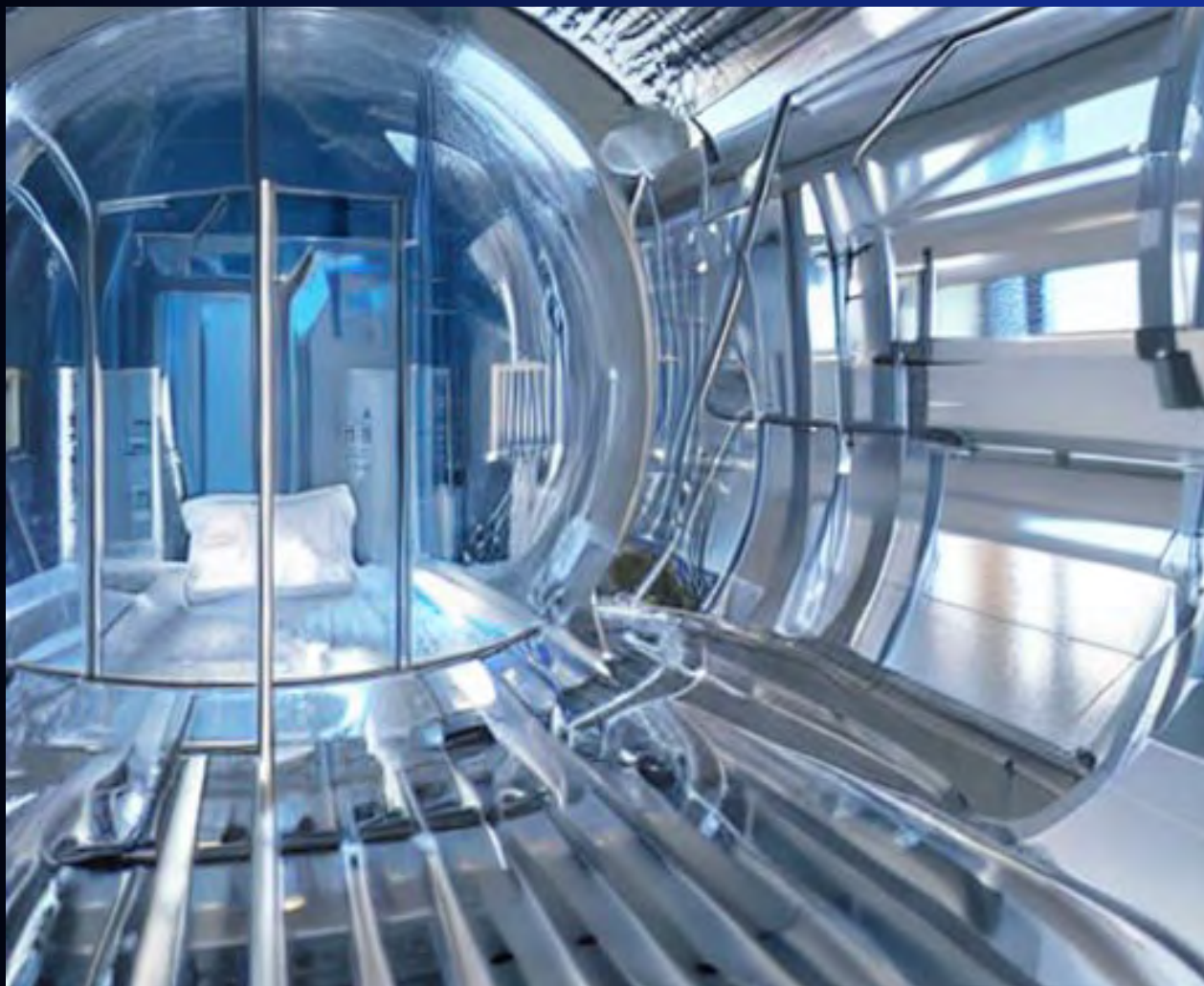
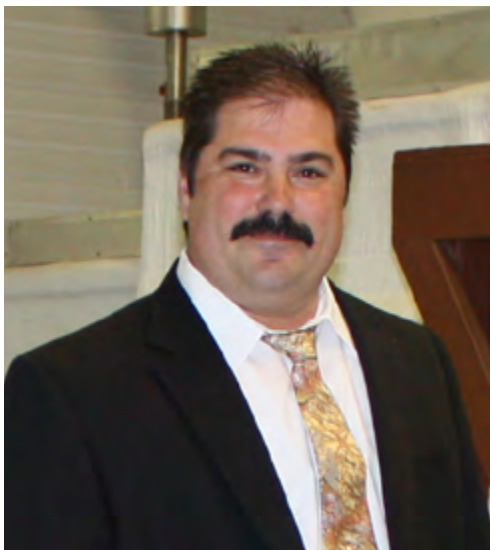


# CRYONICS INSTITUTE

## NEWSLETTER

Cryonics insights and  
information for members  
and friends of the  
Cryonics Institute





Hello everyone and greetings.

It is with heavy heart that I announce the passing of CI director Jim Broughton. Jim was a solid asset to cryonics and certainly to CI, already starting a number of important initiatives in his too-brief time on the Board. I also considered him a close friend and someone I could look to for advice. I had just spoken with him a week before his passing and we were talking about the absolute importance of having our house in order before we died. A particular interest of Jim's was his dedication to local standby and having a good plan in place rather than simply leaving one's cryonics wishes to fate. Jim was an integral part of the Minnesota Cryonics Rapid Response initiative ([MCRR](#)) because he understood that he was potentially working on his own life raft.

As fate would have it, Jim suffered a hemorrhagic stroke over the Memorial Day weekend. As you can imagine, those are not the most conducive circumstances for a person with cryonics wishes. The prospects of perfusing a brain with a ruptured vascular system in addition to booking a last-minute flight during one of the busiest travel times of the year are not ideal.

However, through the hard work of Chuck Bartl and the rest of the Minnesota team, Jim was cooled down and stabilized immediately. Their team was also instrumental in quickly arranging transport and procuring the flight to our facility.

Upon Jim's arrival at CI and after discussing the situation with several other professionals, the decision was made to perfuse with cranial pressure release. I'm very happy to report that Jim appears to have received a very good perfusion. I have no doubt that Jim's suspension would not have gone as well as it did without MCRR's intervention.

This is a prime example of how important it is to get your house in order and take a close look at your own local standby arrangements. Jim did it right and I encourage all of us to do the same so we're ready when our time comes.

CI continues to move forward in terms of member and patient growth as well as continuing work on our new facility. We have a new Fire Suppression system thanks to a generous donation from The American Cryonics Society and its President James Yount. Thank you very much Jim for helping protect our facility and our patients. CI also received a generous donation for research, a new fork lift and a transport van from a couple who wish to remain anonymous. I can't stress enough how the very generous membership has come through with donations to help keep CI running smoothly while keeping prices so relatively low. A very sincere thanks to every one of you who have pitched in. No matter the amount, big or small, every bit helps.

To close, I'd like to personally invite you to the 2023 Annual General Meeting on Sunday, Sept 10, and to the night before dinner at Infinity Hall on Sept. 9. Members as well as non-members interested in cryonics are all welcome, and I look forward to seeing you there! Please see the announcement on page 8 for all the details.

Finally, let me remind our members that the 2023 elections ballots should be arriving shortly, or already received, so be sure to look for yours and take the time to vote. I will be running for election myself, so if you're happy with the progress that you've seen at CI thus far, I'd appreciate your support for another term. Thank you once again and see you at the AGM either in person or via our live Zoom webinar!

Sincerely

*Dennis Kowalski*

*President - Cryonics Institute*



## CRYONICS INSTITUTE MAGAZINE

The digital newsletter of the Cryonics Institute  
24355 Sorrentino Ct.  
Clinton Township, MI 48035-3239

Phone: 1 (586) 791-5961  
Toll-free: 1 (866) 288-2796 (North America)  
FAX: 1 (586) 792-7062  
Email: [info@cryonics.org](mailto:info@cryonics.org)

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## ARTICLE SUBMISSIONS

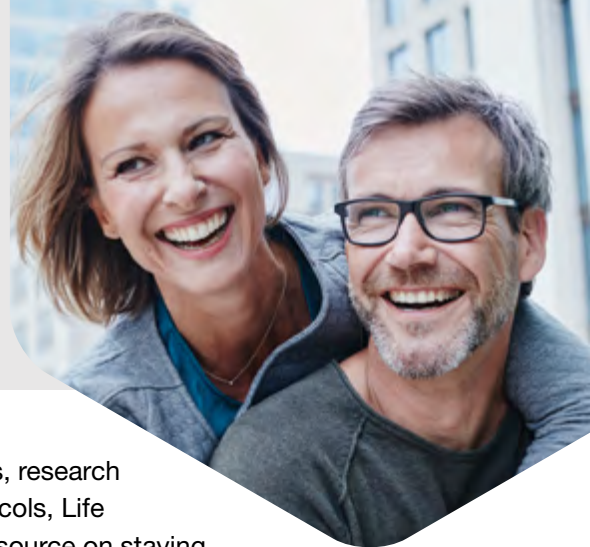
Cryonics Institute or cryonics-related articles are welcome. Submissions: [dg@cryonics.org](mailto:dg@cryonics.org)

## E-SUBSCRIPTIONS

As a CI member, you are automatically added to our email reminder list. To unsubscribe, please use the "unsubscribe" link at the bottom of your email.



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Our expert team of Wellness Specialists can answer your health-related questions every day of the year. And they'll gladly create a regimen of nutritional supplements, diet, and exercise that's customized for your needs.

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Call toll-free **1-888-833-8538** to speak to a live operator at any time.  
Or, go to [LifeExtension.com/CI](https://LifeExtension.com/CI)

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# Membership Benefits

## Why join the Cryonics Institute?

*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?*

### 1) **A Second Chance at Life**

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 through cryopreservation.

### 2) **Affordable Cryopreservation**

The Cryonics Institute (CI) offers full-body cryopreservation for as little as \$28,000.

### 3) **Affordable Membership**

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

### 4) **Lower Prices for Spouses and Children**

The cost of a Lifetime Membership for a spouse of a Lifetime Member is half-price and minor children of a Lifetime Member receive membership free of charge.

### 5) **Quality of Treatment**

CI employed a Ph.D level cryobiologist to develop CI-VM-1, CI's vitrification mixture which can help prevent crystalline formation at cryogenic temperatures.

### 6) **Standby Options and Assistance**

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](#) or [International Cryomedicine Experts](#) (I.C.E.) CI also offers Standby

Training Materials and Kits for members who choose to perform Local Standby.

### 7) **Affordable Funding Options**

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

### 8) **Cutting-Edge Cryonics Information**

Members receive a free e-subscription to the Cryonics Institute Newsletter, as well as access to our Facebook page, Twitter feed, YouTube channel and an official members-only forum.

### 9) **Helpful, Professional Support**

CI's professional staff is available to answer any questions and address any concerns you may have about CI, your membership or Cryopreservation.

### 10) **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.

### 11) **Support Education and Research**

Membership fees help CI to fund important cryonics research and public outreach, education and information programs to advance the science of cryonics.

### 12) **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).



To get started, contact us at:

**(586) 791-5961 • email: [info@cryonics.org](mailto:info@cryonics.org)**

Visit us online at [www.cryonics.org](http://www.cryonics.org)





## New Fire Suppression System Installation

*Sincere thanks to Jim Yount and the American Cryonics Society for their generous donation.*

*The sprinkler system is being set up through the same company CI uses at the main facility for our other security and fire systems. The Clinton Township water department was also involved with the install and the township's Fire Marshall will be doing a final inspection on everything as well. So it has been quite a team effort taking several weeks to complete. Final inspections should be finished and approved at the time of this publication.*





## **Dr Don Kleinsek Appointed to CI Board of Directors**

**Kleinsek succeeds Jim Broughton in Director Position**

CI welcomes Dr Don Kleinsek to our Board of Directors following the untimely passing of Director Jim Broughton. Kleinsek has a long history with the Cryonics Institute and brings a wealth of experience in both business operations and scientific research & development in disciplines directly related to and adjacent to cryonics. His full biography is available [here](#) on the CI website.

In addition to his scientific interest in the physical science of storing cells at liquid nitrogen temperatures, Dr. Kleinsek, in his anti-aging research, routinely used and uses freeze-thaw methods with various chemical solutions on cells as a long-term means of storing cells for future functionality in the laboratory. Somewhat similar to whole body cryopreservation, a number of parameters are used for cellular suspensions. This includes varying the concentration of different cryoprotectants, varying temperature lowering to various colder setpoints, varying the time for freezing at a setpoint temperature, thawing at different temperatures, and changing cell concentration for adequate freezing and thawing methods.

Dr. Kleinsek's initial involvement with CI came to light at the annual meeting in September of 2010. It was then that his father, at the meeting, was suspended for all to see and learn from. Dr Kleinsek has also been a frequent attendee at CI's Annual General Meetings as well as a featured speaker.

Subsequently, in 2023, his close friend Jim Broughton has been suspended. In addition, in 2023, his sister's cat has been suspended as well.

Now as a board member of CI, Kleinsek's initial ambitions are to contribute to three areas of focus.

### **Standby:**

Hammering out the exact procedures to be used in a number of scenarios for the patient; Formation of local groups to assist in the standby.

### **Succession:**

Following up on a succession plan to strengthen CI's position in the cryonics future.

### **Science of cryostasis:**

Stay on top of any advancements in the formulations and/or procedures to ensure a safer and more efficient means of suspension and reanimation. Elimination of ice crystals, toxicity and promotion of cell and tissue integrity is needed.

Please join us in welcoming Dr Kleinsek to CI's leadership team.



# CI NEWS

*What's happening at the Cryonics Institute*



## 2023 Cryonics Institute Annual General Meeting

**SUNDAY - SEPT 10, 2023**

### AGM Location: Infinity Hall & Sidebar

16650 E 14 Mile Road  
Fraser, MI 48026  
phone: 586-879-6157  
website: [infinityhallsidebar.com](http://infinityhallsidebar.com)

### 2023 AGM Details

Sunday, September 10, 2023  
Event start time: 3:00 pm  
Event end time: 6:30 pm

### Facility Tours

Tours of the Main and new Ancillary Facilities will be conducted from 1:00 p.m. to 2:30 p.m. at 24355 Sorrentino Court, Clinton Township, MI.

\* Doors open at approximately 12:30 pm. Note the facility is not open to guests prior to this time, so please do not arrive early to visit with staff as we will be preparing for the tours and the meeting.

### Night Before Dinner

For those who come a day early, an informal dinner will be held at 6 pm on Saturday evening at The Infinity Hall and Sidebar (address above.)

### Join us online

CI will be live-streaming the meeting on Zoom.  
**[REGISTER HERE](#)**



## Featured Guests

**Chuck Bartl - President MCRR:**  
Minnesota Cryonics Rapid Response

**Nikki Olson - Standby Alert Tools**





## 2023 Cryonics Institute **BOARD OF DIRECTORS** ELECTIONS

Cryonics Institute (CI) Voting Members will find on the back of this page will be electing four CI Directors from the five candidates running in the 2023 election. Each Voting Member of CI has four votes that can be distributed among the five candidates. As a Voting Member, you can give as many or as few of your four votes to an individual candidate you support, or divide them among several candidates you wish to support, but you can only cast a total of four votes. Ballots with more than a total of four votes on them will be disqualified, but you do not have to use all four votes if you do not wish to. Because the postal mail service has been extremely slow, CI will accept ballots by fax or email if you are concerned that we will not receive your ballot by the time of the AGM. Our fax number is 586 792-7062 and our email address is [info@cryonics.org](mailto:info@cryonics.org).

## CANDIDATES

(Presented in alphabetical order)



### STEPHAN BEAUREGARD

(Stephan Beauregard) Hi, I'm happy to run for my re-election. I'm 54 years old interested in Cryonics since 1993. I did several realizations for CI & I intend to do more. I did also many interviews & videos about Cryonics. I'm always present to share innovative suggestions. I convinced & helped many persons to signed up. I found willing people (Worldwide) to help Cryonicists no matter the Organization. I also translated CI documents & Cryonics videos. As I promised before my election in 2014, I set up an Official partnership in Canada (pick up the patient, ice bath, perfusion with our VM-1 & shipment to CI. To conclude, no matter your country, you will be able to have me to help. If you want a friendly Director who like working as a team, with familial values, leadership, positive outlooks, clear goals with results & loyal, vote for me. Thanks / Merci / Danke / Gracias / Grazie.

# CI NEWS

*What's happening at the Cryonics Institute*

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## DENNIS KOWALSKI

Dennis Kowalski is a retired Fire Fighter and a Nationally Registered EMT-Paramedic (NREMT-P). He was certified in advanced cardiac life support (ACLS), advanced pediatric life support (PALS), and as a AHA CPR Instructor. He also taught emergency medicine to other emergency responders. His experience in emergency services has made him a vital asset as a CI director and he is eager to share what he has learned as a bridge between conventional emergency medicine and cryonics. Dennis's goals are to see positive growth and stability in CI membership. He'd like to see local support groups formed to promote unity, education and faster cryonics response. He is currently serving as CI's President and has overseen many positive changes. If you like the direction he has taken us please vote to reelect him



## NICHOLAS LACOMBE

I care a lot about the long term future, notably about existential risks. I have helped fixed bugs on the CI check-in app. I have worked in the software development industry for 10 years in various roles such as developer, team lead and software architect. I would like to offer my expertise and skills to help CI improve computer security and user experience. I would also like to help CI in any other way I can, which might include things like improving its processes, assessing the quality of CI's protocols (ex.: using electron microscopy), helping with membership growth, improving standby/stabilisation/transport services, and improving CI's long term sustainability.



# CI NEWS

*What's happening at the Cryonics Institute*



## STEPHEN LUYCKX

Steve Luyckx is CI's vice president. He was born in Detroit, Michigan, the fifth of six children. He graduated from Michigan State in 1986 with a BA in logistics and a master's degree in finance a few years later. His professional career includes Kraft Foods, Chrysler/DaimlerChrysler Financial and in 2009 became the President of Open Dealer Exchange (providing software to automotive dealers to improve the vehicle purchase process).

