BCNetter

Issue No. 14, January 2021

Dear **BCNet Members**,

For many of us the festive season constitutes a season of reflection for activities and initiatives of the year past. The last month has been no different in terms of the ability to look back and evaluate 2020.

We are privileged to have received an insightful guidance article from one of the biobanking pioneers in China, Prof Weiye Charles Wang.

BCNet members were leading in sharing their COVID-19 experiences with a wider global audience, through webinars and publications that have attracted considerable attention. In particular one of the BCNet members publications was on the top 3 most read manuscripts of 2020 for the journal 'Biopreservation and Biobanking'.

We have also welcomed a number of new members to BCNet, strengthening our networks across the world. These are in no particular order, the BCRJ cell bank in Rio de Janeiro, Brazil; the Institute of Endemic Diseases in Khartoum, Sudan; the Shifaa Al Orman Oncology Hospital in Luxor, Egypt and the Integrated Biobank of Mansoura in Mansoura, Egypt.

Our joint efforts continue through virtual meetings, and it becomes evident that enabling a virtual presence will strengthen our ongoing communication, allowing a greater presence in meetings we were unable to attend previously in person. The meetings that should be highlighted include: the MASRI-BIOBANK 3rd International Conference and 13th BGICC (20-22 Jan 2021, Egypt); the 2nd IBCQ International Biobanking Conference 2021 (8–10 March 2021, Qatar); the ISBER Annual Meeting (10-14 May 2021, USA).

Information on further meetings, as well as the many funding opportunities currently available are all included in the present newsletter.

Please do not forget that as with every new calendar year, BCNet members can register and become ISBER members for free, acquiring much needed access to educational materials at no additional cost. A separate email will be sent with details on how BCNet members can register with ISBER. The free access of BCNet members to IARC educational material continues through the dedicated online educational platform for biobanking available at https://learning.iarc.fr/

Lastly, we would like to welcome to the IARC team in Lyon, Ms Tracy Lignini who will be a visible presence in our management and communications.

Please accept our best wishes for a Happy and prosperous New Year 2021.

Zisis Kozlakidis

BCNet Coordinator

Develop an “appraisal approach” in terms of sample integrity for biobank stocktaking assessment of cohort resources

Professor Weiye Charles Wang, MD, PhD;
Shanghai Jiao Tong University

A well-designed cohort study can provide powerful results. Over the past decade, cohort approach for understanding better the correlations with respect to a disease risk or outcome in public health have become increasingly available in China. SBC (short for Shanghai Birth Cohort) and ELP (short for Early Life Plan) are cohort studies developed using different strategies in Xinhua hospital, affiliated to School of Medicine, Shanghai Jiaotong University in Shanghai, China. Thanks to cohort studies, banking biological samples and associated data are two essential and heavy tasks.

In a longitudinal active sampling of the cohorts, we usually review work efficiency of biobanking activities by performing rituals report with a focus on the increasing number of samples and/or cases collected. We are thus excited to hallmark development status according to the increase in storage. However, if we give some thoughts, we realize such updates almost mean nothing: we do not know usability of the collection as well as increase; we do not know if collection can meet the needs to address a scientific question as we designed. Taking together, it strongly suggests that we do need different ways to review and evaluate updates of collection for true values, which can directly reflect on the outcome of collection still aligned with that as designed. By placing our hope, the method does not only inform us correctly, but also helps us identify issues and manage to solve them on time.

To address the key emerging question, we first develop a concept similar to stocktaking inventory. With this concept, we develop a strategic method based on the requirements associated with SBC and ELP. We name the method “appraisal of sample integrity” to determine values of the cohort collection. In this method, we define and evaluate according three key factors: completeness of associated key elements with samples, the accuracy of the relevant elements and the consistency of related elements. As we know, sample integrity is the base for sample usability to increase utilization of samples, which can be used to batch or group samples for addressing scientific questions. The key steps involved in the strategy. (1) Define research direction, for which we design the collection. (2) Identify the elements (associated data, i.e., metadata of sample) to determine sample usability; (3) Determine logical relationships of the elements (use the three basic Boolean operators: AND, OR, and NOT). (4) Search biobank to retrieve the samples that match the requirements defined above.

