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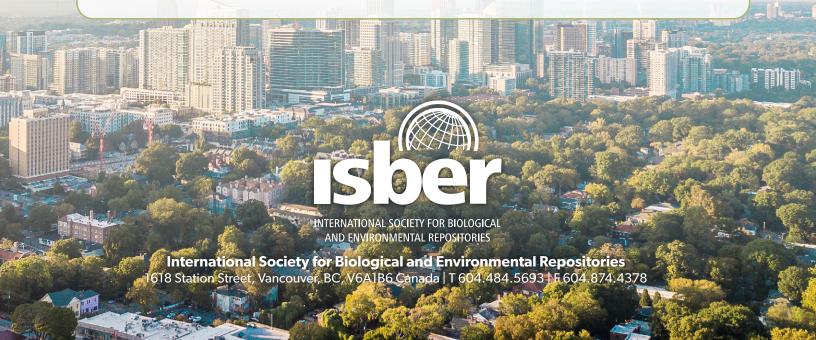


Vision

To be the leading network in the global biobanking and biorepository community.

Mission

ISBER advances the expertise and quality of biorepositories and biobanking science worldwide.



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MESSAGE FROM THE ISBER PRESIDENT, 2021–2022

Dear colleagues and friends,

On behalf of the International Society for Biological and Environmental Repositories (ISBER) Board of Directors, I would like to welcome you to ISBER's first hybrid annual meeting, in-person in Atlanta, Georgia, USA and virtually from around the world.

These last two years have been life altering to us as individuals and to the field of Biobanking worldwide. Yet, throughout this time, we have seen and heard stories of biobankers rising to the occasion, being at the forefront of driving change and scientific discovery.

We hope that you will see that this program reflects the best, cutting-edge elements of Biobanking science worldwide. I would like to take a moment to thank the Scientific Program Co-Chairs, Emma Snapes, Rohit Gupta and Billy Schleif who worked tirelessly to put together this truly international program alongside the talented and diverse program committee. The organization of ISBER's first hybrid meeting is a substantial challenge that they took up with grace, tenacity and intelligence. Thank you as well to ISBER's Organizing Advisory Committee, led by Zisis Kozlakidis, Judita Kinkorova, and Billy Schleif, for providing advice and input as well.

I would like to take a moment to thank our local planning task force, led by Andy Pazahanick, for their contributions to the

program and organizing. This group was always ready to help and provide local knowledge and experience. We hope that you will see the impact of their influence on the program as well.

I would be remiss if I did not recognize our sponsors without whom our conference would not be as successful. I encourage all members to visit our virtual exhibit hall and watch the corporate sessions as well. Our sponsors helped ISBER weather the storm of the last couple of years. They deserve our appreciation.

Finally, thank you to YOU, our attendees, for joining us either in person or virtually or both. We hope that you will be able to make the most of your time to engage with all that this conference has to offer. We hope you will make new connections and friends. We hope that you return to your biobanks, recharged, full of new ideas and knowledge!

Sincerely,

Piper Mullins

ISBER President 2021-2022 Smithsonian Institution

Piper Muhm

USA

MESSAGE FROM THE SCIENTIFIC PROGRAM COMMITTEE CO-CHAIRS

Dear colleagues and friends,

On behalf of the International Society for Biological and Environmental Repositories (ISBER), the co-chairs of the 2022 Annual Meeting and Exhibits welcome you. The great city of Atlanta has deep global connections to healthcare, biomedical research, and technological innovation. It is further world renowned for its southern hospitality, cultural significance, and historical civil rights movements. It is home to the U.S. Center for Disease Control (CDC) and hosts Georgia Bio, a massive life sciences partnership representing nearly two thousand Georgian companies. This combination of science and atmosphere makes Atlanta the ideal host for our long anticipated return to an in-person conference after over two years of restrictions that have kept us apart.

The value of community, diversity, and inclusion is at the heart of the Georgian spirit. Storytelling has played a major role in raising awareness related to race, gender, and health disparities. Therefore, it is fitting that this year's conference is themed "Biobanking: Shaping the Scientific Journey." Experts across the scientific community will share stories of how biospecimens played a role in developing novel tools and insights, and continue to drive change in the life and environmental sciences.

This meeting represents a space for a convergence of diverse

disciplines, people and innovations. An exciting agenda awaits us featuring: inspirational trailblazing actors and collaborative platforms underpinning biobanking and its scientific journey; bridging gaps for the underrepresented; differing global biobanking practices impacting on partnership; building a quality tool chest; and real world data for global research collaboration.

It gives us immense pleasure to welcome you to our first hybrid annual meeting. In-person events are irreplaceable, yet ISBER has kept its prominence in the international biobanking community by hosting many virtual events to keep our community together during these challenging times. These experiences continue to grow and shape our connections, and this year's conference will be no different, by offering the first hybrid format, staggered at different times to reach as many of our worldwide colleagues as possible. The hybrid format facilitates different participation modes: in person, virtually, or both. We are especially grateful to the ISBER scientific planning committee, the Head Office, and the local planning task force for facilitating the safest possible environment in which to convene, and their incredible planning in this effort.

Join us in sharing your hopes and ideas with our ISBER friends and community as we together embrace our theme of biobanking: shaping the scientific journey.

