics Institute, which was started by Mae and a handful of others not too many months after this article was printed and which, starting from relatively humble beginnings, has recently reached the mark of over 140 individuals in its capable care.

A National Cryonics Society?

Editorial by Mae A. Junod

There seems to be a strong sentiment among some of the members of the various societies in the United States regarding the foundation of a national society. The primary motivation seems to be that such a union would lend strength to the movement. Goals and efforts would be combined, there would be little duplication of endeavors, thus making those going on more effective.

There have been suggestions that we have one large national facility rather than a number of local small ones. All the strengths of all the societies would be put into maintaining and promoting this central facility.

It has been proposed that such an organization would be governed by officers elected from local organizations, which would remain autonomous.

Obviously this push for unification and centralizations comes from the examples of various labor unions, associations and other groups that have grown strong and powerful through national affiliation.

There can be no arguing with this premise. However, the cryonics movement has not, up until now, proven itself to be conducive to national affiliation. A prime example is the breakdown of the national conferences. There has not been one since 1971. They were, at least, a means of pooling information, if nothing else.

At this time there is no non-profit facility in the United States. Although BACS (*Long Life editor's note: BACS stands for the Bay Area Cryonics Society*) has indicated an intention to build a facility, it is not on the non-profit basis, but would instead be another profit making endeavor such as those now operating in California, New Jersey, and New York. CSM (*Long Life editor's note: CSM stands for the "Cryonics Society of Michigan", the former name of the Immortalist Society*) has been discussing a non-profit facility for several years and that has been moving to identify local procedures necessary. Our hang-up is the usual one--money. We figure it would cost a minimum of $100,000.00 to put up even a modest facility--one perhaps accomodating 25-30 suspendees.

Some of us are so desirous of having a cryonics facility that would be owned, maintained, and operated on a non-profit basis by a cryonics society--or societies--that we have been willing to put our own

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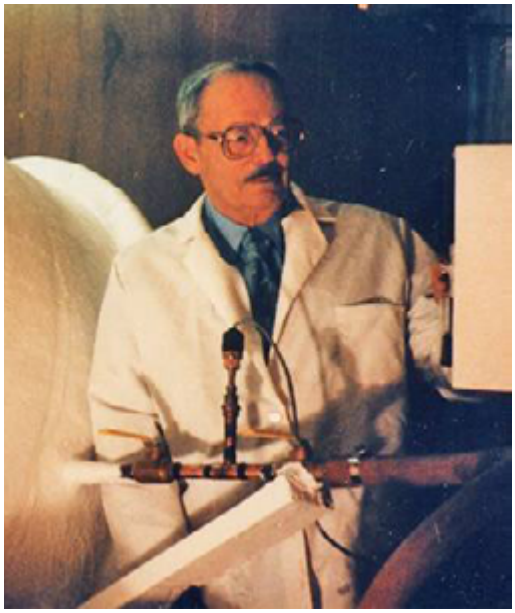


Robert Ettinger: *The Legacy Continues*

Could Drexler Have Saved Campbell?

Introduction by York W. Porter, President of the Immortalist Society and Executive Editor of Long Life Magazine

Robert Ettinger stated in my presence one time that when he wrote his seminal book, The Prospect of Immortality, back in the 1960's, he didn't "know" that repair mechanisms would be available but proposed/postulated it based on the great amount of scientific progress that had occurred plus his reading of the scientific literature. In this writing, from June of 1984, Ettinger makes a relatively early reference to the now widely accepted (and recent Nobel Prize winning) field of nanotechnology and it's obvious utility in the wonderful concept that Ettinger basically founded.

The late John W. Campbell was the editor for many years of the science fiction magazine Analog, and probably second only to Hugo Gernsback as editor of legend. He was silly enough to fall for some obvious nonsense, such as the "dianetics" drivel of L. Ron Hubbard, but all in all he was a very bright fellow who cavorted daily in a sea of imagination. When I wrote him to enlist his backing for cryonics, what was his response?

He said he could not conceive of repairing an organism *after every single cell had been ruptured by ice crystals.*

Well, to begin with, he hadn't been paying attention. I had carefully explained that techniques were known to reduce freezing damage, and that most kinds of human tissue had been successfully frozen and thawed. Furthermore, even without special protection, at moderate freezing rates the main problem is not mechanical damage by ice crystals; the cells are not rupted, but on the contrary may collapse because of withdrawal of water into the intercellular spaces.

Aside from his misinformation, he suffered a typical failure of both nerve and imagination, as do most of the "experts" also; and this failure is combined with a peculiar kind of arrogance. Because ***he*** could not conceive, ***now***, of any way to repair the damage he envisioned, he assumed ***no one*** could, ***ever***. He was unable to build an optimistic case on a general reading of history--he could not look at the broad sweep of progress and conclude, as some of us do, that our technology (if civilization endures) will surely become able to cope with any kind of repair if only enough information is available, either intristincally in the damaged organism or extrinsically in the form of inferences from records.

What someone like Campbell might need is a bridge to span the gap between what a full-fledged capability and what our detractors could term mere speculation. (We call it a realistic reading of the way the world works). Such a bridge may be provided in the work of K. Eric Drexler, whom we have mentioned before.