He first became interested in Cryonics when a neighbor friend who was an important influence in his life introduced the topic at a teenager. He has been one of the longest serving board members dating back almost 30 years and has attended every annual meeting since 1988.

Steve is also active in financial planning primarily for friends and family. His corporate and personal finance background has served CI well as he has been generous with his insights and experience as a member of CI's investment committee and "inside auditor" of CI's financial/accounting practices. Steve can be reached by email at [sluyckx@gmail.com](mailto:sluyckx@gmail.com)



## ANDREW ZAWACKI

Andrew has been an employee of the Cryonics Institute for more than thirty eight years. He handles all aspects of running the Cryonics Institute facility, which include day to day operations, patient suspensions, pet suspensions, patient care, paying bills and signing legal documents as the corporate secretary. He has served as a director of the Cryonics Institute for fifteen years and as the corporate secretary for eleven years.

# CI NEWS

*What's happening at the Cryonics Institute*



## Take a Virtual Tour of the CI Facility

Nicholas Vandermuelen creates his own Cryonics Institute in VR

Nick used Unreal Engine to generate an interactive tour of CI's main facility featuring remarkably accurate hand-crafted assets. The tour allows users to move freely around the virtual facility, with several blue buttons that pop up extra informational and interactive features. The playable beta is available online for download as an .exe file [here](#). Nick said he also has plans for an online version playable right in a user's browser in the future. For more information or to register bug reports, contact [nickvdm@att.net](mailto:nickvdm@att.net).





# Member Readiness Checklist

*You've signed up for cryonics -  
what are the next steps?*

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

- ☐ Become a fully funded member through [life insurance](#) or easy pre-payments  
Some members use term life and invest or pay off the difference at regular intervals. Some use whole life or just prepay the costs outright. You have to decide what is best for you, but it is best to act sooner rather than later as insurance prices tend to rise as you get older and some people become uninsurable because of unforeseen health issues. You may even consider making CI the owner of your life insurance policy.
- ☐ Keep CI informed on a regular basis about your health status or address changes. Make sure your CI paperwork and funding are always up to date. CI cannot help you if we do not know you need help.
- ☐ Keep your family and friends up to date on your wishes to be cryopreserved. Being reclusive about cryonics can be costly and cause catastrophic results.
- ☐ Keep your doctor, lawyer, and funeral director up to date on your wishes to be cryopreserved. The right approach to the right professionals can be an asset.
- ☐ Prepare and execute a Living Will and Power of Attorney for Health Care that reflects your cryonics-related wishes. Make sure that CI is updated at regular intervals as well.
- ☐ Review the [CI Standby Manual](#) and other materials designed to help you with you Standby Planning. Also, 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 you 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. The stronger our organization is, the stronger your chances of success.
- ☐ Keep your records, contact information and contracts up to date. It is recommended you review your relevant information annually at a minimum. One way is to schedule time to review all your materials at the same time you submit your required Annual Proof of Funding to CI. Also, Be especially aware of easy to forget things like a new email, phone number or address. Remember, you can also contact us at any time to ask if you have any outstanding paperwork or other info that needs to be updated.

The online [CI Members' Information Form](#) is a great resource for updating your current information on file.



## DNA and Tissue Sample Preservation Services

Lifetime and Annual Members of the Cryonics Institute can have DNA / Tissue Samples cryopreserved by CI. Annual Members must have fully paid for no less than one year, i.e. have paid \$120 yearly dues (plus the initial \$75 initiation fee if it is their first year) for a full year's Membership.

CI provides a DNA sampling kit for hair, skin, and/or inner cheek samples from living persons or pets. Tissue samples may be extracted from a deceased person or pet by a funeral director or veterinarian, respectively. A CI Member may store DNA/tissue for \$98 for four samples that will each fit into a 1.8ml sample vial. Some members choose to store larger samples, which cost more and that cost is calculated based on the size of the sample. The cost includes a DNA sampling kit which consists of four 1.8-milliliter nalgene vials, swabs, instructions, tissue storage contracts and labels that can be placed on the vials, along with a mailing envelope. Each nalgene vial can be individually labeled for content. Each full kit is labeled, identified by a tissue storage contract and stored in liquid nitrogen at the Cryonics Institute.

Tissue samples need not be sent to CI in the DNA sampling kit. Any small vial or container can be used, and CI will transfer samples to nalgene vials for storage in liquid nitrogen.

For more information on DNA and Tissue Storage Cryopreservation, please contact us at [info@cryonics.org](mailto:info@cryonics.org) or visit [cryonics.org](http://cryonics.org):





### Visiting Hours For Family Members of CI Patients

Monday:	2:00pm - 4:00pm
Tuesday	2:00om - 4:00pm
Wednesday	2:00pm - 4:00pm
Thursday	2:00pm - 4:00pm

We ask that visitors kindly give us at least **one month advance notice** to ensure there are no scheduling conflicts. We cannot guarantee that the facility will be accessible to visitors who have not scheduled their visit in advance.

**\*\* These visiting hours ar subject to change without notice due to patient or pet emergencies. \*\***

These requirements have been established for multiple reasons, but most importantly for protecting our patients, members and facility.

Questions regarding visitation can be directed to Andy Zawacki, Facility Manager at [info@cryonics.org](mailto:info@cryonics.org) or 1-586-791-5961.

Thank you!







# Worldwide Cryonics Groups

**AUSTRALIA:** The Cryonics Association of Australasia offers support and information for Australia & nearby countries. [caalist@prix.pricom.com.au](mailto:caalist@prix.pricom.com.au). Their Public Relations Officer is Philip Rhoades. [phil@pricom.com.au](mailto:phil@pricom.com.au) GPO Box 3411, Sydney, NSW 2001 Australia. Phone: +6128001 6204 (office) or +61 2 99226979 (home.)

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**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](http://www.cryonicsbelgium.com). To get in touch, please send an email to [info@cryonicsbelgium.com](mailto:info@cryonicsbelgium.com).

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**BHUTAN:** Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Thimphu & Paro. Contacts : Jamyang Palden & Tenzin Rabgay / Emails : [palde002@umn.edu](mailto:palde002@umn.edu) or [jamgarnett@hotmail.co](mailto:jamgarnett@hotmail.co) Phones : Jamyang / 975-2-32-66-50 & Tenzin / 975-2-77-21-01-87

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**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: [csc5@cryocdn.org](mailto:csc5@cryocdn.org)

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**BRITISH COLUMBIA:** The Lifespan Society advocates for radical life extension. They also organize conferences and educational outreach events on life extension issues. Lifespan welcomes all Canadians as members, although voting in the society is open to BC residents. Contact Carrie Radomski, President at [carrie@lifespanbc.ca](mailto:carrie@lifespanbc.ca) Web site [www.lifespansociety.com](http://www.lifespansociety.com)

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**QUEBEC:** Contact: Stephan Beauregard, C.I. Director & Official Administrator of the Cryonics Institute Facebook Page. Information about Cryonics & perfusion services in Montreal for all cryonicists. Services available in French & English: [stephan@cryonics.org](mailto:stephan@cryonics.org)

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**CHILE:** Community oriented to provide reliable information on human cryopreservation, as far as technical scientific as well as other practical aspects. Dissemination, awareness and education on issues related to the extension of life in general and cryonics in particular. Contact José Luis Galdames via [galdamesh.jl@gmail.com](mailto:galdamesh.jl@gmail.com).

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**FINLAND:** The Finnish Cryonics Society, (KRYOFIN) was established in 2008 and is an organization collaborating with all nearby groups and organizations. Contact them at: [kryoniikka.fi](mailto:kryoniikka.fi) Their President is Ville Salmensuu [ville@salmensuu.fi](mailto:ville@salmensuu.fi)

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**FRANCE:** SOCIETE CRYONICS DE FRANCE is a non profit French organization working closely with European cryonics groups. For more information: J.Roland Missionnier: phone: 33 (0) 6 64 90 98 41 or email: [cryonicsnews.inpi@gmail.com](mailto:cryonicsnews.inpi@gmail.com) • **Facebook group**

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<https://www.francecryonics.fr/a-propos/> Vivien Gruss, member of Cryonics Institute, has opened a web site for the information of persons interested in cryonic suspension.

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**GERMANY: DGAB** 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](http://www.biostase.de). If there are further questions, contact their Board at [vorstand@biostase.de](mailto:vorstand@biostase.de)

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**GERMANY: CRYONICS-GERMANY** is an active group providing cryonics support, including a special 8-member Standby Response Team. Members from Germany or Internationally are welcome to join. at <http://cryonics-germany.org>. Direct inquiries to [contact@cryonics-germany.org](mailto:contact@cryonics-germany.org).

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**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 & Biooster Vignesh / Email : [vicky23101994@gmail.com](mailto:vicky23101994@gmail.com) Phones : Biooster / 918148049058 & Br Sankeerth / 917795115939

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**ITALY:** The Italian Cryonics Group (inside the Life Extension Research Group (LIFEXT Research Group)) [www.lifext.org](http://www.lifext.org) and relative forum: [forum.lifext.org](http://forum.lifext.org). Contact Giovanni Ranzo at: [giovanni1410@gmail.com](mailto:giovanni1410@gmail.com)

**Kriorus Italy:** Representative Filippo Polistena, email: [filippopolistena45@gmail.com](mailto:filippopolistena45@gmail.com). phone: +39 334 298 9378

**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](mailto:mid_hikaru@yahoo.co.jp) or <http://www.cryonics.jp/>

**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](mailto:toursuresh@gmail.com) Phone : 977-985-1071364 / PO Box 14480 Kathmandu.

**THE NETHERLANDS:** Dutch Cryonics Organization is the local support group since 2002 and able to provide advice, standby, perfusion and shipment 24/7, in case of need. We are an active group utilizing the latest equipment. New members from The Netherlands welcome.

E-mail: [info@cryonisme.nl](mailto:info@cryonisme.nl)  
website: <http://www.cryonisme.nl>

**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 Begegravelsesbyrå / Phones : 011-47-2279-7736

**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@gmail.com](mailto:kriorus@gmail.com) for additional information or visit <http://www.kriorus.ru>. Phone: +7 962 947-50-79

**SWEDEN:** [www.kryonik.se](http://www.kryonik.se) or Facebook: Svenska Kryonikföreningen. Initially, the society will focus on providing information and assistance to those who wish to sign up for cryonics. Eventually,

we also hope to provide practical assistance in cases, possibly in collaboration with other European groups.

**SWITZERLAND:** [www.cryosuisse.ch](http://www.cryosuisse.ch)

CRYOSUISSE The Swiss Society for Cryonics is an active group with over 30 members. To join, [email info@cryosuisse.ch](mailto:info@cryosuisse.ch)

## UNITED STATES:

**Minnesota:** Minnesota Cryonics Rapid Response (MCRR) is a nonprofit standby, stabilization and transport group based in Minneapolis, Minnesota. We have a strong, longstanding working relationship with local funeral directors, and have successfully participated in significantly more-timely suspension efforts in Minnesota in cooperation with both Alcor and the Cryonics Institute. Contact: President, Chuck Bartl, [chuckbartl@yahoo.com](mailto:chuckbartl@yahoo.com).

**Washington DC Metro Region:** Life Extension Society (LES) is a nonprofit organization of area cryonicists dedicated to enhancing local capabilities for standby, stabilization and transport. Members from both Alcor and Cryonics Institute are welcome. Contact: Mark Mugler, [mugsim2@gmail.com](mailto:mugsim2@gmail.com).

**UNITED KINGDOM:** Cryonics UK is a nonprofit UK based standby group. [www.cryonics-uk.org](http://www.cryonics-uk.org) Cryonics UK can be contacted via the following people: Tim Gibson: phone: 07905 371495, email: [tim.gibson@cryonics-uk.org](mailto:tim.gibson@cryonics-uk.org). Victoria Stevens: phone: 01287 669201, email: [vicstevens@hotmail.co.uk](mailto:vicstevens@hotmail.co.uk). Graham Hipkiss: phone: 0115 8492179 / 07752 251 564, email: [ghipkiss@hotmail.com](mailto:ghipkiss@hotmail.com). Alan Sinclair: phone: 01273 587 660 / 07719 820715, email: [cryoservices@yahoo.co.uk](mailto: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. [www.CryonicsSociety.org](http://www.CryonicsSociety.org). They publish an e-newsletter *FutureNews*. Phone: 1-585-643-1167.

## HELP US STAY UP-TO-DATE!

Please send any corrections or changes to the address below. If you know of, or are considering starting a support, standby or other cryonics-related group in your area, please send details to

[dg@cryonics.org](mailto:dg@cryonics.org).



*Please note, this list is provided as an information resource only. Inclusion on the list does not constitute an endorsement by the Cryonics Institute 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.*

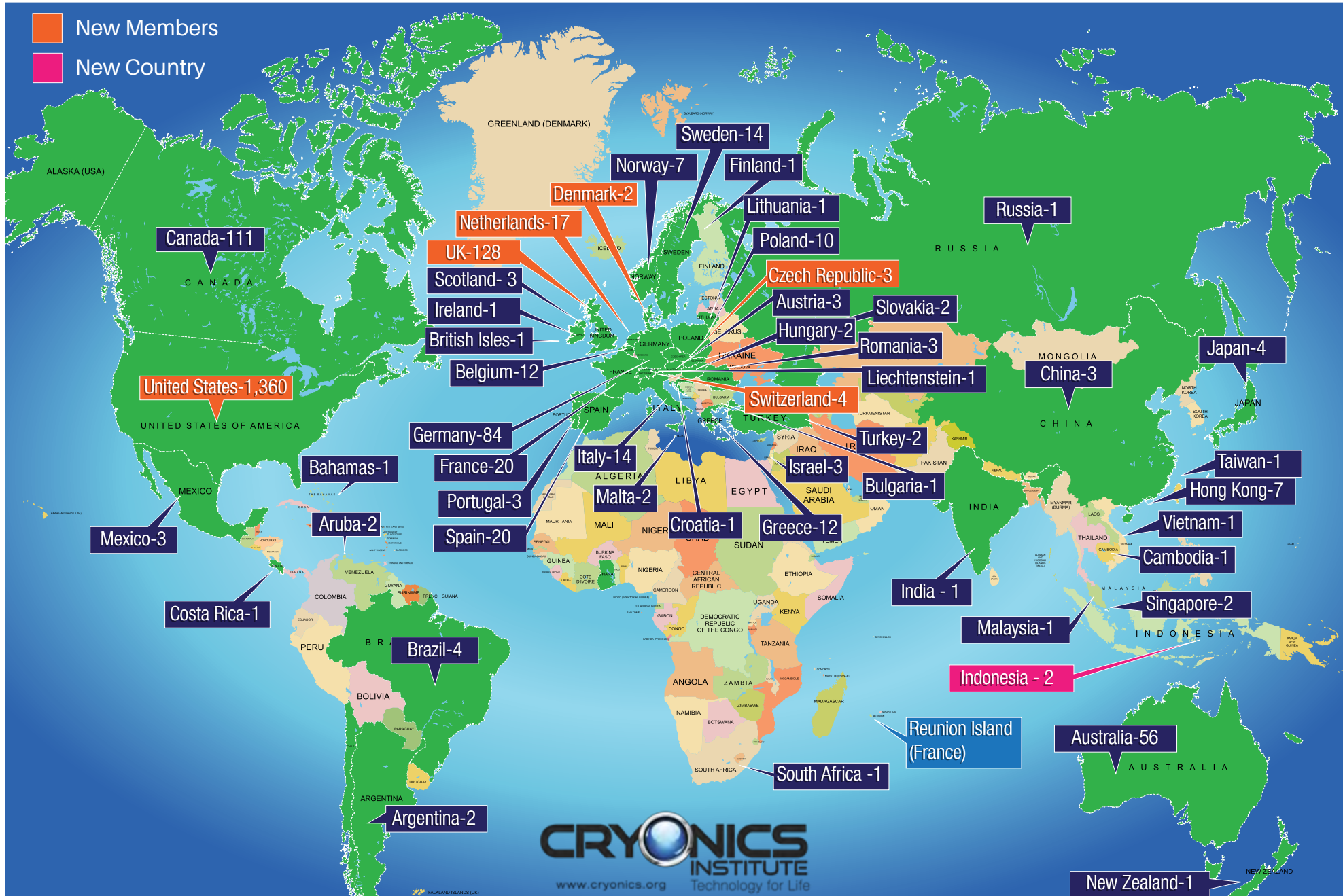
# CI MEMBERSHIP

AUGUST 2023

Members ..... 1,942  
Patients.....243

Pets ..... 245  
DNA/Tissue ..... 345  
SA ..... 325

TOTAL  
**2,185**





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## Remembering Jim Broughton

Dennis Kowalski

President - Cryonics Institute

Jim will be missed both as a Director and as a friend. He was full of enthusiasm as a Director and had taken on many promising projects in his too brief time with the Board. He was heading the newly reconstituted Science Advisory Board, was in the process of working to update and improve the CIVM1 formula and was in the process of formalizing a system to seek out and analyze the latest research and advances in cryobiology and related fields that would advance CI and the cryonics mission.

Jim was full of practical and actionable business ideas that he had learned from his time as an executive with Medtronic. He did a deep analysis of CI's business model and operations and was working with one of our CI members to outline strategies to address succession and other critical areas they identified as needing more focus.

He was also a key member of the Minnesota Cryonics Rapid Response group where he made a significant contribution to setting up their standby operations and logistics. That operation was critical in Jim's standby and their excellent work and quick response insured he received the most optimal suspension possible.

Following our sudden loss, I recommended Jim's close

friend and business partner Dr. Don Kleinsek to finish out Jim's term on the Board of Directors. The CI Directors discussed and approved this decision and Dr. Kleinsek has been appointed Director until that term comes up for election again.

