



# Biobanking from a global perspective

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# Conflict of interest

No disclosures



# Agenda



Introduction



AstraZeneca



AZ Biobank



Future strategy



# AstraZeneca



# Global, science-led, patient-focused biopharmaceutical company



Science and  
innovation-led



Therapy area focus

- Oncology
- Cardiovascular, Renal & Metabolism
- Respiratory & Immunology
- Vaccines & Immune Therapies
- Rare Disease



Diversified portfolio  
with broad coverage  
across primary care,  
specialty care  
and rare diseases



Commitment  
to people, society  
and the planet



Global strength,  
with balanced  
presence across  
regions



# Our strategic priorities



Deliver growth and  
therapy area leadership



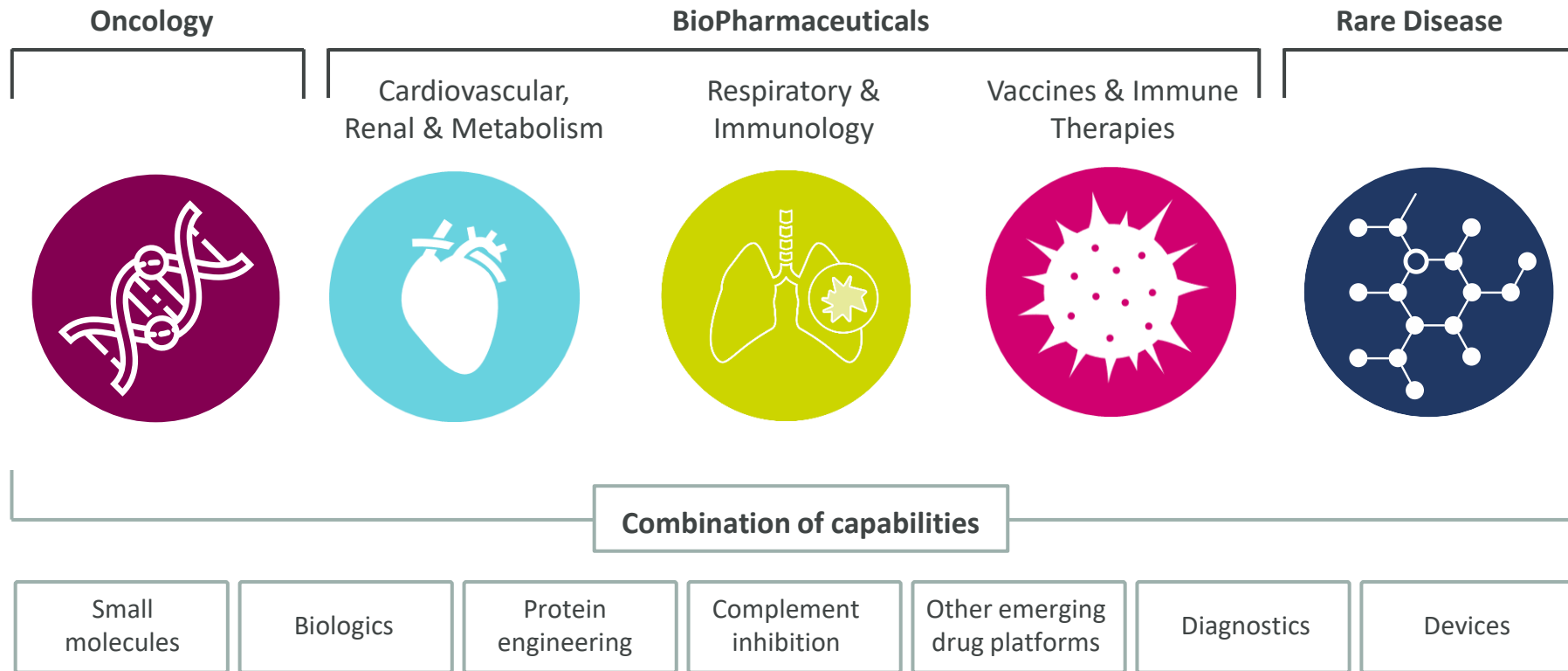
Accelerate innovative  
science



Be a great place to work



# Focus on main therapy areas and across key platforms









# Strategic R&D sites close to global bioscience clusters



# AstraZeneca in Gothenburg

Gothenburg has a unique culture of **collaboration and open innovation**, supporting all our main therapy areas throughout the entire life cycle of our medicines.