Mr. Drexler (Space Systems Laboratory, M.I.T.) has been working in the area indicated by the title of his paper published in the P*roceedings of the National Academy of Sciences*, USA,Vol. 78, No. 9, pp. 5275-5278, September 1981: "Molecular engineering: An approach to the development of general capabilities for molecular manipulation."

The general idea is simple enough. Ordinary objects--including organisms--are made of molecules, which are made of atoms. if we can manipulate atoms and molecules--hold them, pull them, push them, twist them, etc.--then we can build or repair almost anything, in complete detail. (This is a slight over-simplification, of course, since among other things it ignores quantum problems, but it is still a valid statement).

The possibility of molecular engineering has been suggested, in varying detail, by many people. Mr. Drexler got some of his impetus from Nobel laureate Richard P. Feynman, who gave a talk in 1959 called "There's Plenty of Room At The Bottom". Feynman suggested hierarchies of machines, smaller ones building still smaller ones, until

the molecular level was reached; he also pointed out some of the tools already available, and lines of development for new microtechnology.

Drexler's 1981 article is focused on living things. It pointed out many analogies between macro- and micro-engineering: e.g., conformation-changing proteins perform the solenoids and actuators; flagella and membrane proteins do the work of pumps; enzymatic binding sites serve as clamps; enzyme systems and ribosomes act as production lines; and so on and on. There is discussion of upper and lower limits on the capabilities of molecular machines, and of why the absence in nature of a particular type does not preclude its feasibility. (For example, the wheel is absent in organisms, in spite of its usefulness). Specific suggestions are made for improving on or bypassing some of the devices developed by organic evolution. Estimates are given for ultimate compactness of information storage and of machinery.

Getting down to biological applications, Drexler goes straight to cryonics--although he doesn't use the word nor mention the freezing of humans. He talks about ultimately detailed analysis of a frozen brain and its reconstruction. He points out, for example, that electron micrographs show that synapses involve complementary structures on both sides of the intercellular gap "which should provide information enough to reconstruct the pre-freezing configurations of the cells almost regardless of ice crystal locations," and development of these abilities has "implications for the present," including 'the preservation of biological materials today, provided a sufficiently long-range perspective is taken".

Biological materials, this means you. ***You*** can be frozen today--or whenever you happen to die--and even though you are very badly roughed up, at some point in the future, the swarms of busy little Drexler machines will repair you, molecule by molecule if need be.

Photo: Herman Miller

no guarantee, but the argument in your favor is closely reasoned and immeasurably more sophisticated than the mindless slogans of the masses ("Dead is dead") or the sour plaints of most of the alleged experts ("I don't see how").

Since his 1981 paper, Mr. Drexler has done much more work and writing, including a book (not yet published) on the future of microtechnology and its implications, and a long paper (not yet published) on cell repair--over 50 pages of brilliant argument and proposals for innovative molecular technology.

He is not the first to try to outline future repair technology , based on known science. Several cryonicists have made stabs at it, including Jerome White, Michael Federowicz, and Thomas Donaldson. But in scope and detail Mr. Drexler's work is uniquely impressive.

Would it have impressed John Campbell? Likely not. After all, think how few people were impressed by the theoretical rocket work of Goddard and Tsiolkovsky, who ***knew***, many decades ago, that moon rockets were feasible: the math was simple, and only a few relatively minor improvements in technology were needed better refractories, better fuels, better electronics and of course the economic resources.

Well, those who thought moon rockets were far-fetched were merely wrong. Those who--like John Campbell--think cryonics is far-fetched will be wrong and dead.

Looking Back – *continued from p25*

money into such an enterprise--but there are not enough of us, and we are not rich enough. Nor is CSM itself rich enough.

Our conclusion has been that there can be no successful cryonics movement without a national non-profit, centrally located facility. The movement is not strong enough as yet to support large commercial operations.

We went through the chicken-or-the-egg bit for many years before we came to this conclusion. It has been long believed that the "movement" would generate facilities. It hasn't.

To form a national organization simply to gain strength in promotion the movement is not reasonable. To pool our efforts to create a national facility is, and this is what we recommend.

(Final note by York W. Porter: Three years after this article, the Cryonics Institute was incorporated by Mae and three others. It's initial basis was the pooling of some money from these four. In early 1978, a small building was purchased. Later, in 1994, the present headquarters was bought).

Final Thoughts

York W. Porter - Executive Editor

Run Silent, Run Deep....

German WWII Submarine U-14 - Source: Wikimedia Commons

I was born in June of 1952, which was just about exactly seven years after the end of World War II. When I was growing up, television was initially not very reliable, with antennas in the town I lived in frequently bringing in only a less than perfect signal. This resulted in a very "snowy" picture. The problem was due in large part to the valley the town sat in where small but somewhat steep hills pretty much surrounded us. Luckily for me, just up the street around a couple of hundred feet or less from my home, was the local movie theatre. Fairly regularly in my young years, primarily on Saturday afternoons, my parents let me go to the local "picture show".

