Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

MAY 9-12, 2017
WESTIN HARBOUR CASTLE HOTEL

SCIENTIFIC PROGRAM

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ISBER 2017 ANNUAL MEETING & EXHIBITS

Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

May 9 – 12, 2017 • Toronto, Canada

ISBER MISSION
ISBER is a global biobanking organization which creates opportunities for networking, education, and innovations and harmonizes approaches to evolving challenges in biological and environmental repositories.

ISBER VISION
ISBER will be the leading global biobanking forum for promoting harmonized high-quality standards, education, ethical principles, and innovation in the science and management of biorepositories.
CORPORATE PARTNERS

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MESSAGE FROM THE SCIENTIFIC PROGRAM COMMITTEE AND PRESIDENT

Dear colleagues and friends,

On behalf of the International Society for Biological and Environmental Repositories (ISBER) Board of Directors and the Co-Chairs of the 2017 Annual Meeting and Exhibits, we welcome you to Toronto, Canada’s largest and most vibrant city. The city is home to a diverse population and is widely recognized as one of the most multicultural and cosmopolitan cities in the world. The city’s focus on innovation and diversity makes it the perfect place to host the 2017 ISBER meeting. To reflect this, the Scientific Program Advisory Committee chose “Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation” as the meeting theme.

Biobanking activity has grown tremendously in the last twenty years and the fruits of the collective labour have started to emerge. Developments in medical, environmental, microbial and veterinary fields have benefitted hugely from the knowledge, experience and activity of biobanks around the world. Biospecimen research and biobanking has been instrumental in facilitating new discoveries, the implementation of new processes and creating innovative ways of approaching and solving problems. The challenge now is to keep biobanking current and relevant by learning from the successes (and failures) and evolving to change biobanking practice when the evidence supports a shift. Even in the face of compelling evidence or new innovations, change can be a challenge… but to improve, the biobanking community needs to learn from and build on the evidence presented. When we ‘know better’, how do we ‘do better’?

Over the past year, the Scientific Program Committee has worked hard to ensure the Annual Meeting delivers interesting, innovative and educational content relevant to all members to cater to all of ISBER’s stakeholder groups. Bringing together the diverse global biobanking communities in discussion and introducing new biobankers to ISBER will advance not only the Society and the field of biobanking and biospecimen research, but the global research capabilities.

Program Highlights

For the first time, the 2017 Annual Meeting is incorporating the topic-driven educational workshops as part of the main conference program. These workshops are now complimentary to attend for all conference registrants. The workshops are designed to inform attendees about specific types of repository activities and will open up great learning and knowledge exchange opportunities.

The program includes seven symposia sessions, four contributed paper sessions, an Innovative Technologies session and opportunities to attend workshops and symposia run by ISBER’s Corporate Partners. In addition, at lunchtime on Tuesday there will be roundtable discussions where you can join the conversations around various biobanking hot topics, including an update on the changes to the US Common Rule. Additional networking opportunities include: discussions with vendors in the large exhibition space, interactions with poster presenters, and relaxing social time, including a gala evening on Thursday. The ISBER Working Groups and Committees have the opportunity for in-person meetings, with pre-scheduled meeting times and room bookings for groups to get together and discuss and move forward their exciting work. We welcome your participation in the ISBER Working Group discussions.

The symposia, which have invited speakers from across the biobanking communities, have been developed to give the foundation for exciting discussions of ideas and innovative solutions. Symposium 1, entitled ‘Polar Shift: How Biobanking is Changing our Thinking and the World’ showcases four diverse projects from different corners of the biobanking world. It launches the conference on Tuesday and focuses on projects that have biobanking as a key component to their success. We hope that sharing their lessons learned with the wider scientific community can support pushing back the boundaries of scientific knowledge.

Dr. Hannes Dempewolf from the Global Crop Diversity Trust is our keynote speaker. His talk will describe the work being done at the Trust to conserve and make available the diversity of plants that underpins the global food supply.

The other talks in the plenary will give fascinating insight into three projects and include: an overview of major findings from the TCGA, what we’ve learned, and how that can be brought back to the care of individual patients; an introduction to the MetaSub project and how this catalog of microbiological specimens is generating a deeper understanding of our urban biome and related data , informing us on how to design and build “smarter” cities; and how NASA has implemented a biobanking program for capturing specimens from both its astronauts and plant/animal species in orbit.
Symposia 2A and 2B will run concurrently on Tuesday afternoon. Symposium 2A addresses the practical aspects of returning research results to participants and Symposium 2B focuses on the use of liquid specimens to pave the way for new, less invasive research and diagnostic methodologies.

The Special Topic session will describe the new methodologies and techniques being developed in ‘Emerging Tools for Biobanking and Biospecimen Research.’ It will highlight three tools, their impact on research, and strategies for incorporating these new innovations into biobank operations. The audience will benefit from a discussion on how each tool may be adapted to or used by other projects.

On Wednesday morning Symposia 3A focuses on social sustainability of biobanks within their stakeholder communities and running concurrently, Symposia 3B addresses biospecimen quality needs for next generation sequencing technologies.

On Friday morning, we open with two concurrent symposia. Symposium 4A takes a fascinating look at responses to emerging global threats in Low and Middle Income Countries and highlights the involvement of biobanks in those response efforts. Symposium 4B is all about data and novel data exploitation to drive research and maximize the use of biospecimen collections.

Working Group meetings and Contributed Papers sessions

There are four contributed papers sessions during the program. From the 201 submitted abstracts, 24 were selected for oral presentations in the two concurrent sessions and an additional nine abstracts will be presented in the Innovative Technologies session. Two poster sessions will highlight the 162 abstract topics that were accepted as posters, and these will be on display in the Exhibit Hall. The contributed papers sessions and posters demonstrate the diversity of activity across the ISBER membership and give a flavour of the international expertise and breadth of biospecimen research that takes place around the world.

The ISBER Working Groups and Special Interest Groups are scheduled to meet during the conference. Please feel free to join any of the open sessions listed in the program and consider joining the groups in discussions throughout the year, between our annual meetings.

5K Fun Run/Walk/Sleep

The 6th Annual Fun Run/Walk/Sleep has been organized by the ISBER Membership and Marketing Committee and will take place along the harbour on Queen’s Quay, beginning at 6am on Wednesday. All proceeds from the 5K Fun Run will be used to benefit the ISBER Travel Award, which provides complimentary registration and travel support for biobankers from low and middle-income countries to attend the ISBER Annual Meeting. Register for the Fun Run/Walk/Sleep at the registration desk on-site and join us for an invigorating start to Wednesday.

Gala Evening

The Gala Evening will take place in Toronto’s ‘majestic castle’, Casa Loma on Thursday evening. The event will provide great networking opportunities in a beautiful setting, with dinner and musical entertainment. Separate registration is required.

ISBER Business Meeting

The ISBER Annual Business Meeting on Friday afternoon will give you a chance to find out about our society’s achievements from the last year and a look forward to the exciting developments ahead. ISBER President, Brent Schacter will also announce the results of the recent elections for President Elect, Directors-at-Large, Treasurer and Secretary roles. He will also present the annual awards: the ISBER Distinguished Leadership and Service Award, the ISBER Special Service awards, the ISBER Award for Outstanding Achievement in Biobanking (sponsored by Worthington Industries), the ISBER Founder’s Award (sponsored by Chart MVE), the ISBER Travel Award and the 5K Fun Run/Walk/Sleep trophy.

Acknowledgements

Many thanks are due to the members of the ISBER 2017 Scientific Program Committee, the Organizing Advisory Committee and the ISBER Head Office staff for the huge amount of input and effort over the last year that has resulted in the great program that you will experience. The Chairs and members of the Education and Training Advisory Committee and the Membership and Marketing Committee have worked hard to organise the workshops, the 5K Fun Run and
the Exhibition. We thank our invited speakers and workshop presenters for their contributions to the program.

We greatly appreciate the support from our vendors, sponsors and Corporate Partners, without whom the Annual Meeting would not be possible. Please do visit the Exhibition Hall to support the vendors and check out the Corporate Partner workshops throughout the schedule.

Your feedback is very important to ISBER. The Annual Meeting is run by the membership, for the membership and the success of future Annual Meetings relies on your participation and input. Please fill out the survey that will be sent to you at the end of the week and help shape future meetings.

On behalf of the ISBER leadership, we welcome you to Toronto and hope you have an enjoyable, interesting and stimulating four days.

Join us for an exciting evening at Casa Loma!

**Enjoy dinner and network with your colleagues.**

**Date:** Thursday, May 11, 2017  
**Time:** 7:00pm – 11:00pm  
**Venue:** Casa Loma

**Tickets available at Registration Desk**  
**Ticket Price:** $75 USD*

Transportation will be provided to from the Westin Harbour Castle Hotel to Casa Loma.  
**Please meet at in the hotel lobby at 6:45pm.**  
*All prices subject to 13% Harmonized Sales Tax*
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

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ISBER 2016-2017 BOARD OF DIRECTORS

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MAY 2016-MAY 2017
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Vancouver, Canada

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Silver Spring, MD, United States

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Victoria, BC, Canada

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Bethesda, MD, United States

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Daniel Simeon-Dubach
Walchwil, Switzerland

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Cardiff, United Kingdom

2017 PROGRAM COMMITTEE CO-CHAIR
Monique Albert
Toronto, ON, Canada

2018 PROGRAM COMMITTEE CO-CHAIR
Nicole Sieffert
Houston, Texas, United States

2018 PROGRAM COMMITTEE CO-CHAIR
Menghong Sun
Shanghai, China
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Members: Debra Garcia, Scott Jewell, Zisis Kozlakidis, Kaj Rydman, Brent Schacter, Katherine Sexton, Jim Vaught

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Members: Jane Carpenter, Rita Lawlor, Kathi Shea, Heather Siefers, Nicole Sieffert

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Vice-Chair: Sara Nussbeck
Members: Candace Carter, Marta Castelhano, Kristina Hill, Erin Horn, Lise Matzke, Diane McGarvey, Maimuna Mendy, Cheryl Michels, Kathy Sexton, Nicole Sieffert, Tamzin Tarling

MEMBERSHIP AND MARKETING ADVISORY COMMITTEE
Chair: Debra Garcia
Vice-Chair: Piper Mulins
Members: Luke Bradshaw, Alex Esmon, Johnny Greene, Marianne Henderson

ISBER COMMITTEES

ANNUAL MEETING & EXHIBITS
May 9 – 12, 2017 • Westin Harbour Castle, Toronto, Canada

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Chair: Daniel Simeon-Dubach
Vice-Chair: Cheryl Michels
Members: Clare Allocca, Fay Betsou, Jane Carpenter, Yehudit Cohen, Annemieke De Wilde, Bonginkosi Duma, Helena Ellis, Koh Furuta, Shannon McCall, Michael Roehrl, Amanda Rush, Rajeev Singh, Carmen Swaneepoel, Dana Valley

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Vice-Chair: Helen Morris
Members: Brian Clark, Joe Galbraith, Lisa Gilbert, William Grizzle, Jacqueline Mackenzie-Dodds, Tohru Masui, Helen Moore, Anita Nelson, Rebekah Rasooly, Pedro Rondat Radio, Elena Salvaterra, Nicole Sieffert, Heather Siefers, Anne-Marie Tasse, Amelia Warner, Madeline Williams

ORGANIZING ADVISORY COMMITTEE
Chair: Marianne Henderson
Vice-Chairs: Daniel Simeon-Dubach & Cheryl Michels
Members: Monique Albert, Robert Hanner, Kristina Hill, Zisis Kozlakidis, David Lewandowski, Jacqueline Mackenzie-Dodds, Diane McGarvey, Alison Parry-Jones, Andy Pazahanick, Pamela Saunders, Brent Schacter, Katherine Sexton, Roman Siddiqui, Heather Siefers, Nicole Sieffert, Menghong Sun

NOMINATING COMMITTEE
Chair: Jim Vaught
Members: Brent Schacter, Rita Lawlor, Elaine Gunter, Koh Furuta, Andy Pazahanick

PUBLICATIONS ADVISORY COMMITTEE
Chair: Jim Vaught
Members: Marianne Bledsoe, Lori Campbell, Koh Furuta, William Grizzle, Allison Hubel, Scott Jewell, Anna Meredith, Rick Michels, Peter Riegman, Brent Schacter, Cathy Seiler, Daniel Simeon-Dubach

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Chair: Marianna Bledsoe
Vice-Chair: Helen Morris
Members: Brian Clark, Joe Galbraith, Lisa Gilbert, William Grizzle, Jacqueline Mackenzie-Dodds, Tohru Masui, Helen Moore, Anita Nelson, Rebekah Rasooly, Pedro Rondat Radio, Elena Salvaterra, Nicole Sieffert, Heather Siefers, Anne-Marie Tasse, Amelia Warner, Madeline Williams

SCIENTIFIC PROGRAM ADVISORY COMMITTEE
Co-Chairs: Monique Albert & Alison Parry-Jones
Members: Catherine Alix-Panabières, Jonas Astrin, Marianna Bledsoe, Nigel Brockton

MEMBER WORKING GROUPS & SPECIAL INTEREST GROUPS

- Biospecimen Science
- Enviro-Bio
- Informatics
- Integrated Biobanking Workflows
- International Repository Locator
- Pharma
- Public Education
- Rare Diseases
- Regulatory and Ethics
- Trans-Omics

- Automated Repositories
- CSF Biobanking
- Hospital-Integrated Biorepositories
- Management of Investigator-Returned Research Results

- Automated Repositories
- CSF Biobanking
- Hospital-Integrated Biorepositories
- Management of Investigator-Returned Research Results

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The fastest, next generation, 96 format, capper/decapper

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ISBER Booth #500/401

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Sample integrity you can bank on

The value of your work lies in the integrity of your specimens. For decades, customers have relied on our biobanking solutions and services to preserve sample quality and improve efficiency at every stage of the workflow. From sample collection and preparation to sample analysis and sequencing to cold storage and automation, we have the equipment, consumables, software systems, and full service you need to ensure reliable, efficient sample management and monitoring.

Join our online community at thermofisher.com/biobanking
It’s about time

The time from sample collection to freezing is a critical factor in long-term sample quality. TTP Labtech’s arktic enables rapid -80°C storage for small and large biobanks.

For small and medium collections, arktic offers high-density, integrity-assured random access storage.

For larger collections, combining manual freezers with arktic’s powerful sample sorting features can free up researchers’ time, minimise errors and enhance sample integrity.

Learn more at booth #30!

compact
stores up to 140,000 samples within 1.1 m²

secure
a closed cherry picking system that avoids unnecessary freeze-thaw cycles

reliable
continuous system monitoring and 100% backup refrigeration

discover more at www.ttplabtech.com

find us on Twitter LinkedIn YouTube
ISBER 2017 AWARD WINNERS

ISBER Award for Outstanding Achievement in Biobanking

The ISBER Award for Outstanding Achievement in Biobanking, sponsored by Worthington Industries, is designed to recognize individuals who have made outstanding contributions to the field of biobanking. The award can be given for a single outstanding achievement or a lifetime body of outstanding work in the field.

Allison Hubel (USA)

ISBER Founder’s Award

The ISBER Founders Award, sponsored by Chart MVE, recognizes individuals who have provided outstanding leadership to the founding, support, and incorporation of ISBER as an international biobanking society.

Phil Baird (USA)

ISBER Distinguished Leadership & Service Award

This award is designed to honor ISBER members who have demonstrated exceptional leadership to further the mission and goals of the society and/or significant, long-standing contributions to the society.

Katherine Sexton (USA)

ISBER Special Service Award

The ISBER Special Service Awards recognize individuals who have made exceptional contributions towards the goals of the Society through the performance of a special service or act on behalf of the organization.

Debra Garcia (USA)

Daniel Simeon-Dubach (Switzerland)

ISBER Travel Award

The ISBER Travel Award provides travel support for individuals from emerging countries who are planning, or are currently managing, a repository to attend the ISBER Annual Meeting.

Rogers Kisuule (Uganda)
GENERAL INFORMATION

Venue
Westin Harbour Castle Hotel
1 Harbour Square
Toronto, ON M5J 1A6
Canada

MEETING DATES: MAY 9 – 12, 2017

Conference App
Download the 2017 Conference App and get access to all the conference information and the latest updates. Scan the QR Code at left to download the app or search for ‘ISBER 2017’ in your device’s app store.

Symposium 3A - Spotlight on Innovation in Social Sustainability: Developing Evidence-Driven Best Practices in Biobanking will utilize an interactive survey through the ISBER 2017 mobile app – be sure to download the app in advance to participate!

Conference Registration

Metropolitan Foyer
Monday, May 8 4:00pm – 7:00pm
Tuesday, May 9 6:30am – 6:30pm
Wednesday, May 10 7:00am – 6:00pm
Thursday, May 11 7:00am – 5:30pm
Friday, May 12 7:00am – 4:00pm

Speaker Services

Queens Quay
Monday, May 8 4:00pm – 7:00pm
Tuesday, May 9 7:00am – 5:00pm
Wednesday, May 10 7:00am – 4:30pm
Thursday, May 11 7:00am – 4:15pm
Friday, May 12 7:00am – 1:30pm

Exhibits

Metropolitan Ballroom

EXHIBIT INSTALLATION:
Tuesday, May 9 4:00pm – 8:00pm
Wednesday, May 10 7:00am – 4:15pm

EXHIBIT TAKEDOWN:
Friday, May 12 2:30pm – 8:00pm

EXHIBIT HOURS:
Wednesday, May 10 5:15pm – 7:30pm
Thursday, May 11 9:00am – 6:30pm
Friday, May 12 9:15am – 2:30pm

Annual Meeting Registration (Prices in USD)

<table>
<thead>
<tr>
<th></th>
<th>Regular Rate</th>
<th>On-Site Rate</th>
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<tbody>
<tr>
<td>Member</td>
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<td>Technician/Student</td>
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<tr>
<td>One Day Pass</td>
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<td>Exhibit Hall Pass</td>
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Please note: All rates are subject to 13% Ontario Harmonized Sales Tax.