Sincerely,



Emma Snapes *BioConsulting, Ireland*



Billy SchleifJohns Hopkins All Children's
Pediatric Biorepository, USA



Rohit Gupta Spectrum Solutions, USA



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ISBER Working Groups

- Biospecimen Science
- Enviro-Bio
- Informatics
- International Repository Locator
- Pharma
- Rare Diseases

ISBER Special Interest Groups

- Automated Repositories
- Next Generation Living Biobank
- Pediatric



ISBER AWARD RECIPIENTS

ISBER DISTINGUISHED LEADERSHIP AND 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.

Brent Schacter, Canada

ISBER OUTSTANDING ACHIEVEMENT IN BIOBANKING AWARD

The ISBER Award for Outstanding Achievement in Biobanking 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.

Nahla M. Afifi, Qatar

ISBER PIONEER'S AWARD

The ISBER Pioneer's Award, sponsored by MVE Biological Solutions, recognizes individuals who have provided outstanding leadership in developing and executing ISBER's vision and mission.

Marianne Henderson, USA

Sponsored by



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.

David Lewandowski, USA **Amanda Moors**, USA **Benjamin Otto**, Germany **Tamsin Tarling**, Canada

GENERAL CONFERENCE INFORMATION

Virtual Event Platform

Access the 2022 virtual app at the following link:

https://pheedloop.com/ISBER2022Annual/

Username: your email address

Password: Use "forgot password" button to reset your password

Registration Rates (Prices in USD)

All delegates are encouraged to register before the first day of the virtual meeting (June 14) to ensure you do not miss any live sessions.

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	Regular Rate	On-Site Rate (after Sunday, June 12)
ISBER Member	\$515	\$615
Non-ISBER Member	\$640	\$740
Technician/Student Member	\$330	\$400
Technician/Student Non-Member	\$430	\$500

Please note that all delegates who registered for the in-person portion of the ISBER Annual Meeting in Atlanta are automatically registered for the virtual portion of the meeting.

Exhibit Hours:

Tuesday, June 14

- 9:00am 10:00am NA Pacific Time
- 12:00pm 1:00pm NA Eastern Time
- 6:00pm 7:00pm Central Europe Time
- 12:00am next day China Standard Time
- 2:00am next day Australian Eastern Time

Certificates of Attendance

All attendees will receive a certificate of attendance electronically upon completing the post-conference delegate evaluation. This will be distributed via email following the event.







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ISBER's vision is to be the leading network in the global biobanking and biorepository community.

ISBER advances the expertise and quality of biorepositories and biobanking science worldwide.



WWW.ISBER.ORG

BENEFITS OF MEMBERSHIP INCLUDE:

- Free access to the ISBER Best Practices for Repositories and ISBER Biobank Assessment Tool (BAT)
- Opportunity to connect with a global group of professionals in biobanking through the ISBER Members-only Forum
- Access to Biopreservation and Biobanking (BIO), ISBER's official journal
- Reduced registration rates to ISBER meetings
- Stay informed with the latest biorepository news through the online ISBER News

NEW ISBER MEMBERS RECEIVE 15% OFF THEIR FIRST-YEAR OF MEMBERSHIP! READY TO JOIN? VISIT ISBER.ORG!



ISBER is pleased to launch the new edition of the ISBER Biobank Assessment Tool!

The ISBER Biobank Assessment Tool (BAT) assists repositories in evaluating how well their repository follows ISBER's Best Practices including the Cryo Addendum, and on a higher level also the ISO 20387 biobanking standard.

The BAT questionnaire consists of close to 200 questions corresponding to many areas of biobanking, such as repository planning, storage, and general quality management. The BAT can be used repeatedly, which

allows follow up every year, giving it a natural place in any quality management system (QMS), where implementation and follow-up of quantitative indicators are required.

To access the tool, please visit: www.isber.org/bat





CONFERENCE PROGRAM

TUESDAY, JUNE 14, 2022

Time Zone	ROUND TABLE DISCUSSIONS	
	Cohort Biobanks and Quality Assessment Simona Rossi, Swiss Transplant Cohort Study Biobank, Switzerland	
6:00am – 7:00am NA Pacific 9:00am – 10:00am NA Eastern 3:00pm – 4:00pm Central Europe 9:00pm – 10:00pm China Standard 11:00pm – 12:00am Australian Eastern	International Strategies to Enable Research with and Sharing of Biospecimens and Associated Data Annette Schmid, Takeda, USA	
	Raising the ISO 20387 Biobanking Standard to the Next Level Clare Allocca, National Institute of Standards & Technology, USA	
	Microbiome Banking Collaborations: Needs, Barriers, and Hopes Darya Chernikhova, University of Iceland, Iceland	
Time Zone	WELCOME REMARKS AND MEETING BRIEF	
7:15am – 7:30am NA Pacific 10:15am – 10:30am NA Eastern 4:15pm – 4:30pm Central Europe	Welcome Remarks Clare Allocca, ISBER President 2022-2023	
10:15pm – 10:30pm China Standard Next day 12:15am – 12:30am Australian Eastern	Meeting Brief Emma Snapes, Billy Schleif, Rohit Gupta, Program Committee Co-Chairs	
Time Zone	VISIT WITH EXHIBITORS	
9:00am – 10:00am NA Pacific 12:00pm – 1:00pm NA Eastern 6:00pm – 7:00pm Central Europe 12:00am – 1:00am China Standard 2:00am – 3:00am Australian Eastern	Exhibit staff will be available live in their booth space to connect with you.	
Time Zone	ROUND TABLE DISCUSSIONS	
	Decarbonization in Biobanking: Do We Have a Chance to Contribute? Facilitator: Koh Furuta, Urayasu Warakuen, Japan	
3:00pm – 4:00pm NA Pacific 6:00pm – 7:00pm NA Eastern 12:00am – 1:00am Central Europe 6:00am – 7:00am China Standard	Research Priorities in Biobanking 2 Facilitator: Jennifer Byrne, NSA Health Pathology; The University of Sydney, Australia	
8:00am – 9:00am Australian Eastern	Learn About the Qualification in Biorepository Science (QBRS) Exam Facilitator: Brent Schacter, CancerCare Manitoba, Canada	



ON-DEMAND SESSIONS

The following sessions are available for on-demand viewing at your leisure. You will have access to all on-demand session recordings for 6 months.