The local "matinee" varied in its content, with cowboy pictures and war pictures being a large part of what was offered. Along with the Three Stooges, Woody Woodpecker or another comedy or cartoon, there was also frequently offered a relatively short "serial" program in which various scenarios played out with each episode other than the final one, ending just like TV programs do today, at a point designed to make you "come back for more" by watching the next episode.

The "more" represented by the next episode was designed to happen one week later when it, quite understandably, served to help the theatre owner keep revenue coming in. It was loads of fun, it was cheap to go to, plus there was always the added allure of popcorn, candy, and soft drinks. It was pretty close to heaven for this then very young fellow growing up in the hills of Southwestern Virginia.

Like books about "Knights of the Round Table" must have done for stimulating the imaginations of youth before the advent of films, movies did the same for me. I was "right alongside" of many a movie hero in my mind, while they struggled through many a perilous situation. In my case, of course, being a young tyke in the late 1950's and early 1960's, the most peril I was in was having a much taller fellow sit in the seat that was right in front of me to where I had to accept an uncomfortable viewing position or, at worst, result in me having to get up and relo-

cate myself to another seat in the darkened room. Just like John Wayne, movie icon though he was, I was destined to never serve in the military so I was in no danger at all when a war picture was going on. (And, of course, by and large, neither was Mr. Wayne while he fought, as one wag said "the Battle of Burbank"). Still, it was great fun and I look back on those days with fond nostalgia.

Of all the genres of war pictures offered, for some reason, ones about submarines appealed to me the most. I guess it was the "high tech" world (well, for back in those days at least) that submarine service seemed to offer. Sort of like the small trailer my parents, my grandmother, and my sister all lived in just down the street from the movie theatre, everything you needed seemed to be right on board. You were at home and could go to work all in the same location. Seemed like a pretty good deal to me, dressed up, as I'm sure it was, by the "magic" of Hollywood. (Sort of figure I would have been less impressed if I had to subject myself to the rigors of living and working in one of those cramped and dangerous things during a real war situation).

It was intriguing to me, Hollywood "magic" notwithstanding, to consider the real-life consequences of submarine service and I began to delve, in my youthful and amateur way, into the real science and technology behind the subject.

One has to start with the reality that for eons, the sea that covers roughly three-fourths of the planet has beckoned to man. For centuries, however, not much was really known about what lay beneath the vast area represented by the deeper oceans. Area near the shore could be explored, to some degree, by the few souls that basically gulped in a good deep breath and then swam to the deepest point and the longest time their limited ability as humans would allow. Areas beyond that were quite beyond any practical ability of regular humans to explore.

It must have seemed to people down through the centuries that it would always remain so. Artifacts and creatures that randomly washed up on the shore were another source of knowledge about what might lay beneath the seemingly infinite waters that lay before folks but direct knowledge was another thing altogether. Ships, boats, and rafts had been around for a long, long time but they were limited, of course, to the surface of the ocean and to whatever information could be gathered from them. "In the deep", however, was another matter whatsoever.

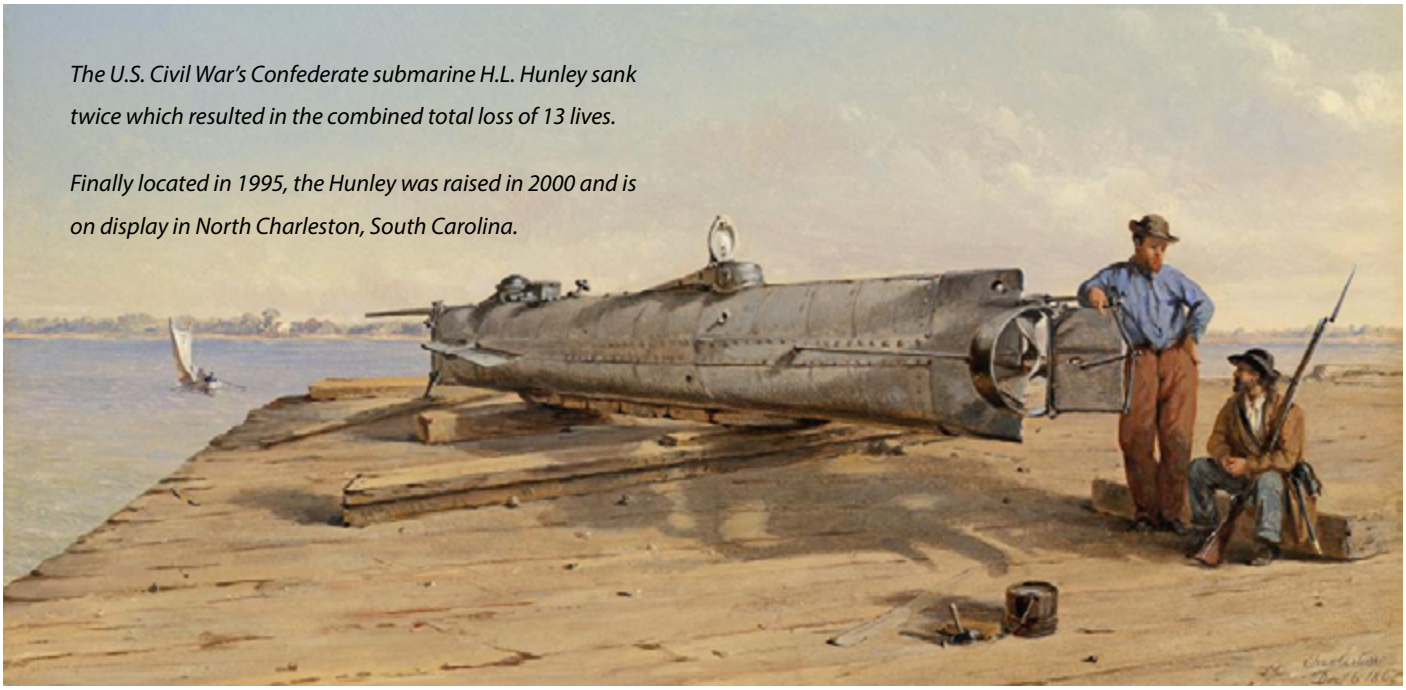
As one answer to this, one can look at the so called "diving bell". The easiest and simplest way to think of this is to imagine taking a drinking glass, turning it upside down, and then pushing it into the water. The sealed nature of the glass keeps the air inside of it and, as the glass is submerged deeper into the water, the air that is trapped resists against the pressure of the water, forming a "safe zone" where humans may reside. It is relatively easy to envision a primitive device of this type enabling folks to land on the bottom of a river or of relatively shallow depths of the ocean and to inspect for themselves the riverbed or seabed that is normally totally obscured from view. Again, a primitive beginning but it was a start.