Jim had worked closely with Don for years, so I can think of no greater tribute to his legacy with CI than to honor his position by appointing someone dedicated to carrying out his projects as he would have wanted them carried out.

Thanks for everything Jim, and I hope all of our work pays off and we'll see each other again in a brighter future.

## Chuck Bartl

President - Minnesota Cryonics

Rapid Response - MCRR

Jim joined our online Meetup group called "Minneapolis Cryonics" on October 22, 2021 and attended our very next in-person MCRR meeting shortly thereafter. He never missed another.

He immediately offered his unlimited time and full support to help us in any way he could. It was just the shot in the arm our group needed.

He quickly became an important MCRR board member, a critical member of our medical supplies committee, an invaluable sounding board for me on every conceivable cryonics issue, and a friend to everyone in the group.

He helped us field-test a wearable alert system, secure extra Ziegler shipping cases, and get our Lucas chest-compression system up and running.

He always had great ideas and was constantly motivating us all. In his last monthly meeting, we discussed skipping the next month's meeting because we had a number of smaller group discussions planned. Jim wouldn't have it. He wanted to keep things moving with the entire group.

Our time together was too short.

I will personally miss the long phone calls, the always-positive attitude and the sunfish lunches.



## Dr Don Kleinsek

Cryonics Institute Director

### My journey with Jim:

He was my friend, he was your friend, he was everyone's friend.

Jim was a humanitarian, a kind and compassionate man with a whole lot of common sense in his personal life as well as business.

I met Jim 30 years ago. The crossroads in our lives occurred in 1993 at an anti-aging meeting. I presented data and Jim listened with the vision of curing aging. From that point, with strong commonality of thought and vision and personality likeness we became both business partners and personal friends.

Jim had a strong sense of curiosity. Beside his passion for longevity and cryonics science Jim wondered about the immensity of the universe, intelligent life on other planets, interplanetary and time travel. He enjoyed aviation in which he was a licensed pilot.

Jim was honest, generous, caring, practical, affable, had a sense of humor and well liked by all. He was a man of principles, action and direct about his opinions.

On the business front we worked together at Gerigene Medical Corporation and then at Cellagen, LLC on a number of anti-aging and medical treatments. Jim carried much of the regulatory affairs, administration and clinical trial assessments in an attempt to forward the Companies' discoveries to enter the commercial Marketplace for all to benefit from.

Jim was the consummate professional: loyal, highly organized, focused, very intelligent, hardworking and perceptive. A short summary of Jim's professional experience follows:

Jim had over 35 years of senior management experience in the medical, pharmaceutical, semiconductor, and computer industries. He had extensive experience with business startup activities for medical/pharmaceutical products worldwide. As the Chief Operations Officer of our management team, his management experience, global expertise and broad experiences was invaluable in Gerigene Medical Corporation's and Cellagen LLC's R&D, clinical trials, manufacturing, and product commercialization.

For over 5 years, Broughton served as Senior Vice President

of Clinical, Regulatory, & Quality for a venture capital funded start-up Company seeking PMA approval for a novel Class III implantable device to treat degenerative disc disease of the spine. Jim served in Regulatory & Quality senior management at Medtronic, Inc. for 16 years and directed operations from pilot production to full scale manufacturing for medical/pharmaceutical products in the U.S., E.U., and Asia. He played a key senior management role for Medtronic's cardiac surgery and heart valve businesses. He was the key manager directing quality system development, regulatory submissions, product development and ISO certification for Medtronic facilities in France, India, California and Texas.

Broughton was pivotal in the transfer of new technologies to new marketing geographies. He also directed product regulatory approvals, including FDA submissions, FDA inspections, design dossier submissions to Notified Bodies within the EU, and other international regulatory certifications. He developed, led and taught quality concepts training to Medtronic's executives at 20 Medtronic facilities worldwide. He is a graduate of the University of Minnesota, holding a BA in economics and mathematics, a BS in physics, and an MS in electrical engineering and computer science.

In his short time with CI, I believe Jim left an impression and his contribution in short order led to some good work to follow up on, including standby, succession plans for the institute and science regarding improved cryostasis developments.

In my breavement:

*"Jim...Jim...Jim... where did you go? Although you passed at the average of an American male, yet despite living a clean life, neither you nor I ever expected this haunting outcome... well, brother, you did the best you could with cryonic suspension as the security backdrop and in some future distant point we will have to discuss this surprising departure from current times, over a favorite drink of yours: Jim Beam on the rocks? while Tony Bennett's rendition of "Fly Me to The Moon" plays.*

So Jim, you are now where you wanted to be and ready for what the future of cryogenics will bring and where the crossroad of our lives shall one day once again intersect.

See you my dear friend

# Science

from SCIENCE.ORG

*A kidney recently removed from a rat quickly begins to decay. Scientists at the University of Minnesota have developed a process to halt that breakdown using supercold liquid nitrogen.*

EVAN TAYLOR STUDIOS  
ASSISTED BY TOM OKINS

## FROZEN IN TIME

*Scientists are learning how to cryopreserve living tissues, organs, and even whole organisms, then bring them back to life*

21 JUN 2023 BYWARREN CORNWALL

**MINNEAPOLIS**—The rat kidney on the operating table in front of Joseph Sushil Rao looked like it had been through hell. Which it had—a very cold one.

Normally a deep pink, this thumbnail-size organ was blanched a corpselike gray. In the past 6 hours, it had been plucked from the abdomen of a white lab rat, pumped full of a black fluid, stuck in a freezer cooled to  $-150^{\circ}\text{C}$ , and zapped by a powerful magnet.

Now, in a cramped, windowless room on the 11th floor of the University of Minnesota's (UMN's) Malcolm Moos Health Sciences Tower, Rao lifted the kidney from a small plastic box and gently laid it inside the open abdomen of another white rat. Peering through a microscope, the transplant surgeon-in-training deftly spliced the kidney's artery and

vein into the rat's abdominal blood vessels using a thread half the thickness of a human hair.

When he finally removed the tiny clips pinching off the blood supply from the aorta, the kidney blushed pink, a good first sign. Then he waited. Forty-five minutes later, a golden drop of urine emerged from the ureter that would normally feed from the kidney to the bladder.

Just before midnight, Rao snapped a close-up photo with his iPhone, proof that the kidney was working. He sent the photo and an ecstatic email to his two bosses, transplant surgeon Erik Finger and biomedical engineer John Bischof, titled "First successful transplant of vitrified, nanowarmed rat kidney."



"I'm out of words," he wrote. "This is a proud moment for us all. It was not easy. But, it paid off."

That moment in April 2022 was one in a series of recent breakthroughs in the quest to effectively stop biological time. After decades of frustration and halting progress, scientists in the past 10 years have made major advances using extreme cold to slow or even halt the decay that is the usual fate of all living things. They've developed new ways to reduce the toxicity of chemical antifreeze treatments, minimize the formation of destructive ice, and thaw objects rapidly and evenly. Since 2018, labs have frozen and then revived bits of coral, fruit fly larva, zebrafish embryos, and rat kidneys. They have also applied gentler techniques to cool everything from tomatoes to entire pig livers to just below freezing without ice formation, keeping them virtually fresh for days or weeks.

Medical uses, particularly organ transplants, are a key driver for today's work. Scientists hope to eventually create cryopreserved banks of tissues such as skin, entire organs, or even limbs, easing shortages and giving doctors time to better prepare recipients for transplants. But the advances in preservation also extend to specks of human tissue used to screen pharmaceuticals, species on the brink of extinction, fruit flies studied by geneticists, produce bound for grocery stores, and fish embryos stored for aquaculture. Mehmet Toner, a bioengineer at Massachusetts General Hospital (MGH) and one of the leaders in the field of cryopreservation, likens the vision of stored living tissue available on demand to a more familiar cornucopia. "I call it," he says, "the Amazon of living things."

**SOMEONE RAISED on Hollywood movies** might think the technology to freeze and revive entire organisms is right around the corner. Star Wars's Han Solo is trapped in

"carbonite" and resuscitated. Tom Cruise gets turned into a human popsicle in a dystopian prison in *Minority Report*. Captain America is entombed in Arctic ice in a Marvel movie and rewarmed nearly 70 years later for a sequel.

Reality is far less simple. The largest living thing routinely stored at temperatures well below zero and brought back to life is the size of a grain of table salt: a human embryo. Try that with an entire person using today's technology and the result would be a lifeless body filled with toxic chemicals, says cryobiologist Greg Fahy. "You would be in sorry shape."

Fahy was one of a pair of scientists whose 1985 *Nature* paper revealed a chemical process that allowed mouse embryos to be stored at nearly  $-200^{\circ}\text{C}$ . Their technique addressed the major barrier to freezing living tissue: ice.

When water freezes, it can wreak havoc inside tissue. The water molecules go from a tightly packed, amorphous fluid to a rigid lattice. Ice crystals tear through cells like knives. Salts in cell fluids get concentrated at toxic levels in the tissue parts that freeze last. Anyone who has frozen and thawed a strawberry has seen the result: a mushy, discolored version of what came off the plant.

Getting tissue below the freezing point while minimizing ice is crucial. (That's why cryobiologists don't like to say they "freeze" tissue.) For the mouse embryo, Fahy and his colleague at the American Red Cross, William Rall, first soaked the little ball of cells in a chemical cocktail that leached out much of the water, replacing it with chemicals similar to the antifreeze in a car's radiator. These cryoprotectants, as they are known, dilute the water molecules in a viscous fluid that discourages ice crystal formation.

Then they cooled the embryo, kept in a slender plastic

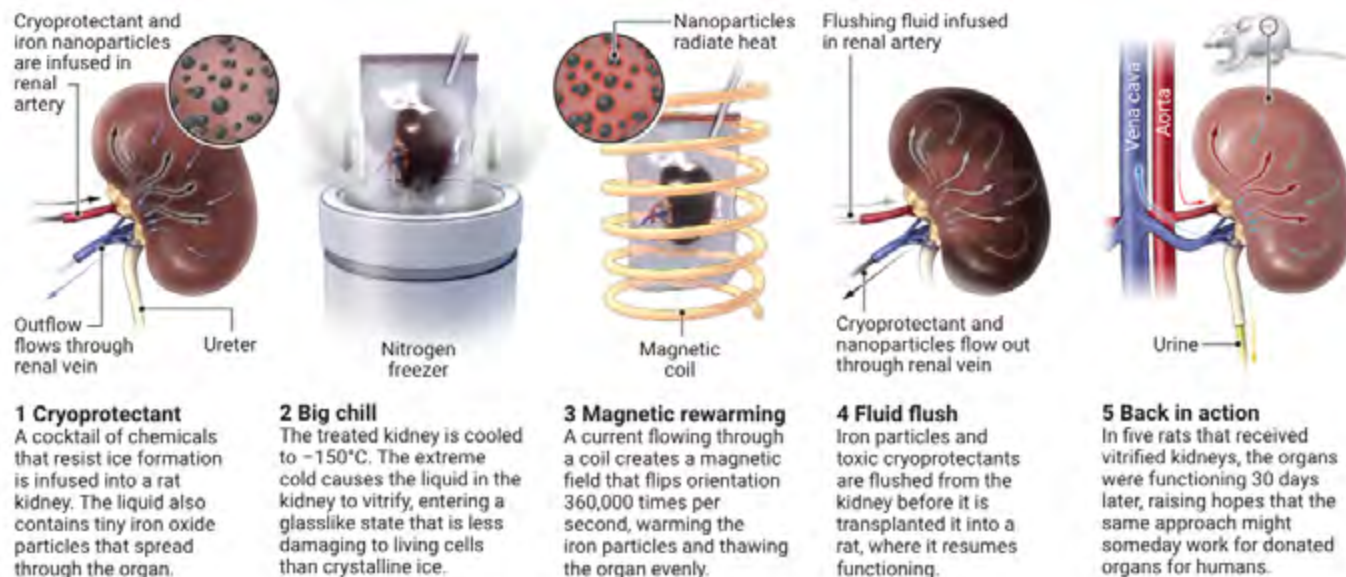


*Joseph Sushil Rao, a transplant surgeon-in-training at the University of Minnesota, prepares to remove a kidney from a laboratory rat (first image) before the organ is preserved at extremely low temperatures. The complex plumbing of a kidney requires delicate handling by Rao during all stages of a transplant (second image).*

EVAN TAYLOR STUDIOS ASSISTED BY TOM OKINS

## Stopping the biological clock

Advances in using extreme cold to slow biological processes could touch everything from donated organs to fresh produce. A University of Minnesota team has developed one approach, dubbed “nanowarming,” which thaws an organ evenly to avoid damage from ice.



G. BICKEL/SCIENCE

straw, using  $-196^{\circ}\text{C}$  liquid nitrogen. Between the rapid cooling and the cryoprotectant, ice didn't have time to form. Rather than line up in a tidy crystalline pattern, water molecules were stuck in a random mass like a rigid liquid, a process known as vitrification. The result was a hard, smooth, glasslike substance without the problematic properties of ice. To rewarm the embryo, Rall stirred the straw in  $0^{\circ}\text{C}$  water.

The mouse embryo work paved the way for banking similar-size human embryos, transforming fertility treatment. But what works for a tiny embryo of about 100 cells doesn't size up easily to whole organs. It's hard to get cryoprotectant to soak evenly into a bigger piece of tissue. The center can take longer to solidify, which fosters ice formation. Pumping in more cryoprotectant to counter ice can be damaging because the chemicals are toxic.

Rewarming poses its own problems. If an object warms too slowly, ice crystals can materialize as the tissue approaches the freezing point. If it doesn't warm uniformly, stresses caused by uneven expansion or contraction can crack the object like an ice cube dropped in a glass of water.

In 2002, Fahy stepped up his work in mouse embryos to rabbit kidneys. He got as far as implanting a previously vitrified organ into an animal. The rabbit survived nearly 7 weeks. But a necropsy revealed that although the kidney was functional enough to keep the animal alive, much of it was damaged.

Fahy has been chipping away at the problem ever since,

testing different chemical mixtures and cooling and warming protocols. "It turned out to be harder than I assumed," says Fahy, who is now executive director of 21st Century Medicine, a private cryopreservation research company. "I think all of this will pay off, but we're not quite there yet."

**THERE'S GOOD REASON** to persist. The rapid decay of organs is one of the biggest problems bedeviling organ transplants for people. From the moment a human heart or lung is disconnected from a donor, doctors have 4 to 6 hours to get it hooked up to a new patient's blood supply before it is irretrievably damaged. For a liver, the window is 8 to 12 hours. For a kidney it's about 1 day.

The rush creates burdens for the medical system and for patients. Surgeons are called to the hospital in the middle of the night. Transplant recipients have a foreign organ plugged into their body without time for treatments that would help their immune system acclimate. More than 60% of donated hearts and lungs never make it to a recipient in time. Fewer than 10% of people who need organ transplants actually get them, the World Health Organization estimates.

Cryopreservation holds out the possibility that organs could be stored for days, weeks, or even years before they are implanted. That could save organs from getting tossed after a few hours and would enable doctors to find organs more easily when needed or choose those that are a closer immunologic match to recipients.

"It could touch so many aspects of biomedicine, truly



change the way that we can treat health,” says Sebastian Giwa, an economist and former hedge fund manager who founded the nonprofit Organ Preservation Alliance in 2012.

Giwa has helped launch several cryopreservation-related companies. One, GaiaLife, is experimenting with vitrifying ovaries. The goal is to remove the egg-bearing organs from people before they undergo ovary-damaging medical treatment such as chemotherapy, then reimplant them after the treatment is over. So far researchers working with the company have reimplanted vitrified ovaries into five sheep; in four of the animals the ovaries produced progesterone, a sign they were working, says Alison Ting, a reproductive biologist and the company’s chief scientific officer. Ting declined to describe the details of the company’s methods but says the progress “gives me the optimism to say that the first in human could be sooner than 5 years.”

**BY VITRIFYING** animal organs, Fahy demonstrated a key first step, Bischof says. “The problem was he couldn’t rewarm them.”

Finding ways to warm vitrified tissue quickly and evenly has been the focus of Bischof’s lab. In the past few years, his team has tried everything from lasers to heat-conducting mesh. With larger objects, such as rat kidneys, they have made progress with a powerful magnetic field coupled with iron nanoparticles.

On an unseasonably hot day in April, Zonghu Han, a UMN mechanical engineering postdoctoral researcher, connected a slender plastic tube to a rat kidney resting on a bed of gauze. He made a few keystrokes on a computer and a black fluid began to flow into the organ. The color came from the iron nanoparticles suspended in cryoprotectant. When the organ turned a glossy ebony from the infusion, Han slipped it into a small plastic bag, and lowered it into a nearby freezer cooled to  $-148^{\circ}\text{C}$ .

The clock for the kidney’s survival had been ticking for more than 3 hours, since Rao, the transplant surgeon, had removed it from a rat in a reenactment of that 2022 breakthrough surgery. Now, as the kidney’s temperature plummeted inside the freezer, the biological processes gradually destroying the organ ground to a halt. “We have stored [a rat kidney] up to 100 days before transplantation,” Han says. “It’s safe in there indefinitely.”

In this case the kidney got just 45 minutes. Han opened the lid in a billow of vapor and lifted out a tiny, rigid packet containing the vitrified organ. He placed the packet inside a small metal cup attached to a cream-colored metal box. When he pressed a button, the box generated a magnetic field around the cup that flipped the positive and negative poles 360,000 times every second. That fluctuation heated the iron particles and thawed the kidney in 90 seconds.

“That’s our secret sauce,” Bischof says of the process as he



*University of Minnesota postdoctoral researcher Zonghu Han connects a rat kidney to tubes that pump antifreeze chemicals called cryoprotectants and tiny iron oxide particles into the organ.*

EVAN TAYLOR STUDIOS ASSISTED BY TOM OKINS



*Zonghu Han uses protective gloves while removing a container holding a rat kidney, cooled to  $-150^{\circ}\text{C}$ . The extreme temperature and cryoprotectants put the organ into a vitrified state, in which liquid in the organ forms a smooth, glasslike substance rather than sharp ice crystals.*

EVAN TAYLOR STUDIOS ASSISTED BY TOM OKINS

watches.

