ORGAN BANKING SUMMIT

FEB 26-28, 2015

PROGRAM GUIDE

ORGAN PRESERVATION ALLIANCE

THE THIEL FOUNDATION

new organ

Society for Cryobiology

ORGAN BANKING SUMMIT 2015

THE DEVELOPMENT OF LONG-TERM BANKING OF ORGANS AND OTHER COMPLEX TISSUES

TO CATALYZE A VITAL NEW INDUSTRY THAT PERFECTS THE ORGAN PRESERVATION PROCESS, SAVING AND ENRICHING MILLIONS OF LIVES

PRESERVATION OF ORGANS WOULD ENABLE

- BETTER MATCHES
- FEWER REJECTIONS
- LESS IMMUNOSUPPRESSION
- MORE ORGANS
- LOWER COSTS
- LESS DISEASE TRANSMISSION
- MORE LIVES SAVED
- FERTILITY PROTECTION

THE NEED IS ENORMOUS AND WHILE, BANKING IS AUDACIOUS, IT'S POSSIBLE TO CRACK BY COMING TOGETHER

Locations:

Scientific Young Investigator Hackathon at NASA Research Park / SU Labs

Lawrence Berkeley National Laboratory Site Visit

Large opening day at the brand new Bio X Campus at the heart of the Medical and Engineering Schools at Stanford

Pre-, Core- and Post-Events at the Sheraton Palo Alto

Participants:

Invited and Recommended Young Investigators

Speakers and Participants at the Multi Day Organ Banking Summit

Scientists and Interested Parties (VC, Biotech, etc) + Stanford Med School, Biosciences and Engineering Faculty/ Students

Speakers and Participants at the Multi Day Organ Banking Summit

SPEAKERS INCLUDE WORLD LEADING SCIENTISTS FROM:

HARVARD/MGH/MIT, STANFORD, BERKELEY, UOFM, CARNEGIE MELLON, 21ST CENTURY MEDICINE, T3 - TISSUE TESTING TECHNOLOGIES

Organ Banking Summit Host Professor

UTKAN DEMIRCI, DIRECTOR OF BIO-ACOUSTIC MEMS IN MEDICINE LABS AT STANFORD UNIVERSITY

Creator of innovative high-throughput nanoliter cell manipulation technologies for cryopreservation

MEHMET TONER, PROFESSOR AT HARVARD/MGH AND MIT

Co-founder of the Center for Engineering in Medicine and co-Author of 2014 rat liver preservation breakthroughs published in Nature Medicine

GREGORY FAHY, CHIEF SCIENCE OFFICER AT 21ST CENTURY MEDICINE

Lead scientist behind the first successful transplant of a cryopreserved and vitrified mammalian organ (rabbit kidney)

JANET ELLIOTT, CANADA RESEARCH CHAIR IN THERMODYNAMICS AND PROFESSOR AT UNIVERSITY OF ALBERTA

Inventor of engineering modeling derived protocols to vitrify human tissues; World expert on thermodynamics in cryobiology

MICHAEL TAYLOR, ADJUNCT PROFESSOR AT CARNEGIE MELLON AND VP FOR R&D, T3 - TISSUE TESTING TECHNOLOGIES

World leader in vitreous cryopreservation approaches of tissue systems

BORIS RUBINSKY, PROFESSOR AT UNIVERSITY OF CALIFORNIA, BERKELEY

Discoverer of fish antifreeze proteins for cryopreservation solutions and innovative isochoric cryopreservation approach

JOHN BISCHOF, DIRECTOR OF BIOHEAT AND MASS TRANSFER LAB AT THE UNIVERSITY OF MINNESOTA

Inventor of award-winning rewarming approach based on radio frequency heating of nanoparticles in cryoprotectant solutions

KELVIN BROCKBANK, PRESIDENT AND CHIEF SCIENCE OFFICER OF T3 - TISSUE TESTING TECHNOLOGIES

Inventor of clinical cryopreservation methods currently employed for viable meniscalallografts, allogeneic heart valves, ligaments, and vascular grafts

KENNETH STOREY, CANADA RESEARCH CHAIR IN MOLECULAR PHYSIOLOGY AND PROFESSOR IN BIOCHEMISTRY AT CARLETON UNIVERSITY

Creator of new approaches of gene activation that allow organisms to endure and flourish under extreme conditions, such as the frozen “frog-sicles”

ERIK WOODS, PRESIDENT OF THE INTERNATIONAL SOCIETY FOR CRYOBIOLOGY, SENIOR VICE PRESIDENT AND LEAD SCIENTIST, COOK REGENTEC

Developed enhanced methods for the preservation and banking of umbilical cord blood-derived stem cells

IDO BRASLAVSKY, DIRECTOR OF THE FOOD-BIOPHYSICS AND CRYOBIOLOGY LABORATORY AND PROFESSOR AT THE HEBREW UNIVERSITY OF JERUSALEM