Neither this type of diving bell which is called, for obvious reasons, an "open" diving bell or the more advanced model where the end is closed off and gases are provided for people to breath, are not directly and independently maneuverable themselves. For that, it takes the technology inherent in the submarine.

Plans for submersible vehicles go back to the Middle Ages. Design followed design, frequently motivated by that sad adventure of humankind, the art of warfare. The initial attempts at propulsion all involved, as they had to, human effort. In the mid-1800's, however, one vessel was proposed that used an engine powered by compressed air. This was the French Navy submarine that was named *Plonguer*. Using multiple cylinders of compressed air to function, reports are that it was slow and unwieldy to maneuver. Like the earlier efforts with diving bells, it was, though, another step forward.

Progress continued to be made, however, and the dreams of numerous humans down through the centuries would eventually come to fruition. The 1800's was a time of great technological and scientific progress and numerous inventions that were later refined and which formed the basis of the technology used in the 20th century (which our own present century rests on) were initially worked on. Steam powered submarines, submarines using "air independent propulsion" where several types of chemical substances provided the necessary oxygen for engines and, finally, in the 1880's, battery powered motors for underwater were all developed and experimented with. Even, somewhat sadly, the self-propelled torpedo which transformed the submarine into a potent weapon of war, traces its design back to 1866.

By the time World War I had rolled around, the basic design of the submarine had been set. Diesel power provided, in most cases, the propulsive force for surface running and extremely large batteries provided the energy storage for electric motors which drove the submarine while it was underwater.



C.S.S. H.L. Hunley - image credit: Wikimedia Commons

World War II saw this basic design continuing. Nuclear propulsion would come later but, surprisingly, due to the need to use pumps to run fluids through the reactor to cool it, some traditionally powered submarines were actually such that they provided less acoustic signal (are "quieter") than some nuclear powered models. The quest to improve submarine design and operation will go on and on, of course, due to their military usefulness, if nothing else.

In terms of safety, the record is, sadly, as in the development of any human transportation technology, one of numerous successes combined with failures that resulted in loss of life. One noted failure was of the Confederate States submarine, the *H.L. Hunley*, which sank twice which resulted in the combined total loss of 13 lives. Later losses include, but are nowhere limited to the British Royal Navy Vessel the M2, lost with all 60 crewmen in 1932 and the *Squalus* in 1939, which resulted in 26 fatalities. In the "nuclear age", both the *USS Thresher* and the *USS Scorpion* were both lost at sea with all persons aboard perishing.

In spite of these losses and, no doubt, many others, especially during the "early days" of this highly technical area, much good was done as well. The *Trieste*, a highly technical form of a submarine, has descended to the deepest part of the oceans with a two man crew. This crew able to make direct visual observation of the sea floor. This was accomplished through a specially designed Plexiglas viewport that was capable of withstanding the roughly sixteen thousand pounds per square inch pressure at the point of the so-called "Challenger deep" in the Marianas Trench! An absolutely and positively amazing accomplishment to say the least, which all began with the crude efforts of folks centuries ago to figure out how to travel below, as well as on, the surface of the ocean.

Another absolutely and positively amazing accomplishment was the thinking of a highly intelligent man by the name of Robert Ettinger which first came out back in the 1960's. Building on centuries of scientific progress, he decided that something could be done about the problem of human mortality. Using what was a very clear thinking mind, coupled by a willingness to spend years in researching the literature about various subjects, he came up with the concept of cryonics. The idea of utilizing ultra-cold temperatures to "stop time" for people at the point of clinical death until they could be helped is, like the development of the *Trieste*, based on centuries and centuries of hard fought for scientific thinking and experimental evidence. It has culminated in organizations that are both now directly engaged in this exciting area of human effort and in spreading information about its usefulness to the human race.

