ORGANS ON-DEMAND
Vision-Setting Workshop on an Organ Banking ‘Apollo Program’

CONTROLLING BIOLOGICAL TIME

... to Revolutionize Trauma, Transplant and Regenerative Medicine

Early Evening Wednesday August 5th to Thursday August 6th, 2015

United States Military Academy, West Point, NY
LEADERS FROM DARPA AND BTO, INCLUDING:

**COL. GEOFFREY LING, M.D., PH.D., FOUNDING DIRECTOR OF DARPA’S BIOLOGICAL TECHNOLOGIES OFFICE (BTO)**

Created and managed a broad and revolutionary research portfolio, spanning neuroscience, infectious disease, pharmacology, and battlefield medicine.

**COL. MATTHEW HEPBURN, M.D., PROGRAM MANAGER IN DARPA’S BIOLOGICAL TECHNOLOGIES OFFICE; PREVIOUSLY DIRECTOR OF MEDICAL PREPAREDNESS ON THE WHITE HOUSE NATIONAL SECURITY STAFF**

Former Chief Medical Officer at a Level II medical facility in Iraq and leading expert in global health and infectious diseases with potential impact on national security.

**DR. DOUGLAS J. WEBER, PROGRAM MANAGER IN DARPA’S BIOLOGICAL TECHNOLOGIES OFFICE; ASSOCIATE PROFESSOR IN THE DEPARTMENT OF BIOENGINEERING AND THE DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION AT THE UNIVERSITY OF PITTSBURGH**

Leading scientist in functional electrical stimulation, activity-based neuromotor rehabilitation, neural coding, and neural control of prosthetic devices.

**DR. PHILLIP ALVELDA, PROGRAM MANAGER IN DARPA’S BIOLOGICAL TECHNOLOGIES OFFICE; CEO AND CHAIRMAN OF TADA, FOUNDING CEO OF MOBITV**

Phillip was selected by Fast Company as the US’s 15th most influential high technology entrepreneur, has been granted numerous technology awards, received an Emmy Award from the Academy of Television Arts & Sciences and is a World Economic Forum Technology Pioneer.

WORLD LEADERS FROM MEDICINE, TRANSPLANTATION, SURGERY AND BIOTECH

**DR. DAVID H. SACHS, DIRECTOR OF THE TRANSPLANTATION BIOLOGY RESEARCH CENTER MASS GENERAL HOSPITAL, AND PAUL S. RUSSELL AND WARNER-LAMBERT PROFESSOR OF SURGERY AND IMMUNOLOGY AT HARVARD MEDICAL SCHOOL**

World leader in transplantation medicine, immune tolerance and xenotransplantation. Recipient of the world’s highest dedicated award for the most outstanding contributions in the field of transplantation, the Medawar Prize.
**DR. MARTINE ROTHBLATT**, CHAIRMAN AND CEO, UNITED THERAPEUTICS; PRESIDENT AND CEO, LUNG BIOTECHNOLOGY INC AND LEAD INVESTOR IN TRANSMEDICS

Innovator behind “organ in a box” preservation, humanized pig lungs and 3D printed organs technology. Creator of GeoStar and Sirius Satellite Radio and responsible for launching PanAmSat and WorldSpace

**DR. PETER RHEE**, CHIEF, DIVISION OF TRAUMA, CRITICAL CARE, BURN AND EMERGENCY SURGERY, PROFESSOR OF SURGERY AND MARTIN GLUCK ENDOWED CHAIR IN TRAUMA SURGERY AT THE UNIVERSITY OF ARIZONA

Former US Navy Captain, battlefield casualty physician in Afghanistan and Iraq and Director of the Navy Trauma Training Center, and Pioneer and World Leader in suspended animation for trauma

**DR. BOHDAN POMAHAC**, PROFESSOR AT HARVARD MEDICAL SCHOOL AND DIRECTOR, PLASTIC SURGERY TRANSPLANTATION PROGRAM AT BRIGHAM AND WOMEN’S HOSPITAL, BOSTON

World leader in the field of Vascularized Composite Allograft (VCA) Transplantation and e.g. led the team that performed the first full face transplant in United States