FULL CONFERENCE REGISTRATION:
Includes participation in all scientific sessions, educational workshops, delegate bag, refreshments and conference meals and networking evenings.

EXHIBIT HALL PASS:
Access to the Exhibit Hall, conference meals served in the Exhibit Hall, and access to the Exhibitor and Poster Networking Evenings.
EDUCATIONAL WORKSHOPS
(Pre-Registration Required)

See page 48 for workshop presentation summaries.

WEDNESDAY, MAY 10 – 3:00PM - 4:00PM

- Educational Workshop 1: Thinning the Collection - can biobanks ever discard samples?
- Educational Workshop 2: Limitations affecting the Use of Human & Animal Tissues in Research: What the Literature Tells Biorepositories
- Educational Workshop 3: Business Planning for Biobanking

THURSDAY, MAY 11 – 11:30AM - 1:00PM

- Educational Workshop 4: Commercialization and Access and Benefit-Sharing Part 1: Public and Community Perspectives on Sample Use
- Educational Workshop 5: The Practice (and Art) of Biospecimen Governance
- Educational Workshop 6: First, Do No Harm: Best Practices and Regulatory Requirements when Procuring Tissue Specimens in the Clinical Setting

THURSDAY, MAY 11 – 1:45PM - 3:30PM

- Educational Workshop 7: Commercialization and Access and Benefit-Sharing Part 2: Private & Legal Perspectives and Commercialization Use Cases
- Educational Workshop 8: Public Education about Biobanks
- Educational Workshop 9: Best Practices for Storage Equipment and Environment

5K FUN RUN/WALK/SLEEP WALK
(Separate Registration Required)

- Date: Wednesday, May 10, 2017
- Time: 6:00am – 7:30am
- Location: Toronto Harbour area
- Ticket Price: $30 USD for Pre-registration, $40 USD for On-site registration

Participants will walk from the Westin Harbour Castle Hotel to the run site. Please meet in the hotel lobby at 5:45am.

ISBER GALA EVENING
(Separate Registration Required)

- Date: Thursday, May 11, 2017
- Time: 7:00pm – 11:00pm
- Venue: Casa Loma
- Ticket Price: $75 USD

Transportation to and from the venue will be provided. Please meet in the hotel lobby by 6:30pm.

Tickets are available at Registration Desk.

Please note: All prices subject to 13% Harmonized Sales Tax

CERTIFICATES OF ATTENDANCE:

All attendees will receive a certificate of attendance by email after the meeting.

WIFI

Hotel guests have access to complimentary WiFi included with their stay.

Non-hotel guests can access WiFi in the meeting areas by connecting to the network Westin-MeetingRoom. The password is ISBER17.

PLENARY SESSION WEBCAST

Please note that the Plenary Session on Tuesday, May 9, 2017 will be broadcasted live and recorded.

The webcast can be viewed at:
https://livestream.com/fmav/isberc2017

on Tuesday, May 9 from 9:15am - 12:15pm EDT.

Use the hashtag #ISBERLIVE on Twitter and Facebook to participate in the conversation!
# POSTER PRESENTATION INFORMATION

<table>
<thead>
<tr>
<th>SESSION 1</th>
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<tbody>
<tr>
<td><strong>Poster Set up:</strong> Wednesday, May 10</td>
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<td><strong>Presentation:</strong> Wednesday, May 10</td>
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<tr>
<td><strong>Poster Take down:</strong> Thursday, May 11</td>
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<td>Biodiversity/Environmental/Animal Repositories</td>
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<td>Biobanking Profiles</td>
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<tr>
<td>Biospecimen Research and Science</td>
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<td>Ethical, Legal, and Social Issues</td>
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<td>Human Specimen Repositories</td>
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<td>Biobanking Education Tools</td>
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<th>SESSION 2</th>
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<td><strong>Poster Set up:</strong> Thursday, May 11</td>
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<td><strong>Presentation:</strong> Thursday, May 11</td>
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<td><strong>Poster Take down:</strong> Friday, May 12</td>
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<table>
<thead>
<tr>
<th>Session 2</th>
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<tr>
<td>Hot Topics</td>
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<tr>
<td>Repository Automation Technology</td>
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<tr>
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<tr>
<td>Repository Standards</td>
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<tr>
<td>Late-Breaking</td>
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**SIGN UP FOR THE 5K FUN RUN AND HELP RAISE FUNDS FOR THE ISBER TRAVEL AWARD!**

**NOT A RUNNER? JOIN THE GROUP TO WALK OR SIGN UP TO SLEEP IN!**

*All proceeds will be used to fund the ISBER Travel Award winner.*

**Date:** Wednesday, May 10, 2017  
**Time:** 6:00am – 7:30am  
**Location:** Toronto Harbour area  

Tickets available at Registration Desk  
**Ticket Price:** $30 USD for Pre-registration, $40 USD for On-site registration  

Please meet at the Westin Castle Harbour Hotel lobby to be escorted to the starting point by 5:45am.  
Please note all prices subject to 13% HST.
VENUE MAP

Westin Harbour Castle Hotel
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Toronto, ON M5J 1A6
Canada
Announcing the launch of our NEW Biorepository!

Store your biomaterials and cell samples!

- Streamlined deposit process
- Data management
- Global distribution and cold chain supply
- Scalability to fit your needs

Stop by our booth #606/507, or visit www.atcc.org/biorepository for more information.
## EXHIBITORS

<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>STAND NUMBER</th>
</tr>
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<tbody>
<tr>
<td>Abbott Informatics</td>
<td>403</td>
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<tr>
<td>ABS Inc.</td>
<td>200</td>
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<tr>
<td>Agilent Technologies</td>
<td>211</td>
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<td>Artificial Intelligence in Medicine</td>
<td>303</td>
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<tr>
<td>ATCC</td>
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<td>BioTillion, LLC</td>
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<td>Bluechip, Ltd.</td>
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<tr>
<td>Brooks Life Science Systems</td>
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<td>BSI Systems</td>
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<td>Core Cryolab</td>
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<td>Coriell Institute for Medical Research</td>
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<td>Cryotherm Inc.</td>
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<td>Custom BioGenic Systems</td>
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<td>Datalog Solutions Inc.</td>
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<td>Hamilton Storage</td>
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<td>ISBER</td>
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<td>Kairos GmbH</td>
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<td>KAYE</td>
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<td>LiICONIC AG</td>
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<td>Longhorn Vaccines and Diagnostics</td>
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<tr>
<td>LVL Technologies GmbH &amp; Co. KG</td>
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<tr>
<td>Mayo Clinic Bioservices</td>
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<td>Micronic</td>
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<td>Pacific Bio-Material Management, Inc.</td>
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<td>Panasonic Healthcare Corporation of North America</td>
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<td>RUCDR Infinite Biologics</td>
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<td>RURO, Inc.</td>
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<td>Scinomix, Inc.</td>
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<td>So-Low Environmental Equipment Co., Inc.</td>
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<td>TWD TradeWinds, Inc.</td>
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<td>Worthington Industries</td>
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<td>Z-SC1 Biomedical</td>
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<tr>
<td>Zhejiang Sorfa Life Science Research Co., Ltd.</td>
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</table>
AT A GLANCE PROGRAM

MONDAY, MAY 8

8:00am-5:30pm  ISBER Board of Directors Meeting (Invitation Only)  Pier 9
1:00pm-5:30pm  Marble Arch Meeting (Invitation Only)  Pier 7&8
4:00pm-7:00pm  Registration / Speaker Services Open  Metropolitan Foyer/Queens Quay
5:30pm-7:00pm  Biopreservation and Biobanking Editorial Meeting (Invitation Only)  Dockside 3

TUESDAY, MAY 9

6:30am-6:30pm  Registration Open  Metropolitan Foyer
6:45am-8:45am  Coffee & Pastries  Harbour Foyer
7:00am-5:00pm  Speaker Services Open  Pier 2/Pier 3/Pier 4/Pier 5
7:00am-8:00am  Committee Meetings  Pier 2/Pier 3/Pier 4/Pier 5
7:30am-9:30am  Coffee and Pastries  Frontenac Foyer
8:00am-9:00am  Getting to Know ISBER  Frontenac
9:15am-12:15pm  Symposium 1  Frontenac
10:15am-10:45am  Coffee Break  Frontenac Foyer
12:15pm-1:15pm  Lunch Corporate Symposium – Global Specimen Solutions  Frontenac Foyer
1:30pm-4:00pm  Symposium 2A/2B (Concurrent)  Frontenac/Harbour
2:30pm-3:00pm  Coffee Break  Frontenac Foyer/Harbour Foyer
4:00pm-8:00pm  General Exhibitor Installation  Metropolitan Ballroom
4:15pm-5:15pm  Special Topics Session  Frontenac
5:15pm-6:15pm  Special Interest and Working Group Meetings  Pier 2/Pier 3/Pier 4/Pier 5

WEDNESDAY, MAY 10

6:00am-7:30am  5K Run/Walk/Sleep  Offsite
7:00am-9:30am  Coffee & Pastries  Harbour Foyer/Frontenac Foyer
7:00am-4:30pm  Speaker Services Open  Metropolitan Ballroom
7:00am-6:00pm  Registration Open  Pier 2&3
7:00am-4:15pm  General Exhibitor Installation  Frontenac Foyer
7:45am-8:45am  Platinum Corporate Partner Workshop 1A  Pier 2&3
9:00am-12:00pm  Symposium 3A/3B (Concurrent)  Frontenac/Harbour
10:30am-11:00am  Coffee Break  Frontenac Foyer/ Harbour Foyer
12:00pm - 1:30pm  General Lunch  Harbour Foyer
12:15pm-1:15pm  Lunch Corporate Symposium – Global Specimen Solutions  Frontenac
1:30pm-2:30pm  Innovative Technologies  Frontenac
2:30pm-3:00pm  Coffee Break  Metropolitan Ballroom
2:30pm-3:30pm  Poster Installation for Session 1  Pier 2&3/Pier 4/Pier 5
3:00pm-4:00pm  Education & Training Workshops 1/2/3 (Concurrent)  Frontenac/Harbour
4:15pm-5:30pm  Contributed Paper Session 1/2 (Concurrent)  Metropolitan Ballroom
5:30pm-7:30pm  Exhibitor & Poster Networking Evening  Metropolitan Ballroom
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

**THURSDAY, MAY 11**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 am-5:30 pm</td>
<td>Registration Open</td>
<td>Metropolitan Foyer</td>
</tr>
<tr>
<td>7:00 am-4:15 pm</td>
<td>Speaker Services Open</td>
<td>Queens Quay</td>
</tr>
<tr>
<td>7:30 am-9:15 am</td>
<td>Coffee &amp; Pastries</td>
<td>Harbour Foyer</td>
</tr>
<tr>
<td>8:00 am-9:00 am</td>
<td>Platinum Corporate Partner Workshops 2A/2B/2C (Concurrent)</td>
<td>Pier 2&amp;3/Pier 4/Pier 5</td>
</tr>
<tr>
<td>9:00 am-6:30 pm</td>
<td>Exhibit Hall Open</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>9:15 am-11:30 am</td>
<td>Contributed Paper Session 3/4 (Concurrent)</td>
<td>Frontenac/Harbour</td>
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<tr>
<td>10:00 am-10:30 am</td>
<td>Coffee Break</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>10:45 am-11:45 am</td>
<td>Poster Take down for Session 1</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>11:30 am-1:00 pm</td>
<td>Education &amp; Training Workshops 4/5/6 (Concurrent)</td>
<td>Pier 2&amp;3/Per 4/Pier 5</td>
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<tr>
<td>11:45 am-12:45 pm</td>
<td>Poster Installation for Session 2</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>12:45 pm-1:45 pm</td>
<td>General Lunch in Exhibit Hall</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>1:45 pm-3:30 pm</td>
<td>Education &amp; Training Workshops 7/8/9 (Concurrent)</td>
<td>Pier 2&amp;3/Per 4/Pier 5</td>
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<tr>
<td>3:30 pm-4:00 pm</td>
<td>Coffee Break</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>4:00 pm-5:00 pm</td>
<td>Platinum Corporate Partner Meeting with Board of Directors</td>
<td>Pier 7&amp;8</td>
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<tr>
<td>5:00 pm-6:30 pm</td>
<td>ISBER 2017 Networking Cocktail Reception</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>7:00 pm-11:00 pm</td>
<td>ISBER Gala Dinner</td>
<td>Offsite</td>
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**FRIDAY, MAY 12**

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 am-8:00 am</td>
<td>Vendor Meeting</td>
<td>Pier 9</td>
</tr>
<tr>
<td>7:00 am-8:00 am</td>
<td>Working Group and Committee Meetings</td>
<td>Harbour/Pier 7/Pier 8</td>
</tr>
<tr>
<td>7:00 am-1:30 pm</td>
<td>Speaker Services Open</td>
<td>Queens Quay</td>
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<tr>
<td>7:00 am-4:00 pm</td>
<td>Registration Open</td>
<td>Metropolitan Foyer</td>
</tr>
<tr>
<td>7:45 am-8:15 am</td>
<td>Coffee &amp; Pastries</td>
<td>Harbour Foyer</td>
</tr>
<tr>
<td>8:00 am-9:00 am</td>
<td>Platinum Corporate Partner Workshops 3A/3B/3C (Concurrent)</td>
<td>Pier 2&amp;3/Pier 4/Pier 5</td>
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<tr>
<td>9:15 am-2:30 pm</td>
<td>Exhibit Hall Open</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>9:15 am-12:15 pm</td>
<td>Symposium 4A/4B (Concurrent)</td>
<td>Frontenac/Harbour</td>
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<td>10:15 am-10:45 am</td>
<td>Coffee Break</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>12:15 pm-1:35 pm</td>
<td>General Lunch in Exhibit Hall</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>1:15 pm-2:15 pm</td>
<td>ISBER Annual Business Meeting</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>1:15 pm-2:30 pm</td>
<td>Poster Takedown for Session 2</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>2:15 pm-2:30 pm</td>
<td>Coffee Break</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>2:30 pm-3:30 pm</td>
<td>Working Group Meetings</td>
<td>Pier 2/Pier 3/Pier 4/Pier 5</td>
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<tr>
<td>2:30 pm-8:00 pm</td>
<td>Exhibitor Takedown</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>3:30 pm-4:30 pm</td>
<td>Committee, Working Group, and Special Interest Group Meetings</td>
<td>Pier 4/Pier 5/Pier 7/Pier 8</td>
</tr>
<tr>
<td>5:30 pm-7:00 pm</td>
<td>ISBER Board of Directors Meeting</td>
<td>Pier 9</td>
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# FULL PROGRAM

## MONDAY, MAY 8, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>8:30am – 5:30pm</td>
<td>ISBER BOARD OF DIRECTORS MEETING <em>(Invitation Only)</em></td>
<td>Pier 9</td>
</tr>
<tr>
<td>1:00pm – 5:30pm</td>
<td>MARBLE ARCH MEETING <em>(Invitation Only)</em></td>
<td>Pier 7&amp;8</td>
</tr>
<tr>
<td>4:00pm – 7:00pm</td>
<td>Registration Open</td>
<td>Metropolitan Foyer</td>
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<tr>
<td>4:00pm – 7:00pm</td>
<td>Speaker Services Open</td>
<td>Queens Quay</td>
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<tr>
<td>5:30pm – 7:00pm</td>
<td>BIOPRESERVATION AND BIOBANKING EDITORIAL BOARD MEETING <em>(Invitation Only)</em></td>
<td>Dockside 3</td>
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## TUESDAY, MAY 9, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:30am – 6:30pm</td>
<td>Registration Open</td>
<td>Metropolitan Foyer</td>
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<tr>
<td>6:45am – 7:30am</td>
<td>Coffee and Pastries</td>
<td>Harbour Foyer</td>
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<tr>
<td>7:00am – 5:00pm</td>
<td>Speaker Services Open</td>
<td>Queens Quay</td>
</tr>
<tr>
<td>7:00am – 8:00am</td>
<td>COMMITTEE MEETINGS <em>(Invitation Only)</em></td>
<td>Pier 2, Pier 3, Pier 4, Pier 5</td>
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<tr>
<td>7:00am – 9:15am</td>
<td>Coffee and Pastries</td>
<td>Frontenac Foyer</td>
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<tr>
<td>8:00am – 9:00am</td>
<td>GETTING TO KNOW ISBER</td>
<td>Frontenac</td>
</tr>
<tr>
<td>9:15am – 12:15pm</td>
<td>SYMPOSIUM 1 : POLAR SHIFT: HOW BIOBANKING IS CHANGING OUR THINKING AND THE WORLD</td>
<td>Frontenac</td>
</tr>
<tr>
<td>9:15am – 9:30am</td>
<td>ISBER Welcome and Opening Remarks</td>
<td>Frontenac</td>
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<tr>
<td>9:30am – 10:15am</td>
<td>Keynote Lecture: A Search &amp; Rescue Mission for the Genes to Feed a Hot and Crowded Planet</td>
<td>Frontenac Foyer</td>
</tr>
<tr>
<td>10:15am – 10:45am</td>
<td>Coffee Break</td>
<td>Frontenac Foyer</td>
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<tr>
<td>10:45am – 11:15am</td>
<td>What’s Under the Hood? The Hidden Wiring of Tumors Revealed with Pan-Cancer Analysis</td>
<td>Frontenac Foyer</td>
</tr>
<tr>
<td>11:15am – 11:45am</td>
<td>Metagenomics Discoveries from Subways to Space</td>
<td>Frontenac Foyer</td>
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<tr>
<td>11:45am – 12:15pm</td>
<td>The NASA Ames Life Sciences Data Archive: Biobanking for the Final Frontier</td>
<td>Frontenac Foyer</td>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>11:00am – 8:00pm</td>
<td>Custom Exhibit Builds <em>(by request only)</em></td>
<td>Metropolitan Ballroom</td>
</tr>
</tbody>
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*Chairpersons: Kathi Shea *(USA)* and Rita Lawlor *(Italy)*