SYMPOSIUMS

INSPIRING INNOVATIVE TRAILS

Chairs: Emma Snapes, Billy Schleif, Rohit Gupta

Science is a continuously evolving journey. From historical academic silos of specialist studies through to the emergence of biotechnology, and now on the cusp of biodigital convergence, innovation continues to inspire new direction. Biobanking stimulates innovation. Straddling different disciplines, the development and use of biobanks serve as catalysts accelerating novel discoveries across critical applications. In the opening plenary, scientists and technologists will discuss how they have leveraged biospecimens and data to pioneer transformative platforms, which are changing the way biobanking can and should be utilized. This will be followed up by a linked but distinct plenary 2 which gives voice to the trailblazers who pave the way for others to follow.

Attendees will be able to take back to their organizations new platforms and perspectives with interdisciplinary potential for their own biobanking practices.

ISBER Welcome and Opening Remarks

Piper Mullins, ISBER President 2021-2022

KEYNOTE: Reflections From An Unconventional Scientific Journey

David Vigerust, Spectrum Solutions, USA

The Rhino Fertility Project and Beyond

Suzannah A. Williams, Nature Safe, UK

Innovative Strategies for Protecting Sample Integrity with an Eye Towards the Future

Robin Grimwood, Sampled, USA

People as Research Partners: A Community-Based Model of Study Participant Engagement and Data Stewardship

Dawn Barry, Luna, USA

Doing More With Less: A Journey to Rare Diseases Genomics in LMIC's

Aimé Lumaka, University of Kinshasa, Congo

Panel Discussion

THE TRAILBLAZERS PRIMING OUR FUTURE

Chairs: Dan Catchpoole, Andy Pazahanick

Biobanking has come a long way over the past several decades and now serves as the cornerstone of multiple scientific disciplines. Yet, times of extreme global challenges call for a re-imagining of how old restrictive structures can be overcome to forge the future.

Trailblazers are undefined by existing parameters; they serve as instruments of change, pushing the boundaries of what is possible so we may advance. Listen to the most inspiring of today's biobanking thought leaders share insights and model transparency on open source, formative alliances with competitors, policy makers and regulators, as they continue to break down barriers to effect systems change. From leading global partnerships between academia and industry stakeholders to driving entrepreneurship across multiple sectors, we will bring together trailblazers who continue to accelerate scientific progress and promote sustainable infrastructure.

This session is intended to inspire attendees to think differently and learn from disruptors and new thought leaders' vision to advance their own biobanks within their local environment.

African Genomic Variations: The Next Frontier of Global Genetic Medicine

Ambroise Wonkam, Johns Hopkins University School of Medicine, USA

BIOBANK NETWORKING FOR UNDERREPRESENTED SPECIMEN COLLECTIONS: INCLUSION, DIVERSITY AND RARE DISEASES

Chairs: Vanessa Tumilasci, Gregory Grossman

High quality and well-annotated biospecimens are a necessary resource for the development of new biomarkers and therapeutics. To date, the vast majority of biospecimens collected are from participants of European ancestries whereas biospecimen collections from those of African, Latin American, Hispanic, and Native/Indigenous ancestries are severely under-represented.

Specimen collections from participants with disease also suffer inclusion challenges. There are nearly 300 million people worldwide affected by rare diseases and the cause and mechanisms of these diseases are largely unknown. More than 90% of these rare diseases have no therapies.

This session will discuss how to overcome the challenges of under-represented collections. The hope is that by improving diversity, it will enhance the impact that specimen collections will have in personalized medicine.

Cancer Biobanking in Puerto Rico: Challenges and Opportunities

Idhaliz Flores-Caldera, Ponce Health Sciences University, Puerto Rico

Centralized Biobanking to Reduce the Rarity of Rare Disease Tissue Samples

Daniel Perrien, Emory University, USA

African Genomics Program: Catalyzing Partnerships Towards Increasing Diversity in Genomic Research

Nicholas Mangeya, Roche, South Africa

Increasing Diversity of Participants and Donors Through Innovation

Gregory Grossman, Advancing Sight Network, USA

Technologies for Increasing Diversity of Donors for Biosamples

Tiffany Whitlow, Acclinate, USA

Q&A + Panel Discussion



DIFFERING INTERNATIONAL BIOBANKING PRACTICES AND IMPACT FOR PARTNERSHIPS

Chairs: Birendra Kumar Yadav, Deb Leiolani Garcia

Biobanking practices vary widely between regions and countries, and depend on numerous factors, such as legislation, local and national regulations, means of support, social perception, and availability of resources. This session will examine how improved awareness of such differences could facilitate the understanding of the diverse perspectives of biobanking practices, which could ultimately pave paths for international collaborations by providing examples of challenges faced and how they were overcome. The presentations will demonstrate the geo-diversity of biobanking practices for particular countries, share different approaches and identify common elements to enable future networking and collaborative research opportunities. The speakers will address regulations of biobanking in their country, means of support, social perception of biobanking, national scale of collaboration, education, and resources. The session will also include a panel of international experts who will provide further discussion on the key points introduced by the presenters and raised by the audience and provide their viewpoint on the challenges that might affect international research.