In a *Nature Communications* paper in early June, Bischof’s team reported putting five rat kidneys through this treatment and reimplanting them. All of the recipient animals lived a month before they were killed to study their condition. Now, the researchers have graduated to pig kidneys, closer to the size of a human kidney. Bischof declined to discuss details of the unpublished pig work. “There’s no physical reason that we’re aware of why this [warming procedure] won’t work” in larger organs, he says.

Although nanowarming, as Bischof calls it, is his tool of choice for the kidneys, it requires costly machinery and one-at-a-time treatment. In May, Smithsonian Institution



*Zonghu Han removes a plastic bag containing a vitrified kidney from a device that warmed it, using a fast-changing magnetic field to heat the iron particles inside the organ.*

EVAN TAYLOR STUDIOS ASSISTED BY TOM OKINS

marine biologist Mary Hagedorn was at a laboratory outside Tampa, Florida, testing a simpler approach developed by the Bischof lab: a fine metal mesh engineered to quickly transmit temperature—both cold and heat. She is trying it on batches of coral larvae. If it works and can be scaled up, Hagedorn thinks this process could be a critical piece of her campaign to bank dozens of coral species in the coming decade, before increasingly hot and polluted oceans spell their end.

The mesh has already proved successful on fruit fly larvae in Minnesota, and with two species of mushroom coral in Hawaii and Australia. In Florida, Hagedorn and colleagues were trying it on *Diploria labyrinthiformis*, a kind of brain coral whose larvae are more than 100 times bigger than those of mushroom coral. In the first few attempts, re-warmed larvae were falling apart. Each larval size, Hagedorn was learning, needs its own version of the treatment. “We’re struggling a little bit to get this to work,” she says.

**WHILE SCIENTISTS** such as Bischof and Hagedorn wrestle with vitrification, others are seeking an easier route by avoiding ultralow temperatures that require large infusions of cryoprotectant and make rewarming so challenging.

At Harvard University and MGH, scientists are taking cues from nature to push tissues below freezing while holding back the ice. The wood frog (*Rana sylvatica*) is a champion of this realm. Found in much of North America, including the frigid Canadian Arctic, it can spring to life after spending months with as much as two-thirds of its body frozen at temperatures as low as  $-16^{\circ}\text{C}$ .

As winter arrives, a cascade of physiologic changes prepares the frog to survive freezing, says Shannon Tessier, an MGH biomedical researcher who had studied it and other animals that hibernate at near freezing. Its liver churns out glucose that acts as antifreeze inside tissues. Antioxidant

levels inside tissues increase, protecting against damage caused by sudden changes in the amount of oxygen in cells. Special proteins in the frog’s bloodstream act as seeds for ice crystals, steering ice growth to begin in the more durable vasculature and not in other, more delicate tissues. Such changes “are the thematic things that we want to pull forward to human organs and tissues,” she says.

In Boston, a team of scientists including Tessier mimicked the frogs by flooding human livers with a synthetic sugar that, unlike natural glucose, can’t be metabolized into toxic byproducts. In 2019, they announced the approach had enabled them to store human livers at  $-4^{\circ}\text{C}$  for 27 hours, more than double the standard life span of donated livers.

More recently, the team combined this synthetic sugar with an infusion of Snomax, an ingredient normally used as a seed for snow in snowmaking machines at ski resorts. Like the proteins in the wood frog’s blood, Snomax slowed ice formation and concentrated it in the blood vessels of rat livers, enabling them to be stored partially frozen for up to 5 days at  $-15^{\circ}\text{C}$ , then thawed with limited damage. Five days is far short of the virtually limitless storage time for a vitrified organ, but still useful, says Toner, who is working with Tessier. The extra time could, for example, allow a patient waiting for an organ to receive a bone marrow transplant, a possible measure to coax the immune system to accept the new organ.

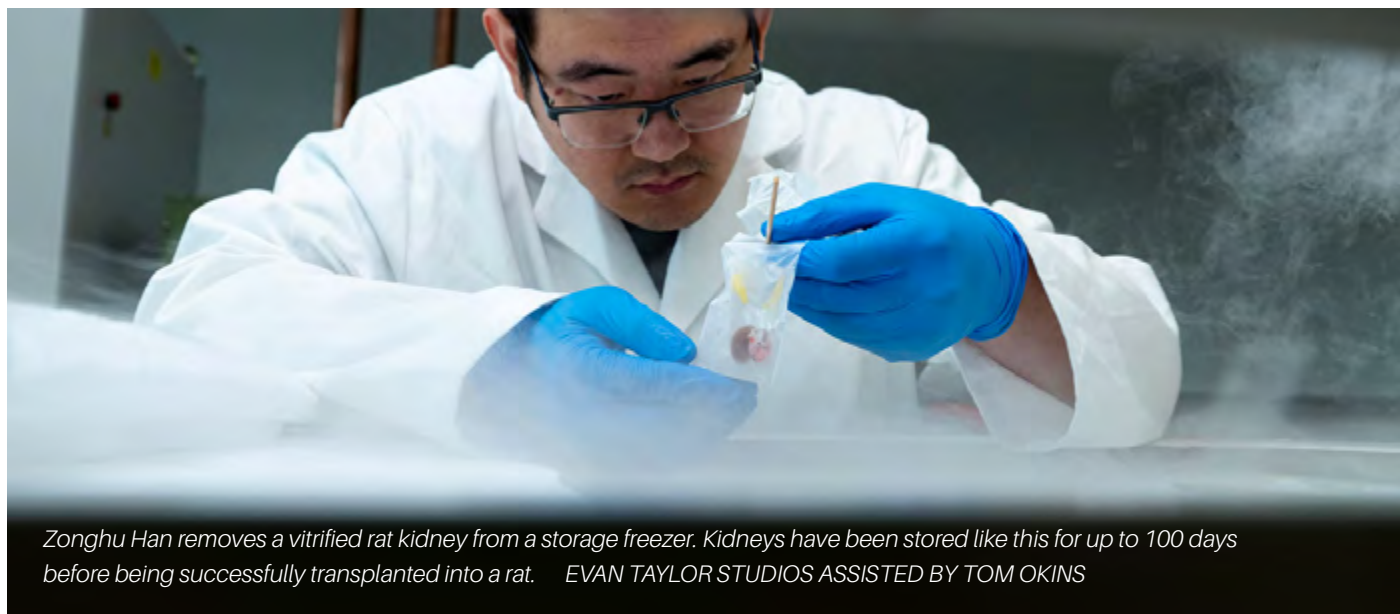
On the other side of the country, Boris Rubinsky had the idea that higher pressures might help him supercool organs without damage. In the early 2000s, Rubinsky, a biomedical engineer at the University of California, Berkeley, began to cool objects inside sealed metal containers. As water inside approached freezing it expanded, raising the pressure. The higher pressure, he discovered, limited the formation of ice. “In all modesty, it’s a revolutionary approach to preserva-



*The wood frog (*Rana sylvatica*) can survive for months in a partially frozen state in places like the Canadian Arctic. Strategies used by the frog to endure such extremes are inspiring efforts to better preserve human tissue and organs.*

J.M. STOREY/CARLETON UNIVERSITY





*Zonghu Han removes a vitrified rat kidney from a storage freezer. Kidneys have been stored like this for up to 100 days before being successfully transplanted into a rat. EVAN TAYLOR STUDIOS ASSISTED BY TOM OKINS*

tion," he says.

In April, the team cooled a pig heart to  $-4^{\circ}\text{C}$  for 21 hours in one of its pressure chambers, then warmed and implanted it into another pig where it began to beat on its own. In addition to avoiding the challenges that can come with full vitrification, Rubinsky finds his strategy enables him to use less cryoprotectant than other methods require, reducing toxic side effects.

Because it is simple and relatively low-tech, the approach could also be put to work to preserve food without the ice damage that can degrade today's frozen vegetables and meats. The metal storage chambers fit in standard commercial freezers. And because the method works at warmer temperatures than those often used for storing frozen food, Rubinsky and colleagues project widespread use could cut global energy consumption by more than 6 billion kilowatt-hours per year—equivalent to Latvia's total annual electricity demand.

Cristina Bilbao-Sainz, a food technologist at a U.S. Department of Agriculture (USDA) lab in Albany, California, started to work on the approach after Rubinsky gave a presentation to the center in 2016. "It was a simple idea, but so novel," Bilbao-Sainz says. "We totally saw that this could have a future."

The first attempt was discouraging. Raspberries, a delicate fruit, turned to mush when thawed. Then Bilbao-Sainz tried tomatoes. Twenty grape tomatoes sat for 1 month in a sealed container filled with sugar water at  $-2.5^{\circ}\text{C}$ . They emerged looking like they had just been picked, she says.

Bilbao-Sainz has also had good results with spinach, cherries, and potatoes. Now, she is trying blueberries. In December 2022, the USDA lab started to work with an unnamed company interested in using the technology. "It could have

a big impact," she says.

**THE ADVANCES** are coming swiftly enough to make those Hollywood scripts seem less outlandish. Some scientists raise the possibility of stockpiling vitrified human organs grown in genetically engineered pigs for future transplants. Tessier is working to keep whole animals—tiny zebrafish larvae—in suspended animation. So far, she has partially frozen them at  $-10^{\circ}\text{C}$  for 3 days. When thawed, half of the fish survived and kept growing. Switch out people for fish and improve the success rate, and a science-fiction staple could eventually become a reality. "You can think about even long-term space travel," Tessier says. Hello, 2001: A Space Odyssey.

But that's a far cry from today. As if to illustrate the gap between vision and reality, the UMN demonstration goes awry at one of the last steps. As the black nanoparticles are flushed from the rat kidney, water condenses on the chilled equipment, causing a device to malfunction. It pumps a solution commonly used to preserve organs during transplants into the kidney at out-of-control pressures.

Han and Bischof stare dejectedly at the damaged organ. Before any of this technology makes its way into operating rooms, it will not only have to scale up to human size, but will also need to pass muster with safety regulators such as the U.S. Food and Drug Administration. "All of this engineering that we're doing in the lab has to be made failsafe," Bischof says as he points toward the kidney. "This is just an example of some of the things that can go wrong."

# Science

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ScienceDaily

from SCIENCEDAILY.COM

## **GPT-3 can reason about as well as a college student, psychologists report**

*But does the technology mimic human reasoning or is it using a fundamentally new cognitive process?*

31 JULY 2023 | UNIVERSITY OF CALIFORNIA - LOS ANGELES



People solve new problems readily without any special training or practice by comparing them to familiar problems and extending the solution to the new problem. That process, known as analogical reasoning, has long been thought to be a uniquely human ability.

But now people might have to make room for a new kid on the block.

Research by UCLA psychologists shows that, astonishingly,

the artificial intelligence language model GPT-3 performs about as well as college undergraduates when asked to solve the sort of reasoning problems that typically appear on intelligence tests and standardized tests such as the SAT. The study is published in *Nature Human Behaviour*.

But the paper's authors write that the study raises the question: Is GPT-3 mimicking human reasoning as a byproduct of its massive language training dataset or it is using a fundamentally new kind of cognitive process?

Without access to GPT-3's inner workings -- which are guarded by OpenAI, the company that created it -- the UCLA scientists can't say for sure how its reasoning abilities work. They also write that although GPT-3 performs far better than they expected at some reasoning tasks, the popular AI tool still fails spectacularly at others.

"No matter how impressive our results, it's important to emphasize that this system has major limitations," said Taylor Webb, a UCLA postdoctoral researcher in psychology and the study's first author. "It can do analogical reasoning, but it can't do things that are very easy for people, such as using tools to solve a physical task. When we gave it those sorts of problems -- some of which children can solve quickly -- the things it suggested were nonsensical."

Webb and his colleagues tested GPT-3's ability to solve a set of problems inspired by a test known as Raven's Progressive Matrices, which ask the subject to predict the next image in a complicated arrangement of shapes. To enable GPT-3 to "see," the shapes, Webb converted the images to a text format that GPT-3 could process; that approach also guaranteed that the AI would never have encountered the questions before.



The researchers asked 40 UCLA undergraduate students to solve the same problems.

"Surprisingly, not only did GPT-3 do about as well as humans but it made similar mistakes as well," said UCLA psychology professor Hongjing Lu, the study's senior author.

GPT-3 solved 80% of the problems correctly -- well above the human subjects' average score of just below 60%, but well within the range of the highest human scores.

The researchers also prompted GPT-3 to solve a set of SAT analogy questions that they believe had never been published on the internet -- meaning that the questions would have been unlikely to have been a part of GPT-3's training data. The questions ask users to select pairs of words that share the same type of relationships. (For example, in the problem "'Love' is to 'hate' as 'rich' is to which word?," the solution would be "poor.")

They compared GPT-3's scores to published results of college applicants' SAT scores and found that the AI performed better than the average score for the humans.

The researchers then asked GPT-3 and student volunteers to solve analogies based on short stories -- prompting them to read one passage and then identify a different story that conveyed the same meaning. The technology did less well than students on those problems, although GPT-4, the latest iteration of OpenAI's technology, performed better than GPT-3.

The UCLA researchers have developed their own computer model, which is inspired by human cognition, and have been comparing its abilities to those of commercial AI.

"AI was getting better, but our psychological AI model was still the best at doing analogy problems until last December when Taylor got the latest upgrade of GPT-3, and it was as good or better," said UCLA psychology professor Keith

Holyoak, a co-author of the study.

The researchers said GPT-3 has been unable so far to solve problems that require understanding physical space. For example, if provided with descriptions of a set of tools -- say, a cardboard tube, scissors and tape -- that it could use to transfer gumballs from one bowl to another, GPT-3 proposed bizarre solutions.

"Language learning models are just trying to do word prediction so we're surprised they can do reasoning," Lu said. "Over the past two years, the technology has taken a big jump from its previous incarnations."

The UCLA scientists hope to explore whether language learning models are actually beginning to "think" like humans or are doing something entirely different that merely mimics human thought.

"GPT-3 might be kind of thinking like a human," Holyoak said. "But on the other hand, people did not learn by ingesting the entire internet, so the training method is completely different. We'd like to know if it's really doing it the way people do, or if it's something brand new -- a real artificial intelligence -- which would be amazing in its own right."

To find out, they would need to determine the underlying cognitive processes AI models are using, which would require access to the software and to the data used to train the software -- and then administering tests that they are sure the software hasn't already been given. That, they said, would be the next step in deciding what AI ought to become.

"It would be very useful for AI and cognitive researchers to have the backend to GPT models," Webb said. "We're just doing inputs and getting outputs and it's not as decisive as we'd like it to be."





*From the left to the right: Anders Meibom, Florent Plane, Stéphane Escrig. Credit: EPFL/A. Herzog*

## Scientists unlock new horizons for cryogenic microscopy

*by Sandrine Perroud, Ecole Polytechnique Federale de Lausanne*

EPFL scientists have developed a new research instrument for observing biological tissue samples prepared using a method discovered about forty years ago by Nobel Prize winner Jacques Dubochet, emeritus professor at the University of Lausanne. Their instrument—the only one of its kind in the world—opens up promising new avenues of research.

It took Prof. Anders Meibom and his research group almost 10 years and several prototypes before they finally made it. They have now succeeded in enhancing an analysis method known as nanoscale secondary ion mass spectrometry (NanoSIMS) by building a CryoNanoSIMS machine—an instrument that can analyze the chemical and isotopic com-

position of vitrified tissue samples.

The sample preparation process they used was developed in the 1980s by the well-known Vaud biophysicist Jacques Dubochet—who won the 2017 Nobel Prize in Chemistry for that breakthrough. That process, which forms the basis of modern cryogenic electron microscopy, preserves all constituents of a biological sample in their most pristine post-mortem state. The research group's CryoNanoSIMS machine and potential benefits are described in an article published in BMC Biology.

"We're now able to generate images of precisely where in a cell or tissue sample a specific nutrient is stored or used, or where a given drug enters—or does not enter. There's



no other way to obtain this information,” says Meibom, who heads the Laboratory for Biological Geochemistry at EPFL’s School of Architecture, Civil, and Environmental Engineering and who is also a professor at the University of Lausanne (UNIL).

## New research horizons

With the CryoNanoSIMS machine, scientists can take cryogenically prepared biological tissue samples—in which no molecules have been lost or even displaced—and directly observe the exact sub-cellular distribution of compounds essential for the treatment of bacterial infection and cancer, for example. Scientists can also use the machine to visualize the distribution of trace elements in plant tissue, which is critically important for improving plant growth and crop production and tracing environmental contaminants in soil and biofilms. And all this can be done at a sub-cellular spatial resolution. “Our CryoNanoSIMS instrument creates entirely new research opportunities,” says Meibom.

“In my lab, we’re in full swing developing an intense research program around this unique capability.” Meibom’s CryoNanoSIMS laboratory is housed at UNIL, where it is part of the Center for Advanced Surface Analysis, a consortium of laboratories from both UNIL and EPFL that use state-of-the-art equipment to conduct elemental and isotopic surface analyses for a wide range of research topics spanning from geology to biology. Commenting on the new instrument, Dubochet heralds it as “an important expansion of the field of biological chemistry.”