**Supporting the entire life cycle of medicines:**  
drug discovery, advanced drug delivery, medical device development, manufacturing for clinical trials.



**~2,800 employees of 70+ nationalities**, including 600 PhD researchers and 30 professors. 57.9% of our line managers in Gothenburg are women.



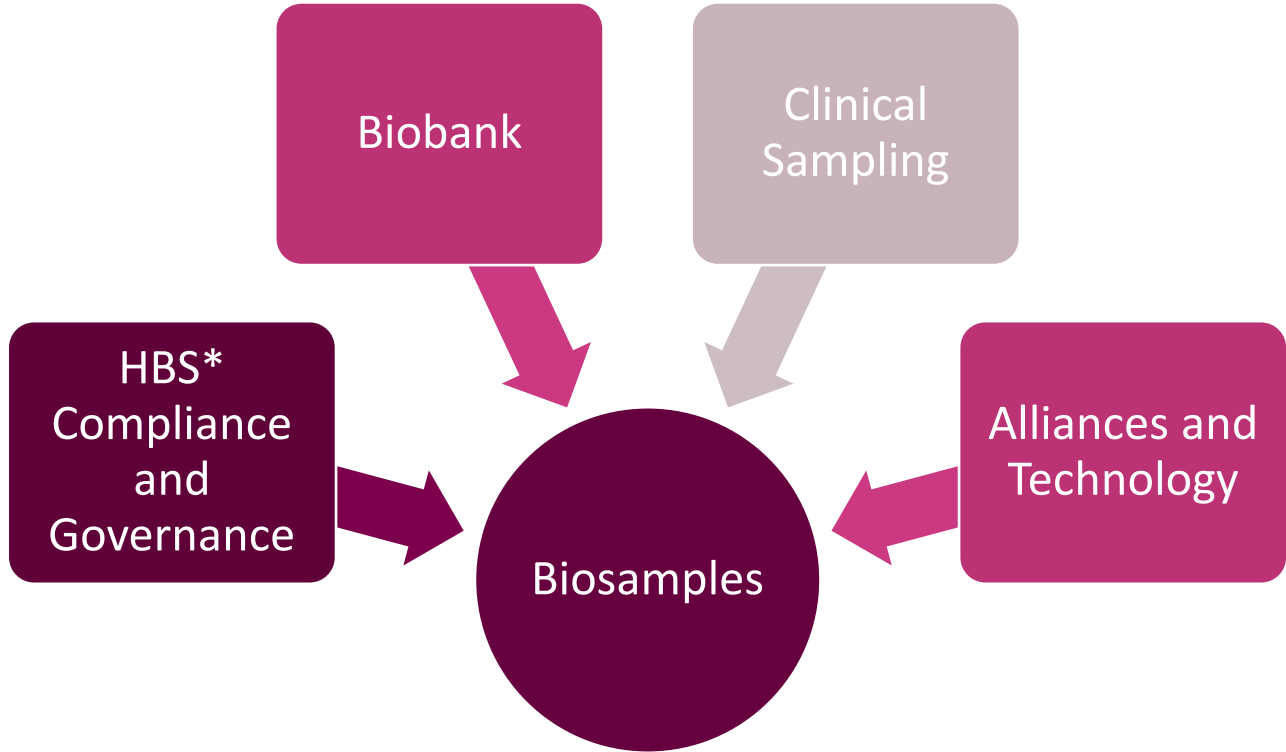
**Reduced the site's carbon dioxide emissions by 99% since 2015** with a clear vision to further reduce our carbon footprint.