**DR. GERALD BRANDACHER**, SCIENTIFIC DIRECTOR OF THE JOHNS HOPKINS RECONSTRUCTIVE TRANSPLANTATION PROGRAM AND VASCULARIZED COMPOSITE ALLOTRANSPLANTATION (VCA) LABORATORY

Internationally renowned surgeon scientist pioneering immunomodulation and tolerance induction for solid organ and vascularized composite allografts. Part of the team that performed the first bilateral hand transplant and first forearm transplant in the United States

**DR. JOHN BRADFORD**, PRESIDENT, SPACEWORKS ENTERPRISES AND NASA NIAC FELLOW

Industry leader in the application of human stasis for space exploration and designer of the torpor-inducing Mars transfer habitat

**DR. JORDAN SHIN**, MEDICAL DIRECTOR AT LUNG AND XENOLUNG CLINICAL DEVELOPMENT AT LUNG BIOTECHNOLOGY INC AND FORMERLY HEAD OF HEART FAILURE AT MASS GENERAL HOSPITAL

A recovering academic cardiologist from Massachusetts General Hospital and Harvard Medical School now working to address the shortage of transplantable lungs with a variety of technologies that delay the day they are needed and expand their supply
WORLD LEADING SCIENTISTS

DR. MEHMET TONER, HELEN ANDRUS BENEDICT PROFESSOR OF SURGERY (BIOMEDICAL ENGINEERING), AND HEALTH SCIENCES AND TECHNOLOGY AT HARVARD, MASS GENERAL HOSPITAL AND MIT
Co-founder of the Center for Engineering in Medicine and among many things co-author of 2014 rat liver preservation breakthroughs published in Nature Medicine

DR. 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)

DR. MICHAEL TAYLOR, CO-FOUNDING CHIEF SCIENCE OFFICER, SYLVATICA BIOTECH, ADJUNCT PROFESSOR AT CARNEGIE MELLON AND VP FOR R&D, T3 - TISSUE TESTING TECHNOLOGIES
World leader in hypothermic, perfusion based, vitreous and other forms of preservation approaches of organs and tissue systems

DR. KEVIN E. HEALY, HEAD OF THE BIOENGINEERING DEPARTMENT AND THE JAN FANDRIANTO DISTINGUISHED PROFESSOR IN ENGINEERING AT THE UNIVERSITY OF CALIFORNIA AT BERKELEY
Thought leader and innovator working at the interface between stem cells and materials science to develop Organ-on-a-chip and other dynamic engineered systems to explore both fundamental biological phenomena and new applications in translational medicine

DR. KELVIN BROCKBANK, PRESIDENT AND CHIEF SCIENCE OFFICER OF T3 - TISSUE TESTING TECHNOLOGIES
Inventor of clinical cryopreservation methods currently employed for viable meniscal allografts, allogeneic heart valves, ligaments, and vascular grafts

DR. 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

DR. 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
DR. 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”. Advisor to both the European and Japanese Space Agencies (ESA and JAXA) on How to Adapt Hibernation and Similar Mechanisms from Nature to Humans

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

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

DR. THOMAS PETERSEN, WORLD LEADING TISSUE ENGINEER AND PRINCIPAL SCIENTIST, UNITED THERAPEUTICS

Developed the first functional bioengineered lung. Lead author on ground-breaking publication in Science describing the first successful animal transplantation of an engineered lung

DR. 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

DR. 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 cryomacrooscope; developer of ultra-miniature, wireless, implantable “cryo sensors”

DR. KORKUT UYGUN, ASSISTANT PROFESSOR AT HARVARD MEDICAL SCHOOL; CO FOUNDER, ORGAN SOLUTIONS; DIRECTOR, ORGAN RE-ENGINEERING LAB, MASSACHUSETTS GENERAL HOSPITAL

World expert in organ preservation via supercooling and subnormothermic perfusion; leading researcher in transplantable engineered livers

DR. MARK ROTH, DIRECTOR OF THE ROTH LAB AT THE FRED HUTCHINSON CANCER RESEARCH CENTER AND PROFESSOR AT THE UNIVERSITY OF WASHINGTON, FOUNDER OF IKARIA, INC., MACARTHUR FELLOW OF THE JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION

World leader in hibernation and suspended animation research. (Photo by Paul C. Miller)
STEPHENVAN SICKLE, CHIEF SCIENCE OFFICER OF ARIGOS BIOMEDICAL
Co-founder of Silicon Valley and Peter Thiel funded Organ Banking Start-up and Co-innovator of a high speed cooling and warming system using hyperbaric pressure combined with persufflation for large vitrifiable organs

DR. CLAUDIA ZYLBERBERG, FOUNDER, PRESIDENT AND CEO OF AKRON BIOTECH AND MEMBER OF LEADERSHIP TEAM, ALLIANCE FOR REGENERATIVE MEDICINE (ARM)
Developer of novel products aimed at the isolation of stem cells and cryopreservation

DR. 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

DR. MARTHA LUNDBERG, PROGRAM DIRECTOR, ADVANCED TECHNOLOGIES AND SURGERY BRANCH, NATIONAL HEART, LUNG, AND BLOOD INSTITUTE (NHLBI) AND MEMBER OF THE FEDERALWIDE, MULTIAGENCY TISSUE ENGINEERING SCIENCE (MATES) WORKING GROUP
Developed and advanced targeted NHLBI investment in over a dozen research technology programs and in 2002 assumed responsibility for the Tissue Engineering (TE) portfolio

DR. JAMES BENSON, BIOMATHEMATICIAN PREDOMINANTLY FOCUSING ON CRYOBIOLGY AND ASSISTANT PROFESSOR AT NORTHERN ILLINOIS UNIVERSITY
Expert biomathematician predominantly focusing on heat and mass transfer and cryoprotectant toxicity problems and optimization in cryobiology

DR. TAMER KHAYAL, CHIEF MEDICAL OFFICER, TRANSMEDICS
Co-leader of the world’s largest randomized trials for organ preservation for transplantation and key developer of the Organ Care System for perfusion based preservation of hearts and lungs

DR. 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
DR. EVA LAI, ASSISTANT RESEARCH PROFESSOR, JOHNS HOPKINS UNIVERSITY AND SCIENTIFIC DOMAIN COORDINATOR FOR PROTECTIVE AND RESTORATIVE BIOENGINEERING, US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND

Eva served as the portfolio lead for the DoDs regenerative medicine portfolio at TATRC (U.S. Army’s Telemedicine and Advanced Technology Research Center)

HOSTING CONVENER

LT. COL. LUIS M. ALVAREZ PH.D., DIRECTOR OF THE CENTER FOR MOLECULAR SCIENCE, ACADEMY PROFESSOR AT THE U.S. MILITARY ACADEMY AND DARPA SERVICE CHIEF FELLOW

Founding Principal Investigator of the Regenerative Biology Research Group at the National Cancer Institute; Former co-founding Deputy Director of the DoD’s Tissue Injury and Regenerative Medicine Program and Deputy Director of AFIRM; and author of the DoD’s first-ever Organ and Tissue Banking Grant Solicitations

CONVENERS

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

Served as the youngest ever 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 (top 5%) at Harvard Business School and senior investment associate at world leading hedge fund Bridgewater Associates

DR. ALESSANDRO TOCCHIO, CO-FOUNDER OF THE ORGAN PRESERVATION ALLIANCE, POSTDOCTORAL RESEARCH SCHOLAR AT STANFORD UNIVERSITY SCHOOL OF MEDICINE AND CO-FOUNDER OF TENSIVE

Awarded entrepreneur in the biomedical field. Inventor of a novel micro fabrication technology and innovative biomaterial for regenerative medicine applications
**PROGRAM WEDNESDAY AUGUST 5TH**

**Hotel Thayer (Pershing Room)**

**Early afternoon**  
Optional Tour of West Point  
(email Valentina@organpreservationalliance.org if interested)

17:00-18:15  
Check-in and Registration  
Drinks and Networking

**17:30**  
Welcome Reception

**Working Dinner and Key Talks: An Enormous Need and Value (Part 1)**

18:15  
Welcome  
Lt. Col. Luis M. Alvarez, Ph.D., Director of the Center For Molecular Science and Academy Professor at the U.S. Military Academy and DARPA Service Chief Fellow

Kick-off  
Dr. Sebastian Giwa, Co-Founder and President, the Organ Preservation Alliance

Alpha Vision, Workshop Goals and Overview  
Lt. Col. Luis M. Alvarez, Ph.D.