## Swiss precision

NanoSIMS technology already revolutionized the field of imaging when it was introduced around 20 years ago. It entails directing a beam of ions onto a sample and produces

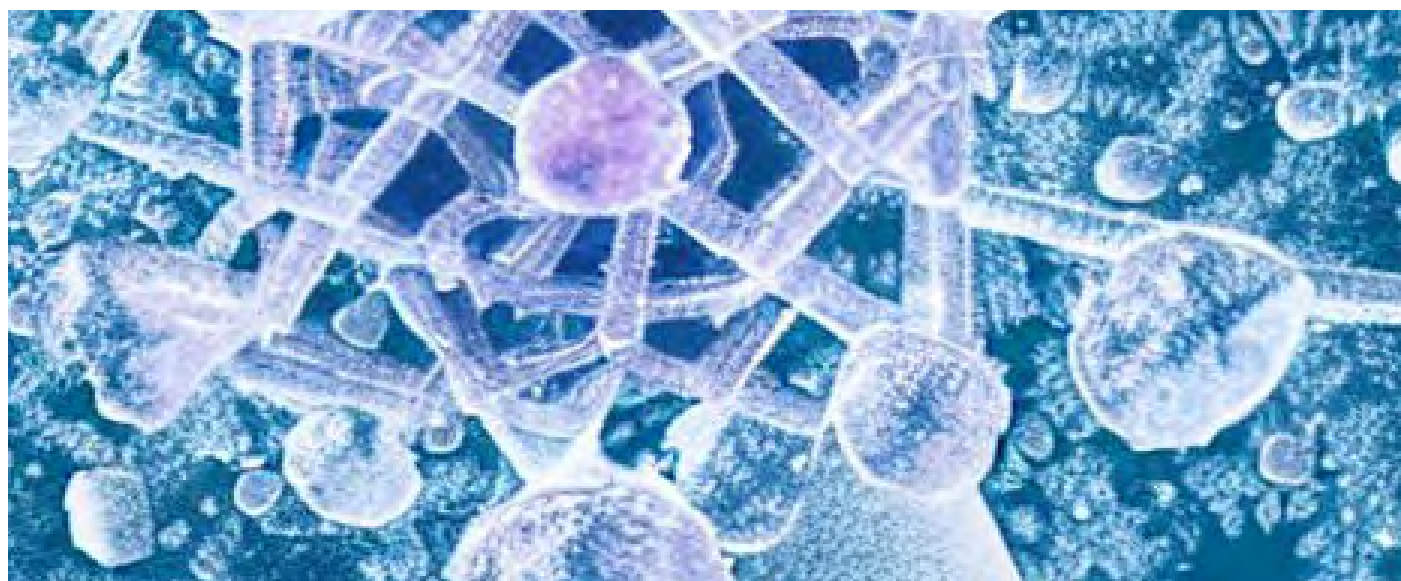
images with 100 nm resolution. But the associated sample preparation methods all result in some degree of tissue morphology distortion and loss of soluble compounds. To overcome these obstacles, Meibom and his team developed a cryogenic process for preparing samples and added new physical components, including a liquid nitrogen tank, to a NanoSIMS machine so that it can accommodate cryogenic samples.

“It was extremely difficult to turn an instrument that operates at room temperature into one that can analyze frozen tissue samples while keeping the sample cold and stable for hours and hours. But we succeeded, and can now obtain entirely new information,” says Meibom. “None of this would have been possible without the mechanical engineering skills of EPFL’s workshops and of the Swiss firms we worked with to achieve the required degree of precision for specific parts.”

## From hydra to corals

The study’s authors tested their CryoNanoSIMS method on samples of Green Hydra, a small animal that lives in freshwater ponds and lakes, including in Switzerland. With the CryoNanoSIMS they could directly observe how this animal takes up and assimilates ammonium, a key nutrient for many aquatic organisms.

The next step will be to apply the method to corals—another area of expertise at Meibom’s lab—so that scientists can study the symbiosis mechanisms between algae and coral and determine the factors that lead to coral bleaching and death.





A female *Brachionus manjavacas* rotifer, as magnified under a microscope. This rotifer is 350  $\mu\text{m}$  long; about the size of a grain of sand. The hair-like cilia at the top of the individual are used for swimming and feeding. By injecting the CRISPR system components into the female's large reproductive system, the targeted genes should be edited in the four developing eggs she is carrying at her posterior end. These eggs will hatch within a day, and the offspring will carry the edited genes. The image was taken with the polychromatic polarizing microscope, giving the normally transparent animal a colorful appearance.

CREDIT

Michael Shribak and Kristin Gribble

## **Powerful gene editing approach boosts rotifers in pantheon of laboratory animals**

*Peer-Reviewed Publication - MARINE BIOLOGICAL LABORATORY*

*By Wynne Parry*

Much about tiny, swimming rotifers makes them ideal study subjects. Although barely visible to the naked eye, these transparent animals and their innards are readily viewed under a microscope. What's more, they grow readily in laboratory culture, offering scientists an otherwise difficult-to-obtain perspective from their corner of the animal kingdom.

However, while rotifers have been used experimentally for more than a century by many research groups, scientists have so far lacked the ability to readily manipulate rotifers' genetics, placing a hard limit on the experiments they can run with these animals.

A joint effort by Kristin Gribble and David Mark Welch at the Marine Biological Laboratory (MBL) has overcome this challenge by devising a method for precisely altering the rotifers' genomes using the gene editing system CRISPR-Cas9. In experiments described in PLOS Biology, their team edited two genes and added a genetic sequence to produce changes that the rotifers passed down through generations.

"Our method turns out to be a very practical way to generate a large number of genetically altered rotifers fairly quickly," said Mark Welch, a senior scientist at MBL and director of the Josephine Bay Paul Center for Comparative Molecular Biology and Evolution.

Not only will this advance benefit his lab and Gribble's, which use rotifers to study the biology of aging, DNA repair mechanisms, and other fundamental questions, it will "open the field to allow more people to work with these animals," Mark Welch said.



## Developing a microscopic, water-dwelling lab animal

Certain living things — the bacterium *E. coli*, fruit flies, and mice, for example — have become well established as model organisms that scientists routinely use in research. Taken together, however, they don't adequately represent the full diversity of life.

The MBL team aims to add rotifers to this group of genetically tractable organisms because, as tiny invertebrates with close ties to the ancestors of modern animals, they offer an important perspective on evolution, development, and other aspects of biology.

To develop rotifers as model organisms, researchers need the capacity to tweak these animals' genomes. In 2017, MBL Interim Director Melina Hale of University of Chicago provided Gribble and Mark Welch with funding to devise a method for doing so using CRISPR-Cas9. The goal of cultivating a greater variety of model organisms later became formalized as MBL's New Research Organisms initiative.

Now widely employed in research, CRISPR-Cas9 makes precise cuts within DNA, which researchers use to shut down or alter genes. First, however, they must get the CRISPR system into the animals.

Fine-sawdust-sized specks darting about in water, rotifers make for unusually challenging targets. After many unsuccessful attempts to hold them still, first author Haiyang Feng, then a postdoctoral scientist at MBL, devised a solution: By immersing them in a high-viscosity solution and administering a low level of an anesthetic, he slowed the animals enough to grab them one at a time with light suction through a hollow needle.

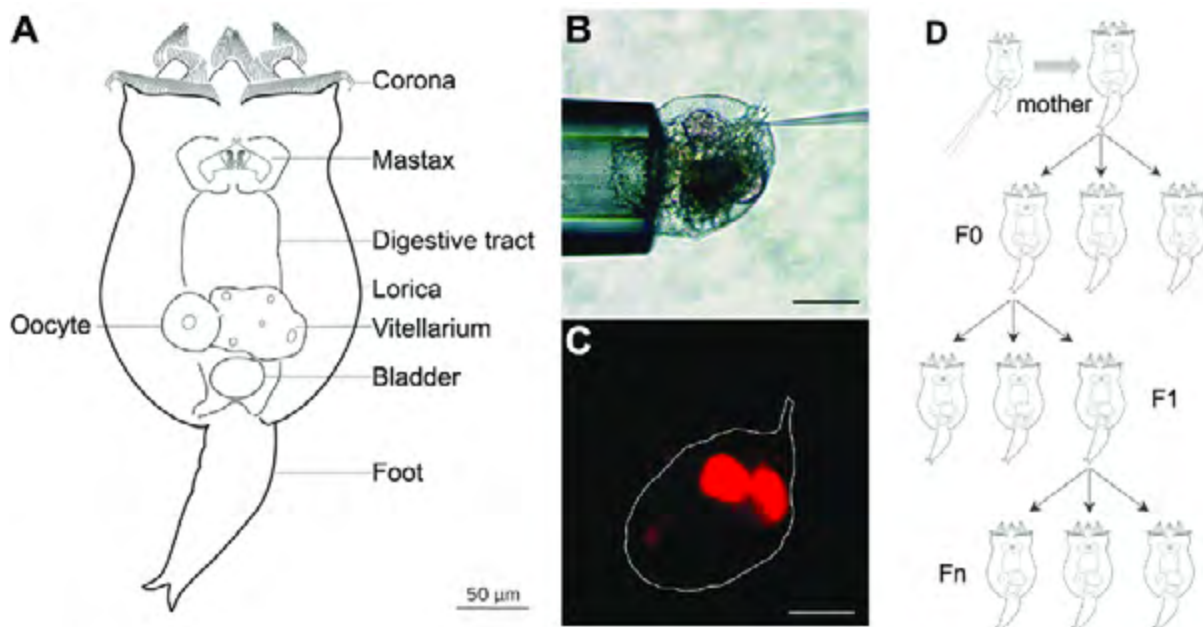
With the animal, always a female, in place, he injected the gene editing system into the part of its body that supplies nutrients to the eggs. The offspring that hatched from these eggs then carried the mutations, which they passed on to their offspring.

In this way, the team inactivated *vasa*, a gene crucial to animal development, causing the rotifers to stop reproducing after a few generations. By turning off a second gene, *mlh3*, they prevented the rotifers from producing male offspring. And, finally, by adding a section of genetic code containing "stop" instructions into *mlh3*, they achieved the same effect.

## New possibilities for rotifer research

Both researchers intend to use the CRISPR-based method to genetically alter rotifers for their own research. As part of her work exploring how mothers' age can affect the traits of their offspring, Gribble, an associate scientist at MBL, is investigating the role of mitochondria, the energy-producing component of cells. The new approach will allow her to tag or alter mitochondria. Mark Welch, meanwhile, plans to use it to explore the molecular mechanisms behind one rotifer species' ability to revive after completely drying out, including how they repair damage to their DNA.

Studies like these are only the beginning. "This new tool, along with the ease of raising rotifers in the lab, will make it possible to use them to answer lots of questions we aren't even thinking about yet," Gribble says.



# CI Reading Room

*Serializing essential works on cryonics*

**R.C.W. Ettinger**

# YOUNIVERSE

**Toward a Self-Centered Philosophy  
of Immortalism and Cryonics**

## **CHAPTER EIGHT**

*"A classic for anyone trying to understand what this universe is all about...and it has many little things that add to the fun of reading it."*

—Professor Peter Gouras, M.D., Ph.D., Columbia University, about the first edition.



## Chapter 8

### The Art of Living

**Where to Focus?** Some things are generally recognized as serious, e.g., a chancre on your willie. Others are merely treated as serious, e.g., the ranking of your football team. But you need to start somewhere.

**Seeking Serenity?** I have said that the goal of (your) life should be to maximize your personal feel-good over future time. But some think we should be seeking something different, such as serenity of the soul.

Many believe that the highest satisfaction-spiritual satisfaction-may be had in spite of, or even because of, a lifetime of suffering. We have previously covered most aspects of this, but let's look now at the core meaning of serenity-seeking in its own terms.

One way to say it is that you want to be true to your higher nature. Another way to say it is that some things, or something, may be worth martyrdom- whether the martyrdom is a climactic event like St. Joan's, or a lifetime of giving such as that of Mother Theresa, or a lifetime of humble truth-seeking such as Fyodorov's, or not-so-humble truth-seeking such as Kant's. Still another way to say it is that integrity is our most valuable possession.

I have no quarrel with those who place integrity above comfort. My philosophy is not one of comfort, although it is intended ultimately to be one of happiness, or of the greatest degree of happiness compatible with reason and honesty.

The point is that there is such a thing as delusion in "integrity" as in just about everything

else. Remember again the famous line, "I could not love thee, Dear, so much, loved I not honor more." Some kinds of "honor"-- such as unlimited devotion to a monarch or a flag -are shabby jokes of which the victims are unaware, which indeed they play upon themselves. Our form of integrity is just honesty-a most uncommon form of honesty that requires not only discipline, but a habit of skepticism bordering on suspicion bordering on paranoia. You can get through almost any thing if you have iron honesty- and a little bit of luck.

**Decision Making:** Day-to-day and moment-to-moment decisions form the science and art of living. Since I have said that the scientific approach is the only valid approach to all areas of life, let's take a few moments to clarify the science- versus-art business.

The artistic approach, as distinguished from science, is usually less general, less systematic and less quantitative. The practitioner may be guided primarily by custom or by a relatively narrow set of guidelines, often with major reliance on intuitions or subconscious attitudes, including personal taste. This is not necessarily unscientific. In many categories of thought and action, nothing much is at stake except relatively small degrees of enjoyment, and whimsical or even random choices are not likely to do serious damage. If you want to relax by painting, nothing much may hang on your decision to paint-say-still life vs. abstracts. If you want to relax with music, it may matter very little whether you choose

snare drums or grand piano. Indeed, part of the point of relaxing may be to avoid any strenuous decision-making, so that in this case the only truly scientific thing to do is to be unscientific!

Once more, the "scientific approach" is simply to do your best with your mind, no holds barred -to apply all your honesty and resourcefulness to the problem at hand, or to determine if there is a problem. If the immediate problem is trivial, you don't strain yourself. You don't spend a dollar to make a penny.

**Too Many Decisions vs. Too Much Risk:** No one can afford to ask too many questions. No one can personally discover, or even confirm, all the important truths of thought and conduct. Therefore, we must depend primarily on judgments previously made, e.g., by professionals or by society. In practice, it is uncommon to ask too many questions-and those who do usually ask the wrong questions, and look for answers in the wrong places, or else just worry without resolving anything.

The opposite and more common mistake is to ask too few questions-to accept too readily the dictates of custom or professionals or habit. The grossest example is the conditioned acceptance of self-sacrifice including the "inevitability" of "natural" death. Indeed there are vast numbers of people who never question anything beyond trivia, who never dream of stepping off the well-trodden trail, even when a precipice is in plain view ahead. Lemmings just follow the crowd (although their alleged cliff-diving is a bad rap).

**Comfort vs. Advantage:** A well known prayer: "Lord give me the strength to bear evils that can't be changed, the courage to act when evils can be changed, and the wisdom to know the

difference." Counselors and psychotherapists often amend the first part: if "evils" can't be changed, maybe we should not just endure but embrace them, convince ourselves they aren't really "evils" after all.

In slightly different terms, when we are uncertain or dissatisfied, there are often two opposed approaches. One is to seek reassurance or soothing, something to help you relax and defuse the problem, to allow you to believe that you are doing the right thing, or the only feasible thing, or that the problem isn't really a problem after all. The second approach is to attack the problem aggressively, look for new and more effective weapons or tools or strategies. There is no clear-cut, easily applied criterion for deciding which way to go. You must first apply all your clear-eyed honesty to decide whether there is a problem and to formulate it. Then you must apply all your resourcefulness to decide whether you can solve it or must live with it, and if the latter, how this can best be done.

When you have made your decision(s), there is no assurance of a favorable outcome. You may try to live with the problem, and find this corroding. You may attempt to solve it and fail. Thus you may need to fall back and regroup, perhaps repeatedly. But there are some guidelines and suggestions that may improve results and success rates.

**Plain Jane & Joe:** We are often taught to feel at best tolerant of those who take the easy road or the quick fix-perhaps even contempt. Near the extreme are the junkies; more numerous and less extreme are the couch potatoes and passive consumer types, and perhaps a majority just drift along. But is this way of life really so bad? Certainly, "higher" aspirations and "nobler" conduct can sometimes be more



rewarding. But it is also true that most of us in practice (at least under previous conditions) simply don't have what it takes to win long uphill battles or justify lofty ambitions. Our incredible good fortune has been to live in a time and place where the ordinary Joe or Jane can frequently live comfortably, most of the time, without busting our balls or our brains. In the U.S., it is a rarity for the poorest home to be without central heating, indoor toilets, hot and cold running water, color television and enough tempting food to raise and maintain fat. A warm shelter, plenty to eat, and entertainment that in earlier eras was beyond the reach of princes and potentates! It's far from perfection, but compared to other times and places, it borders on the heavenly. If you want to settle on the cheap, you have a case.

A cut "above" would be those who want more active life, participation and achievement of some sort, and find it readily available in contemporary insti-

tutions. There are clubs, leagues and "sets" of all sorts, including indoor and outdoor sports, politics, dancing, theatrics, music, and even "the job". The job- even a lowly one can deliver small but regular doses of satisfaction in the form of feelings of usefulness, service, belonging and competence.

It is worth emphasizing that most people's talents include, if not minority talents, then at least talents not shared by many of the "higher" classes. As an obvious example, there are lots of women and girls competent in sewing and related arts, and lots of men and boys competent in maintaining automobiles, and also lots of highly paid administrators and academics who couldn't sew a seam or tune a car to save their lives.

So right here, right now, with no further initiatives, many of us have lives that are highly satisfactory in the perspective of past history- but the future is another story, and all of us want more, at least some of the time. Some of us always want more. So we continue our investigation of strategies.

### **Is There Always an Answer? Outsmarting Yourself:**

Intelligence and initiative are not always successful traits. A while back, our neighbor had a Doberman puppy- a very bright, friendly and lovable little thing. She wanted very badly to come into our yard and play with our dogs- and she did. She taught herself to climb over the cyclone fence- the first and only time I have seen a dog do such a thing. Mae and I didn't mind having her in our yard, but a fence-climbing dog is obviously at risk; she seemed likely to climb one fence too many and run into the street and get killed by a car. So she ended up unhappily on a tether, with only occasional romps in the yard under direct supervision. (Later, we built an extension on the fence, so she couldn't climb over and could at least be free in her own yard.)

Her intelligence and initiative betrayed her. Of course, if her intelligence had been several notches higher, the problem could be explained to her, or if her owner knew how to train her without restraint.... but her universe was just not that user- friendly.