Cryonicists come from all walks of life. We have housewives, truck drivers, lawyers, medical doctors, scientists...pretty much, as the old saying goes, "the butcher, the baker, and the candle stick maker". The evidence for the concept Mr. Ettinger developed was strong when he wrote his seminal book, *The Prospect of Immortality*, back in the 1960's. It's only become stronger through the years! Join today so we can say, as they would to someone new to the submariner trade ,"Welcome aboard!"

Million Dollars - Continued from p20

their time to judge the contest and set up the oversight organization once the rules are in place. The ongoing cost for the oversight organization would be slight and can be paid for by charging an annual fee for the certification inspection.

. . . and that means I still have the bulk of the million to play with. That's good because my next wish list item will be more expensive.

I want to create a Cryonics Hall of Fame.

It's not really my idea. I have stolen it from the Society for Venturism, but my version carries it to its logical conclusion.

The first step is for somebody, maybe the Venturists, to take on the responsibility of overseeing the voting for who should become founding members.

There would be a section for cryonicists who have already been suspended – I'm sure you can think of many who will fit into that category – but we want at least fifty cryonicists who are still alive and active inducted. These should be spread around the world, maybe stipulating that, say, a quarter of them come from outside the US. If you bear with me, you will see the reason for this later.

All existing cryonics organizations can nominate and vote for their favorites, but I want ordinary cryonicists to also have a vote. After all, anyone who is willing to change their life and entire philosophy to become a cryonicist should have a voice in deciding wjo our heroes are. It will make everybody feel part of the process. With a bit of luck it will also make cryonicists from different organizations and countries talk to each other as they debate the advantage(s) of one person over another.

Most of my projects are designed to make all cryonicists feel they are part of a community and have more to gain from working together than to fight each other about our relatively trivial differences. The big decision is whether you freeze yourself or not. After that everything else becomes details. I want the Hall of Fame to bring us closer together.

So far my idea is low cost. You set up a website that you call The Cryonics Hall of Fame, arrange for a vote and you print out some fancy looking certificates for those that are inducted. That can be done for a few hundred dollars – it would also be a largely empty symbol.

My plan is far more ambitious. And expensive. The fifty or so living winners represent the cream of all current cryonicists. They are the mover and shakers of today and the contest is set up so they represent every organization in the spectrum of cryonics and ranges all around the globe. All sorts of good things could happen if they start talking, sharing and planning together. These people often have limited contact with each other because they represent different organizations - like Alcor and CI - or because they represent different types or organizations - like forums moderators and local standby groups – or they are just involved volunteers who represent nobody in particular. Not to mention being separated by distance and time zones.

That's why part of the prize includes a trip to receive the award in person. But it would be a wasted opportunity if all this work was to cumulate in just one award dinner and a few hours of conversation.

After the award ceremony comes the tour. This will take at least two weeks as we want to traverse the US. Every cryonics organization should be visited and as many local groups as possible. It will strengthen ties between groups and help clear up misunderstandings; it will also form a solid base for future help and cooperation.

When you look at the geographic distribution of cryonicists you will find hotspots separated by large empty tracts. I think this is mainly due to active local groups that are good at fostering the cryonics meme. Success builds success. One cryonicist is a freak, five is interesting and twenty makes the whole idea seem reasonable and worth another look. The long term aim of cryonics should include fostering these local sparks. They can provide support for each other and grow our movement. It might not be the most glamorous part of cryonics, but it is where our roots have to be.

Although it will cost money to host and move a large group of people for a couple of weeks, there are ways to cut down on cost. Group booking is one way, so is hiring a bus to travel in. But option that is both cost-effective and outcome-effective is for local cryonicists opening up their homes so the inductees stay in their houses. There isn't a better way to create life-long bonds and deep interesting discussions between people than to have them stay with you for a day or two. Imagine two or three local organizations from different countries sharing their host's house and talking into the night about what has worked and what was a disaster. Flicking ideas between each other and reinvigorating the local groups. Wow.

Neither should the chance of publicity be ignored.

We may need publicity savvy cryonicists to help coordinate all the opportunities. The first opportunity comes when the nominees and winners are announced, especially with local media from each finalist's area. The next publicity opportunity is the award ceremony. Then comes a succession of local media events as the cavalcade rolls across the country. This whole affair should be times to coincide with the so called 'silly

season' when news are sparse and hungry media outlets still have column inches and air minutes to fill. Cryonics has always been able to garner more than its fair share of publicity, and this will be a great opportunity for good positive coverage.

It might even be possible to arrange 'town hall' meetings or appearances in science fiction conventions. Maybe international conferences on longevity or blue sky science. After all, there aren't that many opportunity to see such a stellar group of cryonics talents in one room. Let's use it.

. . . but I'm not finished yet. Let's bite a bit deeper into that million dollars to take full advantage of the once-in-a-lifetime opportunity to use our Hall of Fame winners.