Pioneer in interaction between Antifreeze Proteins and ice, creator of devices that can monitor the fluorescently labeled proteins with high sensitivity

YOED RABIN, DIRECTOR OF THE BIOTHERMAL TECHNOLOGY LABORATORY AND PROFESSOR AT CARNEGIE MELLON UNIVERSITY

World leader on thermo-mechanical stress and structural damage in cryopreservation;inventor of the cryomacroscope; developer of ultra-miniature, wireless, implantable “cryo sensors”

BARRY FULLER, LEAD GLOBAL PROFESSOR AT THE UNESCO CHAIR IN CRYOBIOLOGY AND PROFESSOR AT UCL MEDICAL SCHOOL / ROYAL FREE HOSPITAL

Pioneer of bio artificial liver and preservation of the largest volume metric organoid bulk - 2 liters of liver spheroids

ALEXANDER PETRENKO, HEAD OF THE BIOCHEMISTRY DEPARTMENT AND PROFESSOR AT THE INSTITUTE FOR PROBLEMS OF CRYOBIOLOGY AND CRYOMEDICINE NAS OF UKRAINE (IPC&C) AND KHARKOV UNIVERSITY

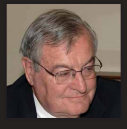
Creator of methods for the preservation of stem cells and bioartificial tissues

GLORIA ELLIOTT, DIRECTOR OF THE BIOSTABILITY LAB AND PROFESSOR AT UNIVERSITY OF NORTH CAROLINA – CHARLOTTE

Creator of next generation preservation agents for the stabilization of biologics and leader in applying molecular understanding to improve cryo processes

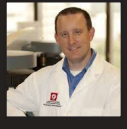
ROBERT N. BEN, CANADA RESEARCH CHAIR IN MEDICINAL CHEMISTRY AND PROFESSOR OF ORGANIC AND BIOORGANIC CHEMISTRY AT THE UNIVERSITY OF OTTAWA

Creator of novel small molecule ice recrystallization inhibitors as cryoprotectants for the long-term storage of biological samples and tissues



JOHN G. BAUST, UNESCO PROFESSOR, CHIEF SCIENTIFIC ADVISER AT CPSI BIOTECH, DIRECTOR OF THE INSTITUTE OF BIOMEDICAL TECHNOLOGY AT THE STATE UNIVERSITY OF NEW YORK, BINGHAMTON

Expert in the responses to low temperature exposure elicited by mammalian cells, tissues and organs with focus on cryopreservation, cancer biology and tissue engineering

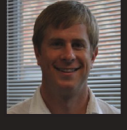


JASON ACKER, PRESIDENT-ELECT OF THE SOCIETY FOR CRYOBIOLOGY AND PROFESSOR AT THE UNIVERSITY OF ALBERTA

Creator of new methods for the long-term storage of a number of cell types and tissues

ADAM HIGGINS, DIRECTOR OF THE BIOTRANSPORT AND BIOMEDICAL PROCESS ENGINEERING LAB AND PROFESSOR AT OREGON STATE UNIVERSITY

Expert in mathematical modeling and optimization of cryopreservation procedures and high flow rate microfluidics for chemical processing



JAMES BENSON, BIOMATHEMATICIAN PREDOMINANTLY FOCUSING ON CRYOBIOLOGY AND ASSISTANT PROFESSOR AT NORTHERN ILLINOIS UNIVERSITY

Expert biomathematician predominantly focusing on heat and mass transfer and cryoprotectant toxicity problems and optimization in cryobiology

DAYONG GAO, DIRECTOR OF THE CENTER FOR CRYO-BIOMEDICAL ENGINEERING AND ARTIFICIAL ORGANS AND PROFESSOR AT THE UNIVERSITY OF WASHINGTON

World expert and inventor of novel technology and instruments for cryopreservation and biobanking

BRIAN WOWK, CRYOBIOLOGIST AND SENIOR PHYSICIST AT 21ST CENTURY MEDICINE

Discoverer and developer of synthetic ice-blockers; Leader in the solid organ cryopreservation field

JOHN MORRIS, FOUNDER AND CEO OF ASYMPTOTE

Leading specialist in cryopreservation, with focus on liquid nitrogen-free and clean-room compatible storage of live biological samples

JOÃO PEDRO DE MAGALHÃES, DIRECTOR OF THE INSTITUTE OF INTEGRATIVE BIOLOGY AND PROFESSOR AT THE UNIVERSITY OF LIVERPOOL

Currently using functional genomics to understand genomics of extreme species like the naked mole rat and the bowhead whale; Currently using function genomic to understand cryoprotectant toxicity