The goal of this session is for attendees to be able to consider what changes may be required within their own operations and practices in order to make partnerships more effective.

Biobanks in Central Europe: Inspiration for Future Collaborations

Judita Kinkorova, University Hospital Pilsen, Czech Republic

Indian Biobanking Trends, Challenges, and Opportunities

Birendra Kumar Yadav, National Liver Disease Biobank, India

Biobanks as Pillars in Precision Medicine: Qatar Biobank Experience

Nahla Afifi, Qatar Biobank, Qatar

The NIST Biorepository: Environmental Specimen Banking in the US

Rebecca Pugh, National Institute for Standards and Technology, USA

Biobanking in Australia

Wayne Ng, Victorian Cancer Biobank, Australia

Biobank for Health Research in Indonesia

Jajah Fachiroh, Biobank Unit, Gadjah Mada University, Indonesia

Q&A + Panel Discussion

QUALITY IN CONTEXT: A TOOL CHEST TO SHAPE THE BIOBANKING JOURNEY

Chairs: Clare Allocca, Deb Leiolani Garcia, Emma Snapes

A treasury of tools and resources is available for use in biobanking. This symposium will present a compendium of stories to explore these tools, their interconnectivities, and their impact. Many tools are relatively new or undergoing revisions to ensure continued relevance. These serve as a holistic foundation for robust biobanking that can be strengthened by complementary tools, education, and other resources.

Standardization is a hallmark of sound biobanking that provides assurance for all stakeholders. It enhances recognition and, along with education, can promote professionalism, thus reinforcing biobanking as a full partner in biotechnology. Best practice guidelines aim to be accessible, comprehensive, and contemporary—as such, they represent an excellent starting point for many biobanking processes.

This session will provide quick briefings for six tools, and from the perspective of four individual repositories, will explore the impact of tool implementation. In-depth scenarios will examine ISBER Best Practices: Recommendations for Repositories, ISO 20387 Biotechnology – General requirements for biobanking, Canadian Tissue Repository Network (CTRNet), and Qualification in Biorepository Science (QBRS).

A Business Perspective on Tools

Wilfredo Marin, Thermo Fisher Scientific, USA

Lightning Talk: Best Practices

Lori Campbell, NexGen BioBanking, USA

Biobank-Driven Approach to Precision Medicine in Under-Represented African Populations

Jumi Popoola, 54gene, Nigeria

Lightning Talk: Qualification in BioRepository Science (QBRS)

Diane McGarvey, University of Pennsylvania, USA

The Value and the Impact of the QBRS Program: A Biobank's Perspective

Alison Parry-Jones, Wales Cancer Biobank, Cardiff University, UK

Lightning Talk: Biobank Assessment Tool (BAT)

Karolin Bergenstrahle, Biobank Sweden, Uppsala Biobank, Sweden

Lightning Talk: CTRNet

Peter Watson, BC Cancer Agency, Canada

The Impact of the Modified CTRNet Certification Program in Australia

Jennifer Byrne, New South Wales Health Pathology, The University of Sydney, Australia

Lightning Talk: College of American Pathology Accreditation

Shannon McCall, Duke University School of Medicine, USA

Lightning Talk: ISO 20387

Paulo Holanda, Bioquallis Consultoria, Brazil

Standing on the Shoulders of Giants: The Measurable Impact of ISO 20387 Accreditation

Marta Castelhano, Cornell Biobank, USA

Panel Discussion



REAL WORLD DATA FOR GLOBAL RESEARCH COLLABORATION

Chairs: Marianne Henderson, Wilfredo Marin, Zisis Kozlakidis

Exponential accumulation, processing, and global accrual of large datasets in healthcare is occurring and is only useful with an equally evolving field of data analytics. Access to big data and accompanying analytics can improve disease detection and control; services modelling; prediction of causality and treatment outcomes; and greater patient and disease stratification. Data analysis, such as artificial intelligence-enabled analyses, of large and varied datasets speed discovery and provide access to better personalized patient care.

Expanding the access to data and collaborations between researchers across high income (HICs) and low and middle-income countries (LMICs) is important for health advances for all and the reduction of disease burden worldwide. This session will aim to highlight different global perspectives and drive the discussion forward from today toward the future of biobanking and big data. The goal of this session is to ensure that attendees understand how their collections contribute to the larger question of big data and what changes they may wish to consider in order to address key challenges faced.

Transforming Data into Knowledge: A Global Perspective on the Microbiome and Drug Response

Nikhil Sharma, BioCorteX, United Kingdom

Challenges and Opportunities of Biospecimens Sustainability and Data Sharing: Lessons Learned from Cancer Prevention Studies

Ying Wang, American Cancer Society, USA

A Global Training Program for Building Resources and Capacity for Genomics

Alice Matimba, Wellcome Connecting Science, UK

Data and Biospecimens from Large Integrated Healthcare Systems: Biomarkers and Al Applications for Risk Prediction

Nicolas Wentzensen, National Cancer Institute, USA

Panel Discussion

Including Rita Lawlor

Rising Stars: Next Generation of Biobankers

Chairs: Hanh Vu, Zisis Kozlakidis, Deb Leiolani Garcia

This session aims to promote new stars and/or early-stage biobanks, including start-ups and young biobanks, newbie biobankers, and recent achievements of biobanking. It will showcase their milestones, acheievements, advancements, and new techniques.