# AZ Biobank



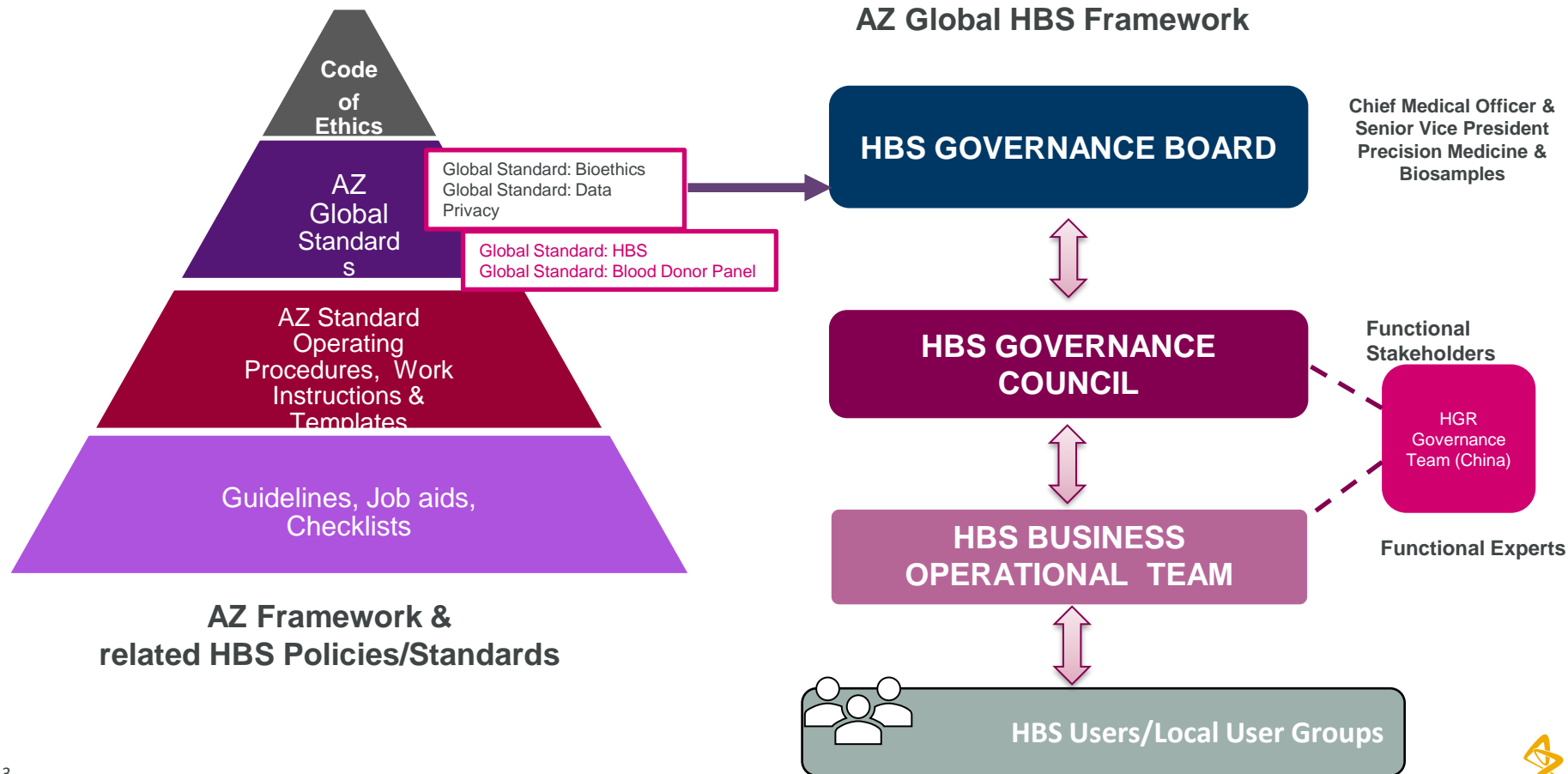
# PMB – Biosamples structure



\*Human Biological Samples



# HBS Governance Framework



# HBS Definition

Globally AstraZeneca defines HBS as biological material sourced or derived directly from a living or deceased human being, which consists of or includes human cells. This includes human organs, cells, tissues and body fluids.

AstraZeneca additionally includes genetic material within this definition, due to potential identification of an individual through generated data.