ROBERT SHMOOKLER-REIS, PROFESSOR OF GERIATRIC MEDICINE, MOLECULAR BIOLOGY AND PHARMACOLOGY AT THE UNIVERSITY OF ARKANSAS

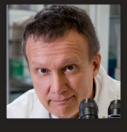
Expert in biochemical defense pathways in animals and discoverer of genes regulating longevity in the nematode

GANG ZHAO, DIRECTOR OF THE LABORATORY FOR CRYO-BIOMEDICAL ENGINEERING AND PROFESSOR AT UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA

Expert in modeling of heat and mass transfer in cryopreservation and inventor of a novel microfluidics-based microperfusion microscope for investigation of cell osmotic responses

THOMAS E. JOHNSON, PROFESSOR OF INTEGRATIVE PHYSIOLOGY AT COLORADO BOULDER AND FELLOW OF BIOFRONTIERS PROGRAM

Led the discovery of age-1, the first gene shown to extend longevity of a metazoan. Developing drugs for better organ cryopreservation



RAMON RISCO, PROFESSOR OF ENGINEERING AT THE UNIVERSITY OF SEVILLE, CEO OF SAFEPRESERVATION AND SENIOR PHYSICIST AT NATIONAL ACCELERATOR CENTRE (SPAIN)

Inventor of a technology based in sulphur detection by computer tomography for avoiding fractures, controlling ice and monitoring cryoprotectant concentration in organ cryopreservation

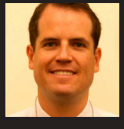
KLEARCHOS PAPAS, SCIENTIFIC DIRECTOR OF THE INSTITUTE OF CELLULAR TRANSPLANTATION AND PROFESSOR OF SURGERY, UNIVERSITY OF ARIZONA

Spearheaded the effort to develop humidified oxygen gas perfusion of the pancreas using novel technology. Collaborating with leaders in the liquid perfusion field to improve oxygenation. Working to apply these concepts to organ cryobanking.

PABLO SANCHEZ, ASSISTANT PROFESSOR OF SURGERY, UNIVERSITY OF MARYLAND

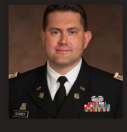
World-leading expert on using ex-vivo lung perfusion to identify good quality organs in poor donor pools and reduce cold ischemic times.

... AND MANY OTHER LEADING SPEAKERS FROM CRYOBIOLOGY AND RELATED SCIENTIFIC FIELDS AS WELL AS FROM BIOTECH, VC, GOVERNMENT, STAKEHOLDER ORGANIZATIONS AND TRANSPLANT, TRAUMA AND REGENERATIVE MEDICINE, INCLUDING:



ROBBIE BARBERO, ASSISTANT DIRECTOR FOR BIOLOGICAL INNOVATION, WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY (OSTP)

Thought leader for federal science research policy, with a focus on life sciences and grand challenge areas

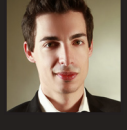


LT. COL. LUIS M. ALVAREZ, DIRECTOR OF THE DOD'S THREE NEW ORGAN AND TISSUE BANKING GRANT PROGRAMS

Former co-founding Deputy Director of the DoD's Tissue Injury and Regenerative Medicine Program and Deputy Director of AFIRM. Currently the Director of the Center for Molecular Science and Academy Professor at the United States Military Academy

SEBASTIAN GIWA, CO-FOUNDER AND CEO OF THE ORGAN PRESERVATION ALLIANCE AND FOUNDER OF SYLVATICA BIO INC.

Served as President of the National Youth Council of Sweden and directly lobbied the Prime-Minister, EU Commissioners and the UN Secretary General, was a Baker Scholar at Harvard Business School and co-founded the Organ Preservation Alliance and Sylvatica to transform transplantation



ALESSANDRO TOCCHIO, CO-FOUNDER OF THE ORGAN PRESERVATION ALLIANCE

Awarded entrepreneur in the biomedical field. Postdoctoral Scholar at Stanford School of Medicine. Inventor or a novel microfabrication technology and innovative biomaterial for regenerative medicine applications.

ABBAS ARDEHALI, CHIEF OF CARDIAC SURGERY AT UCLA SCHOOL OF MEDICINE, DIRECTOR OF THE HEART AND HEART-LUNG TRANSPLANT PROGRAM AND PROFESSOR OF CARDIOTHORACIC SURGERY

World-leading heart transplant surgeon and developer of state-of-the-art perfusion, revival and repair processes to make more hearts available

CHARITY TILLEMANN-DICK, INTERNATIONALLY ACCLAIMED SOPRANO, BEST SELLING BILLBOARD CLASSICAL RECORDING ARTIST AND TWO TIME DOUBLE LUNG TRANSPLANT RECIPIENT

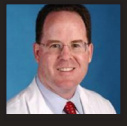
World Class Opera Soprano and Top-Rated TED Speaker