*Chairpersons: Alison Parry-Jones *(United Kingdom)* and Monique Albert *(Canada)*

---

*This session will be broadcasted live in the first ever ISBER webcast! Join the conversation by using the hashtag #ISBERLIVE on Twitter and Facebook.*

This plenary session will focus on demonstrating how biobanking has changed, and is still changing the world. The talks will highlight how evidence derived from biobanking, and its associated practices, is shown to be instrumental in new discoveries, new processes, and new ways of thinking that are changing practices in medicine, agriculture and environmental arenas. It’s about showing the successes, and lessons learned from the last 20 years that are now informing the wider scientific community and pushing back the boundaries. It’s why we’re all here…
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

TUESDAY, MAY 9, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>12:15pm – 1:30pm</td>
<td>General Lunch in the Foyer</td>
<td>Harbour Foyer</td>
</tr>
<tr>
<td>12:20pm – 1:20pm</td>
<td><strong>UPDATE ON THE CHANGES TO THE COMMON RULE</strong>&lt;br&gt;<strong>Chairperson:</strong> Marianna Bledsoe (USA)&lt;br&gt;Hear the latest on the changes to the Common Rule and their impacts on your daily operations!&lt;br&gt;<strong>Presenter:</strong> Michele Russell-Einhorn (USA)</td>
<td>Harbour</td>
</tr>
<tr>
<td>12:20pm – 1:20pm</td>
<td><strong>ROUNDTABLE DISCUSSIONS</strong>&lt;br&gt;Sign up at the registration desk to join us at a roundtable to discuss the latest hot topics in biobanking!&lt;br&gt;- Designing the Quality Management Plan of a Hospital-based Biorepository&lt;br&gt;  Shannon J. McCall (USA)&lt;br&gt;- Creating Industry Standards for Biospecimen Collection, Processing and Storage&lt;br&gt;  Jim Doherty (USA)&lt;br&gt;- Mapping it Out: An Organic Alignment of Biobanking and Data Integration&lt;br&gt;  Jennifer Cheeseman (USA)</td>
<td>Pier 4&amp;5</td>
</tr>
<tr>
<td>12:20pm – 1:20pm</td>
<td><strong>Considerations for Implementing Automation into your Biobank</strong>&lt;br&gt;- The Next Generation Bio-repository&lt;br&gt;  Steve Broach (USA)&lt;br&gt;- Selecting an Informatics System&lt;br&gt;  Michael Tanen (USA)&lt;br&gt;- Self-Consent as a Model for Biobanking and Genetic Research: Doing Right by Patients&lt;br&gt;  Kristy Crooks (USA) and Stephen Wicks (USA)&lt;br&gt;- Risk Management Strategy for Biobanks: Principles and Practice&lt;br&gt;  Berthold Huppertz (Austria)</td>
<td>Harbour</td>
</tr>
<tr>
<td>1:30pm – 4:00pm</td>
<td><strong>SYMPOSIUM 2A (CONCURRENT) – TO TELL OR NOT TO TELL: THE PRACTICAL ASPECTS OF RETURNING INDIVIDUAL RESEARCH RESULTS AND INCIDENTAL FINDINGS TO PARTICIPANTS</strong>&lt;br&gt;<strong>Chairpersons:</strong> Marianna Bledsoe (USA) and Catherine Kennedy (Australia)&lt;br&gt;There has been considerable discussion and many publications in the literature about the return of research results and incidental findings to participants who have contributed their specimens for research. Much of this discussion has focused on the ethical arguments for and against returning research results and incidental findings, when findings should be returned and some of the practical implementation problems with doing so. In this session, biobankers will share their policies and actual experiences with returning research results to participants, challenges that they faced and approaches that they used to overcome them. The session will consist of a series of short presentations followed by an extensive interactive panel and audience discussion period.</td>
<td>Frontenac</td>
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<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>1:30pm – 1:45pm</td>
<td>Obtaining Research Results: A Review of the Experience of One Individual vs One IRB&lt;br&gt;  Michele Russell-Einhorn (USA)</td>
<td>Frontenac</td>
</tr>
<tr>
<td>1:45pm – 2:00pm</td>
<td>Lost in translation: Returning Germline Genetic Results in Genome-Scale Cancer Research&lt;br&gt;  Amber Johns (Australia)</td>
<td>Frontenac</td>
</tr>
<tr>
<td>2:00pm – 2:15pm</td>
<td>Returning Medically Actionable Research Results in the Geisinger MyCode Community Health Initiative&lt;br&gt;  William A. Faucett (USA)</td>
<td>Frontenac</td>
</tr>
<tr>
<td>2:15pm – 2:30pm</td>
<td>Return of Results: Experience from the Telethon Network of Genetic Biobanks&lt;br&gt;  Mirella Filocamo (Italy)</td>
<td>Frontenac</td>
</tr>
<tr>
<td>2:30pm – 3:00pm</td>
<td>Coffee Break</td>
<td>Frontenac Foyer</td>
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</tbody>
</table>
Tuesday, May 9, 2017

1:30pm – 4:00pm

Industry Perspective – Where do We Fit Against Proposed Frameworks for Feedback of Results?
Kirstin Goldring (United Kingdom)

Panel Discussion

Symposium 2B (Concurrent) – Liquid Specimens - New Frontier for Applications of Emerging Technologies
Chairpersons: Dianne Chadwick (Canada) and Teresa Selander (Canada)

Analyses of “Liquid Specimens” focusing on the analysis of circulating tumor cells (CTCs), circulating cell-free nucleic acids (DNA, RNA, miRNA) and exosomes in body fluids (e.g., blood, urine, cerebrospinal fluid) of patients has received enormous attention because these procedures are less invasive than tissue biopsies and allow real-time monitoring of dynamic changes in disease conditions. Analyses of “Liquid Specimens” have paved new diagnostic avenues with obvious clinical implications for personalized medicine. The session will focus on key areas of the emerging technologies, current applications and future perspectives of “Liquid Specimens” including detection of cancer, prenatal diagnostics, and organ transplant rejection.

1:30pm – 1:40pm
Introduction
Klaus Pantel (Germany)

1:40pm – 2:00pm
Clinical Implications of Liquid Biopsy in Cancer Patients
Klaus Pantel (Germany)

2:00pm – 2:30pm
Detection, Characterization and Ex Vivo Expansion of Viable Circulating Tumor Cells
Catherine Alix-Panabières (France)

2:30pm – 3:00pm
Coffee Break

3:00pm – 3:20pm
Live Cell Leukemia Bank – Evolving Ethics
Mark Minden (Canada)

3:20pm – 3:40pm
Application of Proteomics-Based Technologies for the Analysis of Biofluids
Ana Konvalinka (Canada)

3:40pm – 4:00pm
Maternal Peripheral Blood Leukocytes as Biomarkers of Pregnancy Complications
Oksana Shynlova (Canada)

4:00pm – 8:00pm
General Exhibitor Installation

SPECIAL TOPIC SESSION – WHAT’S ON THE HORIZON: EMERGING TOOLS IN BIOBANKING AND BIOSPECIMEN RESEARCH
Chairpersons: Piper Mullins (USA), Sheila O’Donoghue (Canada), Elizabeth Matzke (Canada)

This session will focus on how researchers are developing new biobanking tools/methodologies to improve research. The presentations will describe the new methodologies and techniques, their impact on research, and strategies for incorporating these new innovations into biobank operations. The audience will benefit from a discussion on how each tool can be adapted to or used by other projects.

4:15pm – 5:15pm
B3Africa’s “eB3Kit”: An Informatics Platform
Erik Bongcam-Rudloff (Sweden)

The Global Biodiversity Information Facility (GBIF) and Its Role as an Aggregator of Environmental Biorepository Data
Robert Hannan (Canada)

Tool Building for a Collaborative Scientific and Ethics Future in the Data Intensive Sciences
Vasiliki Rahimzadeh (Canada)

WORKING GROUP MEETINGS (Open to all Participants)

Pier 2
Enviro-Bio Working Group

Pier 3
Hospital-Integrated Biorepositories Special Interest Group

Pier 4
Biospecimen Science Working Group (Invitation Only)

Pier 5
Automated Repositories Special Interest Group
**Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation**

**WEDNESDAY, MAY 10, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 6:00am – 7:30am | ISBER 5K RUN/WALK/SLEEP (Separate Registration Required)  
Meet in the Westin Harbour Castle lobby to be escorted to the starting point for a beautiful run/walk through the Toronto Harbour area. |
| 7:00am – 7:45am | Coffee & Pastries                                                                         |
| 7:00am – 4:30pm | Speaker Services Open                                                                     |
| 7:00am – 6:00pm | Registration                                                                               |
| 7:00am – 4:15pm | General Exhibitor Installation                                                             |
| 7:45am – 8:45am | **PLATINUM CORPORATE PARTNER WORKSHOPS** (Open to all Participants)  
**WORKSHOP 1A – ATCC®**  
MjFF and ATCC® Partnering for Success  
Maryellen de Mars (USA), Liz Kerrigan (USA) and Nicole Polinski (USA) |
| 9:00am – 12:00pm| **SYMPOSIUM 3A (CONCURRENT SESSIONS) – SPOTLIGHT ON INNOVATION IN SOCIAL SUSTAINABILITY: DEVELOPING EVIDENCE-DRIVEN BEST PRACTICES IN BIOBANKING**  
Chairpersons: Daniel Simeon-Dubach (Switzerland), Marianne Henderson (USA), Kirstin Goldring (United Kingdom)  
This session will utilize an interactive survey through the ISBER 2017 mobile app – be sure to download the app in advance to participate!  
Biobank Sustainability consists of focus and attention on the Financial, Environmental, Operational and Societal aspects to be successful. This 2017 ISBER symposium focuses on importance of stakeholder involvement and engagement to develop and maintain social sustainability of biobanks in all sectors. Topics that will be presented and discussed include communications with stakeholder communities; social networking strategies; engaging in the science/policy interface to raise awareness of relevant policy and legal frameworks; development of strategies/business planning to ensure long-term quality and value for contributor and user communities. |
| 9:00am – 9:10am | Introduction to Social Sustainability Symposium                                           |
| 9:10am – 9:35am | Sustaining Biobanks in Cancer Research - Lessons Learned by the Terry Fox Research Institute  
Victor Ling (Canada) |
| 9:35am – 10:00am| The Importance of Reciprocal Transparency between Biobank and End Users of Samples  
Ann Cooreman (United Kingdom) |
| 10:00am – 10:25am| Crop Genebanks: Sustainability through Joint Action  
Hannes Dempewolf (Germany) |
| 10:25am – 10:30am| Opening of Interactive Survey on Sustainability  
*Download the ISBER 2017 mobile app to participate in the interactive survey!* |
| 10:30am – 11:00am| Coffee Break                                                                               |
| 11:00am – 11:30am| Marketing Biobanking Concept Using Social Media: Engaging Stakeholders with a Click  
Ahmed Samir Abdelhafiz (Egypt) |
| 11:30am – 12:00pm| Panel Discussion                                                                            |
WEDNESDAY, MAY 10, 2017

SYMPOSIUM 3B (CONCURRENT SESSIONS) – BIOSPECIMEN QUALITY FOR THE NEXT GENERATION: INNOVATIONS AND IMPLICATIONS
Chairpersons: Nigel Brockton (Canada) and Bonginkosi Duma (South Africa)

Biospecimens are the essential substrates for the “Next Generation” sequencing technologies that have revolutionized genomics and molecular biology. This session will present the reciprocal impacts of biospecimen quality on Next Generation technologies, the diverse applications and quality considerations associated with these technologies and the anticipated future demands and best practices.

9:00am – 9:30am
Opportunities and Challenges in Tissue Procurement for Personalized OncoGenomics
Andrew Mungall (Canada)

9:30am – 10:00am
Enhancing Bovine Genomic Research through High Quality Banked Genetic Materials in South Africa
Avhashoni Zwane (South Africa)

10:00am – 10:30am
Use of Genetic Markers to Evaluate DNA Sample Quality in Biobanks
Victor Alejandro Iglesias (Switzerland)

10:30am – 11:00am Coffee Break
Harbour Foyer

11:00am – 11:30am
Tomorrow’s Needs for Biospecimens in Pharma Research
Pascal Puchois (Canada)

11:30am – 12:00pm Panel Discussion

12:00pm – 1:30pm
General Lunch
Harbour Foyer

LUNCH CORPORATE SYMPOSIUM – GLOBAL SPECIMEN SOLUTIONS
Making your Data eValuable

Speakers:
Amelia Wall Warner, PharmD, RPh, CEO and founder, Global Specimen Solutions
Deb Reinhard, Group Director, Clinical Sample Strategy and Operations

Pharmaceutical companies collect vast amounts of data during a clinical trial, yet only ~20% of the data is used. Disparate data sources, unaligned data, and incomplete data sets prevent in-life interventions, lead to delays in go-to-market, and can lead to non-compliance with regulations. In this symposium, industry leaders will share their experiences with large data sets and how they have been able to incorporate tools into their departments. The audience will glean:
• How to navigate through their department/company to demonstrate that handling large data is complex
• How to evaluate tools to handle large data sets

INNOVATIVE TECHNOLOGIES
Chairpersons: Andy Zaayenga (USA) and David Lewandowski (USA)

1:30pm – 1:35pm
Introduction

1:35pm – 1:40pm
Albumin Oxidizability as a Metric of Blood Plasma/Serum Integrity
Chad Borges, Arizona State University (USA)

1:40pm – 1:45pm
Liquid Biospecimen Volume-Specific Cryopreservation and Aliquoting without Freeze-Thaw
Amanda Riffel, Children’s Mercy Hospital (USA)

1:45pm – 1:50pm
Counting the Costs: The True Price of Manual and Automated Cold Storage
Paul Lomax, TTP Labtech (United Kingdom)

1:50pm – 1:55pm
Ultimate Sample Storage – The New Panasonic TwinGuard Helps Biorepositories Become More Efficient
Joe LaPorte, Panasonic Healthcare (USA)
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

**WEDNESDAY, MAY 10, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:55pm – 2:00pm</td>
<td>Brooks ISIDOR Portal: Bringing Efficiency and Usability to Biobanking Applications</td>
<td>Colin Thurston (United Kingdom)</td>
</tr>
<tr>
<td>2:00pm – 2:05pm</td>
<td>Secure High-Density Automated Sample Storage in a Small Footprint</td>
<td>Jim Doherty, Hamilton Storage (USA)</td>
</tr>
<tr>
<td>2:05pm – 2:10pm</td>
<td>The Marketplace for Human Biospecimen Collections: Biorepositories in the Cloud to Fuel Research</td>
<td>Christopher Lanelli, iSpecimen (USA)</td>
</tr>
<tr>
<td>2:10pm – 2:15pm</td>
<td>BioLix™ SAB: A Novel Automated Storage Platform To Increase Biosample Utilization</td>
<td>Steve Broach, Liconic (USA)</td>
</tr>
<tr>
<td>2:15pm – 2:20pm</td>
<td>Enhancing Specimen, Specimen-derived Data and Consent Tracking for Registries</td>
<td>Scott Clark, Global Specimen Solutions, Inc. (USA)</td>
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<tr>
<td>2:20pm – 2:30pm</td>
<td>Wrap Up</td>
<td></td>
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</tbody>
</table>

2:30pm – 3:00pm  Coffee Break

2:30pm – 3:30pm  Poster Installation for Session 1 (Categories: BEAR, BP, BRS, ELSI, HSR, BET)

**EDUCATION AND TRAINING WORKSHOPS** (Open to all Participants)

<table>
<thead>
<tr>
<th>Pier 2&amp;3</th>
<th>Pier 4</th>
<th>Pier 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00pm – 4:00pm</td>
<td>Educational Workshop 1: Thinning the Collection – Can Biobanks Ever Discard Samples</td>
<td>Educational Workshop 2: Limitations affecting the Use of Human and Animal Tissues in Research: What the Literature Tells Biorepositories</td>
</tr>
<tr>
<td></td>
<td>Presenters: Rebekah Rasooly (USA), Bartha M. Knoppers (Canada), Sherilyn J. Sawyer (USA)</td>
<td>Presenters: William E. Grizzle (USA), Dennis Otali (USA), Daniel S. Atherton (USA), Katherine C. Sexton (USA)</td>
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<tr>
<td></td>
<td>Educational Workshop 3: Business Planning for Biobanking</td>
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<tr>
<td></td>
<td>Presenters: Erik Steinfelder (Netherlands), Alison Parry-Jones (United Kingdom)</td>
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</table>

**CONTRIBUTED PAPER SESSION 1 (CONCURRENT SESSIONS) – ALIGNING ETHICAL, LEGAL, SOCIETAL ISSUES: ‘EXPECTATIONS, EVIDENCE AND DIVERSITY’**

**Chairpersons: Helen Morrin (New Zealand) and Michele Russell-Einhorn (USA)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:15pm – 4:30pm</td>
<td>A Survey of Cancer Patient Biospecimen Donors’ Views About Broad Informed Consent for Using Biospecimens in Future Research, in Collaboration with NCI’s Biospecimen Preanalytical Variables Program</td>
<td>Chris Andry (USA)</td>
</tr>
<tr>
<td>4:30pm – 4:45pm</td>
<td>Informed Broad-Consent at Duke: Modification of “Boiler-plate” Language Increases Comprehensibility and Decreases Time Burden</td>
<td>Shannon McCall (USA)</td>
</tr>
<tr>
<td>4:45pm – 5:00pm</td>
<td>Effect of Deliberation on the Public’s Attitudes Toward Consent Policies for Biobank Research: A Mixed Methods Study</td>
<td>Tom Tomlinson (USA)</td>
</tr>
<tr>
<td>5:00pm – 5:15pm</td>
<td>The Comparative Study of Willingness of Chinese Children and their Guardian Towards Biospecimens Donation</td>
<td>Shijian Liu (China)</td>
</tr>
<tr>
<td>5:15pm – 5:30pm</td>
<td>Some Aspects of Ethical Issues in Biobanks in the Czech Republic</td>
<td>Judita Kinkorova (Czech Republic)</td>
</tr>
</tbody>
</table>
WEDNESDAY, MAY 10, 2017