\*Additional Local Regulations & Legislations will apply







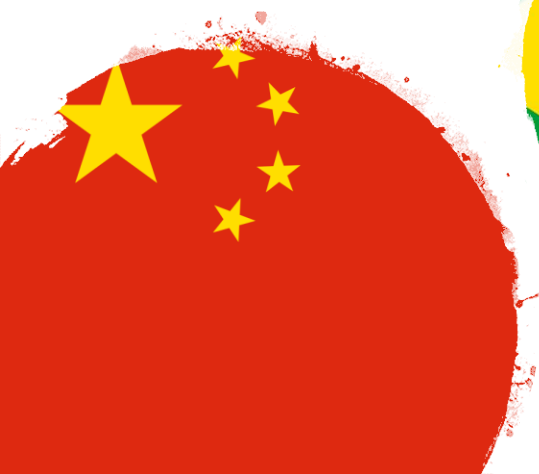
New or changing HBS legislation across the world is a challenge for a global organisation.

**Some examples of legislation on HBS that affects our business for Biobanking:**

- Swedish Act on Biobanks:
  - no long-term storage of samples outside of Sweden.
- UK Human Tissue Act (2004):
  - Track all samples to 'Cell level'

**Some examples of legislation on HBS that affects our business for sample collection, storage & use:**

- Brazil:
  - Storage of HBS after study closure is strictly regulated
- China:
  - Human Genetic Resources Act of China (HGRAC or HGR for short)
  - Import and export of HBS and derived data is heavily regulated



# General Data Protection Regulation



- Personal Data is any information which directly or indirectly can be used to identify a living person.
- The law aim to protect the personal integrity against violation when Personal Data is:
  - Collected
  - Used
  - Retained
  - Disposed



# AZ Biobank – why are we here?

To efficiently collate, store and distribute high quality HBS, in full compliance with ethical and legal standards, to support projects and science.



One sustainable and visible Human Biological Samples (HBS) library to drive projects and science while ensuring ethical sample storage and use.

# One Biobank model

## Sustainable biobank

- Keep the 'correct' samples – useable
- Increased use of available samples
- Environmental impact
  - Storage
  - shipments
- Biobank capacity

## One sample catalogue

- A single view of the sample library
- All samples visible
- Appropriate description of the samples

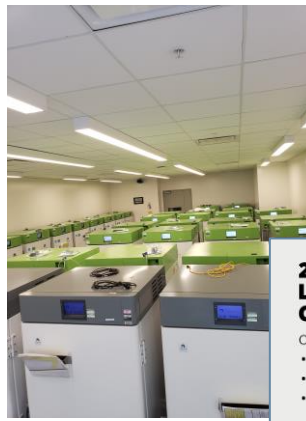
## Governance and biobank operations

- Governance oversight for all HBS activities
- One global biobank including all samples coming into AZ
- Samples to come in to biobank and to be checked out to scientists



# Biobank Facilities

- Designed to meet the needs of the Biobank
- Capabilities include Ambient and Cryogenic Storage
- Energy efficient, environmentally sustainable Ultra Low Temperature units (ULTs)
- Larger Storage capacity/per sqft of floor space – reduced footprint



## 2020 INTERNATIONAL LABORATORY FREEZER CHALLENGE WINNERS

### Organizational winners:

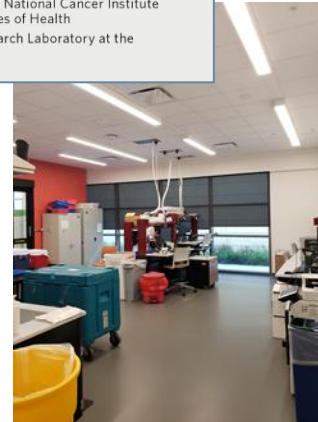
- AstraZeneca
- The U.S. National Institutes of Health
- The Whitehead Institute and the Massachusetts Institute of Technology

### Winning Streak Award:

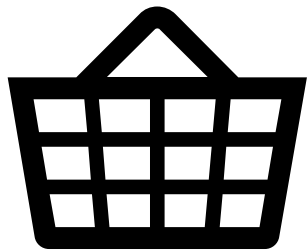
- University of Illinois Urbana-Champaign

### Individual laboratory winners:

- The Janssen Biotherapeutics (JBIO) Lab at Janssen Pharmaceuticals in La Jolla, CA
- The Laboratory of Cell Biology at the Center for Cancer Research of the National Cancer Institute at the National Institutes of Health
- The Learning and Research Laboratory at the University of Bristol