GABOR FORGACS, SCIENTIFIC FOUNDER OF ORGANOVO

Authority in bio-mechanics, tissue engineering and pioneer in 3D bio-printing

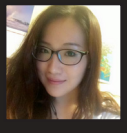
RONALD ZUCKERMANN, SENIOR SCIENTIST AND DIRECTOR OF THE BIOLOGICAL NANOSTRUCTURES FACILITY AT THE LAWRENCE BERKELEY NATIONAL LABORATORY

Pioneer in adapting the fundamental principles of protein folding to man-made polymers,to create novel nanoarchitectures capable of specific molecular functions



JOHN SCANDLING, PROFESSOR OF MEDICINE, MEDICAL DIRECTOR OF ADULT KIDNEY AND PANCREAS TRANSPLANTATION, STANFORD UNIVERSITY

World-leading expert on bolstering immunotolerance by conditioning organ recipients with total lymphoid irradiation and antithymocyte. Pioneered techniques that preserve persistent graft function without maintenance drugs.



XIAOXI WEI , FOUNDER AND CEO OF X-THERMA INC. (USER AFFILIATE TO LAWRENCE BERKELEY NATIONAL LABORATORY)

Supramolecular chemist focused on developing novel highly effective, non-toxic cryoprotectants via Biomimetic Nanoscience

ROBERT STRONG, WORLD-CLASS FACILITATOR AND AWARD WINNING COMEDY MAGICIAN

Voted best magician, best comedian and best performer at numerous occasions, performed for two Presidents of the United States and awarded two Civilian Medallions of Distinction from the US Army

PRE-SUMMIT EVENTS (WEDNESDAY)

8:30am - late	Scientific Young Investigator Hackathon at NASA Research Park	Selected Young Investigators + Hackathon Faculty + Others Interested Are Welcome and Encouraged to Stop By
2:00pm - 6:00pm	Lawrence Berkeley National Laboratory Site Visit (with focus on Biological Nanostructures Facility, The Molecular Foundry) Please RSVP to valentina@organpreservationalliance.org	Dr. Ronald Zuckermann - Sr. Scientist & Facility Director, Biological Nanostructures Facility, The Molecular Foundry
All day	Facilitated and Informal Breakfast Meetings and Networking (some media, VC and other external guests are invited)	Informally + by OPA inspired ahead of time
6:00 - late	Informal Networking at the Sheraton and Informal Dinner in Palo Alto (recommended restaurants and times will be sent out)	

PRE-SUMMIT EVENTS (THURSDAY)

8:00 - 9:30	Facilitated and Informal Breakfast Meetings and Networking (some media, VC and other external guests are invited)	Informally + by OPA inspired ahead of time
9:30 - 10:30	Either Continued Facilitated and Informal Breakfast Meetings and Networking - OR - Mentoring Young Investigator Hackathon Teams	Informally + by OPA inspired ahead of time / Hackathon Faculty Assigned

MAIN CONFERENCE: DAY 1 / THURSDAY (SHERATON FIRST, STANFORD BIO-X LATER)

Opening of the Scientific Conference - at Sheraton Palo Alto

10:30 - 10:45	Welcome and Kick-Off	Robin Farmanfarmaian, Summit Executive Director; Valentina Morigi; Dr. Alessandro Tocchio, Co-Founder and Dr. Sebastian Giwa, Co-Founder and CEO
10:45 - 11:10	While millions and millions of lives have been saved, organ transplantation still faces massive problems after 50 years; Organ Preservation is a Big Part of the Solution	Dr Abbas Ardehali, UCLA School of Medicine, Chief Cardiac Surgery, Director Heart and Heart-Lung Transplant Program, Professor Cardiothoracic Surgery

Round-table, Magic, Comedy and Lunch

11:10 - 12:30	Moderated Round-Table Discussions about the Transformational Potential for Organ Banking - Lunch will be Served	Dr. Sebastian Giwa and Robert Strong, World-Class facilitator and Award Winning Comedy Magician

Logistics

12:35 Sharp	Bus Leaves for Stanford Bio-X	

Broader Audience Joins us for the Stanford Biomedical Engineering Society Hosted Events

1:05 - 1:10	Welcome to Stanford Bio-X and the Grand Challenges in Organ Banking Day	Shivani Baisiwala and Kay Hung, Co-Presidents of Stanford Biomedical Engineering Society and Dr. Utkan Demirci, Host Professor, Leading Cryobiologist and Director of Stanford's Bio-Acoustic MEMS in Medicine Labs
1:15 - 1:45	From Lung Transplant To Lincoln Center: Impossible Possibilities	Charity Tillemann-Dick, Internationally acclaimed soprano, best selling Billboard classical recording artist and two time double lung transplant recipient