CONTRIBUTED PAPER SESSION 2 (CONCURRENT SESSIONS) – PLANNING AND SHARING: TOOLS AND APPROACHES FOR REPOSITORY MANAGEMENT

Chairpersons: Rebekah Rasooly (USA) and Menghong Sun (China)

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>4:15pm – 4:30pm</td>
<td>DiscovEHR Browser: A Portal for Sharing Genomic Data from Geisinger MyCode® Community Health Initiative Ming Ta Michael Lee (USA)</td>
</tr>
<tr>
<td>4:30pm – 4:45pm</td>
<td>Developing a Dashboard and Balanced Scorecard as an Administrative Tool to Rapidly Assess the Overall Health of a Biobank Program Monique Albert (Canada)</td>
</tr>
<tr>
<td>4:45pm – 5:00pm</td>
<td>NIST’s Marine Environmental Specimen Bank: Impacts and Future Directions Debra Ellisor (USA)</td>
</tr>
<tr>
<td>5:00pm – 5:15pm</td>
<td>Biobanking Sustainability: How a Strategic Paper Helps in Operating a Biobank Berthold Huppertz (Austria)</td>
</tr>
<tr>
<td>5:15pm – 5:30pm</td>
<td>Innovative Solutions for Swiss Biobanking Platform Sustainability Christine Currat (Switzerland)</td>
</tr>
</tbody>
</table>

5:15pm – 7:30pm Exhibit Hall Open

5:30pm – 7:30pm EXHIBITOR AND POSTER NETWORKING EVENING

THURSDAY, MAY 11, 2017

7:00am – 5:30pm Registration

7:00am – 4:15pm Speaker Services Open

7:30am – 8:15am Coffee & Pastries

PLATINUM CORPORATE PARTNER WORKSHOPS (Open to all Participants)

Pier 2 & 3

WORKSHOP 2A – BSI SYSTEMS
Engage the Full Potential of Your Biorepository Network
Steven Marroulis (USA) and Joseph Krzystan (USA)
8:00am – 9:00am

WORKSHOP 2B – BROOKS LIFE SCIENCE SYSTEMS
Smarter Sample Management – Establishing a Sustainable Biobank by Connecting Stored Samples with Actionable Data
Balwir Matharoo-Ball (United Kingdom) and Mark Fish (United Kingdom)
8:00am – 9:00am

Pier 4

WORKSHOP 2C – CHART MVE
Sample Storage Integrity in Remote Locations
Buzz Bies (USA) and Bruce Edel (USA)
8:00am – 9:00am

9:00am – 6:30pm Exhibit Hall Open

9:15am – 11:30am

CONTRIBUTED PAPER SESSION 3 (CONCURRENT SESSIONS) – FIT-FOR-PURPOSE APPLICATIONS - BIOSPECIMEN RESEARCH AND SAMPLE QUALITY

Chairpersons: Ayat Salman (USA) and Ping Guan (USA)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:15am – 9:30am</td>
<td>How Important Is the Time of Cold Ischemia to Molecular Research and When Do Most Changes Secondary to Cold Ischemia Occur? William E. Grizzle (USA)</td>
</tr>
<tr>
<td>9:30am – 9:45am</td>
<td>Room Temperature Storage Solutions: An Alternative to Cold Chain Management within Biobanks and/or Diagnostics and Research Laboratories in Africa Shafieka Isaacs (South Africa)</td>
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**THURSDAY, MAY 11, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:45am – 10:00am</td>
<td>A Laser Capture Microdissection (LCM) Study of PAXgene-Fixed Paraffin-Embedded (PFPE) Biospecimens</td>
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<td></td>
<td>Abhi Rao (USA)</td>
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<tr>
<td>10:00am – 10:30am</td>
<td>Coffee Break in Exhibit Hall</td>
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<tr>
<td>10:30am – 10:45am</td>
<td>Evaluation of mRNA Integrity by RNAscope ISH in Archival and Prospectively Collected FFPE Tissue Samples</td>
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<td></td>
<td>Stephen McQuaid (United Kingdom)</td>
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<tr>
<td>10:45am – 11:00am</td>
<td>The Effect of Pre-Mortem Patient Conditions on RNA Integrity of Metastatic Tumors</td>
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<tr>
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<td>Dianne Chadwick (Canada)</td>
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<tr>
<td>11:00am – 11:15am</td>
<td>RNA and miRNA Expression Profiles in FFPE Tissues Subjected to Extended Ischemic and Formalin-Fixation Times</td>
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<td>William Mathieson (Luxembourg)</td>
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<tr>
<td>11:15am – 11:30am</td>
<td>Utilization of Mobile APP for Better Implementation of GCP in Sample Collecting Process for Biorepository</td>
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<td></td>
<td>Lei Tian (China)</td>
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<tr>
<td>9:15am – 11:30am</td>
<td>CONTRIBUTED PAPER SESSION 4 (CONCURRENT SESSIONS)</td>
</tr>
<tr>
<td>9:15am – 9:30am</td>
<td>Preparing a Large Biorepository for College of American Pathologists (CAP) Accreditation</td>
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<td></td>
<td>Renee Root (USA)</td>
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<tr>
<td>9:30am – 9:45am</td>
<td>Biospecimen Commons: Building a Worldwide Listing of Biorepositories</td>
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<td></td>
<td>Joseph Miceli (USA)</td>
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<tr>
<td>9:45am – 10:00am</td>
<td>Adaptation of a Biobank Certification Program for Australia</td>
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<td></td>
<td>Jane Carpenter (Australia)</td>
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<tr>
<td>10:00am – 10:30am</td>
<td>Coffee Break in Exhibit Hall</td>
</tr>
<tr>
<td>10:30am – 10:45am</td>
<td>(Epi)genetic Study of Spontaneous Preterm Birth with Prebanked Specimens: A Model of Multi-Center Biobanks for Reproductive Research in Developing Countries</td>
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<tr>
<td></td>
<td>Jing Pan (China)</td>
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<tr>
<td>10:45am – 11:00am</td>
<td>Tissue Biobanking To Understand Molecular Signatures of Space Radiation Induced Tissue Degeneration</td>
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<td>Dawn E. Bowles (USA)</td>
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<tr>
<td>11:00am – 11:15am</td>
<td>The Genotype-Tissue Expression Project: Charting the Human Transcriptome Using a Multi-Individual, Multi-Tissue Sample Collection</td>
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<td></td>
<td>Kristin Ardlie (USA)</td>
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<tr>
<td>11:15am – 11:30am</td>
<td>Biobanking of Marine Oomycetes from Philippine Mangrove Leaves</td>
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<td>Gina Dedeles (Philippines)</td>
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<tr>
<td>9:15am – 11:30am</td>
<td>SESSION 1 – BIOBANK ACCREDITATION FOR LARGE FACILITIES AND NETWORKS</td>
</tr>
<tr>
<td>9:15am – 9:30am</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>SESSION 2 – CREATIVE BIOBANKING FOR TARGETED COLLECTIONS</td>
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<tr>
<td>10:30am – 10:45am</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>10:45am – 11:00am</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>10:45am – 11:15am</td>
<td>Metropolitan Ballroom</td>
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<tr>
<td>11:15am – 11:30am</td>
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**Harbour**

**Metropolitan Ballroom**
### THURSDAY, MAY 11, 2017

**EDUCATION AND TRAINING WORKSHOPS** *(Open to all Participants)*

<table>
<thead>
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<th>Pier 2&amp;3</th>
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<tr>
<td><strong>Presenters:</strong> Piper Mullins (USA), Gilbert Lau (Malaysia), Marta Castelhano (USA), William E. Grizzle (USA)</td>
<td><strong>Presenters:</strong> Marianna Bledsoe (USA), Helen Morrin (New Zealand), Nicole Sieffert (USA)</td>
<td><strong>Presenter:</strong> Shannon McCall (USA)</td>
</tr>
</tbody>
</table>

**Panelists:** Kirstin Goldring (United Kingdom), Judith Girr (USA)  

11:30am – 1:00pm

11:45am – 12:45pm Poster Installation for Session 2 *(Categories: HT, RAT, RM, RS and LB)*

12:45pm – 1:45pm **General Lunch in the Exhibit Hall**

1:45pm – 3:30pm **EDUCATION AND TRAINING WORKSHOPS** *(Open to all Participants)*

<table>
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</tr>
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<tbody>
<tr>
<td><strong>Presenters:</strong> Mark Barnes (USA), Gilbert Lau (Malaysia), Kirstin Goldring (United Kingdom)</td>
<td><strong>Presenters:</strong> Suzanne Vercauteren (Canada), Sheila O’Donoghue (Canada)</td>
<td><strong>Presenters:</strong> John Fink (USA), Marta Castelhano (USA)</td>
</tr>
</tbody>
</table>

**Panelist:** William E. Grizzle (USA)  

3:30pm – 4:00pm Coffee Break in Exhibit Hall

4:00pm – 5:00pm **PLATINUM CORPORATE PARTNER MEETING WITH THE ISBER BOARD OF DIRECTORS** *(Invitation Only)*

5:00pm – 6:30pm **ISBER 2017 NETWORKING COCKTAIL RECEPTION**

7:00pm – 11:00pm **ISBER GALA DINNER** *(Separate Registration Required)*

### FRIDAY, MAY 12, 2017

7:00am – 8:00am **VENDOR MEETING** *(Invitation Only)*

Vendors – join us to provide feedback about the conference and future opportunities!

7:00am – 4:00pm **WORKING GROUP MEETINGS** *(Open to all Participants)*

<table>
<thead>
<tr>
<th>Harbour</th>
<th>Pier 7</th>
<th>Pier 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biospecimen Science Working Group</td>
<td>Standards Advisory Committee <em>(Invitation Only)</em></td>
<td>International Repository Locator Working Group</td>
</tr>
</tbody>
</table>

7:00am – 8:00am

7:00am – 8:15am Coffee & Pastries
**FRIDAY, MAY 12, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 8:00am – 9:00am | **PLATINUM CORPORATE PARTNER WORKSHOPS (Open to all Participants)**  
WORKSHOP 3A – THERMO FISHER SCIENTIFIC  
Use of Mobile Technology to Enhance Biospecimen Quality and Biobank Efficiency  
James V. Lacey, Jr. (USA) and Amy Hendricks (USA)  
WORKSHOP 3B – LICONIC INSTRUMENTS  
Case Studies: Implementation of the BiOLiX™ Automated Biobanking Platform  
Steve Broach (USA) (Moderator), Rostislav Chernomorsky (USA), Patrice Vaillancourt (Canada) and Tanja Weis (Germany)  
WORKSHOP 3C – WORTHINGTON INDUSTRIES  
Global Standardization, Harmonization and Collaboration III  
Marianna Bledsoe (USA), Rita Lawlor (Italy) and Koh Furuta (Japan) |
| 9:15am – 2:30pm | **Exhibit Hall Open**  
**SYMPOSIUM 4A (CONCURRENT SESSIONS) – EXPECTED TO DELIVER: BIOBANKING RESPONSES TO EMERGING GLOBAL THREATS FOR AND IN LMICS**  
Chairpersons: Maimuna Mendy (France), Zisis Kozlakidis (United Kingdom), Judith Giri (USA)  
Biobanks are increasingly involved in the responses to emerging global threats. These vary and can include medical emergencies as well as natural disasters, they can be mounted through a distributed network or in the field in low and middle income countries. In this session we will highlight cases where the involvement of biobanks has been central to the response effort and present the evidence and innovation that has allowed them to do so.  
9:15am – 9:45am | Ready and Willing: Biobanking Leads a New Paradigm for Collaborative Response to the Zika Outbreak  
Mars Stone (USA)  
9:45am – 10:15am | Biobank in NHTD: The Effort and Achievement  
Vu Thi My Hanh (Vietnam)  
10:15am – 10:45am | Coffee Break in Exhibit Hall  
**Metropolitan Ballroom**  
10:45am – 11:15am | Biodiversity and the need for Standard Biological Reference Materials (SBRMs)  
Robert Hanner (Canada)  
11:15am – 12:15pm | Panel Discussion |
### FRIDAY, MAY 12, 2017

#### SYMPOSIUM 4B (CONCURRENT SESSIONS) – ACCELERATING CLINICAL AND SOCIAL OUTCOMES WITH SAMPLE DATA: IT’S ALL ABOUT THE BASE...AND THE EXPLOITATION

**Chairpersons:** Clive Green (United Kingdom) and Tatsuaki Tsuruyama (Japan)

Biospecimens offer huge potential for improving the lives of patients and the natural world. To unlock this potential, researchers must: 1) establish a knowledge base of critical data that can be derived from the samples, and 2) apply novel data exploitation techniques to drive research and/or enable high quality biospecimen management. This session will explore challenges and solutions in developing an all-important knowledge base and showcase sophisticated data analysis techniques for clinical and social impact.

<table>
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<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:15am – 9:25am</td>
<td>Introduction Tatsuaki Tsuruyama (Japan)</td>
<td>Harbour</td>
</tr>
<tr>
<td>9:50am – 10:15am</td>
<td>Facilitating Research Utilization of the Mayo Clinic Biobank Janet Olson (USA)</td>
<td>Metropolitan Ballroom</td>
</tr>
<tr>
<td>10:15am – 10:45am</td>
<td>Coffee Break in Exhibit Hall</td>
<td>Metropolitan Ballroom</td>
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<td>10:45am – 11:25am</td>
<td>Building Large-Scale Resources for Companion Animal and Translational Research through Personalized Canine Genomics Adam Boyko (USA)</td>
<td>Metropolitan Ballroom</td>
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<td>11:25am – 12:05pm</td>
<td>FAIR Sample and Data Access David van Enckevort (Netherlands)</td>
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<td>12:05pm – 12:15pm</td>
<td>Conclusion Clive Green (United Kingdom)</td>
<td>Metropolitan Ballroom</td>
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**ISBER ANNUAL BUSINESS MEETING**

Members – join us to learn more about ISBER’s activities, financials, strategic plan and leadership!

**WORKING GROUP MEETINGS** (Open to all Participants)

- **Pier 2**: Rare Disease Working Group
- **Pier 3**: Informatics Working Group
- **Pier 4**: Integrated Biobanking Workflows Working Group
- **Pier 5**: Regulatory and Ethics Working Group

**COMMITTEE AND WORKING GROUP MEETINGS**

- **Pier 4**: Public Education Working Group (Open to all Participants)
- **Pier 7**: Science Policy Advisory Committee (Invitation Only)
- **Pier 8**: Membership and Marketing Advisory Committee (Invitation Only)

**ISBER BOARD OF DIRECTORS MEETING** (Invitation Only)

**General Lunch in the Exhibit Hall**

**Poster Takedown for Session 2**

**Coffee Break**

**Exhibitor Takedown**

**COMMITTEE AND WORKING GROUP MEETINGS**

- **Pier 4**: Public Education Working Group (Open to all Participants)
- **Pier 7**: Science Policy Advisory Committee (Invitation Only)
- **Pier 8**: Membership and Marketing Advisory Committee (Invitation Only)

**ISBER BOARD OF DIRECTORS MEETING** (Invitation Only)
ROUND TABLE SESSIONS

Tuesday, May 9 • 12:20pm - 1:20pm Harbour Ballroom

DESIGNING THE QUALITY MANAGEMENT PLAN OF A HOSPITAL-BASED BIOREPOSITORY

Shannon J. McCall (USA)

An overall quality management plan is necessary for a hospital-based biorepository to provide consistent, high quality service to clinicians, researchers, and patients. The primary purpose of the quality management plan (QMP) is to ensure all aspects of the research process are ethical, transparent, and do not interfere with patient care. The QMP is designed to monitor, evaluate, and (as necessary) improve processes and as such the QMP must be regularly reviewed for effectiveness.

Learning objectives:
1. What are the components of an overarching quality management plan?
2. What are some of the most commonly omitted components?
3. What strategies can be employed to keep the quality management plan effective and up-to-date?

CREATING INDUSTRY STANDARDS FOR BIOSPECIMEN COLLECTION, PROCESSING AND STORAGE

Jim Doherty (USA)

- Will other biobanks follow the All of Us Research Program Biobank (at Mayo Clinic) standardization practices?
- How are biobanks ensuring sample integrity?
- How are they maintaining chain of custody?

Learning objectives:
Determine how biobanks currently set up their collection, processing and storage practices and see if any will be changing practices to follow the All of Us Research Program’s standardization. This will help determine if there will be an industry-wide standardization moving forward, or if other biobanks will maintain their current practices.

MAPPING IT OUT: AN ORGANIC ALIGNMENT OF BIOBANKING AND DATA INTEGRATION

Jennifer Cheeseman (USA)

This discussion will engage and inform the audience on the organic emergence of a novel, innovative and adaptable approach to enterprise-wide biobanking. This will include examples from the Duke Heart Repository and BioSight (Eye Bank) and show evolution of biobanking from a departmental service to a research support model by fostering relationships across cross-functional partnership comprised of Research Administration, Clinical Research, Information systems and Regulatory Oversight & Research Initiatives.

The coordination and collaboration of individual biobanks within a single academic institution is a significant challenge facing academic biobanking. Traditionally, such coordination and alignment is undertaken in a linear direction in which established processes and controls drive the alignment. This method is often met with resistance and fear of reduction in sample control in terms of individual investigator’s specific research interests. Academic research institutions are complex and adaptive systems that are well equipped for a multi-dimensional to large scale research initiatives. This approach is guided by interactions, relationships, and feedback loops. This allows understanding and enhanced interdependence of entities within the institution, their role in the larger research picture and their needs to maximize their collaborative potential.