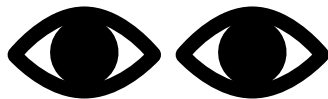


# Global site biobanks support

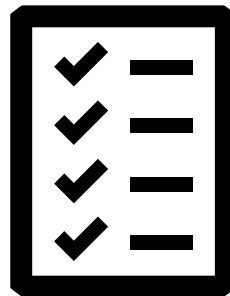


Quick access to clinical trial and commercial samples

Right sample at the right time



Global visibility of all HBS  
Ensure correct data comes with the samples and tracked



Chain of custody–compliance oversight

Usage tracked

Usage restrictions tracked



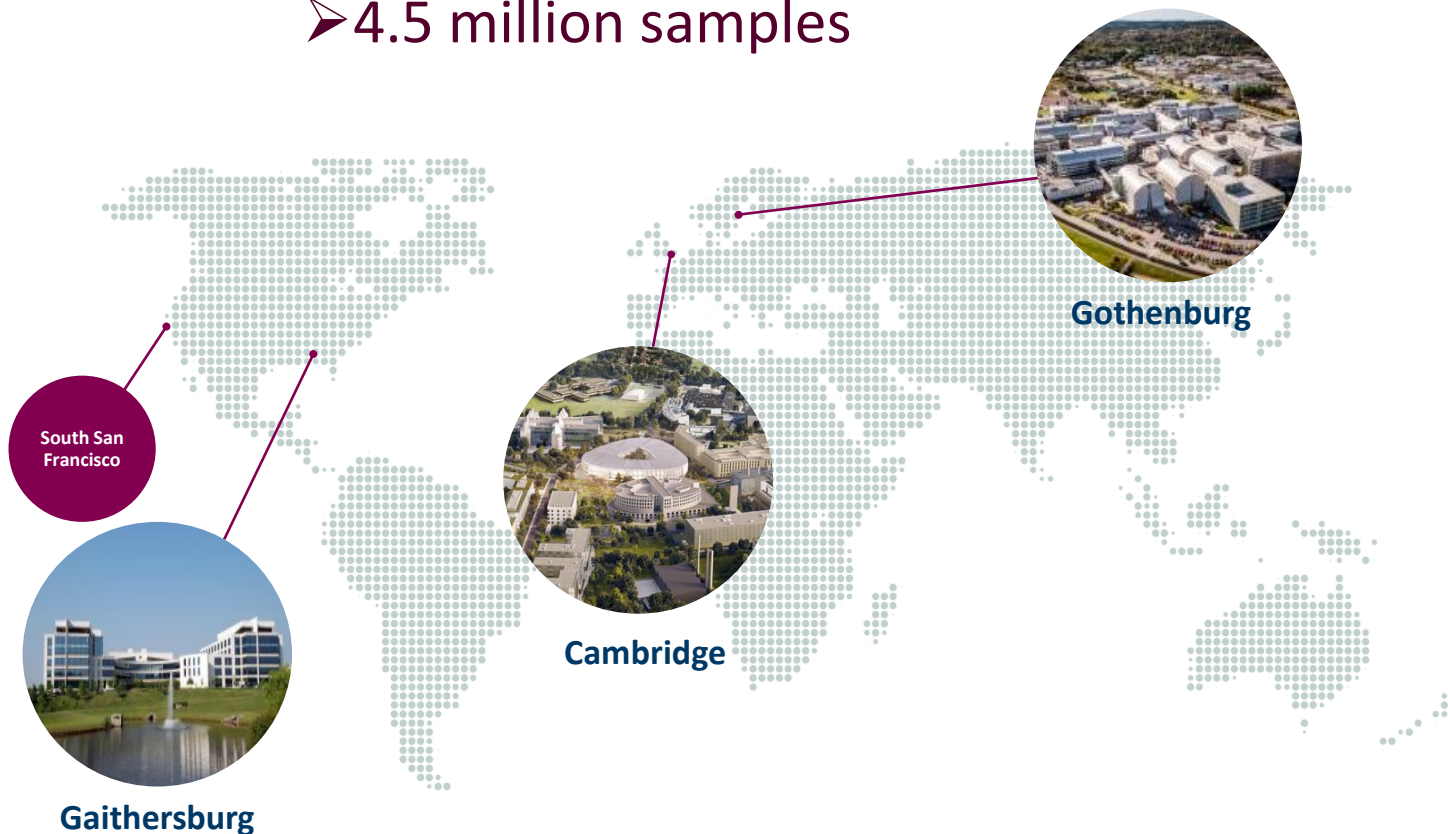
***Time returned to science***

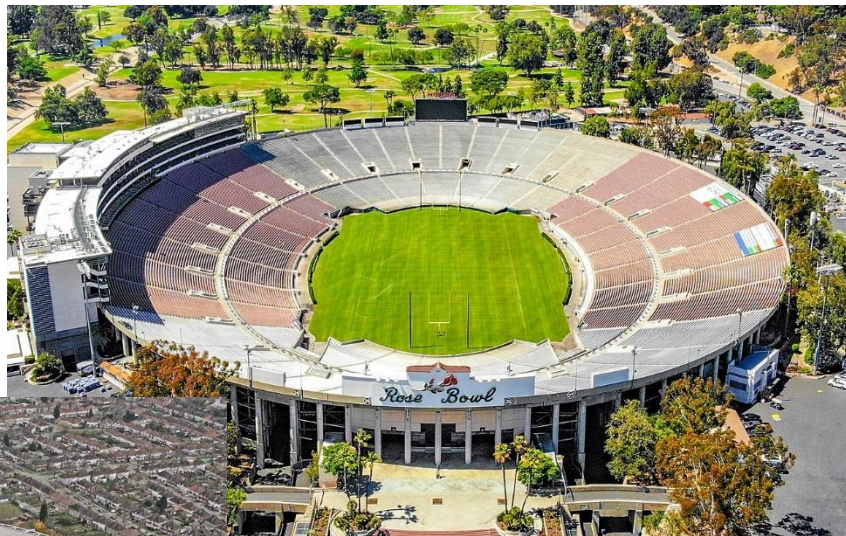




# AZ Biobank sites

➤ 4.5 million samples





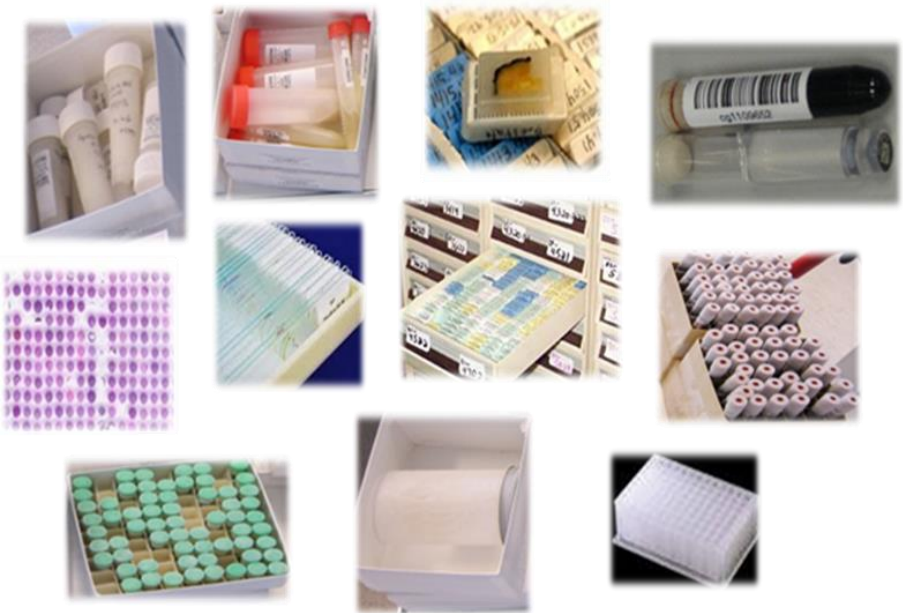
# What's in our storage?

Blood, serum, plasma, CSF, urine, tissue,  
primary cells, tissue blocks, slides, biopsies..