19:05  
Plenary Talk: Transplantation has Come Long Way  
Dr. Jordan Shin, Medical Director at Lung and XenoLung Clinical Development at Lung Biotechnology Inc. and Former Head of Heart Failure at Massachusetts General Hospital

19:25  
The Vast Need and Value of Organs on Demand and the Ability to Control Biological Time  
Dr. Sebastian Giwa
19:40  Keynote: Perspectives on the Future of Transplantation: Conquering Chronic Rejection, Immune Suppression and the Organ Shortage

Dr. David Sachs, Director of the Transplantation Biology Research Center, Surgical Services at Massachusetts General Hospital; Paul S. Russell and Warner-Lambert Professor of Surgery and Immunology at the Harvard Medical School, and Recipient of the World’s Highest Dedicated Award Contribution Field Transplantation, the Medawar Prize

Break

20:30  Plenary Talk: The Recent Revolution in Hand, Limb and other Vascularized Composite Transplantation and its Potential Future

Dr. Bohdan Pomahac, Professor at Harvard Medical School and Director of the Plastic Surgery Transplantation Program at Brigham and Women’s Hospital, Boston. E.g. led the team that performed the first full face transplant in United States

Dr. Gerald Brandacher, Scientific Director of The Johns Hopkins Reconstructive Transplantation Program and Vascularized Composite Allotransplantation (VCA) Laboratory. Pioneer in Immuno-Modulation Tolerance Induction Vascularized Composite Allografts Team Performed First bilateral Hand Transplant first Forearm Transplant and first forearm transplant in the United States

20:55  The Value of Organs and Tissues on Demand for National Defense

Lt. Col. Luis M. Alvarez, Ph.D.

21:05  Keynote 2: Nature Already Has Solutions now Finally Have Tools Understand Those Solutions Begin Applying Them

Dr. Ken Storey, Canada Research Chair in Molecular Physiology and Professor in Biochemistry at Carleton University, Advisor to Both the European and Japanese Space Agencies (ESA and JAXA) on How to Adapt Hibernation and Similar Mechanisms from Nature to Humans

21:30  DARPA and BTO’s Vision of the Future

Dr. Geoffrey Ling, Founding Director of DARPA’s Biological Technologies Office (BTO)

Drinks and Networking
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<tr>
<td>8:30</td>
<td>Controlling Biological Time for Organ and Tissue Banking: Synthesis of Ideas and Goals</td>
<td>Lt. Col. Luis M. Alvarez, Ph.D.</td>
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<td>8:40</td>
<td>Controlling Biological Time and Organ Banking: Why, What, and How</td>
<td>Dr. Sebastian Giwa</td>
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<td>8:55</td>
<td><strong>Organ Banking: Enabler and Accelerator of the Future of Transplantation and of Regenerative Medicine Breakthroughs - <em>Lightning talks</em></strong></td>
<td>Chair: Lt. Col. Luis M. Alvarez, Ph.D.</td>
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<td>The Future and Needs of Tissue Engineering</td>
<td>Dr. Thomas Petersen, World Leading Tissue Engineer, Principal Scientist, United Therapeutics and Developer of the First Functional Bioengineered Lung</td>
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<td>The Future and Needs of Organ-on-a-Chip Technologies</td>
<td>Dr. Kevin Healy, Head of the Bioengineering Department and the Jan Fandrianto Distinguished Professor in Engineering at the University of California at Berkeley; Leader in Organ-on-a-Chip Technology</td>
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<td>Industry Perspective: Vast Economic Value and Market Potential</td>
<td>Dr. Claudia Zylberberg, Founder, President and CEO of Akron Biotech and Member of Leadership Team, Alliance for Regenerative Medicine (ARM)</td>
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<td>NIH and Multi-Agency Tissue Engineering Science (MATES) Interagency Working Group’s Perspectives</td>
<td>Dr. Martha Lundberg, Program Director, Advanced Technologies and Surgery Branch, National Heart, Lung, and Blood Institute (NHLBI) and Member of the Federalwide, MultiAgency Tissue Engineering Science (MATES) Working Group</td>
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Panel and then Round table Discussion on What Organs on Demand Would Mean for the Future of Healthcare, the Bio-Economy, and National Security