About three quarter of all cryonicists live in the USA. For a country that only has 7% of the world's population this is very good. Canada has fewer than 150 cryonicists. It still makes it to the third largest cryonics country, but compared with the two thousand or so cryonicists in the US it shows how underdeveloped cryonics is when we move outside he States. Clearly there are huge possibilities for growth of Canadian cryonicists. After all, they have a population of close to forty million, most of whom can afford cryonics and they are next door to the US so accessing cryonics services is relatively simple. Canada has an active cryonics movement and it is growing, but there clearly is the potential to become much bigger.

It certainly would make sense to extend the tour to include Canada.

Once you start looking outside the US, it becomes apparent that cryonics is sorely underrepresented around the world. This doesn't mean there aren't cryonicists there, just that they could do with some encouragement to take off. For example, South America has a small but promising movement, including a cluster in Argentina that has even done some independent research.

After North America, Europe is the second largest cryonics continent with Britain the most active cryonics country, followed by Germany. Cryonics in Russia is growing strongly, mainly due to the existence of KrioRus. If you are a glass-half-full person you could point out that about one in every eight cryonicists comes from Europe. If you are a glass-half-empty person you could mention that with a total continental population of almost three-quarter of a billion people, far less than five hundred have chosen cryonics. All in all, this is a continent that could do with its own boost and some of that million could be used to take the group over there.

Just how much can be done by one small county with an active cryonics community is shown by England and Australia. Both of them have sizable number of cryonics and several cryonics organizations offering a range of services. But looking at these counties also brings home how underdeveloped cryonics is in other countries. China is an obvious example of this - over a quarter of the world's population and only a handful of cryonicists. A very small handful. They have a population that is becoming increasing affluent with about a fifth of the world's private wealth and a culture around death, funerals and longevity that should make them the next growth market for cryonics.

I don't think that taking the cavalcade around the world is magically going to make cryonics mushroom all over the globe, but showing local groups what other countries, like Australia and England, have done will reap benefits in the future. This is the reason I wanted the first inductees to the Hall of Fame to be internationally diverse. We have to spread cryonics worldwide, not just concentrate on one country.

It isn't possible to go to all four corners of our world and we have to be realistic of what we can achieve. What I am hoping for is to create small nucleus in a number of countries that might grow and spread.

It will be good for cryonics to become global. Not only can we reach and help more people, but it will also change the common perception that cryonics is owned by a small group of white, rich techno-nerds. More members also mean more talent within our group and more resources.

And geographic diversity provides security.

We are shaking things up, we are challenging death itself and there are many people out there who find this confronting, even downright evil. Public opinion can quickly turn against cryonics. Twice already cryonics has been the subject of hostile attention by authorities and in both cases it would have been impossible for the cryonics organization to accept new patients until it was solved. This happened when cryonics where smaller and there could be months or even years between new patients so there was time to deal with the problem. Today we don't have that luxury.

That is why the cryonics movement needs fully fledged organizations in other countries that can temporarily take new patients or, if things really get bad, be used as a refuge for all cryonics patients. Keeping all your eggs in one country isn't a good idea for a movement that has to think in centuries.

Because I hope that a small beginning – creating a Hall of Fame – can have such wide-reaching results that I am willing to commit a large chunk of the million dollars to this. With luck and hard work it can be the springboard to better sustainable cooperation between different cryonics organizations and the growth of cryonics until it becomes truly global phenomena.

But it won't take the full million. Far from it. That still leaves me with more money to spend, and I am just hitting my stride.

For my third project I will finally opt for more research. You might have noticed how almost everything I want deals with relatively neglected areas in cryonics. This is deliberately as there are a lot of low-hanging fruits to be picked. Biggest bang for 'my' buck. When it comes to research I have also gone for the less obvious.

Following that maxim, I am picking the rather obscure experiment that Isudo Suda did in the 1960's. A copy of the article that appeared in Nature, a premier peer-reviewed scientific publication.

I can send you a copy of it if you email me at martasandberg99@hotmail.com.

Isudo Suda was an old and venerable Japanese scientist who had gained enough reputation to conduct a few wayward experiments just because the subject interested him. The cat-brain experiments were one such.

In brief, Suda anaesthetized cats, removed their brains and very briefly perfused them with glycerol and then froze them at -20C for periods that ranged from days to months and even years. He then thawed the brains and took EEG tracings of the brainwaves and compared them with the tracings he had taken before they brains were frozen.

The results were stunning. The brains spontaneously 'sparked' back to life when they were thawed.

These were the tracings after the brains had been being frozen for 45 days.

. . . and after 203 days (or more than half a year)

[Source: Nature, Vol. 212, October 15, 1966, 'Viability of Frozen Cat Brain In Vivo' , Prof I Suda, Dr K Kito, Dr C Adachi]

The EEG signals are created as the end result of very complex orchestrated activity inside your brain. Your neurons keep charged ions lined up along their cell membranes. When triggered an influx of these ions happens, followed by an outflow. This result in a charge building up, peaking and then being neutralized, but not before the peak has triggered the next section of the neuron to start the same process. When the signal comes to the synapse and even more complex set of activity takes place that may, or may not, result in a cluster of chemical being released across the synaptic gap to trigger an electrical signal rushing through the next neurons.