Establishment of Biobank: Technical Considerations

Anuj Kumar, National Institute of Cancer Prevention and Research, India

Challenges and Opportunities of Biobanking in Southeast Asia

Plebeian Medina, Research Institute of Tropical Medicine, Philippines

A Plea From The CHM Biobank: Call for Action Towards Rare Diseases and Associated Health Innovation in South Africa

Engela Conradie, Centre for Human Metabolomics, South Africa

Biobanking in Africa: The International Cancer Institute's Journey

Chite Asirwa, International Cancer Institute, Kenya

CORPORATE SESSIONS

An Innovative Solution For Just-in-Time Biobanking



Chris lanelli, Emily Hubbard, iSpecimen, USA

Advances in and growing accessibility of emerging technologies are breaking new, fertile ground for attainable, next-generation biobanking solutions that address the changing needs of biobanks and researchers alike. Join this active discussion and learn more about a novel platform that can enable the coupling of smart inventory-based and just-in-time approaches, helping to achieve the promise of an active, sustainable biobank.

Preserving Sample Integrity and Chain of Custody Through Automation



Chairs: Vanessa Tumilasci, Albert Hidalgo, Azenta Life Sciences, USA

Speakers: Wohaib Hasan, Takeda Pharmaceuticals, USA, Susan Garrison, Cornell Veterinary Biobank, USA, Dean Montano, Azenta Life Sciences, USA

The volatile nature of sample integrity often causes immense challenges for biobanks to optimally preserve biospecimens and maintain chain of custody. This workshop will discuss the challenges biobankers face when choosing and implementing storage systems, and the advantages of automation in sample handling and storage to maintain and improve sample integrity.

CASE STUDY: Large Pharmaceutical Manufacturer Partners with SciSafe, Part of BioLife Solutions, to Build Out Vaccine Storage in Amsterdam, a Global Export Hub



Garrie Richardson, General Manager Storage Services Platform, SciSafe Inc., USA

Nahreen Smyth, Sr. Director, Global Quality Assurance and Regulatory Affairs, SciSafe Inc., USA

"To build or to outsource?" – that is always the question. Follow along as we review our process to quickly build biostorage infrastructure and assist with vaccine distribution – from initial challenges to the lessons learned throughout the process.

Alternative Storage and Shipping Options for Cryopreservation



Kevin Gilliland, VP Life Science, MVE Biological Solutions, USA

The presentation will be centered around alternative options for storage in difficult to supply locations as well as green storage options. The talk will feature how MVE's Fusion and Vario products can solve these user needs. Additionally, the appropriate selection of shippers will be addressed.

Build Your Biobanking House on Solid Footing



Chair: Luke Stewart, Fluidigm, USA

Speakers: Michael Sheldon, Sampled, USA, Michael Denton, Indiana University Genetics Biobank, USA

Biobanks and sample repositories accelerate the scientific journey through leveraged insights provided by precious biological samples. The interdependence between researchers and biobanks is significant. Researchers need to feel confident that received samples match the specification and integrity they require to enable their research. Similarly, biobanks need to ensure that precious specimens are preserved and managed in a manner that allows them to fulfill the purpose intended by their trusting donors.

This workshop discusses challenges in meeting quality expectations (such as validation of sample identity, identification of degraded samples, or non-concordance between accession and pre-distribution sample tests) and the continual improvement process involved in verifying sample integrity within day-to-day biobanking operations. Case studies will reveal how incorporating cost-effective, scalable DNA Fingerprinting methodologies stream-lined Biobank Workstream accession and distribution processes, as well as ensured that provided samples meet both the sample requirement specification and the functional integrity needs of requesting researchers before the samples are sent out.



CORPORATE SESSIONS

Biobanking Modernization with Fit-for-Purpose Technologies for Cold-Storage Management



Wilfredo Marin, Thermo Fisher Scientific, USA

The future of healthcare and research demands that biobanks not only store increased capacities of biomaterial with associated data but also utilize these samples for research discovery translating into treatments. Biobanks are uniquely positioned beyond infrastructure to maintain sample integrity by creating value metrics, meeting standards and accelerating the pace of data science. As innovations in connectivity emerge, they will facilitate the call for collaboration amongst researchers. This workshop by Thermo Fisher Scientific will discuss when and how to employ end-to-end solutions for a successful biobanking workflow. Our enhanced monitoring and compliance features across the reliable cold-storage family help ensure that the return on investment for modern equipment is sustainable for years to come.

New Convection Cooling Technology Significantly Reduces Freeze/Thaw Time Helping to Preserve Sample Integrity and Increase Yield



INV

Sylvain Riendeau, Farrar Scientific/Trane Technologies, USA

Traditionally, pharmaceutical and bio pharma companies have stored small vial samples in cold wall -80 C freezers. As industry needs have evolved, bulk sample storage has become challenging. Current freezers are not designed to remove the energy from larger sized containers. As a result, chamber temperature recovery is lagged, and uniformity due to lack of air exchange is problematic. Without full redundancy and cooling technology purpose-built for -80 C requirements, yield can be reduced, and quality and sample integrity may be at risk. With limited options for bulk sample cold storage, biopharma manufacturers are forced to build massive lab-scale freezer farms or capital-intensive cold rooms. Recent innovations in small to bulk cold storage technology offer solutions to several of these historical limitations. An overview of the science that enables these advancements and can help drive down the cost-per-liter and space will be provided in this workshop, followed by case studies quantifying operational benefits. We'll share data that supports a paradigm shift away from reliance on cold wall freezers towards more sustainable integrated air flow systems built on overall temperature uniformity and integrated redundancy. Data demonstrates that modular, scalable solutions are more sustainable as smaller footprints consume less energy and significantly improve air temperature uniformity within the storage chamber (as low as +/- 3.0C Vs existing cold wall -80C ULT freezer at +/- 6.0C).