MAIN CONFERENCE: DAY 1 / THURSDAY (STANFORD BIO-X)

The Need and Value

1:50 - 2:10	Let's Revolutionize Transplantation Medicine through Organ Banking: Why, What and How	Dr. Sebastian Giwa, President and CEO of the Organ Preservation Alliance
2:15 - 3:15	**Talks and Panel on Grand Challenges, Breakthrough Technologies and the Future of Transplantation**	Chair: Robin Farmanfarmaian, Summit Executive Director
	Challenge of Organ Shortage is Enormous, but we're Heading Towards a Future Where we Have Time and Ability to Improve and Augment Organs before More and Better Transplants	Dr Abbas Ardehali, UCLA School of Medicine, Chief Cardiac Surgery, Director Heart and Heart-Lung Transplant Program, Professor Cardiothoracic Surgery
	White House Office of Science and Technology Policy: Revolutionary Science and Technology is Needed and Possible	Dr. Robbie Barbero, Assistant Director for Biological Innovation, White House Office of Science and Technology Policy (OSTP)
	The Promises of Tissue Engineering for Organ Building and Banking	Dr. Gabor Forgacs, Scientific Founder of Organovo, Authority in bio-mechanics, tissue engineering and pioneer in 3D bio-printing
	Tolerance Induction - The Holy Grail of Transplantation, and How Organ Banking Could Increase its Power	Dr. John Scandling, Medical Director of Kidney and Pancreas Transplantation and Professor of Medicine, Stanford University

MAIN CONFERENCE: DAY 1 / THURSDAY (STANFORD BIO-X)

2:15 - 3:15	A Vision of a Future Where Organ Banking Revolutionizes Transplant, Trauma and Regenerative Medicine	Lt Col. Luis Alvarez, PhD, Director of the DoD's three new organ and tissue banking grant programs, former co-founding Deputy Director of the DoD's Tissue Injury and Regenerative Medicine Program that also oversees the AFIRM. Currently the Director of the Center for Molecular Science and Academy Professor at the United States Military Academy
	Panel Dialogue	All Panelists

Networking

3:15 - 3:45	Networking Coffee Break and Poster Exhibition	

Audacious Project, But the Problems are Solvable (Part 1)

3:45 - 3:50	Magic and Comedy	Robert Strong, World-Class facilitator and Award Winning Comedy Magician
3:50 - 3:55	A Powerful Solution, Market Forces and the Birth of a New Industry	Dr. Sebastian Giwa, President and CEO and Alessandro Tocchio Co-Founder of the Organ Preservation Alliance
4:00 - 4:20	Keynote 1: Lessons in Organ Preservation from NATURE	Dr Kenneth Storey, Canada Research Chair in Molecular Physiology
4:25 - 4:40	Plenary Cryo Talk 1: Cryobiology: Past, Present and Future	Dr Erik Woods, President of the International Society for Cryobiology, Senior Vice President and Lead Scientist, Cook Regentec
4:45 - 5:05	Plenary Cryo Talk 2: The Grand Challenge of Organ Banking and the Current State of the Art	Dr Greg Fahy, Chief Science Officer at 21st Century Medicine

MAIN CONFERENCE: DAY 1 / THURSDAY (STANFORD BIO-X)

Networking

5:05 - 5:30	Networking Coffee Break and Poster Exhibition	

Audacious Project, But the Problems are Solvable (Part 2)

5:35 - 5:40	Magic and Comedy	Robert Strong, World-Class facilitator and Award Winning Comedy Magician
5:45 - 6:35	**Powerful Approaches in Organ Banking**	Chair: Dr. Utkan Demirci, Host Professor, Leading Cryobiologist and Director of Stanford's Bio-Acoustic MEMS in Medicine Labs
	Microfluidics and high-throughput screening of cryoprotectants	Dr. Utkan Demirci, Host Professor, Leading Cryobiologist and Director of Stanford's Bio-Acoustic MEMS in Medicine Labs
	Nanowarming: A new concept in tissue and organ preservation	Dr. John Bischof - Director of Bioheat and Mass Transfer Lab at the University of Minnesota
	Isochoric Pressure Based Cryopreservation and Natural Anti-Freeze Protiens	Dr. Boris Rubinsky, Professor at UC Berkeley, Discoverer of fish antifreeze proteins for cryopreservation solutions and innovative isochoric cryopreservation approach
	Cryobiological Thermodynamics: How Math Can Save Lives	Dr. Janet Elliott, Canada Research Chair in Thermodynamics and Professor at University of Alberta
	Modern Cryobiology – What Can Organic Synthesis Bring to the Table?	Dr. Robert Ben, Canada Research Chair in Medicinal Chemistry, Professor Bioorganic Chemistry at the University of Ottawa
6:40 - 7:00	Keynote 2: The Extinction of Extinction for Generations to Come: Cryobanking of Species in the South Lunar Pole	Dr. Mehmet Toner, Professor at Harvard, Mass Gen Hospital and Co-founder of the Center for Engineering in Medicine