By the method, we have identified some critical issues in our cohort collections. By doing so, we believe it would be very useful to make sample collection more useful and usable to increase sample and data utilization. Since a biobank is very costly, it would be critical to identify any issues that could reduce sample integrity and correct them to stop wrongdoing of biobanking. Besides, we expand the model to consortium member hospitals that act in full compliance. We can sidestep the major challenges by increasing interoperability to reduce heterogeneity for sharing for sufficient scope to lead to full-length research theme. In a summary, we should not convince ourselves only by increasing number of samples of collection, data might be meaningless if we do not take a holistic approach to use them.

Recent publications from our Members

In the top 3 'most read' for 2020 in Biopreservation and Biobanking:
Henderson MK, Kozlakidis Z, Fachiroh J, Wiafe Addai B, Xu X, Ezzat S, Wagner H, Marques MM, Yadav BK. The Responses of Biobanks to COVID-19

Henderson MK, Kozlakidis Z. Coronavirus and Biobanking: The Collective Global Experiences of the First Wave and Bracing During the Second

Simeon-Dubach D, Henderson MK. Opportunities and Risks for Research Biobanks in the COVID-19 Era and Beyond

Yadav BK, Ng W, Fachiroh J, Tsuruyama T, Furuta K. Diverse Responses of the Biobanks in Indo-Pacific Rim Region During the COVID-19 Pandemic: Case Scenarios from Two Low-and Middle-Income Countries and Two High-Income Countries in the Indo-Pacific Rim Region

Allocca CM, Bledsoe MJ, Albert M, Anisimov SV, Bravo E, Castelhano MG, Cohen Y, De Wilde M, Furuta K, Kozlakidis Z, Martin D. Biobanking in the COVID-19 Era and Beyond: Part 1. How Early Experiences Can Translate into Actionable Wisdom

Allocca CM, Snapes E, Albert M, Bledsoe MJ, Castelhano MG, De Wilde M, Furuta K, Kozlakidis Z, Martin D, Martins A, McCall SJ. Biobanking in the COVID-19 Era and Beyond: Part 2. A Set of Tool Implementation Case Studies

Vandenberg O, Martiny D, Rochas O, van Belkum A, Kozlakidis Z. Considerations for diagnostic COVID-19 tests

Aisyah DN, Mayadewi CA, Diva H, Kozlakidis Z, Adisasmito W. A spatial-temporal description of the SARS-CoV-2 infections in Indonesia during the first six months of outbreak

Cree IA, Indave Ruiz BI, Zavadil J, McKay J, Olivier M, Kozlakidis Z, Lazar AJ, Hyde C, Holdenrieder S, Hastings R, Rajpoot N. The International Collaboration for Cancer Classification and Research

Al Knawy B, Kozlakidis Z. 'Quaranta giorni' leadership test: time to transform healthcare

Abdelhafiz AS, Mohammed Z, Ibrahim ME, Ziady HH, Alorabi M, Ayyad M, Sultan EA. Knowledge, perceptions, and attitude of egyptians towards the novel coronavirus disease (COVID-19)

EL-Khadry SW, Abdallah AR, Yousef MF, Ezzat S, Dorgham LS. Effect of educational intervention on knowledge and attitude towards research, research ethics, and biobanks among paramedical and administrative teams in the National Liver Institute, Egypt.

Publication opportunities

BCNet members can now also publish with no article processing charges to the international, peer-reviewed journal 'Innovations in Digital Health, Diagnostics and Biomarkers': (https://meridian.allenpress.com/innovationsjournals-iddb).

This is a new journal with a strong focus on healthcare innovation; and innovations from/for LMIC settings are particularly welcome.

IDDB
Innovations in Digital Health, Diagnostics, and Biomarkers

Funding Opportunities

Here is a selection of funding opportunities of interest:

Funding News:
Resources for global health researchers from NIH and Fogarty International Center:

- Information for foreign grants from the NIH Office of Extramural Research (OER), NIH's central resource for grants and funding information.
- NIH Research Portfolio Online Reporting Tools (RePORT) provides access to reports, data and analyses of NIH research activities, including information on NIH expenditures and the results of NIH supported research.
- The NIH Guide for Grants and Contracts is the official publication for NIH grant policies, guidelines and funding opportunities. Subscribe to receive weekly notifications of all published funding opportunities and notices.
- Fogarty's *Global Health Matters* newsletter, distributed by email every two months, includes the latest news and information on global health research. Subscribe and browse current and past issues.