Then the neuron have to re-set itself by shepherding the ions to their starting positions and mop up or reabsorb the excess compounds in the synaptic gap ready for another signal. The neurons do some of this themselves, but they are also attended to by a host of glial cells that acts a bit like nursemaids cum butlers.

All of this is needlessly complicated – as in most things biological because evolution isn't a very tidy process. But it proves that to create these tracings a network of neurons and their accompanying glial cells must have survived. We are not talking about individual cells, but many (most?) of them surviving freezing and functioning after thawing. As the pattern continues for hours, most of the circulatory system and other support mechanisms must also be intact.

I can't say that the cats are still thinking. In fact, considering that we are talking about isolated cat brains removed from their own skulls I hope that they are so anaesthetized that they were no longer capable of true thought. But I believe that these cat brains were in a 'repairable' state. In fact, if my brain survives suspension as well as the cat brains did, then I'm confident that I can be revived one day.

For this reason alone the Suda experiments deserve more attention, but . . .

It also represent a different emphasis than our current experiments. They are mainly looking at preserving structure whilst this looks at function instead. I am not suggesting that current research is defunded; rather that some of 'my' million is used to try a different approach.

I can only think of one recent experiment that tested primarily for function. It was performed by Natasha Vita-More and Daniel Barranco and published under the title 'Persistence of Long-Term Memory in Vitrified and Revived Caenorhabditis elegans'. The nematode worm Caenorhabditis elegans is known to survive being frozen to liquid nitrogen temperatures. Nematodes were imprinted to associate the smell of benzaldehyde with food, then they were either slow frozen with a low concentration of cryoprotectants or vitrified together with a control group of untrained nematodes. When warmed up again, it was clear that the pleasant memory that associated benzaldehyde with food had persisted. This was equally true for the slow cooled non-vitrified nematodes as for the vitrified ones, but overall survival rates were about five times higher for the vitrified nematodes. These are intriguing results and I might have suggested expanding this research, if it wasn't for the old Suda experiments that show persistence of thought in a slow frozen mammalian brain. A cat is much closer to us that a nematode.

I would like to see Suda's experiments revised and experiment and expanded. One obvious area to investigate is determining how much ice was formed during freezing. Just how damaging is ice formation to function? ? What is the correlation between structural damage and functional deterioration?

Another area to investigate is to see what happens as the temperature drops further. Suda's experiments were done at -20C, the slow frozen nematodes were only taken down to -80C. What happens when the brains approach -196C or liquid nitrogen

temperature?

Any updated results would provide vital information for cryonics. Using it to improve our human perfusion protocol is good for all cryonicists. These experiments might also get published in peer-reviewed scientific journals as the original two papers were both published. That can only be good for the reputation of cryonics.

To start to look more at how function survives freezing, rather than structure has the clear advantage that we don't know exactly what structures needs to be preserved for cryonics to work, but as long as the surviving structures also preserve function, then we can be fairly certain that we are preserving enough. Commercial cryogenics have always concentrated on function rather than structure and that approach has proven very successful for them.

Another advantage of concentrating on function is that it is more convincing for most people. An electron microscope slide doesn't convey a lot unless you are routinely examining them. It still comes down to an expert telling you cryonics can work and another expert telling you it can't. Dueling experts and you take your pick whom you believe. EEG tracings or a living nematodes single-mindedly crawling towards a learned smell is far more persuasive for a layman.

The main drawback with continuing Suda's experiments is that they require sacrificing living cats. This might sound squeamish, but I love cats. When I read Suda's paper the first time, my cat was sitting in my lap. Purring loudly. I spent the whole time alternating between applauding the results he got and apologizing to my cat on behalf of the human race for the cruelty we inflict on our fellow creatures.

It might also be hard to get permission to do these experiments in the US with increasingly tight restrictions on animal experiments. A way around the practical problems – if not the ethical conundrum – would be to move the experiments out of the US. This would also involve more scientists doing cryonics research and that will improve spreading the cryonics footprint globally.

But I'm still not quite sure if I can bring myself to finance more cat experiments. If I can't then there is another field of research that can do with a boost – developing better protocols for real-life situations – and I might support that instead. It still involves laboratory animals, but not purring cats.

All our experiments have been done with laboratory animals that are killed under ideal conditions whilst they are at their peak of fitness. That is the opposite of how cryonicists die.

Most of us will die when we are old from slow degenerative diseases. That means that our bodies and circulatory system will be compromised. The death process brings further deterioration before the perfusion can begin. This badly affects the suspension result.

Of course, some of us will die when we are relatively young and healthy. It can be an accident or, say, an undiagnosed fatal heart condition. That brings its own problems. Even if an autopsy can be avoided, it will take time before the perfusion team can reach body and therefore the end results will, once again, be less than hoped for.

This is a Catch-22. If you die in a healthy body, your chances of quick suspension are low. If you die slowly and predictably, then suspension will be difficult because the condition of your body. It means that most cryonicists will receive a compromised perfusion and research into different protocols that provide better outcomes would help people like you and me when our time comes.