Panelists as above as well as:

- Xenotransplantation and Immune Tolerance (covered on Day 1)
  - Dr. David Sachs
- Vascularized Composite Allotransplantation/VCA (covered on Day 1)
  - Dr. Gerald Brandacher and Dr. Bohdan Pomahac
- Military Use-Cases (covered on Day 1)
  - Lt. Col. Luis M. Alvarez, Ph.D.
- Overall and Other Cases (covered above)
  - Dr. Sebastian Giwa

Remaining Challenges and Why They Now Are Within Reach

10:00  Technological and Other Key Forms of Enabling Convergence: Why Organ Banking now, for the First Time, is Within Reach
  - Lt. Col. Luis M. Alvarez, Ph.D.

Break

10:30  Cryobiology: Past, Present and Future
  - Dr. Erik Woods, President of the Society for Cryobiology, Senior Vice President and Lead Scientist, Cook Regentec

10:45  A Grand Challenge...
  - Dr. Greg Fahy, Chief Science Officer at 21st Century Medicine.
  
  ... That Can be Translated into 6 Sub-Problems that Only Need to Be Held Within Acceptable Thresholds
11:00 The Time is Now for Multi-Component, Holistic Organ Banking Approaches

Dr. Korkut Uygun, Assistant Professor in Surgery at Harvard Medical School, Mass General Hospital and the Center for Engineering in Medicine

Dr. Michael Taylor, Co-Founding Chief Science Officer, Sylvatica Biotech, Adjunct Professor at Carnegie Mellon and VP for R&D, T3 - Tissue Testing Technologies

**Examples of Promising Avenues to Achieve Organs on Demand – Lightning Talks (Part 1)**

11:20 Future of Perfusion

Dr. Tamer Khayal, World Leader in Perfusion Based Preservation of Organs and Chief Medical Officer, TransMedics

Nature Already Has Solutions Part II

Dr. Ken Storey, Canada Research Chair in Molecular Physiology and Professor in Biochemistry at Carleton University, Advisor to both the European and Japanese Space Agencies (ESA and JAXA) on How to Adapt Hibernation and Similar Mechanisms from Nature to Humans

The Relatively Recent Emergence of Large Volume/Complex Tissue Vitrification

Dr. Kelvin Brockbank, President and Chief Science Officer, T3 - Tissue Testing Technologies

Applying the “Materials Genome Initiative” to Design Next Generation Protectants

Dr. Gloria Elliott, Director of the Biostability Lab and Professor at University of North Carolina – Charlotte

Pending: Examples of What Organic Chemistry Can Bring to the Table: Rational Compound Design, High Throughput Screening and Organic Synthesis

Dr. Robert Ben, Canada Research Chair in Medicinal Chemistry and Professor of Organic and Bioorganic Chemistry at the University of Ottawa

Third Generation Cryo = Molecular Understanding Based Cryo

Dr. 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

Nano-Warming

Dr. John Bischof, Director of Bioheat and Mass Transfer Lab at the University of Minnesota
Lunch and Invited Vision Talks:

12:20 Lunch at West Point Club (Hudson Room)

Suspended Animation for Trauma: From Science Fiction to Clinical Trials
Dr. Peter Rhee, Chief, Division of Trauma, Critical Care, Burn and Emergency Surgery, Professor of Surgery and Martin Gluck Endowed Chair In Trauma Surgery at the University of Arizona

Human Torpor to Sustain U.S. Leadership in Space
Dr. John Bradford, President, Spaceworks Enterprises and NASA Niac Fellow

Examples of Promising Avenues to Achieve Organs on Demand – Lightning Talks (Part 2)