Standardized NMR* Technology: A business opportunity for Biobanks? Panel Discussion & Workshop



Alexander Funke, Dresden Clinic and Lab Diagnostics, Germany, Roland Leiminger, Bruker BioSpin, Germany, Glen Gregory, Bruker BioSpin, USA

Bruker BioSpin has developed a new Clinical Research NMR platform that provides enhanced QC and phenotype analysis to increase the value of biobank samples. We also believe this standardized solution creates an opportunity for a new biobank offering in the form of a "digital phenotype" with several advantages. We would like to host a panel discussion to explore those concepts with experts in the field and engage in active dialog with the audience.

*Bruker NMR Instruments are for Research Use Only. Not for Use in Clinical Diagnostic Procedures.

Managing High Volume Allogeneic Therapies



Mark W. Sawicki, PhD, President and Chief Executive Officer, Cryoport Systems

Current storage and distribution systems are ill prepared for the first large indication allogeneic therapy which may require management of 1,000,000 doses of cryogenically stored and distributed therapy annually. This workshop will discuss key considerations for enabling the successful management of this volume of cryogenically preserved and transported therapy.







Maximize efficiency with software designed to meet your requirements for sample tracking, study management, and freezer inventory.

Learn more at **Booth 307** or freezerworks.com

ISBER would like to thank the many individuals who have volunteered for the ISBER Best Practices, Fifth Edition so far!

ISBER Best Practices, Fifth Edition Gap Analysis Task Force

This group developed a comprehensive analysis of the fourth edition and identified gaps to be addressed in the fifth edition.

Clare Allocca (Co-Chair)
Emma Snapes (Co-Chair)
Cory Arant
Marianna Bledsoe
Annemieke De Wilde
Sheila O'Donoghue
Elisabeth Standard
Peter Watson

ISBER Best Practices, Fifth Edition Associate Editors

We are very pleased to have appointed the following volunteer Associate Editors, who are creating the framework for developing the Best Practices, Fifth Edition:

Nina Bertheussen
Nicola Miller
Greg Grossman
Cathy Seiler
Joachim Silber
and Jonas Astrin, Special Advisor

ISBER Best Practices, Fifth Edition Steering Committee

This group provides the day-to-day oversight and management advice to the ISBER Best Practices

Jane Carpenter Daniel Simeon Dubach Tamsin Tarling

Standards Advisory Committee

This group provides the vision for the ISBER Best Practices and coordinates other programs/products coming out of the Best Practices.

Daniel Simeon-Dubach (Chair)
Annemieke De Wilde (Vice Chair)
Monique Albert
Clare Allocca
Sergey Anisimov
Cory Arant
Karolin Bergenstrahle
Marta Castelhano

Yehudit Cohen Bonginkosi Duma Helena Ellis Koh Furuta Samantha Higgins Shannon McCall Karine Sargsyan Brent Schacter Weiping Shao Timothy Sharp Emma Snapes Carmen Swanepoel Ran Wang Peter Watson



ABSTRACT SESSIONS

INNOVATIVE TECHNOLOGIES

Chairs: Billy Schleif, Deb Leiolani Garcia

Novel Dry Storage Approach for DNA Preservation at Room Temperature

Marta Martín Ayuso, 300K Solutions, Spain

SARS-CoV-2 Sequencing, Polygenic Risk Scores, and Precision Medicine: High-throughput Solutions

Christian Bixby, Jessica McDevitt, Sampled, USA

Storage Temperature Monitoring: It Is Not One Size Fits All

Michael Rusnack, American Pharma Technologies Inc., USA

Biospecimen Matchmaking: The Data-Driven Journey from Internal Spreadsheets to Online Inventories to Just-in-Time Biobanking

Jill Mullan, iSpecimen, USA

Introducing an Advanced Sample Management System to a Clinical Biobank for the Collection and Storage of Human Colorectal Cancer Clinical Samples

David White, Bluechiip, USA

CONTRIBUTED PAPER SESSION 1

Chairs: Emma Snapes, Wilfredo Marin

Improving Efficiency of Blood Procurement with a Real-Time Approach

Ada Golowiejko, Duke University, USA

Strategies for Generating the Highest Quality Isogenic iPSC Lines

Azadeh Jadali, Sampled, USA

Linking the Stability of Clinical Proteins in Blood Plasma to Δ S-Cys-Albumin—a Marker of Plasma Exposure to Thawed Conditions

Chad Borges, Arizona State University, USA

The Utility of College of American Pathologists (CAP) Biospecimen Accreditation for Oncology-Based Research Pathology at MSKCC: Lessons Learned and the Path Forward

Joachim Silber, Memorial Sloan Kettering Cancer Center, USA

NCI's Cancer Moonshot Biobank: Supporting Diversity Through Local Patient Engagement

Helen Moore, National Cancer Institute, USA

CONTRIBUTED PAPER SESSION 2

Chairs: Gregory Grossman, Birendra Kumar Yadav

How Artificial Intelligence Techniques can be Employed to Increase the Success Rate for Identifying Datamatrix Barcodes Neil Benn, Ziath Ltd, UK