MAIN CONFERENCE: DAY 1 / THURSDAY (STANFORD BIO-X)

7:05 - 7:10	Closing Reflections	Dr. Alessandro Tocchio, Co-Founder of the Organ Preservation Alliance
7:15 - 7:20	Thanks and Closing	Shivani Baisiwala and Kay Hung, Co-Presidents of Stanford Biomedical Engineering Society
7:25 - 7:40	Magic and Comedy	Robert Strong, World-Class facilitator and Award Winning Comedy Magician

Networking

7:45 - 8:05	Networking Break

Evening Program for Speakers and Participants at the Multi Day Organ Banking Summit

8:10	Bus back to Palo Alto for Speakers and Participants in the Multi Day Conference
8:30 - 10:00	Dinner
Late to Later	Informal Wine, Beer and Cocktails, Networking on Your Own at the Sheraton

MAIN CONFERENCE: DAY 2 / FRIDAY (SHERATON)

Session

8:30 - 10:45	**Remaining Obstacles That Need to Be Overcome**	Charis: Dr. Jason Acker - President-Elect Society, Cryobiology and Professor at the University of Alberta and Dr. Sebastian Giwa - CEO, Organ Preservation Alliance
	Control ice formation	Dr. Ido Braslavsky - Director of the Food-Biophysics and Cryobiology Laboratory and Professor at The Hebrew University of Jerusalem
	Control cryoprotectant toxicity and chilling injury	Dr. Greg Fahy - Chief Science Officer at 21st Century Medicine
	Reducing thermo-mechanical stress and preserving structural integrity	Dr. Yoed Rabin – Director of the Biothermal Technology Laboratory and Professor at Carnegie Mellon University
	Avoid ischemic injury	Dr. Mike Taylor - Adjunct Professor at Carnegie Mellon and VP for R&D, T3 - Tissue Testing Technologies
	Augment revival and repair	Dr. Erik Woods, President of the International Society for Cryobiology and CEO of Cook General BioTechnology and Genesis Bank
	Comments on Integrated Challenge and How Sub-Problems Can Be Traded-off Against Each Other	Dr. Jason Acker - President-Elect of the Society for Cryobiology and Professor at the University of Alberta
	Panel Discussion and Participant Discussion	

Networking

10:45 - 11:15	Networking Coffee Break

MAIN CONFERENCE: DAY 2 / FRIDAY (SHERATON)

Session		
11:15 - 12:00	**Controlling Ice Formation**	Chairs: Dr. Kelvin Brockbank - President and Chief Science Officer of T3 - Tissue Testing Technologies. Dr. Ido Braslavsky - Director of the Food-Biophysics and Cryobiology Laboratory and Professor at The Hebrew University of Jerusalem
	Avoiding the Problems of Ice on Tissues via Vitrification	Dr. Mike Taylor - Adjunct Professor at Carnegie Mellon and VP for R&D, T3 - Tissue Testing Technologies
	Ice Propagation	Dr. Jason Acker - President-Elect of the Society for Cryobiology and Professor at the University of Alberta
	Diffusion limited ice crystallization: The importance of non-equilibrium events during freezing + A comment on liquidus tracking	Dr. John Morris - Founder and CEO of Asymptote
	Different Classes and Types of Ice Active Compounds	Dr. Robert Ben - Canada Research Chair in Medicinal Chemistry, Professor Organic and Bioorganic Chemistry at the University of Ottawa
	Freezing under pressure	Nickolas Greer - Chief Science Officer, Rissali - Technology and Devices for Freezing and Thawing Under Pressure
	The Power of Isochoric (Constant Volume) Preservation Part 2	Dr. Boris Rubinsky, Professor at UC Berkeley, Discoverer of fish antifreeze proteins for cryopreservation solutions and innovative isochoric cryopreservation approach
Networking		
12:10 - 1:15	Lunch	
Session		
1:15 - 2:15	**Controlling Ice Formation (continued)**	Chairs: Dr. Kelvin Brockbank - President and Chief Science Officer of T3 - Tissue Testing Technologies. Dr. Ido Braslavsky - Director of the Food-Biophysics and Cryobiology Laboratory and Professor at The Hebrew University of Jerusalem

MAIN CONFERENCE: DAY 2 / FRIDAY (SHERATON)