Funding Opportunities
NIH funding opportunities for which foreign organizations, foreign components of U.S. organizations and/or other foreign components may apply.

- Informatics Technologies for Cancer Research and Management:
  Early-Stage Development (U01 Clinical Trial Optional) (RFA-CA-21-014)
  Advanced Development (U24 Clinical Trial Optional) (RFA-CA-21-015)
  Sustained Support (U24 Clinical Trial Optional) (RFA-CA-21-016)
  Application Receipt Dates: June 8, 2021; November 17, 2021

NIH Notices of Special Interest (NOSIs) that may be of interest to global health researchers.

- Notice of Special Interest: Advances in Research for the Treatment, Services, and Recovery of Alcohol Use Disorder (NOT-AA-20-022)
- Notice of Special Interest (NOSI): High-throughput Molecular and Cellular Phenotyping (NOT-HG-21-004)
- Notice of Special Interest (NOSI): Advancing Genomic Technology Development for Research and Clinical Application (NOT-HG-21-018)

Funding Opportunities (continued)

Upcoming Deadlines

- Harnessing Data Science for Health Discovery and Innovation in Africa (DS-I Africa):
  Research Hubs non-AIDS application due date: December 8, 2020
  Updated: Research Training Program due date: December 18, 2020
  Research Hubs AIDS application due date: February 8, 2021
- International Bioethics Training
  Application deadline: June 4, 2021
- Global Infectious Disease Research Training
  Application deadline, D43 only: August 3, 2021
- HIV Research Training
  Application deadline: August 20, 2021
- Upcoming deadlines for all Fogarty funding opportunities

More Information

- View all Fogarty funding opportunities
- Search all NIH funding opportunities and notices
- Subscribe to NIH Guide for Grants and Contracts weekly emails

➢ **News from the NIH Office of Science Policy:** National Institutes of Health (NIH) announced a Funding Opportunity Announcement (FOA) for administrative supplements to support research on ethical considerations related to biomedical research and projects that support capacity building in bioethics. Consideration of ethical issues associated with biomedical research is intrinsic to the responsible conduct of science and the translation of scientific and technological advances into practice. Complete Information, including how to apply can be found here.
Deadline 06-March-2021

➢ **Notice of Intent to Publish a Funding Opportunity Announcement:** Cancer Prevention, Detection, Diagnosis, and Treatment Technologies for Global Health (NOT-CA-21-021):
https://grants.nih.gov/grants/guide/notice-files/NOT-CA-21-021.html

➢ **Notice of Special Interest (NOSI):** Administrative Supplement Opportunity to Support Global Cancer Stigma Research (NOT-CA-21-026):
https://grants.nih.gov/grants/guide/notice-files/NOT-CA-21-026.html

isber
INTERNATIONAL SOCIETY FOR BIOLOGICAL AND ENVIRONMENTAL REPOSITORIES

ULTRA LOW TEMPERATURE FREEZERS:
KEY CONSIDERATIONS FOR COVID-19 VACCINES

Many cold chain issues occur in the "last mile/kilometre" of vaccine distribution, with samples lost due to improperly handled freezers. ISBER, the International Society for Biological and Environmental Repositories, offers our shared expertise in cold chain management to educate new users of ultra-low temperature (ULT) -70C freezers as part of COVID-19 vaccine distribution programs.

This document is intended to provide guidance for managing the deployment of frozen COVID vaccines.

For more information on the Best Practices referenced here visit (or scan QR Code):
isber.org/page/BPR
Training Resources available at:
isber.org/page/webinars-on-demand

STAFF TRAINING IS CRITICAL

- Provide all vaccination staff with proper training in cold chain supply, freezer operations and frozen sample handling.

ULT FREEZER SELECTION MUST MEET LOCAL REQUIREMENTS

ISBER Best Practices C.3. Mechanical Freezers & B.5. Backup Power

- Choose freezers with the widest temperature range to accommodate vaccine candidates and choose the smallest freezer required.
- Confirm the power configuration available in your lab prior to purchase, especially in areas with low-grade power supply.
- Have a dedicated backup power system in place in case of power outage.
- Install an independent internal thermometer sensor to log/alert against temperature fluctuations. Ensure internet or Wi-Fi access and send alerts to multiple staff.