Biobanking: Strengthening Uganda's Rapid Response to COVID-19 and Other Epidemics

Rogers Kamulegeya, Makerere University, Uganda

Data Mining Pathology Reports for Crucial Biomarkers for Samples Held in a Biobank

Zachery von Menchhofen, University of Pennsylvania Perelman School of Medicine, USA

Integrating Biospecimen Science Approaches into Clinical Assay Development: A National Cancer Institute (NCI) Funding Opportunity for Tissue and Liquid Biopsies (PAR-22-049)

Helen Moore, National Cancer Institute, USA

POSTER SESSIONS

FINAL ID	TITLE	PESENTER NAME	COUNTRY
PA-01	Participation in Proficiency Testing Program is Associated with Improvement of Biobank Laboratory Performance	Olga Kofanova	Luxembourg
PA-02	Social Implementation of Bita, a Qualifying Examination to Evaluate the Competence of Biorepository Personnel	Junko Ikeda	Japan
PA-04	Updates to the Ethical, Legal and Policy Best Practices of the NCI Best Practices for Biospecimen Resources	Helena Ellis	United States
PA-05	The Mathison Centre Neurogenetics Biobank and Advancing in Precision Mental Health	S.M. Shaheen	Canada
PA-06	Listening to the Voice of the User to Inform the Next Edition of ISBER's Best Practices: Recommendation for Repositories	Emma Snapes	Ireland
PA-07	Development of the Next Edition of ISBER Best Practices for Repositories	Emma Snapes	Ireland
PA-08	Mapping a Sunburnt Country: An Australian National Biospecimen Locator	Cassandra Griffin	Australia
PA-09	Implementing a New Technology in Biorepository Through Education and Training	Galina Khramtsova	United States
PA-10	Quality Assurance/Quality Control (QA/QC) Activities of the NIST Biorepository Rebecca Pugh		United States
PB-01	Study of Laboratory Staff Knowledge of Biobanking in Côte D'Ivoire	Ambroise Kintossou	Côte d'Ivoire
PB-02	Building a Cancer Biobank in a Low-Resource Setting in Northern Iran: The Golestan Cancer Biobank	Fatemeh Ghasemi-Kebria	Iran (the Islamic Republic of)
PB-03	UMMC Biobank: Biobanking for Collaborative Research	Gouri Mahajan	United States
PB-04	Singapore Translational Cancer Consortium	Chon Boon Eng	Singapore
PB-05	The Neurodegenerative Disease Biobank at Macquarie University, Sydney, Australia	Susan D'Silva	Australia
PB-06	ARICE: Twinning for the Armenian Research Infrastructure on Cancer Research	Karine Sargsyan	Austria
PB-07	The NIGMS Human Genetic Cell Repository: A Biomedical Research Resource Samuel Sander-Effron United Sta		United States
PB-08	The Management of Oral and Maxillofacial Cancer Biobank and Its Access	Xinhua Pan	China
PC-01	Establishing a Cross Border Network of Biobanks in Central Europe	Judita Kinkorova	Czechia
PC-02	Supporting Diagnostic Research and Development with Equitable Sample Access and Sharing: Enhancing a Conventional Biobank with the Addition of FIND Integrated Biobanks (FIB) and DxConnect Virtual Biobank		Switzerland
PC-03	Enhancing the Despense to Emerging Infectious Discoses A Righank		United States
PD-01	Development of Conservation Techniques for Liver Samples From Rodents of the Genus Rattus in Abidjan	Ambroise Kintossou	Côte d'Ivoire
PE-01	Induced Pluripotent Stem Cells – The Next Step in the Modelling of Genetic Diseases	Jennifer Moore	United States
PE-05	A Prospective Breast Cancer Biobank from Single Institutional Cohort	Laleh Busheri	India
PE-03	SMART Tube Whole Blood Biobanking for Downstream Flow Cytometry	Pauline Lambert	Luxembourg
PE-04	Optimisation of Ambient Temperature Storage of Nucleic Acids	Timothy Moshma	South Africa