Then there is always the putative contented cow, or the happy cultist, etc. Dullness or delusion can be "successful". But stupidity and insanity are not usually available by choice, and more often than not, would be bad choices anyway. It isn't wise to be overconfident or to brag to yourself, but we still have to bet on brains.

**Adjustment vs. Control vs. Maneuver:** When we feel uncomfortable in the world, we are commonly said to have the choice of trying to change ourselves (adjustment) or the world (control). Actually, we have a third choice-not to change ourselves (our attitudes or feelings or goals) but our actions, in such a way as to improve outcomes without necessarily changing the world appreciably. For want of a better word, we might call this last option "maneuver"; it applies primarily to dealings in the world of business and politics, not usually to personal relations.

**Adjustment** is ordinarily the first requirement, since in most of life's activities, society provides the best guidelines and resources. As the most obvious example, the traditional "moral" values of honesty, consideration and fair dealing are generally necessary (although not sufficient) to anchor the personality and maintain self-esteem. "Adjustment" is most commonly sought in the following serious situations:

You are poorly endowed by nature and victimized by circumstance. Since there seems to be no practical objective way to improve your life substantially, you need to reduce your discomfort by some kind of self-persuasion or change of view-point. How to do it?

Some of the traditional means involve simple self-deception. In this category, I would put the admonition to trust in God and His inscrutable higher plan. Another reject would be the reminder of the man who said, "I wept because I had no shoes, until I met a man who had no feet." There is no defensible reason why we should be comforted by the greater discomfort of others.

What does work? Begin with the simplest and

most general of both traditional and modern therapies-support. The cheapest and most effective support can be just the informal comfort of sympathetic relatives and friends, listening and commiserating and making suggestions. When these are lacking, one can turn to professional support such as counselors and therapists and formal support groups, recently proliferating.

None of these appears to work extremely well, but many seem to work somewhat. The theories behind the various therapies are diverse and probably mostly wrong but they work anyway. The common ground is just that someone is interested in you (even if only because he is being paid), you feel less isolated and abandoned, and you get a chance to express yourself and absorb other viewpoints, and to take the edge off your worst moments without doing something desperate. Therapies and support groups mostly do not cure, but they often do keep the client functioning and out of despair. It isn't necessary to reject delusion altogether. The content of the various therapies does not seem to be important, since none of the wildly varying methods seems clearly superior, and since some border on absurdity; but it can be important that the therapy have some explicit content or idiosyncrasy or rationale or procedure. This allows the subject to imagine that there is some special intrinsic merit in the approach being used; when his credulity kicks in, he is more likely to benefit (the placebo effect). Because of our inherent capacity for double-think, we can even realize this is going on and still benefit.

Finally, we add a novel and possibly crucial ingredient-the Youniversal outlook. If someone believes-even 5% or 10%, on a clearly understood rational basis-that (s)he may live



to enjoy the conquest of death and transhuman development, then temporary discomfort is more easily borne and hope sustained.

**Traps of Loyalty & Pride:** We have already noted that derivative (secondary or subsidiary) values are usually the dominant ones. Mere habits can, and often do, overrule the most basic "instincts," including that of self-preservation. This is partly because, in modern life, the consequences of particular actions are not clear-cut or easy to predict. When a threat is dim and distant, we tend to disregard it, if it is up against ingrained habit or immediate temptations. Once again, smoking is a prime example.

But another reason is that some derivative values have genuine validity in a broad range of circumstances; loyalty and pride are prime examples.

### Defiance

*Out of the night that covers me, Black as the  
pit from pole to pole, I thank whatever gods  
there be For my unconquerable soul.*

*In the fell clutch of circumstance I have not  
winced nor cried aloud. Under the bludgeonings  
of chance My head is bloodied but  
unbowed.*

*Beyond this place of wrath and tears*

*Looms but the horror of the shade, And yet  
the menace of the years Finds, and shall  
find me, unafraid.*

*It matters not how strait the gate, How  
charged with punishments the scroll,*

*I am the master of my fate: I am the captain  
of my soul.*

*Invictus-William E. Henley*

This well-known poem is inaccurate and illogical in obvious ways-but its sentiment is nevertheless useful, inspiring, motivational. Let's look into these matters a bit.

**The Power & Price of Pride; Pride as Confidence:** There is obvious practical and evolutionary value in pride in one's abilities and judgment. Self-confidence is necessary for decisiveness and for consistency in action. Decisiveness and consistency, in turn, are important for success in life.

Pride is not exactly the same thing as self-confidence, but it is closely related. Justified confidence is built by stretching one's endeavors and abilities, and pride is part of what drives us to attempt the new and difficult, as well as to protect what we have and fight off challenges.

On a low level, a monkey has to believe he can gauge distances and the strength of a branch, and that his arms will hold his weight. If his confidence wavers, he will eat less often and be caught by a leopard more readily. On a slightly higher level, a Yuppie has to believe he can cut the corporate mustard, or he will be trapped by timidity and may never be promoted out of the mailroom. Both the monkey and the man need the goad of pride.

Needless to say, a certain humility may also be required for success. One who overestimates his abilities and chances will meet his comeuppance and perhaps his end. Even when arrogance is justified, we usually need to hide it from others; it isn't usually a good idea to cultivate enemies.

**Pride As Arrogance:** When pride grows past confidence and begins to verge on arrogance, there are new dangers and also new rewards. If you are competing with other people as well as with nature, if your own success must come at the expense of someone else, then you are more or less in the "championship" or gladiatorial arena, with possible new "highs"

of satisfaction along with more dangerous competitors and greater odds against you. The professional sporting scene displays some of this, but not nearly as much as the world of business and politics. The pinnacle, of course (or nadir, if you prefer), is in the political/ military realm of geopolitics, with whole countries in danger from testosterone poisoning.

**Honor & Chivalry:** Codes of honor abound through history, with both positive and negative lessons. They can be sometimes useful, sometimes harmful or destructive. During the Middle Ages, "chivalry" became a fetish not only of the noble classes but even other strata of society. (See the Huizinga book in my bibliography.) Some versions of it have been credited originally to Arab influence, as through the Moors in Spain. Contemporary leftovers often focus on gallantry toward women. All versions elevate some form(s) of honor above "selfish" concerns. "Validity" of such views depends, as usual, on your criteria. For some people, some of the time, they probably did indeed tend to promote life satisfaction. For us, they are (or should be) mostly curiosities.

**Kunta Kinté and the Auto-Da-Fe:** In Alex Haley's *Roots*, an African youth sold into American slavery is given the name "Toby" by the plantation owner, but he refuses to acknowledge it. He is not the slave Toby; he is the warrior Kunta Kinté. His pride and loyalty demand that he accept fearful punishment rather than submit in this symbolic way -even though he has already submitted in other, more practical ways.

No one can make a definitive judgment on such cases. In some combinations of circumstance and psychology, martyrdom is the right choice, because any other choice will result in a lifetime of misery. But in modern condi-

tions, martyrdom will rarely, if ever, be the rational choice. We have too many options, and too many possibilities for future redemption or healing, too many ways to recognize and rationalize the virtues of survival and adaptability.

**Semi-Hemi-Demi Martyrs:** One way to remind oneself of the error of martyrdom—or the virtue of the "sellout" or "cave-in" if we choose to put it that way—is to remember that almost all of us, almost all of the time, practice sell-outs and cave-ins. This is just another way of saying that we exercise prudence that we do not insist on "my way, all the way." We are seldom totally rigid. If we disagree with the boss, or with society, or with the spouse, or even with the child, we usually are willing, and find it necessary, to go part way toward the other point of view, or sometimes even all the way on a temporary basis. This will at least buy you time—and it may even turn out that the other guy was right.

As usual, the problem depends on the particulars and the numbers—how much are you asked to bend, or for how long, and how much will it cost you in the various coins? Bending too much can often be wrong; sometimes bending even a little can be wrong. We'll deal with some examples by and by; they include such simple things as civility and formal courtesy. Once more, our conclusion is that there are no absolute, permanent guidelines; instead, we must continually evaluate our situation, capabilities and options with a view to maximizing long term satisfaction. And yet again: recognizing changing conditions is not the same as weaseling or taking the easy way. It will sometimes result in an easier (more comfortable) choice, but sometimes the opposite.

**Sometimes Not a Hair Shirt:** How about the



temptation to lie to yourself, to tell yourself that selling out your principles-just this one time, in just these unusual circumstances is a justified temporary tactic when it is really just craven weakness? To ask this question is to acknowledge the need for the sternest self-discipline and most careful habit of honesty. There is no magic formula; you just have to train yourself and gradually build or improve your character.

And don't forget that Temptation can take different forms. Sometimes the new morality may dictate the same choices as the old morality: "Get thee behind me, Satan" means turn away from the easy, temporary gratification, or avoidance of duty, in favor of discipline and longer term success. But it might equally well be the opposite: the new morality may demand, for example, that you forgive yourself for past failures or write off old loyalties, which can be exceedingly distasteful.

**Napoleon & de Gaulle:** The Little Corporal said, "Loyalty is a disease of dogs." (So he must have regarded his troops, on whose loyalty he depended to march into withering fire shouting "Vive l'Empereur," as diseased dogs.)

The Long Asparagus said, "States do not have friends. They have interests." (And a man with few friends may need to take refuge in the state.)

The famous French cynicism, as per usual, has it partly right and partly wrong. Loyalty to institutions is frequently a very bad idea and represents nothing more than indoctrination contrary to your personal best interests, imposed by the beneficiaries of your loyalty. And Charley's remark about states could equally well apply to individuals, if we take a narrowly "logical" view.

But there is nothing narrow about human psychology, and "logic" in the blinkered sense can be grossly misleading. We must operate mainly from habit, and those habits had better be generally sound ones, both for outward results and for inward coherence.

**The Tyrant Tot:** Loyalty is a traditional value, and like many other traditional values, it is often well founded. But sometimes it is just a self-donned strait jacket, a fashion statement.

One source of hopelessly inappropriate outlook is the persistence of attitudes formed in childhood or youth. These may include an outsized emphasis on attachment to parents, siblings, or homestead.

If some readers are already bristling at the suggestion that this cargo could be jettisoned, why, the reaction itself should give some indication of the grip the tot may retain on the adult.

Your previous selves-attitudes and inclinations held over from earlier stages of life-need not necessarily be abandoned; sometimes they should not be and often they cannot be (at least not suddenly). But they are not sacrosanct; they need to be noticed and examined. The brain has several layers (either literally or metaphorically), evolutionary accretions reflecting phylogenetic background. Only the latest, outer layer (roughly speaking) is definitively human; the rest is left over from our simian stage, our reptilian stage, our piscine stage, etc. In a somewhat similar manner, our psyches-including memories, habits and attitudes-grow in stages, and the development of the latest does not obliterate the former.

This means that every adult has a child within, everyone in midlife retains a youth and a child, the spouse retains a bachelor, and so on.

And each of the vestiges demands loyalty to its own values and habits.

Is this necessarily a bad thing? No. If you disregard or betray your former selves, your promises and attitudes, you may undermine your current dominant self by losing faith, in your own integrity. If your child-within can't trust you, how can you trust your future self or maintain self respect? Loyalty to your former selves-like loyalty to your family and community- is betrayed at your psychic peril. But that is only part of the story. Loyalty to your predecessor selves is sometimes loyalty to error or stupidity or naivete. A reasonable degree of stability is important, but so is growth. No one can be right all the time, and young, inexperienced people are often wrong; can you allow their errors-your previous mistakes-to bind you forever? The ties that bind can serve as mooring or as imprisonment. There is no simple formula for striking the balance, for knowing when to stick unwaveringly with traditional values and when to jettison tradition and make a new calculation of self interest.

**Calculation & Discipline:** Calculation is the key, along with discipline. It would be nice if we could learn a few maxims and mantras and resort always to those, in safety and psychic comfort, but the world just isn't that convenient. Change cannot be avoided, growth must not be unduly feared, and justice must not be expected-except in the sense that you attempt to violate natural law at your peril.

"Discipline" is an uncomfortable word, to be sure, and "calculation" a downright scary one. It isn't fair that a nice, ordinary person, not too dim but not too bright either, just trying to do the right thing and get by, should find no reliable direction from above, no blueprint explaining the construction of the cosmos, no

simple slogans that will assure a comfortable outcome. It isn't fair that someone who just wants to hang loose should find himself forced to weigh evidence and compute probabilities, to pound his persona and chisel his psyche, on pain of punishment or even death.

But that's the way it is. And there could be compensations, such as a longer life in a better world and open-ended personal growth, including a whole lot of fun. Maybe there will even be avenues to exaltation and transfiguration-without illusion.

**The Ideal of "Service":** Somewhat akin to the sense or concept of loyalty is that of duty, and this in turn to that of "service". Dedicating oneself to "service" is commonly thought to be a lofty and noble commitment. However, as usual, we need to examine this idea more closely and critically.

First, we need to recognize that the ideal of service is not entirely self-sacrificial or even self- subordinating. Acceptance of service has definite pay-offs, and not only in terms of self esteem. Above all, it is in many respects the easy way. In many ways, it absolves you from worry and responsibility. You just follow orders: orders either explicitly handed down in some guide book (e.g. *Das Kapital* or *Mein Kampf* or *The Holy Scriptures* or *The Q'Uran*; or by some designated authority such as Stalin or Hitler or the Pope or the Imam-in-Chief or the Chief Rabbi; or else implicitly in the tradition of your ideal.)

This is not to deny that one who serves may have to endure some hardships and make some sacrifices and resist some temptations; he may even display unusual heroism. Every ideal and ideology has its saints and martyrs. But this changes nothing and proves nothing.



After all, Pit Bulls may fight to the death, as "lesser" breeds will not, but that doesn't prove the Bulls are "right" in any sense. And more commonly, those who serve are less than noble from almost any point of view. For example, in the old days of the Soviet Union, many polls and interviews of citizens showed clearly that Communism was supported over freedom, and primarily because of the security factor. Safety and stability were more highly prized than freedom and opportunity.

If now we dare to suggest that this same syndrome characterizes the major religions, as well as the humanist tradition and other quasi-religions, we take a considerable risk. To reduce the offense, I repeat and emphasize that such people are by-and-large just as worthy of respect as the rebels, and often more worthy. The difference between traditionalists and innovators is almost always just an accident of nature/nurture, turning on tiny events. Nevertheless, the parallel exists. The religionists, for example, just like the Communists, seem to be motivated primarily by the security they find, the relief from personal responsibility in deciding the criteria of right and wrong. Once again, Dostoyevsky: "Men prefer peace, even death, to freedom of choice in the knowledge of good and evil." Let Daddy decide; I'll just do what I'm told, like a good boy.

Still another coin in the payoff is the self-esteem, which may swell into smugness, intolerance and ruthlessness. One may gain power, feeding power-hunger. It is all too easy to convince yourself that the end justifies more and more excessive means, and that any personal benefit or satisfaction accruing to you is deserved and incidental.

BEWARE THE MAN WHO WILL SACRIFICE HIMSELF FOR A CAUSE. HE WILL SAC-

RIFICE YOU FIRST.

**The Ties That Bind:** New circumstances make new opportunities. For our generation, the circumstances are radically new, and the opportunities unprecedented in scope. Yet this lesson is extremely hard to assimilate, because traditional mindsets keep us virtually in strait jackets. About the only way out is to examine, repetitively and in some detail, the origins and structure of these mindsets.

**View From the Top:** Logically, one's life plan should be formed from a top-down perspective, i.e., looking first at the main outlines of motivation and goals, thence to the subdivisions and details. As we have already seen, Me-First and Feel-Good constitute the foundations of motivation. In broadest outline, your life strategy should be to survive and try to maximize your long-term satisfaction, improving yourself and revising your specific goals by successive iteration from time to time.

Nothing could be further from the actual practice of almost everyone, almost all the time. The "survival instinct" is mostly irrelevant in the circumstances of modern life, since obvious and immediate threats to life are rare. Reducing the threat of cancer death, for example, or heart attack, by giving up smoking or eating less fat, is not instinctual - on the contrary, any operative "instinct" is to pick up the pacifiers and gobble the goodies. Quitting requires a reliance on intellectual evaluation of longer term prospects, and here most of us are weak-even when we have the support of institutions and a background of extremely solid evidence. Lacking such support-no way, José.

**Ancestral Themes:** We are creatures of culture, and our culture has been created in the past-mainly a past remote from current conditions.

To get a feel for what is important to us- other than the daily necessities of livelihood and family-it is only necessary to look at the themes of literature.

Some of these themes concern counterproductive exaggerations of originally valid drives. One is greed, a distortion of the reasonable need to acquire assets. Another is aggression or power hunger, an unbalanced version of the reasonable need to protect oneself and achieve security. But some themes are so grotesquely perverted from any reasonable substrate that ordinary people can appreciate the absurdity just by looking at it, as we shall see shortly.

**Getting Down to Cases:** So far we have mostly just some general principles, which bear repeating:

**I. Me First:** Whatever I want, I want-at bottom-for myself. The interests of certain others, and of society, are also important to me, but not *intrinsically*-only for the way they affect me in the end. What is important to me is what is important to me.

**II. Feel-Good:** "Wants" occur at many levels and are usually "psychological"; but ultimately every want is based on physiological satisfaction, the attainment of particular brain states -feel-good. (How many basic kinds of feel-good may exist is an important pending problem.)

Note: Some might object that we must distinguish between a criterion of satisfaction and satisfaction itself, or between means and ends. For example (they might say), evolution has designed us to want to copulate to propagate; the feeling of satisfaction we get with sex is not at bottom an end in itself, but only nature's way of getting us to do the job. We deal with this point at some length elsewhere. My conclusion is unchanged: our most basic and most general

goal is feel-good.

To clarify this still further, it simply doesn't matter to us what "nature" or evolution "wants". In personal terms, for example, should a woman want to have as many children as she can bear? That would be "best" from an evolutionary standpoint, in terms of maximum "success" of the species, at least under some conditions--but she would have to be insane or totally unthinking to be concerned with that.