Less than half of us will receive standby, irrespective of what arrangements we have made. When analyzing Alcor's case files I found that only 47% of their patients were covered despite the massive effort they put into providing standby. This isn't because they haven't tried, but the problems they are facing are formidable. Unexpected death, including terminally ill patients that suddenly take a turn for the worse, is the main reason for the failure. It will be tough to improve this situation.

David Hayes, one of the founder of SA, did not receive standby and eventually was straight frozen, despite his girlfriend witnessed his deamination and every effort was made to provide the best possible outcome. It is hard to think of anybody more prepared than him and nobody did anything wrong - it is a salutary example of how difficult it is to provide good suspension in real-life situations.

We need to take the protocols out of the labs and into real life.

Attempts have been made to provide home based or personal alarms that will notify your cryonics organization when you become critical or die. One or more of the CI Newsletters explains one such app that is freely available.

At the moment these alarms are clumsy. They are improving all the time with better apps and monitoring equipment, driven by a large and growing population of elderly in frail health that want to stay in their own homes as long as possible. Once the technology is developed, cryonicists can adapt them to their own use. It will help. Sometime in the future.

But until cryonics becomes so common that every ambulance and medical providers use it as a viable option we will have to accept that the chances are we will receive a compromised suspension.

Putting more money into research to provide the best possible suspension under difficult conditions can provide a better chance for all of us. And this is an area that

has been under-researched. I think there is lots of low-hanging fruit to be gathered there.

This research should concentrate on function as well as structure, that way some of the gains from replicating and expanding on Suda's research can still be attained. For that reason I would also consider taking this research beyond the scientists we currently use as their emphasis is different from where I want to go. There is nothing wrong with what they are doing, but another approach could lead to new breakthroughs.

By now I expect to have spent most of the million – sample legislation and certification of cryonics organization; a Cryonics Hall of Fame and a world tour to create stronger ties between organizations and spark the general public's interest in cryonics both in the US and worldwide and two new areas for cryonics research.

Now I can become a bit selfish. I'll claim the remainder for myself.

And that means giving the bulk of the remaining money to CI, my cryonics provider.

It might sound strange, but I am being logical. Although I would like to take some of my estate with me so I can wake up wealthy, my main wish is to wake up at all. By giving money to my cryonics organization I am strengthening it and therefore improving my chances that they will be able to look after my body and reanimate me. It will also help all my fellow cryonauts and, quite frankly, when I open my eyes in the future I want a sizable bunch of people from my own century to be have survived the journey so I can have somebody to talk about the good ol' days to.

But after I have given CI a fillip, then I will look at helping myself.

Next question is - how do you take it with you?

There have been many suggestions. One of the most popular is to put your wealth in a trust that reverts to your revived future self. Historically speaking, ownerless personal trust doesn't have a good track record over long periods, a century or two. And these are the timespans we are looking at with cryonics. I'm skeptical.

How else can I take it with me? Let's become a bit more creative and looked further.

Maybe buy bitcoins. They are supposed to be inflation proof and even increase in value. I have thought about this, and I have doubts. Some type of digital money will probably exist when I am revived, but will it be bitcoin? I know of some cryonicists who think this option is worth exploring. I certainly found it intriguing enough to give it a long hard look.

A much more hands-on approach is to save physical objects that would appreciate or at least keep their value. On the whole I prefer this idea.

First I have to decide what I should bury. Something that will keep its value, like rare old coins. We know they can survive being buried and they have historically kept their value and slowly increased it. Of course, if I bury new coins they will become old by the time I dig them up again. Think Euros. Every country have a different version of these coins and you can still buy a complete set of the first minting in prime condition for a relatively small sum. By the year 2200 they will either be the forerunners for the money of the future or an interesting relic of an idea that never worked out. Either way, they are a collectors dream.

That brings up the next question. Where do you safely store your loot?

I can hire a bank vault and either prepay for a century or two or put enough money into a bank account that the interest will pay the annual fee. Alternatively there is a disused salt mine that has been converted into storage rooms. You can hire a space for as long as you want, including forever, and store your stuff in there.

Personally I prefer the more direct method. Get a shovel and bury it.

This is particularly attractive in Australia where there are plenty of empty spaces where nobody will see you bury or dig up anything. Technically, I might be trespassing on crown land, but once you are into the Outback, nobody cares. There are also plenty of geological landmarks that have been there for tens of thousands of years and will still be there when I revive.

It is a time honored method that works. Recent examples are the hordes that were buried all over Russia and the east block counties when the Communists took over. After the fall of the Soviet Union, scores of these hordes where unearthed. In fact, so many valuables came to light that the price fell for some types of antiques, like solid silver plates and fancy dinner sets.

It doesn't have to be a lot, but a year of living frugally could make me and my husband Helmer's re-entry into the new world a lot easier. Of course, if that doesn't work, then I am still quite confident I will make it on my own. I have started from scratch several times in my life so I am not afraid of trying it one more time.

So that is how I would spend my million . . .

. . . but if you were to give me another million, then I would . . .

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