Learning objectives:
- The attendees will learn to look beyond linear directed biobanking implementation
- Importance of sharing across active biobanks to advance innovation in research
- How to meet research needs through biobank alignment
- Lessons learned from an organic growth experience
ANNUAL MEETING & EXHIBITS
May 9 – 12, 2017 • Westin Harbour Castle, Toronto, Canada

CONSIDERATIONS FOR IMPLEMENTING AUTOMATION INTO YOUR BIOBANK

Steve Broach (USA)

Biobanking is undergoing an unprecedented expansion in diversity of organizations, sample types, and processes. Correspondingly, automation storage solutions and their advantages are being more thoroughly analyzed.

This discussion endeavors to give a forum to a spectrum of needs, from early stage awareness of the novice automation adopter, to an informational update for the more experienced users and technology providers.

Learning objectives:
1. Establish the current top 5 drivers in biobanking organizations.
2. Explore how automated storage and/or automated processes address these drivers.
3. Look at ROI considerations for automated storage/processes
4. Update on automated storage solutions
5. Wish list discussion

THE NEXT GENERATION BIO-REPOSITORY

Michael Tanen (USA)

As translational and personalized medicine continue to advance, the ability to access high quality bio-specimens for the development of diagnostic tests, to drive combination therapies, and discover new targets will bring the biobank/biorepository to the forefront in integrating the many data elements back to patients. The ability to link highly annotated specimens “in real time” to various disparate databases that house clinical, molecular, and specimen data will define the next generation biobank/biorepository.

Learning objectives:
1. Pharmaceuticals, vendors, academics have all begun moving toward solutions. Can we begin to understand the different solutions and see how various solutions can be integrated through sophisticated informatics
2. Define critical data elements needed to drive personalized medicine
3. Can we organize the information thru data standards
4. Understand the Bed to Bench philosophy

SELECTING AN INFORMATICS SYSTEM

Cheryl Michels (USA)

ISBER members frequently ask the Informatics Working Group to provide assessments of available software. While we cannot do that, we can and will offer advice and best practices in developing system requirements, identifying available systems, and evaluating solutions.

Learning objectives:
1. Developing system requirements
2. Identifying available systems
3. Evaluating solutions

SELF-CONSENT AS A MODEL FOR BIOBANKING AND GENETIC RESEARCH: DOING RIGHT BY PATIENTS

Kristy Crooks (USA) and Stephen Wicks (USA)

We will discuss the advantages and challenges of self-consent with regard to 1. Subjects’ understanding of the proposed research studies; 2. Whether self-consent offers a more authentic reflection of subjects’ desire to consent or decline; 3. Different models that can be used for self-consent; 4. Under what circumstances the study and its implications are too complex to be appropriate for self-consent; 5. Under what circumstances additional consent or re-consent is necessary (e.g., return of clinically-actionable results).

Learning objective:
Identify a number of advantages and disadvantages of self-consent for research and clinical biobanking.

RISK MANAGEMENT STRATEGY FOR BIOBANKS: PRINCIPLES AND PRACTICE

Berthold Huppertz (Austria)

- What are general and what are specific risks for biobanks?
- Risk categories: biological, chemical, physical, ethical, financial
- Risk management plans for biobanks including risk identification, analysis, response planning, monitoring and management tools

Learning objectives:
1. General strategies for biobanking risk management
2. Practical examples for the implementation of a risk management plan
3. Description of specific risks in biobanking and possible coping processes
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**ISBER PRESENTATION SUMMARIES**

**KEYNOTE LECTURE: A SEARCH & RESCUE MISSION FOR THE GENES TO FEED A HOT AND CROWDED PLANET**

Hannes Dempewolf (Germany)

The genetic diversity of our crops and their wild relatives represents a vast pool of resources to help the planet and those who live on it to survive and strive in the challenging times ahead. Ensuring the effective conservation and use of crop diversity depends on long-term, ready access as well as a strong policy framework that governs access and benefit-sharing of these resources. We at the Crop Trust have the mission to ensure the conservation and availability of plant diversity essential for food and agriculture, forever. This presentation will provide an overview of strategic interventions that the Crop Trust is engaged in to build and strengthen an emerging global system of ex situ conservation of plant genetic resources in agricultural genebanks – and synthesize some key recommendations for the conservation and use of biodiversity more generally.

**WHAT’S UNDER THE HOOD? THE HIDDEN WIRING OF TUMORS REVEALED WITH PAN-CANCER ANALYSIS**

Joshua Stuart (USA)

The varieties of cancer seem numberless. Are tumors that arise in different tissues distinct? Is every patient’s tumor distinct? Or are there underlying connections to help construct a molecular taxonomy of cancer’s forms? In this talk, I will present results from the TCGA Pan-Cancer analysis project to investigate cancer’s forms in the most comprehensive study of tumor subtypes attempted to date. We derived a map of tumor classes encompassing an integrated view of six different omics datasets. While most tumors (90%) cluster with others from the same tissue of origin, a significant fraction (10%) are reclassified into groups of multiple tissue types. The study highlights the power of coupling genomics investigations with large scale biobanking of cancer specimens.

**METAGENOMICS DISCOVERIES FROM SUBWAYS TO SPACE**

Sofia Ahsanuddin, MetaSUB Executive Director (USA) on behalf of Christopher Mason (USA)

Here, we show that evolution moves at the genetic, epigenetic, transcriptional, and epitranscriptional level, enabling many means by which cancer can resist therapy. Notably, some of these changes can be resolved by single-cell analysis and enable prognostic relevance. We reveal new biochemical methods and algorithms to examine these changes. Finally, pilot data will be shown for enabling patients to become more involved in their ‘omics data, including an integrative genomics view of entire cities (MetaSUB.org) that leverages longitudinal metagenome and microbiome profiles of the world’s cities to map global dynamics of DNA/RNA. All of these methods and molecular tools work together to guide the most comprehensive, longitudinal, multi-omic view of human physiology in the NASA Twins Study and the NASA Biomolecule Sequencer Mission to enable new technologies that can sequence, quantify, and engineer nucleic acids and entire genomes for long term human space travel.

**THE NASA AMES LIFE SCIENCES DATA ARCHIVE: BIOBANKING FOR THE FINAL FRONTIER**

Jon Rask (USA)

The NASA Ames Institutional Scientific Collection involves the Ames Life Sciences Data Archive (ALSDA) and a biospecimen repository, which are responsible for archiving information and non-human biospecimens collected from spaceflight and matching ground control experiments. The ALSDA also manages a biospecimen sharing program, performs curation and long-term storage operations, and facilitates distribution of biospecimens for research purposes via a public website (https://lsda.jsc.nasa.gov). As part of our best practices, a tissue viability testing plan has been developed for the repository, which will assess the quality of samples subjected to long-term storage. We expect that the test results will confirm usability of the samples, enable broader science community interest, and verify operational efficiency of the archives. This work will also support NASA open science initiatives and guides development of NASA directives and policy for curation of biological collections.

**OBTAINING RESEARCH RESULTS: A REVIEW OF THE EXPERIENCE OF ONE INDIVIDUAL VS ONE IRB**

Michele Russell-Einhorn (USA)

Reporting research results has become a major topic of conversation in national and international arenas. In the United States, there are laws and regulations that impose conflicting responsibilities on institutions and institutional review boards that significantly impacts the ability to manage an individuals request to obtain research results in certain situations. This presentation will describe one such incident and the various
issues it involved as well as its final resolution.

LOST IN TRANSLATION: RETURNING GERMLINE GENETIC RESULTS IN GENOME-SCALE CANCER RESEARCH

Amber Johns (Australia)

The return of research results (RoR) remains a complex and well-debated issue. Despite the debate, actual data related to the experience of giving individual results back, and the impact these results may have on clinical care and health outcomes is sorely lacking. Through the work of the Australian Pancreatic Cancer Genome Initiative (APGi) we: 1) delineate the pathway back to the patient where actionable research data was identified and 2) report the clinical utilisation of individual results returned. Using this experience we discuss barriers and opportunities associated with a comprehensive process of RoR in large-scale genomic research.

RETURNING MEDICALLY ACTIONABLE RESEARCH RESULTS IN THE GEISINGER MYCODE COMMUNITY HEALTH INITIATIVE

William A. Faucett (USA)

Geisinger Health System launched the MyCode Community Health Initiative in 2007. In 2014 we revised the consent and made a commitment to return medically actionable research results to participants. We have consented over 140,000 participants and completed exome sequencing on 62,000+. Our Return-of-Results (ROR) process has contacted over 300 individuals to share medically actionable results. Over 50% of the participants have chosen to be seen by a genetic counselor or a medical geneticist. This presentation will discuss the process that the Geisinger ROR team developed, the infrastructure needed for a successful program and some initial estimates on program cost. We will also share some stories on the significant medical impact of the program. Early results have shown participant and healthcare provider acceptance of the process with no undue anxiety.

RETURN OF RESULTS: EXPERIENCE FROM THE TELETHON NETWORK OF GENETIC BIOBANKS

Mirella Filocamo (Italy)

One of the aims of the Telethon Network of Genetic Biobanks has been to start a dialogue with Patient Organisations via promotion of dedicated meetings and round-tables to discuss and draft biobank policies and procedures, including those concerning ethical issues. From the debates, it became clear that the concerns of lay members are particularly related to the difficulty of obtaining access to the research results. Based on the principle that patients have the right to decide if they want to know or not know the research results, the central question is who should communicate the results and which results should be returned. We have disclosed that while the biobank staff must ensure the return of research results, they may not have the expertise required to communicate such results and should rather act as a link between the researchers and the health personnel who are best suited to contact the patients.

INDUSTRY PERSPECTIVE – WHERE DO WE FIT AGAINST PROPOSED FRAMEWORKS FOR FEEDBACK OF RESULTS?

Kirstin Goldring (United Kingdom)

The presentation will cover the Industry perspective, policies and practices in feedback of results, focusing on where it fits against existing frameworks.

• Guidelines and framework
• The complexity in pharma
• The AstraZeneca position and considerations
• AstraZeneca the practice
• Other experience of feedback of results

CLINICAL IMPLICATIONS OF LIQUID BIOPSY IN CANCER PATIENTS

Klaus Pantel (Germany)

CTC enumeration and characterization with certified systems provides reliable information on prognosis and may serve as liquid biopsy to identify therapeutic targets or mechanisms of resistance on metastatic cells. Metastatic cells might have unique characteristics that can differ from the bulk of cancer cells in the primary tumor currently used for stratification of patients to systemic therapy. Moreover, monitoring of CTCs during therapy might provide unique information for the future clinical management of the individual cancer patient and might serve as surrogate marker for response to therapy. Functional characterization using specialized in vitro and in vivo test systems might serve as models for drug testing. Besides CTCs the analysis of circulating nucleic acids and exosomes provides complementary information. Thus, the molecular and functional analysis of CTCs can be used to improve cancer therapy.
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

DETECTION, CHARACTERIZATION AND EX VIVO EXPANSION OF VIABLE CIRCULATING TUMOR CELLS

Catherine Alix-Panabières (France)

Circulating tumor cells (CTCs) in blood are promising new biomarkers potentially useful for prognostic prediction and monitoring of therapies in patients with solid tumors including colon cancer. Moreover, CTC research opens a new avenue for understanding the biology of metastasis in cancer patients. However, an in-depth investigation of CTCs is hampered by the very low number of these cells, especially in the blood of colorectal cancer patients. Thus, the establishment of cell cultures and permanent cell lines from CTCs has become the most challenging task over the past year.

In 2015, we described for the first time the establishment of a permanent cell line from CTCs of one colon cancer patient. Such data may supply insights for the discovery of new biomarkers to identify the most aggressive CTC sub-populations and for the development of new drugs to inhibit metastasis-initiator CTCs in colon cancer.

LIVE CELL LEUKEMIA BANK-EVOLVING ETHICS

Mark Minden (Canada)

The ethics of tissue banking is continuously evolving in step with the changing awareness and wants of society that includes the public, researchers, ethicists and regulators. In addition, advances in technologies such as genetic manipulation and sequencing provide the stresses for re-evaluation and change. While all forms of tissue procurement, storage and dissemination are faced with the problems of protecting the identity of its donors and yet allow for advancement, live cell banking has the added confounder of being able to generate permanent cell lines that can be propagated in tissue culture or in animals. As well, with current and evolving methods of re-programming and genetic engineering it is possible to use banked cells to create cells with stem cell properties that can be used for creating tissues that can be introduced into patients. In 2016 the Common Rule, the US federal regulations for ethical conduct of human-subjects research, was updated and will go into effect in 2018. Aspects of these new rules as they relate to tissue banking in general and live cells in specific will be discussed.

APPLICATION OF PROTEOMICS-BASED TECHNOLOGIES FOR THE ANALYSIS OF BIOFLUIDS

Ana Konvalinka (Canada)

Biospecimens derived from patients may overcome some limitations of traditional disease models. Proximal fluids are particularly attractive, as they contain tissue-specific biomarkers.

A system called renin angiotensin system (RAS) and its main effector, angiotensin II (AngII), are active in native and transplant kidney disease, causing kidney fibrosis. Although RAS inhibitors constitute the main therapy of kidney disease, they do not uniformly prevent fibrosis. Furthermore, clinical measures of kidney RAS activity are lacking. We previously defined proteomic markers of AngII in primary kidney cells and demonstrated that these markers were increased in fibrotic kidneys, in animal models and humans. We have since developed targeted assays for monitoring of these proteins in urine and our preliminary studies demonstrate that these proteins reflect kidney fibrosis and are modified by RAS inhibition in a cohort of kidney transplant recipients with fibrosis and matched stable controls.

MATERNAL PERIPHERAL BLOOD LEUKOCYTES AS BIOMARKERS OF PREGNANCY COMPLICATIONS

Oksana Shynlova (Canada)

Major pregnancy complications (including intrauterine growth restriction, preeclampsia and preterm birth) impact 15% of all pregnancies, resulting in significant maternal/fetal mortality and morbidity. Maternal peripheral blood leukocytes contribute to many processes during pregnancy including placental development, uterovascular remodeling, as well as remodeling of the fetal membranes and cervix in preparation for labour. They receive signals from multiple sources and in response to these signals orchestrate physiologic processes within uterus that contribute to a successful pregnancy; inappropriate or premature activation of maternal peripheral leukocytes contribute to pregnancy complications. Thus leukocytes are an attractive source of information and can serve as biomarkers to predict adverse pregnancy outcomes. This is a base for developing predictive/diagnostic tests and novel therapeutic interventions that will reduce the incidence of pregnancy complications.
B3AFRICA’S “EB3KIT”: AN INFORMATICS PLATFORM

Erik Bongcam-Rudloff (Sweden)

B3Africa is a 3-year project, during which the eB3Kit is being designed, developed and tested in 8 pilot centres. It includes a plan for sustainability and for dissemination of the eB3Kit and training material beyond the lifetime of the project.

The eB3Kit is an Informatics Platform based on Open source software that integrates through an ID management system and contains:

- Laboratory Information Management System customised for biobanks (e.g., Baobab LIMS).
- A collection of Bioinformatics tools and workflows selected from the eBioKit project.
- Azizi biorepository and freezer monitoring system and ODK field sampling tools.

During my presentation, I will present the eB3Kit modular system and the work done so far by the B3Africa partners.

THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF) AND ITS ROLE AS AN AGGREGATOR OF ENVIRONMENTAL BIOREPOSITORY DATA

Robert Hanner (Canada)

The Global Biodiversity Information Facility is an open-data research infrastructure funded by the world’s governments and aimed at providing access to data about all types of life on Earth. Coordinated through its Secretariat in Copenhagen, the GBIF network of member states and organizations—formally known as Participants—provides data-holding institutions around the world with common standards and open-source tools that enable them to share information about where and when species have been recorded. This includes species occurrence data derived from observations as well as species occurrence data derived from repository specimens. Concerning the latter, GBIF has the potential to serve as an overarching directory to the world’s environmental biorepositories, presuming they hold suitable data that can be shared (for example, the World Federation for Culture Collections is a GBIF member). This talk proposes a case for partnership between GBIF and ISBER to advance best practices in biodiversity data collection and sharing, while also increasing the visibility of the participating repositories.

TOOL BUILDING FOR A COLLABORATIVE SCIENTIFIC AND ETHICS FUTURE IN THE DATA INTENSIVE SCIENCES

Vasiliki Rahimzadeh (Canada)

This presentation will discuss the contemporary governance and policy challenges of research ethics review for collaborative, multi-site/jurisdictional research in the data-intensive sciences. The adoption of single ethics review policies in some Canadian provinces and, most recently, in the United States, substantiates the need for tools that enable institutions to in fact operationalize such policies. Based on a comparative analysis of select international research consortia, the Ethics Review Equivalency Task Team of the Global Alliance for Genomics and Health developed the Ethics Review Recognition (ERR) Policy. Its objective is to provide a common platform of procedurally equivalent requirements that inspire both timely and proportionate ethics review of studies typified in the data-intensive sciences. The ERR Policy serves as both a model and a tool in this regard, able to achieve responsible governance while facilitating collaborative research in the post genomic era.

SUSTAINING BIOBANKS IN CANCER RESEARCH - LESSONS LEARNED BY THE TERRY FOX RESEARCH INSTITUTE

Victor Ling (Canada)

The lack of a culture to support translational research was recognized as a major gap in incorporating innovations into the Canadian health system. The Terry Fox Research Institute (TFRI) was founded in 2007 with a vision to catalyze translational cancer research in Canada. It was recognized that advances in technologies such as genome sciences, advanced imaging, and big data analytics were providing unprecedented opportunities to investigate patient samples with the potential to impact patient outcomes. Central to such a vision is the availability of well-annotated biobanks for cancer research. Working with the Canadian Tissue Repository Network TFRI has learned over the years that a major challenge is to secure resources to fund and sustain biobanks. Cancer is a progressive disease and good quality bio-samples need to be collected and maintained over decades. Another challenge is to harmonize biobanks across the country so that samples and data can be usefully shared.
Due North: Aligning Biobanking Practice with Evolving Evidence and Innovation

THE IMPORTANCE OF RECIPROCAL TRANSPARENCY BETWEEN BIOBANK AND END USERS OF SAMPLES

Ann Cooreman (United Kingdom)

Traceability of biospecimens should be mandatory good practice in research as it is in drug clinical trials. Mutual traceability allows control not only over the ethical, regulatory, and legal provenance and final use of samples but also over the processes that control the pre-analytic variables. Control over these avoids unintended artefacts, biases or errors in the results. Since different laboratory practices, environmental, ethnic, socio-economic and genetic factors may impact final drug target or biomarker selection and validation, those factors must be known. Lack of traceability leaves also end users open to potentially and unknowingly participating in illegal and unethical practices. Transparency between donors (via biobanks) and end users would help in countering a climate of social distrust and suspicion between public and private research sectors and improve quality of research, reproducibility as well as save money in case of irreproducibility of results.