### **III. Future Orientation and Decision Theory:**

The main question in life (from some points of view the only question) is, "What should I do next?" Since past and present are (?) beyond our influence, every decision must be an attempt to shape the future to our liking. Since we cannot know everything about either our circumstances or the results of particular decisions, we necessarily make probability estimates and employ some form of decision theory (for most people, usually very crude or primitive forms!) to arrive at a conclusion. One of our most important tasks as individuals is to educate ourselves to make more logical choices.

**IV. Development by Iteration:** Our decisions are based on our values--but our values cannot and should not be static. Since perforce we are future-oriented, we must ask ourselves not only what we want-now- but what we are likely to want later. Furthermore, we will actively try to shape our future wants, by looking not only at what we are and what we want, but at what we may become and what we ought to want. We develop ourselves and our values by successive iteration.

**V. Self Preservation:** This is almost always the most general and basic of our strategies for expressing our values-simply because life is the condition precedent for all satisfactions. If you



don't exist, you can't feel good. But if you don't exist, you can't feel bad either, and this leads us to the only exception to the rule of self-preservation, viz., if you anticipate a future lifetime preponderance of pain over pleasure, or dissatisfaction over satisfaction, then it makes sense to opt out. But I cannot think of any present basis for any such decision-for anyone! --hence there should currently be no exceptions to the self-preservation value. (Those in "terminal" misery, or with totally bleak outlooks, can at least choose cryostasis rather than oblivion.)

The general primacy of self-preservation means one does not deliberately sacrifice one's life for anyone or anything. The only possible exception might be if one were to make a valid estimate that such refusal would make life permanently and preponderantly unpleasant. More simply put, you might decide that sacrificing someone or something you love would make your continued life intolerable; the question is whether such a judgment would be valid, in light of your future opportunities for growth and healing.

Yes, you or I or anyone, at a particular moment, might be incapable of making the "correct" decision to sacrifice someone or something you hold dear-but that fact changes nothing. After all, many people-perhaps even most-are incapable of suicide in the face of certain torture; that only proves their weakness, not the wrongness of suicide. On a more practical and usual level, many people are incapable of dieting or quitting smoking-the weakness is exactly the same, even in the absence of any current public moral stigma.

It does not follow that you should never risk your life. Risk in fact is unavoidable, the operative question always being the degree of risk, the analysis of cost/benefit, in light of the prob-

able external and internal consequences.

**VI. Shift toward "Selfishness":** Evolutionary pressures have shaped both our drives toward self-preservation and self-sacrifice. But our goals are not the same as the "goals" of evolution (or should not be), and modern conditions are not the same as those of the past; we now have different needs and opportunities. In particular, we now envisage the possibility of indefinitely extended life for individuals, and individual change and growth beyond the bounds of our apparent genetic limitations. In these circumstances, while we cannot disregard social responsibilities—and indeed have more need than ever to cooperate-most of us will have to trim our personalities gradually away from self-sacrifice and toward "selfishness" or enlightened self-interest.

Now let's try to crystallize some of this with at least a few examples.

Item VI above is perhaps the easiest to deal with-and the most repugnant to the tradition-bound.

**Rally 'Round the Flag, Boys (and Girls).** John F. Kennedy said (with a straight face, generating enthusiastic applause), "Ask not what your country can do for you; ask rather what you can do for your country." This preposterous inversion of the natural order -and its general acceptance! -underlines the distortion of what ought to be seen as right and proper.

I have already indicated at considerable length why my own individual interest should have first place in my value system. If this postulate be accepted, it then remains only to show why it is not even in my "long term" self-interest to be too "public-spirited."

Yet again, we have to acknowledge carefully

that some degree of public spirit and even self-sacrifice is in our personal interest; no one denies that (at least in this period of history) the individual relies on the support of society for almost everything, especially including that technological progress and capacity that will be our salvation. (See also the "Problem of the Commons" discussed elsewhere.) The question is rarely either/or; it is almost always "how much?" To this bothersome and unwelcome question there is a bothersome and unwelcome answer: you have to calculate how much sacrifice (or cooperation etc.) is appropriate in each context. But before getting to some numbers ("Numbers?" Yes, so sorry.) Let's note some background facts that can provide a bit of perspective.

**The Inverse Square Law of Concern:** We don't mean this literally, as in Newton's Law of Gravity or Coulomb's Law; we just want to emphasize the common-sense rule that we should be more interested in what is near (to our heart of hearts) than in what is far.

Often this is reflected in the folk wisdom: Charity begins at home; blood is thicker than water; stick to your knitting; bare is the back without a brother to defend it; ein Volk, ein Reich; family first; cleave to each other, forsaking all others; etc., etc.

However, there are also memes pulling us more or less in the opposite direction:

The human family is one; all life is sacred; we are all equally the children of God; I am my brother's keeper; the Golden Rule; the Universal Spirit; the whole is greater than the part; the Law above the individual; etc., etc.

The resolution is clear-cut, although not simple. Other things equal, we should give preference to what is nearest our needs,

and in particular, to the "people" who are "closest" to us. The quotation marks above are used because, for example, some people are more concerned about the comfort of their dogs and cats ("people" in this context) than about starving humans in Africa or Asia or Latin America-and that is more or less as it should be. "Closest" is in quotes because it means psychological closeness, not necessarily geographical; if your children live across the continent, you are still more concerned about them than about your neighbors.

Although clear-cut in principle, the proposition is still far from simple in many cases, for the obvious reasons that (1) you may not be sure yourself what is truly more central to your value system, and (2) it is usually difficult to judge the future effects (internal and external) of the actions being weighed.

What to do? No explicit, simple rule can be given, and we can't resort to the Bob Newhart school of counseling. ("Go with that," or "What do you think?" or "How does that make you feel?") But we can convey some of the flavor with a few gingerly chosen conundrums.

1. Your wife embarrasses you in a restaurant in front of the waiter. Maybe she talks too loud, or makes an inappropriate fuss, whatever.

This is easy: you don't embarrass her, and further embarrass the waiter (if he cares at all) by berating her or giving her dirty looks or kicking her in the shin. You just ease your way out of it, and have a quiet discussion later. The point is that your wife is very close to the inmost circle of your values, and the waiter far out on the periphery-not to mention the fact that, even were it otherwise, it would be counterproductive to throw a tantrum. Relax.

2. Your son has been selling heroin and is a

fugitive from justice. You are in a position to hide him or help him or both, or to refuse to help him, or perhaps even to turn him in.

This is tougher. Your son (presumably, although not necessarily) is valuable to you, yet your moral principles are close to your heart also. On top of that, it is hard to tell the realistic consequences of either course of action, on yourself and on him; there are many possible future scenarios of actions and feelings.

In a science fiction story many years ago, the central character was able to make anyone (everyone) love him; he then blithely went around committing crimes, secure in the belief that no one would hurt or even oppose him. But his father, weeping with love and dismay, finally shot him; the father put duty above love—or, to put it another way, his principles were dearer to him than was his son. On the other hand, we remember the story of David in the bible, who put both sexual love and fatherly love above principle (and still remained beloved of God).

3. Solidarity forever? How much loyalty do you owe your union? This is a nice intermediate case for investigation—not as simple as (1) above, not as uncommon as (2) above.

Right off the bat we see a moral conflict in even belonging to a union at all—several, in fact, but let's concentrate on one. That is the conflict arising out of the nearly universal grab-all-you-can stance of unions ("We want more"), with essential disregard for the interests of anyone else. Never mind the shareholders (if you work for a company), or the citizens (if you work for a government), or the customers, or the nation as a whole—just give us union people more, or else.

This is not to say that unions should be abol-

ished, or that domination by ownership/management might not be worse, given free rein; but we must acknowledge the plain fact that unions do, indeed, usually put the interests of their own membership and management (not necessarily in that order) ahead of all others. (This might be looked upon as organizational me-first and feel-good; social and political bodies do in some ways have a life of their own.)

On the more-or-less objective side, the determination is made by "simply" deciding, in time of crisis or decision, whether your personal long-run interests are best served by sticking with the union (or its policy) or going your own way. This will seldom be easy, but in principle, there is no ambiguity; your own interests come first. And, of course, the results of your action are not fixed by that action alone, but depend also on further decisions and actions you may take down the line—for example, what kind of job you take next and in what location etc.

On the more-or-less subjective side, the practical difficulties are even greater. If you not only "betray" the union, but are seen as a traitor, then not only may your erstwhile comrades have it in for you, but you may feel unclean also. But again, the outcome is not set in stone at the moment of decision; you can plan ahead, make objective and subjective midstream corrections, and so on.

A very substantial element of any correct calculation depends on assessing your own reaction to adversity or opportunity. If you tend to fold under pressure, then breaking with tradition or habit, or inviting criticism, will be hazardous indeed. If you are tough, resilient and creative, then you need not place as much emphasis on conformity. Yet a final reminder: conformity or passivity is not automatically safe either. There



will not necessarily exist any safe consensus or precedent. At the crossroads, or under new conditions, any decision is risky. Failing to make a conscious decision is itself a choice, and often a poor one.

4. Military service? Who knows-maybe the draft will come back. At any rate, this question allows us to review a little of the cost/benefit consideration when actual physical danger is involved (which otherwise seldom happens in modern circumstances).

As already noted more than once, me-first/feel-good orientation never allows sacrifice of one's life (unless one can otherwise confidently predict a permanently bleak future). But reasonable risk is permitted and often necessary.

Should a young man put his actual carcass on the line in a war situation? Near the end of the Viet Nam war, some of my students said, "Hell no, I won't go." The implication usually was that accepting induction was equivalent to suicide. Looking at the actual numbers, however-if I remember correctly-revealed something like this: Roughly 50,000 had died, over a period of several years, out of perhaps a million who had served; this would suggest a 5% chance of dying, going in. If you balance a 5% chance of dying against a possible prison term-or exile to Canada or whatever-if you defy the draft, the decision is certainly not automatic.

Of course there are other complications, including your politics and the way you feel about yourself. Most young men need to prove their courage to themselves and to others. This may not be especially "logical", but it is a fact of life that cannot be instantly wished or willed away. An attempt to reshape oneself instantly is just as stupid as resignation to conditioning. Most young men cannot accept feeling cow-

ardly, or being seen as cowardly, regardless of logic, except at the cost of severe damage to the persona.

Next, look at the Gulf War in 1991. Even though there was no draft this time, some war protesters used Viet Nam war casualty figures to rally public opinion in opposition to the war. But such statistics were wishful thinking in support of previous opinions. Many people, including myself, pointed out clear evidence that our casualties would almost certainly be very light, as proved to be true. Any case against that war had to be on other grounds than likely American casualties.

Much more could be said, but you get the drift. It is always crucial, and usually difficult, to consider all the relevant factors and to weigh them realistically.

**The Rat Fink:** Small children are almost invariably taught, "Don't be a tattle-tale." Whistle-blowers are at risk not only from above but also at their own levels. Mafiosi reputedly (used to) take blood oaths of omerta. Policemen don't peach on each other. Everybody hates a rat-fink.

Certainly many tattles are unnecessary, even spiteful, and potentially damaging to the character of the tattler as well as incurring the wrath of the tattlee. And yet, there are obviously many times when the potential tattler would be doing a favor to someone or to many, and often in the end, even to the one squealed upon.

So do I just dodge the issue again, and say figure it out on a case-by-case basis? Not quite. This category of problem is one of many in which often the best ploy is neither to charge head on nor to run away, but to find a third option. Accomplish what you want by indirection. Cultivate the cunning of an Odysseus.

Shame the perpetrator privately, or coerce him, or trick him into giving himself away, or somehow ensure that his dastardly deed goes unrewarded.

**Tess Trueheart, the Liege Lord, and the Los Angeles Dodgers-What Price Loyalty?** Who is likely to be happier-Tess Trueheart or Frances Fickle? Conventional wisdom says the former, and on average, that is probably correct. At the least, she seems more likely to retain her self-esteem; in addition, some people may treat her better out of respect for her sense of loyalty. On the other hand-

Perhaps Tess will end by thinking herself a fool, and maybe her predictability will tempt some to victimize her. There are many variables and imponderables, which one is compelled to attempt to ascertain and quantify. In the movie Robin and Marian, back in the eighties, Robin Hood (Sean Connery) tells Maid (or former Maid) Marian (Audrey Hepburn) about the atrocities of the Crusaders. After taking the city of Acre, King Richard ordered thousands of women and children put to death, and thousands more sold into slavery-to the approbation of the clergy, in the name of Christ. When Marian asks why he still remained loyal to Richard, Robin replies, "He was my King." (And, no doubt, Christ was still his God.)

Loyalty-top down and bottom up-is frequently a worthy habit. But sometimes it is only a habit, with no adequate justification. As an example of loyalty that might be considered to border on absurdity, consider professional sports. Some "fans" identify with the baseball Dodgers-once of Brooklyn, then Los Angeles, maybe somewhere else by now; I don't follow sports any more. They feel good when the Dodgers win, and hoist a few beers. They feel bad when the Dodgers lose, and-you guessed it-hoist a

few beers. Yet a cynic might say, "You nuts? So one buncha hired freaks beats another buncha hired freaks- I could care less." (Meaning "I couldn't care less.")

Of course, the cynic may be both right and wrong. He is right that it doesn't "really" matter to us, or shouldn't matter, which team wins. But he may be wrong in implying the fan shouldn't identify with the team; after all, he enjoys his self deception, and it may even contribute to other kinds of community spirit. A little double-think isn't necessarily a bad thing-if it doesn't go too far and if we don't take it too seriously.

If you need proof, just think of an adult playing with a child, on the child's level. If you play "horsie", does that make you a juvenile? Yes, to some extent- but what of it? The child enjoys it, you enjoy the child's enjoying it, and you even enjoy it yourself -nothing wrong with that. We all need more than one arrow in the quiver.

**No Fate Worse than Debt:** Emotional debt, that is. Just what do you owe your relatives, friends, associates, community, country, humanity, the genus homo, the order primates, the class of mammals, the planet earth, the Milky Way galaxy, and the four-dimensional continuum (assuming one day we find others)?

Once more, we can cut to the nut by first taking the broad perspective: What is our basic value? It is to feel good, which means to plan to maximize future feel-good. This will often entail reviewing some "givens" of ordinary life, including family loyalty.

An initial temptation is just to cut loose from whatever annoys, impedes, or dissatisfies you. For example, how can you be considered indebted or hostage to a situation in which you had no initial choice? You didn't earn a good

family and you didn't deserve a bad one; you just fell into it, willy nilly. If you find yourself in a messy situation—whether you stumbled into it or were thrust into it or were born into it—why not just walk away? Why not just jettison the unwanted cargo?

Obviously there are several practical dangers in just cutting the ties that bind. In particular, you may not realize how deeply they are entwined in your psyche, nor how difficult the adjustment will be, how stubborn is habit and how tenacious guilt. That aside, just how real or valid are these various moral or emotional debts?

Again, there is a potential trap. The joyful radical me-firster may be tempted to say the bottom line is that the naked self-circuit, the core psyche, the fundamental you, cares nothing for anyone or anything external, except as a means to its single end of personal satisfaction. The problem—one problem—is that we don't yet know the structure of feel-good.

We remember that, presumptively, feel-good arose in connection with fundamental evolutionary needs, such as feeding and reproducing. But derivative or higher-level kinds (or causes) of feel-good quickly arose, and in the conditions of modern life, there are many "intellectual" or "moral" or "aesthetic" values that take precedence over the more obvious biological drives. (Sometimes you would rather listen to music than eat, or would rather keep on playing ball than go home to eat, even if you are hungry.) We don't know the (hierarchical?) relationship between the various values, or how many there are at bottom. Now, if it turns out that some type(s) of "intellectual" values have independent status, then that could provide a link between your welfare and their welfare—not just a practical link, but (conceivably) a struc-

tural link. Once again, caution is required.

That also aside, we can attempt at least a first-approximation assessment of duty-to-family vs. freedom-from-family.

There is always a social contract, with both external and internal implications. Unless you deal with others in ways that promote feelings of good will on both sides, you are likely to fare poorly in both your objective situation and your subjective life. As usual, you are forced to make your own calculation and hope you have it right.

What do you owe parents-whom you didn't choose, but who have "given" you much? In ordinary circumstances, you are probably best off doing (and feeling) the conventional thing: give (and accept) love, help, and money, within reason.

But what if they want or need or think they need to give or receive what seems beyond reason? You can try discussion or conventional counseling avenues, but what if these don't work? Then you can consider "divorce"—and the mere fact that you see this as a fall-back position may give you more patience before it comes to that.

How about children? In a sense, you did choose them, and may feel you bear some responsibility for the way they turned out. Or/and you may feel that they "owe" you for their upbringing and your years of giving. But the "tough love" counseling of recent years offsets some of that, even from the point of view of the children.

If it comes to the extreme of "divorce", you may find a void in your life with nothing in it but guilt and regret—or you may find mainly blessed relief. Again, professional counseling—whether or not very competent—may offer a way out, or



a way to do what you must with less guilt. If you are strong enough, and good enough at assessing your own resources and reactions, as well as those of the children, you can make your own calculations and decisions. With other relatives and friends it is usually easier, and "divorce" should be considered more often and more readily than is presently the case. Why should accidents of propinquity dominate your fate?

**I Feel for You-The Care & Feeding of Empathy:**

Cats play with mice, and orcas play with seals, and it doubtless never crosses their minds that the prey is suffering. American Indians, as previously mentioned, (after killing a deer, for example), traditionally would say, "Forgive me for killing you, little brother, but we need food. Go in peace with the Great Spirit." Something like that.

On the third hand, some tribes practiced atrocious cruelties against human captives, with the squaws said to be usually the torturers.