ULT FREEZER INSTALLATION REQUIRES A SPECIFIC STORAGE AREA

ISBER Best Practices B. Facilities

- Each freezer requires an independent circuit. Ensure outlets are on an emergency circuit with built-in redundancy.
- Ensure room where freezer will be housed can handle additional heat load. ULT units will increase humidity and temperature.
- ULT freezers need to pull air in and exhaust without restriction. Check clearance requirements outlined by each manufacturer before purchase.

ULT FREEZER OPERATION AND MAINTENANCE MUST BE COORDINATED

ISBER Best Practices C.12 Equipment Maintenance

- Access to vaccines needs a strict procedure for how staff will manage door openings. Aim for few and short door openings to avoid freezer temperature fluctuations. Allow the freezer to return to set temperature.
- Avoid an empty unit. If you do not have product to fill the unit, consider adding empty aluminum racks to fill it.
- Regularly clean the condenser and gaskets to prevent ice formation, especially around doors.
- Ensure ULT freezers are calibrated for accuracy of temperature display.

ULT FREEZER EMERGENCY PLANNING

ISBER Best Practices B.8 Emergency Preparedness

- Draft an emergency plan in case of freezer failure, power outage, natural disaster, and other common hazards.
- Have a written procedure for transferring specimens to alternative storage (e.g. dry ice).

www.isber.org

Upcoming events

Virtual Event: Pan-Cohort metabolomics – The future of population health. 2 February 2021 9:00-13:00 (CET)

AORTIC 2021 OAREC
dakar, senegal
7 - 10 NOVEMBER 2021

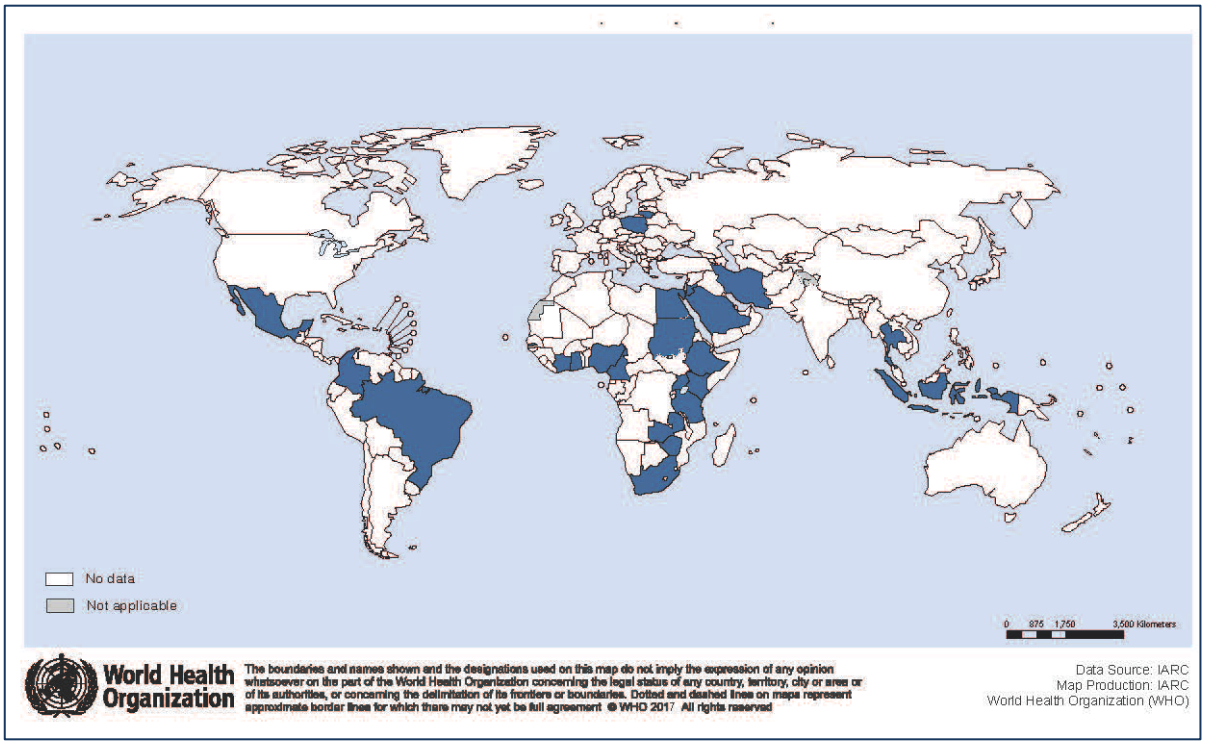
In 2021 AORTIC will host its 13th International Conference on Cancer in Africa. Recognised as the most significant cancer conference in Africa, AORTIC attracts participants from around the continent and the world for information sharing, the presentation of new data, and the establishment of collaborations."
Read more in English...