MARKETING BIOBANKING CONCEPT USING SOCIAL MEDIA: ENGAGING STAKEHOLDERS WITH A CLICK

Ahmed Samir Abdelhafiz (Egypt)

Social media networks provide easy, affordable and accessible methods of communication. Being the largest social media platform nowadays, Facebook has evolved into a common marketing platform for products, services as well as ideas. Facebook can be used in association with other methods for effective marketing of biobanking concepts. Using diversified content on Facebook leads to better results. YouTube is another social media platform that can also be used to communicate with stakeholders, get their feedback and help them spread the word about biobanking. Creating specific, engaging and informative content represents challenges for using this approach for marketing. Other social media platforms can also be considered for the same purpose. Sound knowledge of the science of marketing, the potentials of the platform and its limitations is essential to achieve positive results. Moreover, using clear indicators of success is a must to measure the effectiveness of any of these approaches.

CROP GENE BANKS: SUSTAINABILITY THROUGH JOINT ACTION

Hannes Dempewolf (Germany)

Agricultural gene banks harboring the genetic resources that underpin our food supply are an essential foundation for global food security. The diversity of our crops conserved in these facilities is considered a global common good on which all nations are interdependent. The international community has come together and established a multi-lateral system to ensure sustainable long-term conservation, as well as an access and benefit-sharing framework that pertains to these important resources. In this talk, I will explore how stakeholders around the world deliver joint, effective action to conserve and utilize humanity’s common agricultural heritage. Global partnerships and coordinating institutions, such as the Crop Trust, are essential to ensure the sustainable conservation and characterization of this resource to allow future generations to use the myriad of options contained within the genomes of our crops. Only then do we stand a chance to adapt agricultural production systems to adapt agricultural production systems to the immense challenges ahead.

OPPORTUNITIES AND CHALLENGES IN TISSUE PROCUREMENT FOR PERSONALIZED ONCOGENOMICS

Andrew Mungall (Canada)

Personalized cancer treatment based on whole genome and transcriptome analyses can be clinically useful when applied at scale. The British Columbia Cancer Agency’s POG clinical research program involves a multidisciplinary team to identify tumour-specific therapeutic targets to aid treatment decision-making for patients with advanced cancers. Genomics and bioinformatics activities within our Genome Sciences Centre are amenable to scale as patient enrolment increases. However, a significant challenge in scaling the POG program to a population level is the collection of specimens suitable for sequence analysis. I will describe how we have integrated technicians in biopsy suites to collect the highest quality specimens, the impact of biopsy type on specimen quality and pathology review to establish tumour content and cellularity. I will also discuss our nucleic acid extraction process and the impact of DNA and RNA quality on analyses required for evidence-based treatment decision making.
ENHANCING BOVINE GENOMIC RESEARCH THROUGH HIGH QUALITY BANKED GENETIC MATERIALS IN SOUTH AFRICA

Avhashoni Zwane (South Africa)

South Africa (SA) has a number of farming regions with diverse climatic conditions, vegetation, soil types, farming practices and different agricultural activities. In 1999, the Agricultural Research Council (ARC) established a biobank for livestock biodiversity conservation. Biological samples are collected and banked, and are used for current and future genomic research. The initiation of the SA Beef and Dairy Genomic Projects, and the development of the ARC Biotechnology platform, has opened an opportunity for genomic research such in cattle. These research programs form the basis for genomic selection, and the detection of traits of economic importance SA cattle populations. The availability of these new initiatives will enhance the status of genomics research in SA, and allow preservation of valuable genetic resources. Continuing data collection will not only conserve the SA genetic resources, but also improve the status of multidisciplinary research in SA livestock populations.

USE OF GENETIC MARKERS TO EVALUATE DNA SAMPLE QUALITY IN BIOBANKS

Victor Alejandro Iglesias (Switzerland)

Whole genome and tumor sequencing are becoming a standard procedure in clinical trials. Roche/Genentech is embarked on a large project to obtain genetic data from consenting patients recruited in clinical studies. High DNA sample quality is a key to success in this costly undertaking. We are applying genetic markers and other methods to guarantee best possible purity, integrity and uniqueness of the DNA samples before sequencing, significantly reducing sequencing failures. We are also using post-sequencing algorithms to again confirm sample quality parameters.

TOMORROW’S NEEDS FOR BIOSPECIMENS IN PHARMA RESEARCH

Pascal Puchois (Canada)

Scientists need collections of more complex biospecimen collections: specific mutations (e.g. Alk for lung cancers), biospecimen format (e.g. liquid biopsies), associated clinical data (medical outcome after specific therapy), serial collections (for new drug efficacy biomarkers). Existing retrospective biospecimen collections in biobanks do not necessarily meet these current needs and solutions must be found in order to reply to this growing research demand. What are the main bottlenecks to meeting these current and future needs? How can one biobank or network of biobanks reply efficiently to this challenge?

READY AND WILLING: BIOBANKING LEADS A NEW PARADIGM FOR COLLABORATIVE RESPONSE TO THE ZIKA OUTBREAK

Mars Stone (USA)

The global emergence of Zika and the severe neurological outcomes associated with infection caused World Health Organization to declare Zika a public health emergency of international concern. Unlike responses to previous PHE, the unprecedented collaborative reaction and sharing of resources by the scientific and public health communities has driven advances in understanding Zika infection and its effects at an unparalleled rate. At Blood Systems Research Institute we have capitalized on existing infrastructure and networks to collaborate with blood banks, commercial diagnostics and blood screening companies, researchers and national and international government agencies to develop and perform follow up studies of Zika infected blood donors to develop a unique, comprehensive and well pedigreed biorepository of longitudinally collected Zika specimens. This shareable biorepository has facilitated detailed studies characterizing the pathogenesis, persistence and compartmentalization of virus, characterization of viral dynamics, immune parameters and correlation of clinical outcomes, as well as identification and validation of predictive biomarkers. These findings inform government and public health agencies on diagnostic testing recommendations, donor screening and deferral policies, and patient and pregnancy management.

BIOBANK IN NHTD: THE EFFORT AND ACHIEVEMENT

Vu Thi My Hanh (Vietnam)

National Hospital for Tropical Diseases is a leading teaching hospital in patient care and research on tropical diseases in Vietnam. NHTD has an ambitious effort that seeks to extend precision medicine approaches by building a national infrastructure for sustained research on tropical diseases. This project focuses on biobanking and research on the biological determinants of disease. Since 2007, NHTD started Medical Microbiology Gene Bank Project – Vietnam, a long term project which in cooperation with DTRA/CBEP to stored isolated microorganism and biospecimens from patients’ samples positive with certain pathogens combined with all related laboratory and clinical informations. Now, NHTD is storing over 50000 samples in biobank. Moreover, NHTD recently implemented a bioinformatics system to management and analysis samples informations. This project has initiated the first collaborative network with prestigious health and research institutions in the country, and with the other international partners offering its services to the scientific community, in favor of excellence of our clinical research, education programs. This also helps improve the biosafety and biosecurity activities in Vietnam. NHTD willing to join in local and international repositories networks.
**BIODIVERSITY AND THE NEED FOR STANDARD BIOLOGICAL REFERENCE MATERIALS (SBRMS)**

*Robert Hanner (Canada)*

The advancement of DNA sequencing technologies are making inroads into the study of biodiversity at varied scales, from whole genome sequencing of model organisms to marker gene surveys of entire communities and/or taxonomic assemblages. This information can be used in a plethora of downstream applications, including for example, the identification of pests, parasites and vectors of zoonotic diseases. To this end, the Convention on Biological Diversity has advocated the use of tools like DNA Barcoding to address the taxonomic impediment and identify genomic resources globally. This is a powerful approach when reference sequences used for the identification of unknown samples are linked to expert-identified repository specimens. However, as a finite resource, those specimens are not suitable for use as positive controls or for proficiency testing of labs that seek to use DNA sequencing as a molecular diagnostic tool. This talk will discuss innovative approaches for biobanks to respond to the emerging need for wide-spread access to standard biological reference materials in order to facilitate emerging molecular diagnostic applications.

**THE SAIL DATABANK: LINKING REAL WORLD POPULATION-SCALED DATA TO A NATION’S BIO-REPOSITORIES. EASY?**

*David Ford (United Kingdom)*

Systematically harvesting all the data from a country’s health and care providers is hard. Technical and data barriers are significant and, increasingly, public support cannot always been relied upon. Wales’ SAIL Databank has made significant progress over the last decade and now it turning its sights on the task of linking the country’s many bio-banks into the SAIL system, to provide significantly enhanced data facilities for research - from the molecule through to the population.

**FACILITATING RESEARCH UTILIZATION OF THE MAYO CLINIC BIOBANK**

*Janet Olson (USA)*

The Mayo Clinic Biobank, is a research collection of blood-based specimens, patient reported data and clinical data on 56000 Mayo Clinic patients. It began in 2009 and has been available since 2010 to researchers within the Mayo Clinic system as well as to researchers external to Mayo Clinic. More than 200 projects have been approved for use of the resource since its inception. Dr. Janet Olson will present a history of the Mayo Clinic Biobank, summarize key uses of the collection to date as well as lessons learned as to how to best facilitate use of the biobank over time as current research needs change.

**BUILDING LARGE-SCALE RESOURCES FOR COMPANION ANIMAL AND TRANSLATIONAL RESEARCH THROUGH PERSONALIZED CANINE GENOMICS**

*Adam Boyko (USA)*

Although biobanking resources for companion animals has been steadily growing, developing large-scale repositories of tissues and DNA with associated genetic information is much more difficult. The cost of genotyping or sequencing very large cohorts is prohibitive for most research projects, so even when large biobanks can be built, genetic analysis is only performed on a subset of the samples. However demand by owners and breeders for personalized genetic information for their dogs can be used to drive both sample acquisition and genetic analysis for companion animal biobanks, and may be a promising route for supporting large-scale cross-sectional or longitudinal studies aimed at understanding the genetics of complex traits, diseases and aging in these animals.

**FAIR SAMPLE AND DATA ACCESS**

*David van Enckevort (Netherlands)*

Biobank directories (e.g. BBMRI-ERIC Directory, ISBER Resource Locator) and workflow systems for sample and data requests (e.g. BBMRI-NL Request Portal, BBMRI-ERIC Negotiator) are generic ways to increase visibility of biobank collections and improve the use of samples and associated data. Adoption of these systems however requires a significant effort from the biobanks to properly annotate and publish their collections. We have developed a flexible software system (MOLGENIS) to easily build directories based on a flexible data model and advanced tools for data integration (MOLGENIS/connect) to address this burden. Together with the development of the MIABIS information model this provides a solution that meets the FAIR (Findable, Accessible, Interoperable and Reusable) principles for data stewardship and enables biobanks to more easily harmonise and publish their data.
ISBER EDUCATION & TRAINING WORKSHOP SUMMARIES

Wednesday, May 10 • 3:00pm-4:00pm

EDUCATIONAL WORKSHOP 1: THINNING THE COLLECTION - CAN BIOBANKS EVER DISCARD SAMPLES?

Pier 2&3

Presenters: Rebekah Rasooly (USA), Bartha M. Knoppers (Canada), Sherilyn J. Sawyer (Canada)

As population-based studies and precision medicine approaches become more popular, the collections in biobanks are growing dramatically. In the US, for example, the All of Us Research Program (Precision Medicine Initiative®) and the Million Vets Program each plan to collect samples from one million individuals. However, it is extremely expensive to maintain such collections and this poses challenges for the institutions or funding agencies supporting the repository.

This workshop will examine how human biosample repositories manage their collections ethically and appropriately in a sustainable manner. Can a biobank discard some of its human samples? How do we consider the participant’s perspective when deaccessioning samples? Should samples to be discarded be returned to the collecting investigator or just destroyed?

EDUCATIONAL WORKSHOP 2: LIMITATIONS AFFECTING THE USE OF HUMAN & ANIMAL TISSUES IN RESEARCH: WHAT THE LITERATURE TELLS BIOREPOSITORIES

Pier 4

Presenters: William E. Grizzle (USA), Dennis Otali (USA), Daniel S. Atherton (USA), Katherine C. Sexton (USA)

Some requests for tissues including associated specimen requirements specified by investigators as well as some requirements used by biorepositories in their operations are based on hearsay and anecdotal information; in contrast, all such requirements should be based on scientific studies. This workshop will focus on how the literature in biorepository sciences aids biorepositories in selecting requirements for biorepository operations and in educating investigators as to standards for research tissues. Thus, the workshop supports the mission and vision of ISBER in their goals of educating the biorepository community and investigators in order to pursue optimal tissue quality for supporting research.

EDUCATIONAL WORKSHOP 3: BUSINESS PLANNING FOR BIOBANKING

Pier 5

Presenters: Erik Steinfelder (Netherlands), Alison Parry-Jones (United Kingdom)

Biobanking is a relatively young scientific discipline that requires multiple skills and competences that go way beyond being a good custodian of valuable collected materials. Challenges around governance, ethics, data management, logistics and quality are faced by many biobanks in their daily routine. This session will discuss:

1. General business planning for biobanking
2. Making your biobank visible and adding value
3. Financials – sustain after the first 5 years
4. ELSI and business planning: is it a threat or can it help moving forward
Thursday, May 11 • 11:30am-1:00pm

COMMERCIALIZATION AND ACCESS AND BENEFIT-SHARING (ABS) WORKSHOPS

Translating basic research discoveries into practical application involves private industry, the public sector, and academia, from human to animal to environmental research. However, there are complex policies and ELSI issues involved in these sectors’ biobanking activities and sample uses in research. This two-part workshop series will highlight ELSI issues related to the commercial development and/or use of specimens and associated phenotypic data, ownership of/rights to use specimens and associated data, and benefits sharing arising from specimen access and use.

EDUCATIONAL WORKSHOP 4: COMMERCIALIZATION AND ABS PART 1: PUBLIC AND COMMUNITY PERSPECTIVES ON SAMPLE USE

Pier 2&3

**Presenters:** Piper Mullins *(USA)*, Marta Castelhano *(USA)*, William E. Grizzle *(USA)*, Gilbert Lau *(Malaysia)*

**Panelists:** Kirstin Goldring *(United Kingdom)*, Judith Giri *(USA)*

Workshop Part 1, “Public and Community Perspectives on Sample Use,” will present speakers from the museum, veterinary, and human academic sectors. The speakers will discuss a) access and benefit sharing (ABS) policies stemming from the Nagoya Protocol, and applicable to science policy for all biobankers, and b) universities’ and public sectors’ experience sharing benefits and working with companies for commercial use of specimens. The presentations will be followed by a group-led discussion to contextualize the policy implementation approaches discussed.

EDUCATIONAL WORKSHOP 7: COMMERCIALIZATION AND ABS PART 2: PRIVATE & LEGAL PERSPECTIVES AND COMMERCIALIZATION USE CASES

Pier 2&3 (1:45pm - 3:30pm)

**Presenters:** Mark Barnes *(USA)*, Gilbert Lau *(Malaysia)*, Kirstin Goldring *(United Kingdom)*

**Panelist:** William E. Grizzle *(USA)*

Workshop Part 2, “Private & Legal Perspectives and Commercialization Use Cases,” will present three speakers from the legal, private, and government sectors. The speakers will discuss a) ownership and use of human specimens; b) a private industry perspective on commercial use and working with the public sector; and c) a government use case on commercializing specimens using the Nagoya Protocol. This series of short presentations will be followed by audience discussion.

EDUCATIONAL WORKSHOP 5: THE PRACTICE (AND ART) OF BIOSPECIMEN GOVERNANCE

Pier 4

**Presenters:** Marianna Bledsoe *(USA)*, Helen Morrin *(New Zealand)*, Nicole Sieffert *(USA)*

Biospecimen governance is essential to the development and continuation of successful biorepositories and biospecimen-related research efforts. Defining the authorities, processes, and procedures required to guide key operational decisions however, can be difficult. This workshop will include interactive discussion, share working examples, and provide an introduction to the following aspects of research biospecimen governance:

- Governance definition, purpose, models
- Responsibilities of the PI, IRB, etc.
- Participant Engagement
- Biospecimen access concerns (policies, ELSI, etc.)
- Biospecimen distribution concerns (coding, tracking, consent, etc.)

EDUCATIONAL WORKSHOP 6: FIRST, DO NO HARM: BEST PRACTICES AND REGULATORY REQUIREMENTS WHEN PROCURING TISSUE SPECIMENS IN THE CLINICAL SETTING

Pier 5

**Presenter:** Shannon McCall *(USA)*

While some biorepositories focus primarily on processing, storage, management, and distribution of specimens that arrive for accessioning via courier service, biorepositories associated with hospitals often also manage specimen procurement in the clinical setting in partnership with the hospital’s Pathology department and clinical laboratories. The pathologist’s unique medical training allows them to function as patient advocate, ensuring the fidelity of the diagnostic process. This workshop will review specimen procurement from the perspective of a physician-pathologist.
EDUCATIONAL WORKSHOP 8: PUBLIC EDUCATION ABOUT BIOBANKS

Pier 5

Presenters: Suzanne Vercauteren (Canada), Sheila O’Donoghue (Canada)

It is clear that the vast majority of the general public has no or little concept about what biobanks are and what their purpose is. There is an obvious need to educate the public so that they can make an informed decision when asked to participate in biobanking or research. A number of excellent videos and pamphlets have been designed to educate the public on what biobanks are and will be presented as part of the introduction to the workshop. The BC Transplant media kit will be presented as an example of a tool used to educate the public about a similar topic.