	Thermodynamics in Cryopreservation: Understanding Ice Formation	Dr. Janet Elliott - Canada Research Chair in Thermodynamics and Professor at University of Alberta
	Antifreeze Proteins and Visualizing Ice Observations (video of ice inhibitors in action)	Dr. Ido Braslavsky - Director of the Food-Biophysics and Cryobiology Laboratory and Professor at The Hebrew University of Jerusalem
	Roles of Ice-Active Agents in Organ Cryopreservation	Dr. Brian Wowk - Cryobiologist and Senior Physicist at 21st Century Medicine
	Comments by Discussant	Dr. Kelvin Brockbank - President and Chief Science Officer of T3 - Tissue Testing Technologies
	Panel Discussion and Participant Discussion	

Networking

2:15 - 2:45	Networking Coffee Break	

Session

2:45 - 4:45	**Limiting Cryoprotectant Toxicity and Chilling Injury**	Chair: Dr. Greg Fahy - Chief Science Officer at 21st Century Medicine
	Deeper Dive on the Use of a Microfluidics Approach to High-throughput Screening of New Cryoprotectants	Dr. Utkan Demirci - Director of Bio-Acoustic MEMS in Medicine Labs at Stanford University
	Designing Next Generation Protectants	Dr. Gloria Elliott - Director of the Biostability Lab and Professor at University of North Carolina – Charlotte
	An Engineering Perspective on Toxicity	Dr. Janet Elliott - Canada Research Chair in Thermodynamics and Professor at University of Alberta
	Designing Innovative Procedures for Avoiding Cryoprotectant Toxicity in Whole Organs	Dr. Adam Higgins - Director of the Biotransport and Biomedical Process Engineering Lab and Professor at Oregon State University

MAIN CONFERENCE: DAY 2 / FRIDAY (SHERATON)

2:45 - 4:45	Membrane models of chilling and cold shock	Dr. John Morris - Founder and CEO of Asymptote
	Protecting Cells and Proteins in Multiple Organ Systems	Dr. Kenneth Storey - Canada Research Chair in Molecular Physiology and Professor in Biochemistry at Carleton University
	Cryoprotectant toxicity: biochemical mechanisms and functional genomics	Dr. Joao Pedro Magalhaes - Leader of the Integrative Genomics of Aging Group at the Institute of Integrative Biology, University of Liverpool, UK
	Eliminating Toxicity during Long-Term Cryogenic Storage of Human Organs	Dr. Tom Johnson - Professor at the Institute for Behavioral Genetics, University of Colorado; Professor of Integrative Physiology and Fellow of Biofrontiers Program
	Comments by Discussant	Dr. Greg Fahy - Chief Science Officer at 21st Century Medicine
	Panel Discussion and Participant Discussion	

Networking

4:45 - 5:15	Break	

Session

5:15 - 7:00	**Thermo-Mechanical Stress and Structural Integrity in Cryopreservation**	Chair: Dr. Yoed Rabin – Director of the Biothermal Technology Laboratory and Professor at Carnegie Mellon University
	Mechanical Behavior of Cryopreserved Materials	Dr. Yoed Rabin – Director of the Biothermal Technology Laboratory and Professor at Carnegie Mellon University
	Computer Tomography for avoiding fractures, controlling ice and monitoring cryoprotectant in organ cryopreservation	Dr. Ramon Risco - Professor of Engineering, University of Seville, CEO of SafeP-reservation, Senior Physicist at National Accelerator Centre (Spain)
	Protocols that Avoid Fracturing in Whole Organs and Solutions	Dr. Brian Wowk - Cryobiologist and Senior Physicist at 21st Century Medicine

MAIN CONFERENCE: DAY 2 / FRIDAY (SHERATON)

5:15 - 7:00	Neutron Scattering – A Technique to Interrogate Molecular Changes Coming out of the Vitreous State	Dr. Barry Fuller - Lead Global Professor at the UNESCO Chair in Cryobiology and Professor at UCL Medical School / Royal Free Hospital
	Challenges in Thermo-Mechanical Stress Modeling	Dr. Yoed Rabin – Director of the Biothermal Technology Laboratory and Professor at Carnegie Mellon University
	Cell-based Modeling of Mechanical and Chemical Stress in Tissues During Cryoprotocols	Dr. James Benson - Biomathematician predominantly focusing on cryobiology and Assistant Professor at Northern Illinois University
	Comments by Discussant	Dr. John Bischof - Director of Bioheat and Mass Transfer Lab at the University of Minnesota
	Panel Discussion and Discussion with Rest of Participants	

Networking

7:00 - 7:15	Break	

Roadmap

7:15 - 7:55	**Roadmap Forward**	Dr. Sebastian Giwa and Dr. Erik Woods
	Organ Preservation Alliance Strategy for the Next Year - what can and should the Organ Preservation Alliance do? - what can and should the Society of Cryobiology do? - what can and should do we as individuals do?	Dr. Sebastian Giwa and Jesse Horwitz
	Collection and Discussion of Ideas for Roadmap	Dr. Sebastian Giwa and Dr. Erik Woods