FINAL ID	TITLE	PESENTER NAME	COUNTRY
PE-06	Persistent Organic Pollutants in Bristol Bay Beluga Whales, Delphinapterus Leucas	Jennifer Hoguet	United States
PE-07	Complementary High-Throughput RNA Extraction Conducive to Multi-Omic Characterization of Pediatric Central Nervous System Tumors	Raymond Heromin	United States
PF-01	Effects of Introduced and Cold-Call on Participation Rates for Biobanking	Christian Cook	United States
PF-02	Informed Consent Models in Biobanking: Results from a Systematic Review	Claire Lewis	United Kingdom
PF-03	Return of Results: Should We Return to Donors with Research Findings?	Adelina Ovcharenko	Israel
PF-06	Enhanced Lay Involvement for Improved Biobanking	Alison Parry-Jones	United Kingdom
PF-07	Improvement of SingHealth Tissue Repository (STR) Broad Consent Form	Lai Ling Yue	Singapore
PG-01	Keeping an Eye on Covid: CONSERVE Seroprevalence Study for Healthcare Workers for Antibody Testing Over a One Year Period	Rosy Singh	United States
PG-03	Overcoming Natural and Socio-Economic Challenges in Biobanking: Examples from USA and Nigeria	Tetiana Petrachkova	United States
PG-04	Investigation into the Effects of CO_2 on Quality of SARS-CoV-2 Clinical Specimens	Vivian Zhang	United States
PH-01	Biobank-driven Approach to Precision Medicine for the Underrepresented African Population	Yusuf Ibrahim	Nigeria
PH-02	The Cooperative Human Tissue Network (CHTN) Midwestern Division Uses Whole Slide Images (WSIs) for Pathologist QC Review of Each Distributed Tissue for Lesion Type and % Tumor	Randal Mandt	United States
PH-03	The PROCURE Biobank: A Precious Tool for Prostate Cancer Research	Ginette McKercher	Canada
PH-04	Call for Action Towards Rare Diseases and Associated Health Innovation in South Africa	Engela Conradie	South Africa
PH-05	Sunnybrook Hematology Biobank: First Year Audit and Quality Assurance Results	dianne Chadwick	Canada
PH-06	Progress in Biobanking with the Cooperative Human Tissue Network (CHTN) Midwestern Division to Enable Pathologist-Supervised Distribution of High Quality Tissues for Basic and Translational Research	Randal Mandt	United States
PH-07	Collection and Utilization of Biospecimen after BNT162b2 and ChAdOx1 Vaccination - National Dasman Diabetes Biobank, Dasman, Kuwait	Sriraman Devarajan	Kuwait
PH-08	Setting up a Fresh Tumor Tissue Biobank From a Single Oncosurgeon's Practice	Madhura Kulkarni	India
PH-09	The Implementation of the First DNA Bank for Neurogenetics Research in Peru	Diana Cubas-Montecino	Peru
PH-10	Who Wins? Benefit Sharing in the H3Africa Biorepository Programme	Elizabeth Mayne	South Africa
PH-11	Building Blocks for Better Biorepositories in Africa	Taliesha Croxton	United States
PI-01	Lessons Learned: Implementation of a Biobanking Informatics Solution for the Research Enterprise	David Aaronson	United States
PI-02	Data Sharing Approaches in the Cancer Moonshot Biobank Study	Veena Gopalakrishnan	United States
PI-03	The Cancer Moonshot Biobank Online Catalog	Ping Guan	United States
PI-04	The Intelligent Application for Clinical and Molecular Classification of Oral and Maxillofacial Cancers	Zhen Zhang	China
PI-05	Using Artificial Intelligence for Sample Quality Control in Biobank	Svitlana Gramatiuk	Ukraine

FINAL ID	TITLE	PESENTER NAME	COUNTRY
PJ-01	Setting Up for Success: Preplanning Repository Meta-Data Collection for Operational Sustainability	Marianne Henderson	United States
PJ-02	An Experience of Organizing the First National Tumour Tissue Repository (NTTR) in India	Sangeeta Desai	India
PJ-03	Beyond Sustainability: Keeping Paediatric Biobanking Relevant	Li Zhou	Australia
PJ-04	What Does This Mean? My Data is Invalid The Need for Data Standardization	Kristina Peterman	United States
PJ-05	Development of a Combined Query Tool to Capture Comprehensive Biorepository and Cancer Registry Information at an Academic Medical Center	Nathan Garcia	United States
PJ-06	The Impact of COVID-19 on Institute of Human Virology Nigeria, H3A Biorepository (I-HAB) Services	Petronilla Ozumba	Nigeria
PJ-07	Data Validation to Enforce High Quality Data	Duncan Villanueva	Australia
PK-01	Leveraging the Power of a Biobank Quality Management System to Drive Operational Efficiency	Sophy (Yuwen) Ding	Canada
PK-02	Quality Appraisal in a National Tumor Tissue Repository (TTR) – An Indian Experience	Manisha Kulkarni	India
PK-03	Understanding Corrective Actions, Nonconformities, and Root Cause Analysis in ISO 208387:2018	Cory Arant	United States
PO-01	Biobank Network for Promotion of Utilization of Biobank Toward Realization of Genomic Medicine in Japan	Soichi Ogishima	Japan
PO-04	Implementation Model of Quality Control Procedures of Fresh Frozen and FFPE Tissue Samples Along with Proficiency Testing Program for Biobanks	Anna Michalska-Falkowska	Poland
PO-05	Transient Warming Events Impact Ice Recrystallization in RCCs Cryopreserved Using the High and Low Glycerol Freezing Methods Canada Canada		Canada

EXHIBITOR LISTING

COMPANY NAME	COMPANY NAME
A2LA	Hamilton Storage
ASKION GmbH	IC Biomedical, LLC
AutoGen Inc.	ISBER
Avantor	ISENETUSA/DiData
Azenta Life Sciences	iSpecimen
B Medical Systems	Liconic Instruments
BioLife Solutions	LVL Technologies
Bluechiip	MGI Americas Inc.
Bruker	Modul-Bio
BSI Systems	MVE Biological Solutions/
College of American Pathologists	NBS Scientific
Cryoport Systems	Phasetwo
Cryotherm	PHC Corporation of North America
Ellab, Inc.	Precision Stabilty Storage, LLC
Farrar Scientific/Trane Technologies	Rees Scientific
Fluidigm	Stellar Scientific and AltemisLab
Freezerworks	Thermo Fisher Scientific
GA International	Trimetis Life Sciences
GenVault	Ziath
Greiner Bio-One	Zymo Research Corp
Haier Biomedical	



ISBER WOULD LIKE TO ACKNOWLEDGE EACH OF ITS COMMITTEES AND THANK THE VOLUNTEERS FOR THEIR HARD WORK.

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