From ambient to -150 (LN2) storage



A variety of samples types in a  
variety of shapes and forms



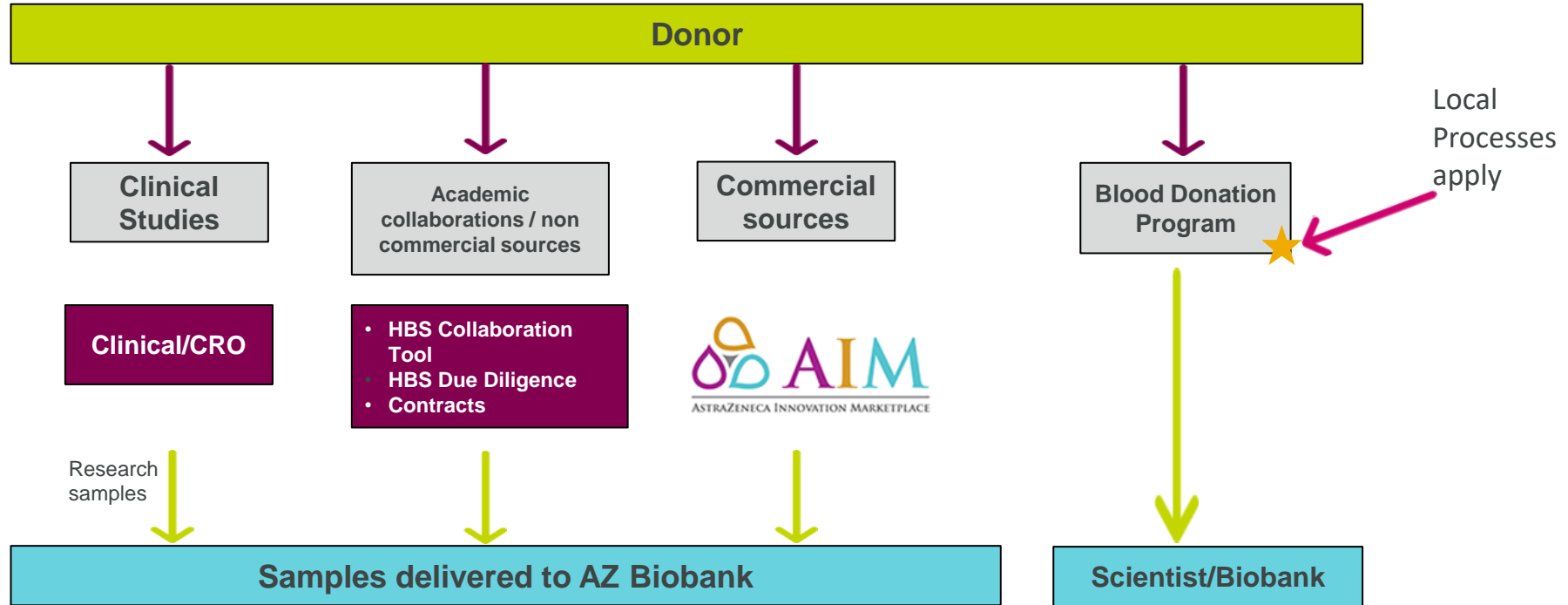
# All HBS samples needs to:

- Be from an approved source only
- Have appropriate consent for collection, storage & use
- Have an owner to approve all collection & use
- Only be used in accordance with the consent
- Be uniquely identified and labelled to protect the donor identity
- Be assigned to a Biobank
- Have a custodian
- Have a chain of custody
- Be collected and processed correctly
- Have optimal conditions for storage and transit