In modern America and Europe, among the professional humanitarian classes (clergymen, charitable organization administrators, certain bureaucrats), there is an acute awareness of human suffering in backward locales or in time of catastrophe. Their typical response is to attempt rescue by giving, or by urging others to give-but modestly. Almost no one demands or offers a degree of giving that would seriously compromise the standard of living of the giver. The professional humanitarians, by and large, live very comfortably.

Is it wrong to give only a little, when the needs of others are so great? Is it wrong to give anything at all, if your own interests are paramount? Is empathy desirable or even necessary? If empathy is highly developed, how can we live with the knowledge of pervasive mis-

ery and agony in so much of the world and in so many species?

As usual, it turns out that there are many sensitive variables, so no simple answers and no guarantees are possible; but we can still make some headway in setting up guidelines.

**Not the Best of All Possible:** It takes bottomless ignorance, or an exceedingly narrow focus, to believe that this is a good world, let alone the best of all possible worlds.

In Africa, millions starve- disproportionate numbers of them being innocent infants- and if foreign aid is delivered, their countrymen steal it from the starving. In the Balkans, tribes savage each other and the populations of cities become scavengers. In the U.S., gangs commit random drive-by shootings and babies are found with syphilis of the throat. Everywhere, pets and farm animals are frequently abused; chickens are raised by the millions in cages that hardly allow them room to stand or move. Everywhere, wild creatures mostly die young, through starvation, disease, or predation. Read *Candide* — there have been some intervening improvements, in some parts of the world, but the big picture is still sickening. Even the luckiest of us cannot live long without watching parents or siblings or children-let alone pets-suffer and die.

Does it follow that we "should" wear sackcloth, or despair, or martyr ourselves; or on the other hand, that we should harden our hearts and avert our eyes? Neither, in most cases.

**The Ups & Downs of Empathy:** A high degree of empathy is important for a realistic outlook—i.e., to anticipate correctly what the actions and reactions of others will be.

This might seem to be contradicted by the suc-

cess of people like Jhingiz, Attila, Tamerlane, Mao, Hitler, Stalin, and Pol Pot, not to mention thousands of lesser tyrants, but it isn't really. Success has many elements, of which empathy is only one; and empathy itself is not monolithic, but may be possessed in part -somewhat as vision impairment can be only partial and sometime. And the successes of tyrants have always been only partial and temporary. (Yes, the same thing is true of the successes of good guys.)

Further, there seems to be a rather close connection between empathy for others and empathy for your past and future selves. Success in life does indeed require the ability for "cold" calculations; but the bottom line is feeling, and if you can't appreciate how others feel, and how you are likely to feel in the future or in different circumstances, you are not likely to be very successful.

Nevertheless, it is undeniably essential to insulate our nerve ends most of the time. A physician, however humane, just cannot think too much about the suffering and prospective suffering of his patients; it usually wouldn't be good either for him or for them. Counselors and social workers just can't afford to soak too much or too long in the wretchedness of their clients. And all of us would be overwhelmed and destroyed if we fully opened our minds and sensibilities to the insight of Mel Brooks: "Life stinks." (Lately we see bumper stickers- "Life sucks, and then you die.")

**The Safest Place is on a High Wire:** The solution, once more, is a juggling or balancing act. We can't be effective, and we can't feel good about ourselves, without empathy; and we usually need more than we have. But protection and advancement of the self is the First Commandment of biology. So once more the

answer is simple in principle, difficult in practice --we train and expand our empathy, but keep it under tight control, turning it on and off as the situation demands.

Will this deteriorate into "rationalizing"-doing first what is easiest and finding excuses for it later? Of course it could; all of our honesty and resourcefulness (all of our scientific training) will be demanded to balance between the sides of this high wire.

The high wire is not exactly safe, but it's worse down below -no net, nothing there but a deadly swamp on both sides.

**The Light Fantastic:** Apparently, relatively little has been written about the merits of fantasizing. When it is mentioned at all in psychological works, it is usually seen pejoratively. Walter Mitty types are usually seen as second or third raters, losers or at least underachievers. Admiration is usually reserved for those who can point to real-world, objective accomplishments, especially those acknowledged by society. The couch potato receives plenty of disdain, and he is indeed the cheapest kind of fantasizer, since he doesn't even create his own fantasies for the most part, but buys or rents them prepackaged.

Yet fantasizing, in its many varieties, is a potential source of feel-good of a most remarkable character. It transcends the natural world in a certain sense. You cannot do what is physically impossible, but you can imagine yourself doing it, and that imaginary action can provide real enjoyment.

But the extremes are not necessary. You needn't live in cloud-cuckoo land nor abandon your sense of reality, but you can still make excellent use of imagination. It can be a temporary retreat or hidey-hole, a place of refuge and

solace. It can be virtual reconnaissance or exploration. It can be something as simple as practicing a speech while imagining yourself at the podium, or something as elaborate as a multibranch game plan.

Most of us do a lot of fantasizing in any case. After all, even reading nonfiction often involves a certain amount of exercise of empathy, putting yourself in the situations described. In active enterprises, planning is required, and this demands creation of scenarios and solutions of problems. How you feel about it, or how you would feel, is often important and sometimes primary. You act out a scenario in your mind, and this opens doors and windows. When children fantasize, it is usually tolerated or even approved as part of learning. For adults, approval may be less or lacking, but the appropriate kind and degree of beneficial fantasy is strictly individual. In any case, it's a resource which should not be forgotten.

**New You-Phase One:** Eventually, you may find it necessary to retrofit yourself in some major ways involving new hardware and applicable only through advanced nanotechnology. Meanwhile, you will almost certainly find it necessary, or overwhelmingly desirable, to modify your habits in non-trivial ways, and this can often be done with relative ease, beginning today.

In particular, most of us worry too much about the wrong things, feel too guilty about the wrong things and not guilty enough about other things. We allow ourselves to become and remain creatures we don't like very much and that are ridiculously ineffective. We embrace grief and flee happiness. Much of this can be changed by amazingly simple techniques. Simple-but not easy.

Not easy-but far from impossible. See e.g. George Weinberg's books.

Samuel Butler (17th Century English poet) wrote to more or less opposite effect:

*He that complies against his will Is of his own opinion still. Hudibras*

Only sometimes. Often enough, habits inculcated by compulsion or necessity become ingrained. Those who say that habits can be changed by conscious choice and practice are bucking a majority which still takes a gloomy view about the possibility of teaching old dogs new tricks.

For example, P.M. Symonds has written that the evidence points not only to the persistence of traits of personality throughout life but also to the great resistance of personality traits to change. Gardner Lindzey et al have found compelling evidence for the importance of genetic factors underlying certain personality traits. And the psychoanalytic school, beginning with Freud, holds that events in early life exert influences exceedingly hard to counteract, a view which is certainly consistent with the indifferent success of analytic methods.

Abraham Maslow's views are at least partly consonant with the James/Weinberg type of behaviorism. He speaks of an "inner core" of the personality, formed in the first few years of life, which must be discovered if one is to find his "identity"; but he also says of the self that it is partly also a creation of the person himself, that every person is, in part, his own project and makes himself. Again, the tail wags the dog, and at least an important part of the person is simply a bundle of autonomous habits, subject to change.

The better known behavioral therapists of this



century, e.g., H.J. Eysenck, have had a somewhat different focus in applying learning theory to the elimination of neurotic symptoms, often using a simple "conditioning" approach reminiscent of Watson's work with animals; for example, a child may be cured of bed-wetting simply by wiring the bed so that a bell rings whenever he begins to urinate.

Needless to say, the analysts vigorously attack the behaviorists, claiming among other criticisms that a symptom eliminated by conditioning is likely to be replaced by another symptom, perhaps worse, if the "underlying unconscious" cause is not removed; but the behaviorists insist the facts support them, and that in many cases, at least, there is no "unconscious cause", but only the syndrome itself.

Introspection and common sense make a rather compelling case, I think, that bad habits sometimes stand nearly alone as a circularity of cause and effect. Certainly there had to be some initiating propensity and proximal cause, and certainly, once established, the bad habit must have some mutually-reinforcing interaction with other aspects of personality. Nevertheless, bad habit patterns can often be changed with no real damage to the underlying person and without substituting another, equally bad habit.

Taking this viewpoint, Weinberg's position is in some important respects different from that of the classical behaviorists, particularly in his attention to the total patient and his motivations, rather than to isolated syndromes. But he is also attacked by the analysts, and has some wry comments about those who insist that a "seeming" personality change leaves one "really" the same underneath, however great the objective and subjective improvement may be.

We have not proven that "normal" people can

be much improved by the same techniques that are used with "neurotics," but no one is fully normal anyhow. ("There are two kinds of people-the neurotic and the psychotic.") Nearly all of us could probably be substantially improved by the systematic use of existing techniques. If we include "operant conditioning", by means of which one can apparently attain conscious control even of his heart beat and brain waves, as the yogis are said to do, then this partial and current armamentarium alone gives promise of a giant step forward. By middle age I had become much less fearful than I was as a child or youth. Some of this fear reduction may result, to be sure, from diminished sensitivity- our antennae become stiffer with age-but introspection convinces me that some of it represents genuine learning and growth, the ability to size up dangers, put them in perspective, and handle them in a relatively calm way. Phasing out fear is only one small aspect of the improvement expected in our personalities as supermen, but it is one most of us can understand and appreciate readily. Not to shiver, not to quake, not to feel the knot in one's stomach, not to be gripped by the shrinking confusion of mind or paralysis of will- not to be afraid any more, how marvelous!

Another critical problem is that of monitoring one's own conditioning. According to Eysenck, despondent patients and normal introverts are characterized by the quick and strong formation of conditioned responses, while psychopaths and normal extroverts are characterized by the weak and slow formation of conditioned responses. Thus deviation in either direction may prove disastrous. And this is oversimplified; our problem will be to screen endless categories of conditioning reactions and optimize the rate and degree of each. There are some things that we want to learn thoroughly, in a

single lesson-mathematical theorems and tables of basic information, how to walk without stumbling in the reduced gravity of the moon, how to recognize poison mushrooms, etc. Then there are other things that we want to learn only through thick (but not impassable) barriers of suspicion that our value systems are wrong, that a friend is stabbing us in the back, or that it is necessary to betray a commitment, for example.

A related problem is that of adjustment versus responsibility. In contemporary life, we all know easygoing people who have apparently made a marvelous adjustment-by blinding themselves to dangers and responsibilities (for example, letting children run wild, untrained and unprotected); and on the other hand, there are those who assume more responsibility than they can handle, and succumb to neurotic anxiety. The latter will be the greater danger for superman, whose longer attention span and heightened awareness of implications may tend to overwhelm him with demands.

Finally, large elements of uncertainty will always be present when we have no fixed ultimate goal, when the horizon continually recedes as we advance, when being is subordinate to becoming for the indefinite future. As Maslow put it, growth has not only rewards and pleasures but also many intrinsic pains. Each step forward is a step into the unfamiliar and carries dangers. It also means giving up something familiar and good and satisfying.

It frequently means a parting and a separation, with consequent nostalgia, loneliness and mourning. Growth is in spite of these losses and requires courage and strength in the individual.

There is no guarantee that the requisite courage and strength will always be found in time, but I am reasonably confident we can gain sufficient control of our nervous systems, so that the major threats will not be from within.

As for the particular trait of generosity, we may be able to throw light on some of its aspects by considering the word itself. "Generosity" is usually construed as giving more than is needful, or more than is expected, or more than is customary. But to understand the anatomy of this generosity, we must ask what is needful, and why; what underlies the expectations and the customs. What is our purpose in giving more than is needful, or expected, or customary? If it is to inspire gratitude, because we enjoy the gratitude or want to benefit from it, then giving that much was needful after all, and in a private sense, the generosity did not exist. If our motives were more neurotic, if we needed to bolster our self-esteem or assuage guilt feelings, then again, in a subjective sense, no generosity was involved. In the last analysis, we do everything to please ourselves, or to please some aspect of ourselves, or to avoid a worse eventuality (even though our actions do not necessarily bring the desired result).

## Next Issue:

### *Chapter Nine: Identity & Survival*

#### *1 — Meat*

# 10 Worst Mistakes in Cryonics

Don't ruin your chance for a successful suspension

## 1) Not signing up ahead of time

Becoming a member, having contracts in place, and having paperwork in order should not be a last minute decision. Waiting until the last minute or after death results in an unnecessary delay of care or worse- No suspension at all! Don't wait. Sign up here and be prepared.

<https://www.cryonics.org/membership/>

## 2) Not providing proof of funding

Some people believe that they can worry about funding later or if they have funding, they have put off providing proof of funding to CI. This should be done annually. Failing to provide this can result in a delay of care while the funding clears, which can take weeks. Send your proof of funding to CI now to be prepared.

## 3) Not telling anyone your plans

Being reclusive or not telling family or friends your wishes is not recommended. You should not be afraid to tell those around you what your wishes are, especially your next of kin. Wearing a bracelet, necklace or having identification or other items in view can speak to your wishes. This is all you have when you can't speak for yourself. Disasters have resulted in the past from not sharing. Talk with your family, close friends and your estate attorney, so you can be prepared.

## 4) Not planning

Many think cryonics is a turnkey service where you can just sign up and let fate take over. No matter how much you pay for cryonics, you are the only one who can make sure that you will have the best chance by planning. CI has provided a lot of information on our website and in our standby manuals. Those who plan succeed those who don't fail.

For more information visit: <https://cryonics.org/category/members/standby/>

## 5) Not notifying CI of Emergencies

There is no way that your cryonics provider can help you if they do not know of your emergency. Your family, friends, standby group or next of kin must immediately contact CI when you are having health issues or worse. It is also important for CI to know if you have up and coming surgeries or procedures, including terminal illness. Patients with a diagnosed terminal illness could enter hospice care, which might help your cryonics situation vastly. Any delay in notifying us directly could result in a poor suspension. Those helping you must have simple and clear instructions.

## 6) Committing suicide

Anyone who commits suicide who is not terminally ill or breaks a local law in doing so is potentially putting both themselves and our organization at great risk. CI will not risk itself for people who engage in behavior that goes against our mission to preserve life. Such activity will likely lead to an autopsy and long delays, rendering the suspension process substandard or impossible to carry out.

Do not consider cryonics as a way out of your problems. You are likely to not get suspended under those circumstances. If you do not have a terminal illness and are considering suicide, you should seek mental health advice and treatment as soon as possible. <https://www.mentalhelp.net/articles/depression-hotline/>

## 7) Engaging in Risky or illegal activities

Risky behaviors or associations that lead to the patient dying around suspicious circumstances will also likely lead to mandated autopsies that will also stand in the way of your cryonics wishes. It is best to use common sense and not put yourself in harm's way. Not only could your life be ended, so too could your chances of cryonics suspension or future reanimation. Use common sense and stay safe.



# 10 Worst Mistakes in Cryonics

## 8) Providing financial or legal incentives that encourage your **not** being suspended.

Leaving all of your insurance or cryonics money to family if you are not suspended is certainly an option at CI, but ironically it does provide financial incentive for hostile family members to block your suspension. As often is the case, people will make sure you are not suspended to get a hold of your money.

One suggestion is to leave family and next of kin some separate money from cryonics funding while suggesting that Cryonics funding go to cryonics as a donation no matter if you are buried or suspended. In addition, family or next of kin can be further compelled to cooperate if they will actually lose the money that is allocated to them for not cooperating. It is also suggested that your family be made fully aware of your wishes and stipulations, so they know what the results of their actions will be. You want to make sure you put incentives and disincentives in the correct place, so that your wishes are honored. It is suggested that your will and cryonics documentation reflect this and get reviewed by an attorney. See <https://cryonics.org/members/protect-yourself-from-legal-threats/>

## 9) Not removing a hostile next of kin from rights to your remains and finances

In many states and areas you can legally remove a hostile family member or next of kin from your estate. You can reassign someone who is sympathetic to cryonics and who has the legal authority to disposition of your remains, as well as your assets. In some states and locations there are disposition of remains reassignment documents, as well as powers of attorney, both in regards to financial as well as medical decisions. The executor of your will or anyone involved with making decisions should

be sympathetic to your cryonics wishes. It is your responsibility to make your wishes very clear and to remove any doubt or potential legal resistance from family or next of kin.

We suggest seeking legal advice to help you in this regard. Some members have even made a video statement of their wishes and given it to both their cryonics organization as well as their attorneys. Not being careful could mean that you don't get suspended, despite your wishes. Many are surprised to learn that they lose their rights upon legal death. See an attorney and prepare.

## 10) Dying under less than favorable conditions

This seems harder to control than the other situations, but there are some things you can do to make your situation more favorable. You can diet, exercise and follow the latest official medical advice to stay healthy longer. The longer you are alive, the better the technology will probably be for suspending you and the closer we will be to a future that may be able to reverse your condition.

You can also avoid travel to remote or hostile places where such travel is risky. Some overseas travel can result in long delays both logistically and bureaucratically. In general, dying near your cryonics provider or cryonics standby group helps your chances. Living a healthy lifestyle and staying sociable, while surrounding yourself with people who will act on your behalf is paramount. Building solid, positive relationships with good people is probably one of the most important things you can do to have your wishes honored. Take care of yourself and maintain social connectivity.



## Bulletin Board



### Writers Wanted

*Got something to say?*

The CI Newsletter is looking for submissions from our readers!

If you've got a great idea for a story, please forward it to:

**dg@cryonics.org**

### CRYONICS QUESTIONS?

*Need some help with your membership?*

*Want to understand your suspension options?*

*Need to fill out important cryonics paperwork?*

### CONTACT US!

*Our team is here to help.*

**1-(586) 791-5961**

### FREE Memberships?!!

*Did you know the Cryonics Institute offers FREE LIFETIME Memberships for minor children of paid Lifetime Members? Any minor children (under the age of 18) of fully-paid Lifetime Members are eligible for a permanent Lifetime Membership of their own. If you'd like to give your children the priceless gift of a second chance of life with you in the future, please contact us at 1 (586) 791-5961 and ask about Lifetime Membership Benefits.*



Show the world you support cryonics with CI gear from our **Cafe Press store**.