13:40 Scanning and Micro Sensing for Optimal Understanding and Protocols
Dr. Yoed Rabin, Director of the Biothermal Technology Laboratory and Professor at Carnegie Mellon University

Organ-on-a-Chip Technology and Micro-Fluidics as Tools to Create Better CPAs and Cryo Protocols
Dr. Utkan Demirci, Director of Bio-Acoustic MEMS in Medicine Labs at Stanford University

Hyperbaric Pressure and Gas Persufflation To Enable Rapid and Uniform Cooling, Vitrification and Warming
Stephen Van Sickle, Chief Science Officer, Arigos Biomedical

Computational Tools Enable Cryobiological Understanding and Rapid Prototyping: Historical Successes, Future Potential, and a Cutting Edge Cell-based Tissue Model
Dr. James Benson, Biomathematician Predominantly Focusing on Cryobiology and Assistant Professor at Northern Illinois University

Convergence and Powerful Acceleration in Areas of Science, Domains of Technology and Tools Outside of Classical Cryobiology
Dr. Alessandro Tocchio, Co-Founder of the Organ Preservation Alliance, Postdoctoral Research Scholar at Stanford University School of Medicine

14:20 Round Table and Q&A Session: Organ Banking Challenges and Solutions
All Speakers Above
Moderator: Lt. Col. Luis M. Alvarez, Ph.D.
### ‘DARPA-Hard’ Implementations of Organs on Demand

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<td>14:40</td>
<td><strong>Concept 1:</strong> Vitrification of Humanized Pig Kidneys</td>
<td>Dr. Greg Fahy, Chief Science Officer at 21st Century Medicine</td>
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<td><strong>Concept 2:</strong> Banking of VCA via Radio Frequency Excited Nanoparticles and Vitrification</td>
<td>Dr. John Bischof, Director of Bioheat and Mass Transfer Lab at the University of Minnesota</td>
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<td>Dr. Kelvin Brockbank, President and Chief Science Officer of T3 - Tissue Testing Technologies</td>
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<td><strong>Break</strong></td>
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<td>15:40</td>
<td><strong>Concept 3:</strong> Nature Inspired, Suppressed Metabolism and High-Sub-Zero Banking of Livers</td>
<td>Dr. Mehmet Toner, Helen Andrus Benedict Professor of Surgery (Biomedical Engineering) and Health Sciences and Technology at Harvard, Mass General Hospital and MIT (Presenter)</td>
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<td>Dr. Michael Taylor, World Leader in Hypothermic, Perfusion-Based, Vitreous And Other Forms of Preservation Approaches of Organs and Tissue Systems</td>
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| 15:55 | Implications of Organs on Demand for the Future of Healthcare and Other Reflections: *Shared Remarks and Round table Conversation* | Dr. Peter Rhee, Chief, Division of Trauma, Critical Care, Burn and Emergency Surgery, Professor of Surgery and Martin Gluck Endowed Chair in Trauma Surgery at the University of Arizona  
Dr. Martine Rothblatt, Chairman and CEO, United Therapeutics; President and CEO, Lung Biotechnology |
| 16:20 | A Giant Leap Forward: Concrete Steps to Make Organs on Demand a Reality | Lt. Col. Luis M. Alvarez, Ph.D. |
| 16:35 | Open Round table Discussion and Reflections                           | Everyone                         |
| 16:50 | BTO Reflections and Closing Comments                                  | Dr. Geoffrey Ling, Founding Director of DARPA’s Biological Technologies Office (BTO)  
Closing | Lt. Col. Luis Alvarez, Ph.D.  
Dr. Sebastian Giwa |
| 17:00 – 18:00 | Reception                                                           |                                  |
| 18:00 | Self Organized Networking                                            |                                  |
CONTACT

ABOUT THE WORKSHOP PROGRAM/GOALS
luis.alvarez@darpa.mil or sebastian.giwa@post.harvard.edu

ABOUT LOGISTICS AND OTHER
valentina@organpreservationalliance.org and robin@organpreservationalliance.org

Valentina Morigi
COO,
Organ Preservation Alliance

Robin Farmanfarmaian
Executive Director,
Organ Preservation Alliance