The objective of the workshop is to have attendees identify key messages to include in the contents of a public education biobank kit in different formats (print ad, online ad, fact sheet, letter, radio, video). These items will be drafted by workshop attendees.

(Up to 6) members of the public interested in engaging in the workshop will be identified by local (Toronto-based) colleagues. An orientation to biobanking, including a one hour teleconference, will be presented to the invited members of the public prior to the workshop.

Pre-registered attendees of the workshops will be put into working groups comprised of members of the public, researchers, biobankers and others interested in the topic. Non-registered attendees will be assigned to groups based on their professions and personal interests. Following a brief introduction to the purpose of the session and the working groups tasks, the groups will be invited to describe key messages to include in a biobank public education kit. Each working group will present the unique aspects of their education kit to the whole group.

Finally, if there is time there will be a discussion about ISBER’s role in public education about biobanks. We will also discuss how/ if messages need to be adjusted for the global ISBER audience.

EDUCATIONAL WORKSHOP 9: BEST PRACTICES FOR STORAGE EQUIPMENT AND ENVIRONMENT

Pier 4

Presenters: John Fink (USA), Marta Castelhano (USA)

ISBER best practices advocate transferring samples as quickly as possible, but how fast is quick and is it fast enough? Recent research demonstrates vials at cryogenic temperatures can warm as fast as 2°C per second when exposed to an ambient environment. The type of sample, consumable, exposure environment and time will all affect the temperature rise of the sample. Additionally, research shows that warming events can adversely affect post-thaw sample quality and viability.

Biobanking professionals need to identify the variables that affect sample warming in order to understand the scale of the transient event and its effect. Only then, can they implement controlled and monitored processes to ensure valuable samples are never damaged from excessive temperature elevations.

In this workshop attendees will learn about the latest temperature excursion research and the effect of temperature change on biobank samples. This workshop will foster a discussion on:

· Causes and rates of sample warming and all variables
· How increasing cell-based research and therapies are changing the temperature needs of researchers
· Current practices vs. best practices on maintaining sample temperature and viability
· How to build more rigor into the cold-chain management of your sample inventory
· Methods to improve standardization and monitoring of sample temperature control in a biobank
· How new technologies can enable better sample protection and monitoring
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## POSTER SESSIONS

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2017 ANNUAL MEETING SPONSORS & EXHIBITORS

ABBOTT INFORMATICS

Abbott Informatics has been providing leading Laboratory Information Management Systems (LIMS) solutions for more than 30 years. The Abbott Informatics’ STARLIMS solution improves the reliability of laboratory sampling processes, supports compliance with global regulatory requirements and industry standards, and provides comprehensive reporting, monitoring and analysis capabilities. With 12 development and support centers throughout the world, serving organizations in over 45 countries, STARLIMS solutions offer a balance between flexibility, functionality, and usability for data management. As your partner, we’ll make sure that your lab is prepared to take on the challenges of today and seize the opportunities of tomorrow.

ABS INC.

For over 27 years, Analytical Biological Services Inc. (ABS) has been a leading provider of high quality human biospecimens for biomedical research. ABS offers extensive biospecimen processing and characterization services. For example, we analyze and QC samples with Westerns, RT-qPCR, immunohistochemistry, and other technologies. Likewise, we can prepare primary cell cultures, cell fractions, RNA, and DNA, and proteins. If you would like to become part of our biospecimen network, please contact us. As a free service, we offer biobanking consulting, QA, and QC services to our network members to ensure the highest quality biospecimens for biomarker and drug discovery research.

AGILENT TECHNOLOGIES

Agilent Technologies Inc. (NYSE: A), a global leader in life sciences, diagnostics and applied chemical markets, is the premier laboratory partner for a better world. Agilent works with customers in more than 100 countries, providing instruments, software, services and consumables for the entire laboratory workflow. The company generated revenues of $4.20 billion in fiscal 2016 and employs about 12,500 people worldwide. The Agilent 4200 TapeStation system for Biobanking is an automated electrophoresis platform that allows you to standardize your quality control of DNA and RNA samples isolated from a variety of different sources.

Come and see us at booth 211. www.agilent.com/genomics/BioBank-OC

ARTIFICIAL INTELLIGENCE IN MEDICINE

AIM is a software engineering firm that develops solutions to aide in biobank information management, cancer research, surveillance, and reporting functions. Utilizing artificial intelligence, our solutions save you time and resources, while dramatically improving case finding accuracy, completeness and timeliness.

ATCC

With our over 90 years’ experience focused solely on biomaterial services and management, ATCC® has the expertise to store and distribute biological materials worldwide. We offer secure and reliable biological material management with temperature-controlled supply chain, 24/7 equipment monitoring, and on-call after-hours personnel. Together, the people of ATCC share in its non-profit mission to acquire, authenticate, preserve, develop, and distribute biological materials and information for the advancement of scientific knowledge. Learn more about our biorepository services at www.atcc.org/biorepository.

AUTOGEN, INC.

AutoGen, Inc. is a leading provider of nucleic acid extraction equipment. The FlexSTAR+ is AutoGen’s newest solution for
fully automated genomic DNA extraction and isolation from large volumes of whole blood. It purifies long-stranded genomic DNA from up to 10ml volumes of whole blood, starting from the primary sample tubes and ending in the final DNA storage tubes ready to move to the freezer. The automated system uses Qiagen’s proven FlexiGene precipitation chemistry to produce high-quality DNA, free of RNA and other contaminants, and perfect for long-term storage, as well as many downstream assays.

AUTOSCRIBE INFORMATICS, INC. BOOTH 504

By leading the way in system configuration techniques Autoscribe software solutions can match your exact requirements without writing any programming code. This enables Matrix solutions to keep pace with changing business requirements leading to longer system life, lower costs and improved return on investment.

BIOFORTIS, INC. BOOTH 502

BioFortis is a leading provider of precision medicine software solutions. Our flagship product, Labmatrix, is a next-generation biobanking software application that addresses the needs in clinical research sample and consent tracking, study subject and biospecimen management, as well as collaborative translational research programs.

BIOLOGIX GROUP LIMITED BOOTH 317/416

CryoKING, supplier of complete biobanking solutions, is concentrated on biobanks of standardization, formalization and digitalization. With the professional design, advanced techniques, safe and efficient management, CryoKING covers every phase of biobanking and offers complete and one-stop service for biobanking produces.

BIOMATRICA, INC. BOOTH 603

Biomatrica manufacturers best-in-class omics sample collection products and reagents for ambient storage and shipment. Our technologies allow more accurate test results, save money, and improve sample handling workflows through innovative design and our unique expertise in ambient preservation chemistry.

BIOMICROLAB BOOTH 616

BioMicroLab is an innovator of benchtop sample automation instruments to provide productivity tools for life science researchers in drug discovery, R&D, biorepositories and molecular genetics testing laboratories. BioMicroLab manufactures automated sample management platforms for tube and vial based handling, labeling, liquid handling, volume verification, barcode reader systems and more for tube racks and many other common labware formats. Our instrument offering helps improve laboratory efficiency by automating tasks associated with sample handling and by integrating multiple laboratory applications onto a single automation platform.

BIOSERO BOOTH 411/510

Biosero addresses the daily tasks and requirements faced in laboratories by providing scientists with products and services for fields including compound management, bio-banking and sample management. Instruments and consumable solutions include scanners, tubes, seals, software and automated solutions. Products are designed to ensure laboratories the most efficient and effective solution for their process.
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BIOSTOR SYSTEMS, LLC

Biostor Systems is a customer oriented provider of equipment for controlled rate freezing, storage and transport of medical and biological material. Biostor & CLST’s objective is to assist our customers with the delivery of secure, cost-effective and turn-key solutions.

CLST’s manufacturing facility is located in Klagenfurt Austria. The facility produces a variety of products for the pharmaceutical, clinical (tissue banks), biotechnology, diagnostics and blood processing sectors. All products are CE marked in accordance with all applicable standards enabling our customers to comply with GLP requirements in Life - Laboratory Science.

BIOTILLION, LLC

BioTillion provides sample-tracking solutions for cryogenic environments using RFID technology. Our ColdSight system provides realtime biorepository inventory tracking and guides users when accessing the repository for efficient and reliable retrieval and placement of samples while maintaining a full transactional audit trail. ColdSight also provides 3D temperature monitoring ensuring sample integrity. Our BoxMapper product rapidly locates samples in a standard freezer box. Together, these two products provide a complete sample tracking solution for modern biobanks and biorepositories. It interfaces with a growing number of freezer inventory and LIMS packages.

BLUECHIIP, LTD.

bluechip has developed an IT-based temperature and identification tracking solution for biosamples in the health and life sciences industry. The system is well differentiated vs current methods such as labels (hand-written and pre-printed), barcodes (linear and 2D) and RFID (Radio Frequency Identification).

Every time a smart chip is read, an instantaneous temperature is measured, time stamped and recorded. This allows an accurate temperature history to be recorded to provide a more complete chain of custody. The smart chip will survive and operate in extreme temperature environments such as cryogenic storage, temperature shocks and gamma irradiation.

BROOKS LIFE SCIENCE SYSTEMS

Brooks Life Science Systems, a division of Brooks Automation, provides comprehensive sample lifecycle management solutions including sample automation, cryogenics, consumables, compound and biological storage and flexible onsite or offsite sample storage models. Our expert sample management consultants deliver the highest quality management of research samples utilizing our industry-leading automation and cold-chain products, temperature-controlled storage facilities, global logistics services including ReloFleet® mobile biorepository, innovative sample bioprocessing solutions and ISIDOR® transformational technology platform which integrates research samples and data. Our products, services and technology solutions support hundreds of bioscience customers around the world.

BSI SYSTEMS

BSI Systems (BSI, BioShare, and SRL Advantage) is a collection of web-based specimen inventory and resource management products that provide a variety of helpful workflows, specimen inventory, and location tracking services for your facility. BSI manages your biobank with a validated software that tracks the complete life cycle of all specimens within your repository.

BioShare is a platform for sharing specimens and/or datasets with others in the research community by providing a central location for researchers to search, submit requests, and track requester correspondence.

SRL Advantage can aid researchers to search, locate, and request specimen resources across a biobanking network.
ANNUAL MEETING & EXHIBITS
May 9 – 12, 2017 • Westin Harbour Castle, Toronto, Canada

CHART MVE
BOOTH 409/508

Chart MVE, the leading innovative manufacturer of secure cryogenic storage, features a complete line of stainless steel freezers, aluminum vapor shippers, and nitrogen handling equipment. Chart MVE’s stainless steel freezers achieve the longest hold time and lowest LN2 consumption of comparable freezers, with vial capacities ranging from 3,200 to 94,000.

The lightweight aluminum tank line is designed for efficient storage, with capacities ranging from 120 to 6,000 and both liquid and vapor storage options. Cryogenic shipping became more secure with the introduction of Chart MVE’s newest shippers that provide savings on packaging, shipping costs, dry ice, and disposal.

CLOUDLIMS.COM
BOOTH 405

CloudLIMS provides SaaS Laboratory Management software for biobanks, clinical and diagnostic laboratories. Hosted on the cloud, BioTracer and CloudLIMS Lite are essential for any laboratory wanting to automate their operational workflows in a secure and reliable environment at virtually zero capex. BioTracer and CloudLIMS Lite support complete sample life-cycle management including subjects, consents, sample acquisition, storage, request management, and test results management, with a strong focus on data security and compliance (HIPAA & 21 CFR Part 11). With truly configurable, extensible and scalable products, CloudLIMS meets the ever-changing business requirements of both large and small organizations. To learn more, visit www.cloudlims.com

COLLEGE OF AMERICAN PATHOLOGISTS
BOOTH 313

As the world’s largest organization of board-certified pathologists and leading provider of laboratory accreditation and proficiency testing programs, the College of American Pathologists (CAP) serves patients, pathologists, and the public by fostering and advocating excellence in the practice

of pathology and laboratory medicine worldwide. The CAP laboratory accreditation, more than 55 years old, currently accredits approximately 8,000 laboratories.

CORE CRYOLAB
BOOTH 513

Core Cryolab specializes in biorepository services including: cryo-storage, cryo-shipping, cryo-biological equipment sales & service, and biorepository design & build. We are a cryogenic solution provider for biobanks, clinical laboratories, transplant centres, medical research, trials, and biopharma companies. As a full service biorepository resource, we can ship individual samples or large collections around the world. We provide safe, secure storage of master cell lines, clinical grade products, research and clinical trial specimens. We assist biobank start-ups from design through to equipment installation, validation and on-going maintenance. Our success has been built on extreme dedication to quality management and customer care.

CORIELL INSTITUTE FOR MEDICAL RESEARCH
BOOTH 111

Coriell Institute for Medical Research is recognized as one of the world’s leading biobanks, distributing biological samples and offering research and biobanking services to scientists around the globe. A pioneer in genomics, Coriell is examining the utility of genetic information in clinical care through the Coriell Personalized Medicine Collaborative (CPMC) research study. The Institute is also unlocking the promise of induced pluripotent stem cells and their role in disease research and drug discovery.

CRYOBIO SYSTEM
BOOTH 506

Exclusively dedicated to the human life science, CryoBio System manufactures and markets cryopreservation and storage solutions for biological samples. From primary tube to final aliquot storage allotment, CryoBio System covers a range of innovative High Security devices, instruments and software. Product lines include CBS™ High Security
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straws, CBS™ High Security tube, filling, sealing and labeling equipment, storage devices for nitrogen tank or mechanical freezers. State-of-the-art cryopreservation technology provider, CryoBio System, is the reference in biorepositories, biobanks and biological resources centers for applications such as epidemiological studies and Assisted Reproductive Technologies (ART).

CRYOTHERM INC.  
BOOTH 315

Cryotherm specializes in the construction and manufacturing of vacuum super-insulated transport and storage containers and transfer pipes for cryogenic liquid gases (LIN, LOX, LHe, LAr, LH2, LNG) that are used in chemical, medicine, foodstuffs, research or biotechnology industries. Cryotherm develops innovative and market-oriented solutions for customers’ individual processes. Applications include preserving and storing of biological samples, plus design of cryobanks.

CUSTOM BIOGENIC SYSTEMS  
BOOTH 210/212/214

Custom BioGenic Systems is a global leader in the design and manufacture of state of the art liquid nitrogen laboratory freezers, cryogenic equipment and accessories. The CBS Isothermal Liquid Nitrogen Vapor Storage System was patented in 2000 and Custom BioGenic Systems continues to be an innovative leader in the design of cryogenic equipment and supplies.

DATAZOOM SOLUTIONS INC.  
BOOTH 103

Datazoom Solutions based out of Mississauga, Ontario, Canada is the leading healthcare IT cloud solutions provider in North America. The company provides state-of-the-art one-stop IT solutions for biobanking repositories, clinical research and healthcare system integration. Datazoom’s Cloud model ensured a successful, cost-effective delivery of challenging projects to several leading institutions including McGill University Medical Centre, Montreal, Georgetown Medical Centre Washington DC, University Health Network, CHU de Quebec and Winnipeg Health Sciences Centre among others. Powerful analytics combined with privacy and security of healthcare data are the key features of Datazoom’s platforms based on a robust Oracle database.

ELPRO SERVICES, INC.  
BOOTH 101

ELPRO, founded in 1986, is a leading Swiss manufacturer of innovative monitoring solutions for pharmaceutical facilities and transportation of temperature sensitive healthcare products. The LIBERO PDF Logger monitors shipments (-200C...+200C) & requires no software/hardware for data download. Access your facility via internet browser to remotely see temperature, CO2, RH, Pressure or any 4-20mA signal. Ask about our temperature mapping service with GMP-compliant report. We support healthcare companies around the world to simplify their cold chain by reducing manual work, while ensuring product quality. ELPRO’s US subsidiary has been established in Marietta, OH since 2003 with a full technical support staff.

FREEZERWORKS  
BOOTH 302

Configurable software solutions for sample and laboratory management. Track samples and data across multiple freezers, departments and labs while managing workflow. Flexible and user-friendly, Freezerworks puts the laboratory in control with easy to build fields, screens, and reports. Safeguard data with comprehensive security features, 21 CFR part 11 compliance, and cryogenic-safe barcode labeling. State of the art security features maintains patient confidentiality.

GA INTERNATIONAL, INC.  
BOOTH 402

GA International is the leading manufacturer of specialty labels and tags for biorepositories and biomedical laboratories. Since its establishment in 1999, GA International has been committed to the development of new and innovative
materials and products. Our experienced R&D team of scientists is dedicated to test and ensure high-performance products for a wide range of applications.

Using advanced technologies, we manufacture and provide labels for complete labeling and identification solutions including hardware & accessories, software, customization, as well as free consulting & technical support.

Our passion is constant innovation. Our mission is to deliver exceptional quality products unmatched in the industry.

GENOHM, INC.  BOOTH 204

Genohm is the creator of SLims, a feature complete software platform that provides laboratories with one integrated LIMS + ELN + workflow tracking + order management environment. This software can track information from the original sample shipment down to the results from lab equipment and in-silico analysis pipelines. SLims fully accommodates the needs of any research/next-generation sequencing, clinical service facility, biobank or QC lab.

GLOBAL SPECIMEN SOLUTIONS, INC.

Global Specimen Solutions, Inc. provides innovative pipeline data management and analytics solutions and services designed to optimize drug development. GSS was founded in 2013 by global specimen management experts with extensive big pharmaceutical experience. A specialized Clinical Research Organization(CRO) delivering Good Clinical Practice (GCP) accredited products and services, GSS works with clients designing and managing specimen collections with accompanying metadata—from planning to protocol, collection to management, all real-time accessible via targeted analytics and reporting. GSS serves pharmaceutical, biopharma and diagnostic companies and academic institutions. GSS is WBENC certified and a Women & Minority-Owned Business.