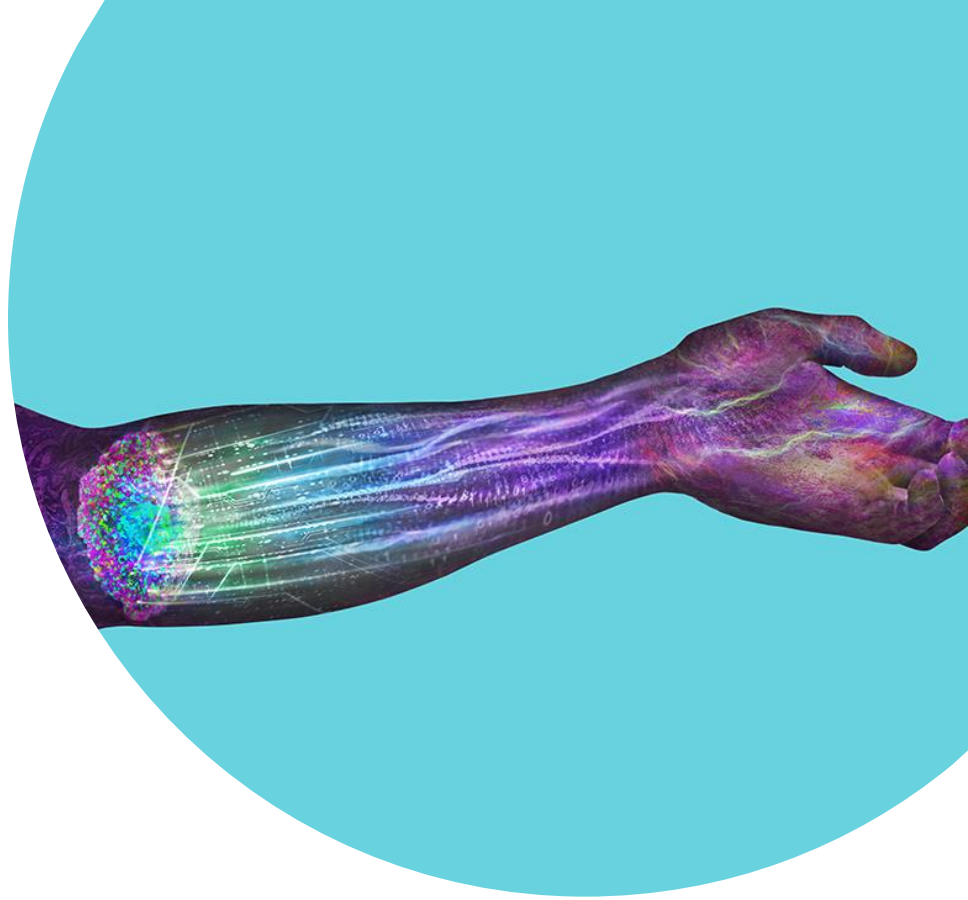




# Sourcing of HBS for Research



What about the future?





# We are only just beginning to explore the wealth of potential drug targets for human disease



We are investing in multiple approaches  
to help identify and validate the 'Right Targets'



# Future Biobank

- Key future role for biobank
  - Use of human samples underpin new strategy
  - Ensure every patient sample counts
- Next generation biobank IT solution
  - Search in annotated catalogue
  - Enhance use of available samples
- State-of-the-art storage
  - Automated storage solution
  - Rapid omics-ready access to samples
  - Best-in-class freezers





## Challenges...



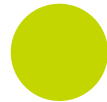
Changes in laws and regulations – staying compliant



Storage solutions – manage oversight



Increased use of samples – efficient processes for compliance checks and retrieval of samples



Sustainable sample collection

# Making our science sustainable

## Access to healthcare

Health is at the heart of our business

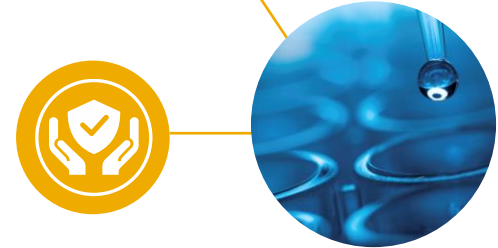


## Environmental protection

The health of the planet impacts all life

## Ethics & transparency

Equality and prosperity for all fosters healthy societies



# Where we are committed to driving positive change

## Access to healthcare

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- Increasing access to life-saving **treatments**
- Promoting **prevention**
- Strengthening the resilience and sustainability of **healthcare systems**

## Environmental protection

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- Accelerating delivery of **net zero** healthcare
- Proactively managing our **environmental impact**
- Investing in **nature and biodiversity**

## Ethics and transparency

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Ensuring behaviour across our organisation and value chain that is:

- **Ethical and Open**
- **Safe and Inclusive**







## Sustainability in the Biobank

- Updated freezer park and better use of freezer space
- Reduce use of dry ice – manage shipments
- Long term storage as applicable
- Visit poster P02 for more details!

# Thank you!

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