En 2021, l'OAREC accueillera sa 13e Conférence internationale sur le cancer en Afrique. Reconnue comme le plus éminent rassemblement sur le cancer en Afrique, la conférence OAREC attire des participants de tout le continent et du monde entier à la recherche d'opportunités de partage d'informations, de présentation de nouvelles données et d'établissement de collaborations
Continuez à lire, en français...

Who Are We?

BCNet is the Low- and Middle-Income Countries (LMIC) Biobank and Cohort Building Network, which was established in 2013 to provide a platform for collaboration between its members, partners, IARC, and the international community. BCNet aims to support biobanking and cohort-building activities and to develop sustainable infrastructures for the management of high-quality biological samples and data for research, using best practice principles and guidelines.

BCNet Members



BRAZIL: Banco de Células do Rio de Janeiro; Barretos Cancer Hospital; CAMEROON: Faculty of Medicine and Biomedical Sciences, Université de Yaoundé; Université des Montagnes; COLOMBIA: Clinica de la Costa Ltda; CÔTE D'IVOIRE: Institut Pasteur de Côte d'Ivoire; EGYPT: Children's Cancer Hospital Egypt – 57357; Faculty of Medicine, Cairo University; Integrated Biobank of Mansoura, School of Medicine, Mansoura University; Medical Research Institute, Ain Shams University; Medical Research Institute, Alexandria University; National Cancer Institute; National Liver Institute; Shifaa Al Orman Hospital, Luxor; South Egypt Cancer Institute, Assiut University; ETHIOPIA: Jigjiga University; GHANA: Breast Care International, University of Health and Allied Sciences; INDONESIA: Faculty of Medicine, Universitas Gadjah Mada; IRAN: Golestan Cancer Biobank; JORDAN: King Hussein Cancer Center Biobank; KENYA: Ampath Reference Laboratory; LITHUANIA: National Cancer Institute; MEXICO: Instituto Nacional de Cancerología; NIGERIA: College of Medicine, University of Ibadan, Obafemi Awolowo University Teaching Hospitals Complex; POLAND: Biobank Lab, Department of Molecular Biophysics, University of Lodz, Wrocław Research Centre EIT+ Biobank; SOUTH AFRICA: National Health Laboratory Service (NHLS), NHLS/Stellenbosch University Biobank; SUDAN: Institute of Endemic Diseases (IEND), University of Khartoum; Radio-Isotope Centre Khartoum; THAILAND: National Cancer Institute; THE GAMBIA: Medical Research Council (MRC) The Gambia Unit, MRC International Nutrition Group; UGANDA: Makerere University College of Health Sciences; UNITED REPUBLIC OF TANZANIA: Kilimanjaro Clinical Research Institute; ZAMBIA: Centre for Infectious Disease Research in Zambia; ZIMBABWE: African Institute of Biomedical Science & Technology; University of Zimbabwe College of Health Sciences.

BCNet Partners

National Cancer Institute

BBMRI-ERC Biobanking and BioMolecular resources Research Infrastructure

Karolinska Institutet

AORTIC OAREC

P3G2 Policy Partnerships Project for Genomic Governance

ARC Net Applied Research on Cancer Ricerca Applicata sul Cancro

RINC Network of National Cancer Institutes and Institutions

UNASUR

CGP Centre of Genomics and Policy Centre de génomique et politiques

Isber Connecting Repositories Globally through Best Practices leading since 1999

LMIC

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