GREINER BIO-ONE NORTH AMERICA, INC.  BOOTH 307

Greiner Bio-One North America, Inc., located in Monroe, North Carolina, provides product manufacturing, distribution logistics and product application support to clinical laboratories, research laboratories at Universities, startup companies, and to the world’s largest hospitals, Pharmaceutical and Biotechnology corporations. Greiner Bio-One’s products offer solutions for the collection of human samples and plastic labware products specifically related to the medical research field.

HAIER BIOMEDICAL  BOOTH 517

Haier BioMedical founded in 1998 is based in Qingdao, China. We design, manufacture and market laboratory equipment for the global market. Our products are designed to enable scientific researchers across the globe to perform research projects and to assist in the production of pharmaceutical products. Our product line includes: Ultra-low temperature freezers, laboratory freezers, blood bank refrigeration, laboratory & pharmacy refrigerators, ice lined vaccine refrigerators, biosafety cabinets and much more.

HAMILTON STORAGE  BOOTH 406

Hamilton Storage provides ultra-low temperature automated sample management solutions for the life science industries. Our product line includes −150°C cryopreservation, −80°C biobanking, −20°C high-throughput tube and plate management systems, and consumables. Visit Booth 406 to learn about our new products: SAM HD for high-density −80°C sample storage in a small footprint, ColdScan on the LabElite® I.D. Reader for 2-D barcode reading of frozen samples, and the 6-channel head on the LabElite decapping devices to decap 24-well tube racks. Furthermore, our systems integrate with Hamilton Robotics’ automated liquid handling workstations for complete biobanking solutions.
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ISPECIMEN

iSpecimen is the marketplace for human biospecimen collections, providing researchers with the specimens they need from the patients they want. The company uses proprietary cloud-based technology to match qualifying samples and associated data from its diverse network of hospitals, labs, biobanks, blood centers, and other clinical organizations to biomedical researchers’ specimen requests. iSpecimen sources biofluids, solid tissue, and primary cells, offering clinical remnants, banked samples, and samples collected prospectively for research. Scientists gain easy access to the high-quality samples they need. Partner sites gain an opportunity to further contribute to biomedical discovery as well as their bottom line. And ultimately, healthcare advances for all.

KAIROS GMBH

KAIROS has >10 years of experience in building holistic software platforms that supply medical researchers with IT-tools they need. Our headquarters are in Germany, where we have installations at 28 - from a total of 36 - university hospitals. In 2016, we added our first North American project in Toronto to our list of clients.

Our product CentraXX is a state-of-the-art, web-based application that captures and imports all relevant research data into one system and provides query and reporting tools. The three foundational modules of CentraXX are CXX Biobank, CXX Study Management, and CXX Meta.

KAYE

Visit booth #514 and check out the NEW Kaye RF ValProbe II. Kaye launches new Kaye RF ValProbe II Wireless Loggers and Base Station - high accurate measurement of temperature and humidity providing superior validation and monitoring functionality. Check out the Kaye Validator AVS - Next Generation Validation System!

The Kaye Validator AVS combines accurate sensor measurements with all GMP requirements for calibration and traceability to national standards - not compromising compliance but significantly improving data handling and data management. With this Kaye is introducing a change to current validation concepts and is lifting validation to the next level.

LABVANTAGE SOLUTIONS, INC.

LABVANTAGE, the most configurable, web-based LIMS in the market, is trusted by industry leaders worldwide. We help customers run their labs more efficiently and with fewer errors by automating tasks and integrating with instruments and systems. Our vast experience allows us to minimize risk of project delays or failures. Our system can adapt to changing business needs after initial implementation.

With over 35 years of experience, LABVANTAGE powers hundreds of laboratories, large and small, worldwide. LABVANTAGE is the best choice for industries ranging from pharmaceuticals and consumer goods to molecular diagnostics and biobanking.

LABWARE, INC.

LabWare is the world’s leading specialist in laboratory workflow automation. We empower our customers to succeed because we engineer and deliver a full featured, configurable, enterprise solution that provides results and retains its value. LabWare’s solution for biorepositories and biobanks combines powerful specimen receipt, storage, and request management capabilities with study definition, informed consent, specimen processing, and testing workflow management tools. LabWare’s biospecimen storage management tools are used by over 100 customers, including CRO’s, pharma, government research, health care, and public health organizations, who have realized benefits in efficiency, quality, compliance, and flexibility to quickly accommodate new business requirements.
LICONIC AG

LiCONiC

Liconic is well known worldwide as a leading manufacturer of automated incubators and plate hotels for life sciences. Customers include top pharmaceuticals, biotech companies, governments, and academic research institutes. By investing in R&D, Liconic creates products that address the growing complexity of laboratory automation. Building on 25 years of providing automated solutions, Liconic offers a robust line of biobanking systems, each built “fit-for-purpose”.

The BioLix™ line includes:
- STT (Fully automated biorepository, smallest footprint)
- SAB (High-density, high-throughput, rack based)
- FAB (High-density, high-throughput, tube based)
- STC (Widest range of capacities and applications)
- STV (Fully automated, wide capacity range, cryogenic (<-180°C) automation)

LONGHORN VACCINES AND DIAGNOSTICS

Privately held Longhorn’s PrimeStore® Molecular Transport Medium facilitates and simplifies sample collection and shipments to biobanks and diagnostic laboratories without the cold chain by effectively killing viral and bacterial pathogens and preserving RNA and DNA at ambient, even elevated, temperatures over extended periods. PrimeStore MTM® provides safe, non-hazardous samples for molecular diagnostics, viral loads and next-generation/whole genome sequencing of different human, clinical trial, veterinary, environmental, plant and other samples, including blood/plasma/serum, fecal, urine, sputum, nasal and other secretions/bodily fluids/swabs, cloacal samples, insect vectors and tissue. The samples can be biobanked in the same cryotube for long-term studies.

LVL TECHNOLOGIES GMBH & CO. KG

Since the launch of the product line of 2D Biobank tubes called Samplosophy® in 2013, LVL technologies was able to win numerous customers in sectors such as biobanking, cryopreservation and compound management.

At the moment LVL has to offer storage tubes with various volumes starting at 300µl up to 5ml, external and internal thread types and a highly customizable 2D tube rack system to fit all the different needs of our customers. Associated infrastructure such as scanners and cappers are also part of the product range.

To ensure that all of our 2D biobank tubes will work with your automated storage systems we can provide a certificate of compatibility.

MAYO CLINIC BIOSERVICES

Our laboratory services combine specimen accessioning, processing, nucleic acid extraction, specimen tracking, storage, shipping, kit building, microbiome services, and a variety of histology and tissue-based services in a highly integrated core laboratory vital to basic, translational and epidemiological research.

We also provide highly curated and annotated specimens from the Mayo Clinic Biobank. Unlike most collections that are disease-specific, the Mayo Clinic Biobank is a unique collection of health information and biological samples derived from blood from over 50,000 participants.

These samples and laboratory services can be offered in conjunction with our bioethics and genetic counseling expertise as they relate to biobanking.

MICRONIC

Micronic’s goal is to advance research by serving scientists in finding solutions that contribute to a higher quality of life. We develop and manufacture a range of Dutch-designed products to enhance the process of sample preservation and storage.
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**MODUL-BIO**

Modul-Bio specializes in IT solutions for the management of biospecimen collections.

Modul-Bio’s products portfolio includes:

- MBioLIMS BioBanking: a software specially designed for biobanks and cohorts projects that manages the entire life cycle of samples and their associated data in compliance with biobank regulations.
- MBioLABEL: biological samples identification solutions for long term storage, from labelling to scanning.
- eMBioBANK: a centralized biospecimen inventory web catalogue for sharing biorepositories sample collections with researchers.

We deploy our software solutions dedicated to biobanking, for biological resource centres, cohort projects, diagnostic laboratories, cosmetics and biotechnology companies.

modul-bio.com

**PACIFIC BIO-MATERIAL MANAGEMENT, INC.**

Pacific Bio-Material Management, Inc. (PBMMI) is a cold chain, logistic management service provider to the life science community. We operate regulatory compliant biorepositories, an extensive fleet of custom mobile biological transport vehicles, and quality focused management systems.

Through our four, separate cGMP compliant biorepositories, PBMMI’s biological storage services satisfy the industry’s most stringent regulatory requirements. Complete biorepository management solutions make collecting, using, storing, and retrieving biological specimens with PBMMI both safe and efficient.

Our commitment starts with a promise of the the highest level of security, convenience, and accountability.

**OPENSPECIMEN**

OpenSpecimen is a free and open source biobanking informatics platform used by 55+ leading biobanks across 15 countries including Stanford, Johns Hopkins, Emory, Univ of Pennsylvania, University of Melbourne, Leicester, Victorian Cancer Biobank, etc. OpenSpecimen is feature-rich, highly configurable, easy to customise, open source, unlimited user license, and worldwide community of adopters. OpenSpecimen enables tracking of human and animal biospecimens throughout its lifecycle from collection through utilisation, including collecting high-quality specimen annotations, inventory management and powerful reporting engine.

Panasonic Healthcare Corporation of North America is a subsidiary of Panasonic Healthcare Co., Ltd, Tokyo, Japan. Panasonic Healthcare Co., Ltd. is a global leader in development, design and manufacturing of laboratory equipment for biopharmaceutical, life sciences, academic, healthcare and government markets. For information call Panasonic Healthcare Corporation of North America at 800-858-8442.

**PERKINELMER**

Chemagen from PerkinElmer is a leading supplier of automation and reagents for fast and reliable magnetic bead based DNA and RNA extraction for sample volumes from 10 ul to 10 ml for blood, tissues, saliva, bacteria, food, PCR products. All functions can be performed on the one instrument. Advantages of this unique system are fast processing, unmatched sample volume range and robust chemistry.
Praxair has teamed with the world’s leading manufacturers of vacuum-insulated products and cryogenic systems to provide the latest in cryogenic storage freezers and shippers. We offer a comprehensive selection of sample holding racks, boxes, canisters, frames and cassettes. We also supply carbon dioxide back-up systems for -80°C mechanical freezers, dry ice storage containers and production systems, and controlled rate freezers, along with a wide variety of cryogenic accessories including safety equipment, changeover systems and transfer hoses. As a fully integrated supplier, Praxair provides cryogenic liquid nitrogen in dewar, microbulk and bulk scales and can implement a complete turnkey liquid nitrogen distribution system that’s right for your facility.

RUCDR, a world leader in global biobanking and bioprocessing of biospecimens, supports the bioscience research community by providing comprehensive solutions in sample preparation, genetic, gene and cell-based services, bioinformatics and biostorage. Using a state-of-art infrastructure and the highest quality biomaterials, our scientists work to convert precious biosamples to renewable resources.

Headquartered in the heart of Maryland’s biotechnology corridor RURO, Inc. develops state of the art computer software for research, biotechnological, pharmaceutical, healthcare and government (homeland security) laboratories in the US and worldwide. RURO is a web applications leader, combining world-class innovation and industry experience so individuals can use computer software in new ways and places. Our recent line of biological applications is designed to increase the productivity of scientific, biotech and pharmaceutical laboratories while maintaining the highest level of security, versatility and knowledge.

Scinomix is a provider of laboratory automation systems to customers in the life science industry. Our mission is to provide our customers with solutions by committing to quality, reliability, value, and customer service. Over the years, we have helped customers by providing configurable solutions to increase efficiency in the laboratory. Currently we meet a strong market-niche for labeling tubes, vials, and plates in on research and development. As more labs incorporate automation into their process, our team is ready to provide them with first class customer service and help them get the best return on their investment.
many life science applications. Our focus on high quality and prompt service elevates our brand. Innovation and creativity continue to play a strong role in our vision for the future.

SO-LOW ENVIRONMENTAL EQUIPMENT CO., INC. BOOTH 205

Since 1959, So-Low has manufactured ultra-low temperature freezers for research, storage, and industrial needs. We also supply laboratory freezers, refrigerators, undercounter freezers, and undercounter refrigerators for a variety of applications. Our goal is to provide a level of reliability, quality construction, and value unequalled anywhere in the world for our customers.

STIRLING ULTRACOLD BOOTH 107

Stirling Ultracold develops and manufactures a new generation of environmentally friendly ultra-low temperature freezers which operate from -20°C to -86°C. These freezers do not use compressor-based or cascade refrigeration systems, using a patented free-piston Stirling engine technology developed for critical energy, aerospace and industrial applications. Offering unsurpassed sustainability benefits, this ULT storage solution uses less than half the power of leading cascade ultra-low freezers and uses 100% natural refrigerants.

SO-Low

TECHNIDATA AMERICA MEDICAL SOFTWARE BOOTH 413

TECHNIDATA specializes in developing and distributing Laboratory Information Systems (LIS) together with a suite of software products and services offering the laboratory and users of laboratory services a wide range of information management solutions.

Our collaborators cumulate over 40 years’ experience providing unrivaled know-how in the fields of laboratory production and data management, LIS and analyzer workstation design and development, instrument interfacing and integration.

TERUMOBCT BOOTH 600

A global leader in blood component, therapeutic apheresis and cellular technologies, and the only company with the unique combination of apheresis collections, manual and automated whole blood processing, and pathogen reduction. We believe in the potential of blood to do even more for patients than it does today. This belief inspires our innovation and strengthens our collaboration with customers.

Thermo Fisher Scientific BOOTH 215/314

Thermo Fisher Scientific is the world leader in serving science. Our mission is to enable our customers to make the world healthier, cleaner and safer. Through our Thermo Scientific, Applied Biosystems, Invitrogen and Fisher BioServices brands, we help customers accelerate innovation and enhance productivity. Thermo Fisher Scientific supplies innovative solutions for the world’s biobanking industry. With applications that span the biobanking process and sample protection, we provide a broad range of products and services that support sample collection, preparation, analysis, transport, storage and off-site storage.

TITIAN SOFTWARE BOOTH 213

Founded in 1999, Titian Software supplies software and consultancy services to improve sample management (of compounds, reagents and biologics) for client’s vital life science research. Mosaic is Titian’s customisable, modular software product to control and track all aspects of sample storage, preparation and delivery. Companies worldwide, from small biotech to global pharma, trust Mosaic to provide a seamless, error-free sample supply chain. SampleBank and
FreezerManagement provide optimised and pre-configured subsets of Mosaic software available for rapid deployment.

**TTP LABTECH**

**BOOTH 310**

Sample integrity is assured with TTP Labtech’s modular, high-density biostores (comPOND® at ambient, 4°C and -20°C and arktic® at -80°C). Advanced cherry picking ensures sample security and avoids unnecessary freeze/thaw cycles. Based on proprietary pneumatic technology, the biostores have continuous monitoring systems and in the case of arktic, backup refrigeration. TTP Labtech’s mosquito® liquid handlers and range of automation accessories enable full or partial automation of your workflow. TTP Labtech is a world leader in the design and development of automated instrumentation and consumables for life science applications. Meet our experts at booth #310!

**TWD TRADEWINDS, INC.**

**BOOTH 407**

TWD is the industry leader in permanent barcode technologies. With manufacturing facilities centrally located in the United States, TWD provides a wide variety of permanently barcoded glass and plastic sample vials, serving the pharmaceutical and life science research community, particularly in compound management and bio-banking. TWD prides itself with superior customer services and highest quality of products.

**WORTHINGTON INDUSTRIES**

**BOOTH 201/300**

Worthington Industries, a leading global manufacturing company headquartered in Columbus, Ohio, USA with 10,000 employees worldwide, is proud to offer secure cold chain sample storage, transportation and data management for the life sciences market. With more than 60 years of manufacturing excellence, the company will build on the heritage of the CryoScience by Taylor-Wharton line, acquired in Dec. 2015. Products are shipped around the globe from the Theodore, Alabama facility. To view the complete line of liquid nitrogen storage freezers, refrigerators, dewars and accessories, visit WorthingtonIndustries.com/LifeSciences.

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**BOOTH 100**

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**ZHEJIANG SORFA LIFE SCIENCE RESEARCH CO., LTD.**

Invested in 2009, Zhejiang Sorfa Life Science Research Co., Ltd. is mainly engaged in developing, manufacturing and sales of high-end lab consumable products. At present, Sorfa has four major series of products: biobank consumables, cell culture consumables, food testing consumables and rapid diagnostic consumables, nearly 1,000 varieties.
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**SELF-ASSESSMENT TOOL (SAT) FOR REPOSITORIES**
Assists repository operators in determining how well their repository follows the ISBER Best Practices for Repositories. Participants receive an individualized report which includes:

- Final Score - represents the percent compliance with the ISBER Best Practices
- Questions of Concern – includes questions which most contributed to the overall score.

**BIOREPOSITORY PROFICIENCY TESTING (PT) PROGRAM**
Allows laboratories working with biospecimens to compare their performance to that of other expert laboratories from different sectors all over the world. PT works as an external quality assessment tool to verify the accuracy, precision and efficiency to laboratories’ processing and testing methods.

**PRE-ANALYTICAL BIOREPOSITORY EXTERNAL QUALITY ASSESSMENT (EQA) SURVEY**
Allows participants to benchmark their pre-analytical practices to other biorepositories. Participants receive and individualized report which includes the results and statistics obtained by all biorepositories who have participated.

**INTERNATIONAL REPOSITORY LOCATOR (IRL)**
Helps investigators locate biospecimen data repositories by developing a directory of repository information that can be searched online.

**STANDARD PRE-ANALYTICAL CODE (SPREC)**
Identifies and records the main pre-analytical factors that may have impact on the integrity of sampled clinical fluids and solid biospecimens and their simple derivatives during collection, processing and storage.

**BIOSPECIMEN STABILITY TESTING CALCULATOR (STABCALC)**
Determines sample stability, including freeze-thaw stability and storage stability. STABCALC facilitates stability studies performed by biobanks on different types of biospecimens by identifying potential variabilities in pre-analytical procedures.

**NEUROLOGICAL DISEASE METADATA**
Access metadata related to the biorepository level, the collection level and the individual sample level. Housed in a RedCap server, this tool has been configured in the scope of neurological disease collections, but can be used for other disease collections too.

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