Networking and Entertainment

8:10- late	Dinner and Relaxing Piano Music by a Carnegie Hall Playing Pianist	Dr. Zak Allal, M.D, Pianist Composer and Co-Chief Strategy Officer and Co-Founder, the Organ Preservation Alliance

MAIN CONFERENCE: DAY 3 / SATURDAY (SHERATON)

Session

8:45 - 9:30	**Optimal Rewarming Modalities**	Chair: Dr John Bischof - Director of Bioheat and Mass Transfer Lab at the University of Minnesota
	Electromagnetic Warming: Basics and Strategies	Dr. Dayong Gao - Director of the Center for Cryo-Biomedical Engineering and Artificial Organs and Professor at the University of Washington
	Considerations for Electromagnetic Warming of Vitrified Biomaterials	Dr. Brian Wowk - Cryobiologist and Senior Physicist at 21st Century Medicine
	Radiofrequency heating of magnetic nanoparticle solutions	Dr John Bischof - Director of Bioheat and Mass Transfer Lab at the University of Minnesota
	Panel Discussion and Discussion with Rest of Participants	

Hackathon Finals

9:30 - 10:00	**Finalist Hackathon Presentations**	
	Two Finalist Teams Present	

Networking

10:00 - 10:30	Break	

Session

10:30 - 12:30	**Enhance Cellular and Tissue Repair and Avoid I/R Injury**	Chair: Dr. Erik Woods, President of the International Society for Cryobiology, Senior Vice President and Lead Scientist, Cook Regentec
	Biochemical Defense Pathways in Animals	Dr. Robert Shmookler-Reis - Professor of geriatric medicine, molecular biology, and pharmacology at the University of Arkansas
	Self-Resuscitation of Frozen Animals - how can things start functioning again and repair	Dr. Kenneth Storey - Canada Research Chair in Molecular Physiology and Professor in Biochemistry at Carleton University

MAIN CONFERENCE: DAY 3 / SATURDAY (SHERATON)

10:30 - 12:30	How to Block Injury after it Has Occurred: Example of Blocking Apoptosis	Dr. John Baust, Sr - UNESCO Professor, Chief Scientific Adviser at CPSI Biotech, Director of the Institute of Biomedical Technology at the State University of New York, Binghamton
	Cytoprotection Strategies - I/R Injury and Opportunities for Organ Repair	Dr. Barry Fuller - Lead Global Professor at the UNESCO Chair in Cryobiology and Professor at UCL Medical School / Royal Free Hospital
	Effect of natural cocktail of trophic factors on ischemic injury of isolated rat liver under hypothermic storage and reperfusion	Dr. Alexander Petrenko - Head of the Biochemistry Department and Professor at the Institute for Problems of Cryobiology and Cryomedicine ff Ukraine (IPC&C) and Kharkov University
	Ex vivo Lung Perfusion. Initial Steps Toward Organ Repair	Dr. Pablo Sanchez, Lead Scientist for XVIVO Perfusion, Inc and Assistant Professor of Surgery, University of Maryland
	Persufflation in organ preservation and conditioning prior to cryopreservation and during rewarming	Dr. Klearchos Papas, Scientific Director of the Institute of Cellular Transplantation and Professor of Surgery, University of Arizona
	Pre-conditioning, Epigenetics and Other Strategies	Dr. Erik Woods, President of the International Society for Cryobiology, Senior Vice President and Lead Scientist, Cook Regentec
	Comments by Discussant	Dr. Robert Shmookler-Reis - Professor of geriatric medicine, molecular biology, and pharmacology at the University of Arkansas
	Panel Discussion and Discussion with Rest of Participants	

MAIN CONFERENCE: DAY 3 / SATURDAY (SHERATON)

Networking

12:30 - 1:30 **Roundtable and Lunch**

Other Areas of Science That we Should Bring in to Help Crack Organ Banking? Top 5 per Table and then Collect/Discuss	
Tools we'd Like to See Applied? Top 5 per Table and then Collect/Discuss	
Other Key Ideas on How to Overcome the Remaining Challenges	

1:45 - 2:00 **Awards, Closing Words and Final Thoughts**

Award for the Winning Hackathon Team - Sponsored By New Organ	Dr. Alessandro Tocchio, Co-Founder and Boris Schmalz, Jedd Lewis of the Organ Preservation Alliance
Short Synthesis of Some of the Super Exciting Things we Covered in this first Summit	Dr. Sebastian Giwa - CEO and President of the Organ Preservation Alliance

Post-Summit Events (Saturday/Sunday)

Sat Afternoon	Informal Networking at the Sheraton, Informal Dinner in Palo Alto or San Francisco
Sunday	Potential Wine Tour to Napa or Other Area for Those Interested. Please let Valentina know if you are interested in joining - please contact: valentina@organpreservationalliance.

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