COMMERCIALISATION DE LA RECHERCHE
Institut de recherche en immunologie et en cancérologie

IRICoR – transformation avant-gardiste de la recherche en thérapies innovantes

Journées québécoises de valorisation des données CRDM/IVADO
Montréal, Qc | 13 mars 2018

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Directrice générale
IRICoR


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From discovery to commercialization

For more patient-accessible cancer therapies

Mission

To accelerate the discovery and commercialization of novel highly innovative therapies in oncology and related indications by establishing strong partnerships with industry

Vision

To be Canada's world leader in
Next Generation Cancer Drug Development

Attracting the best drug discovery projects from Canada and abroad

Generating multiple opportunities for academia - industry partnerships

Thriving within an integrated research and entrepreneurial environment

Exerting a cultural shift in academia with market pull-based innovation

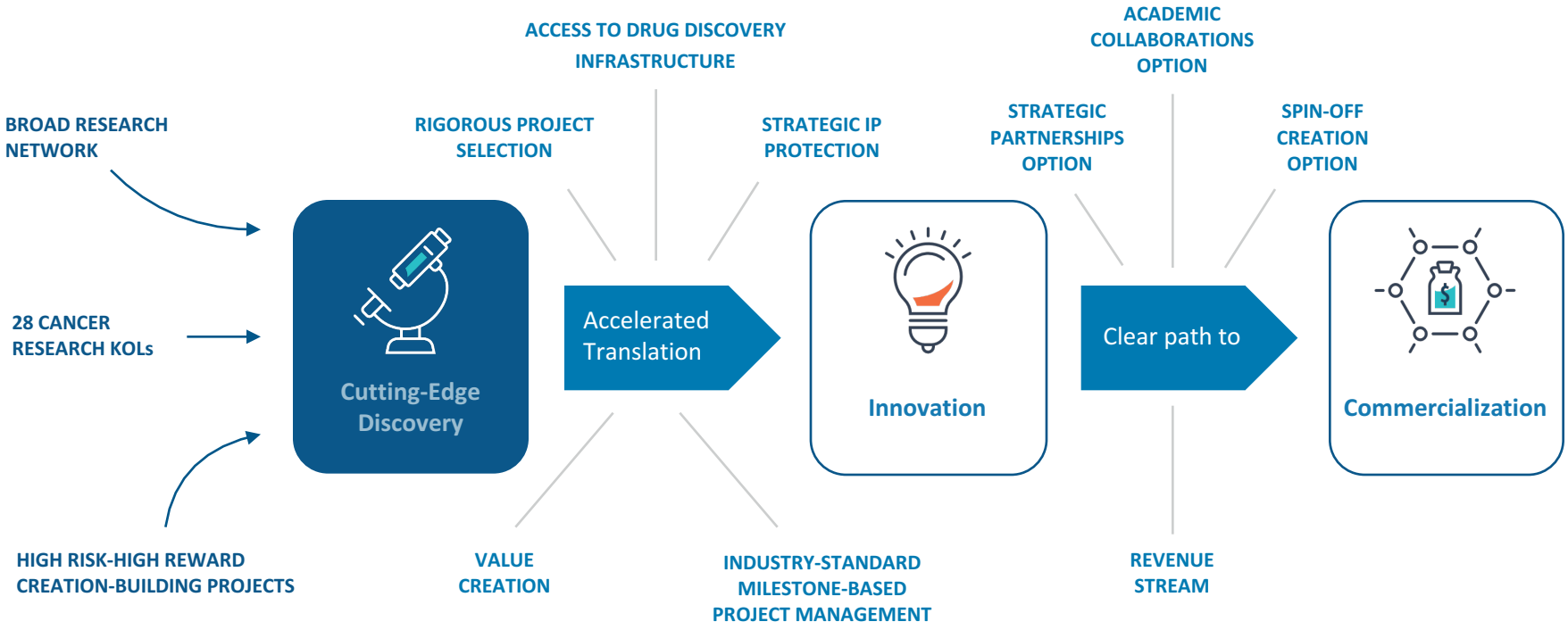
Located in a World-Leading Research Institute

Privileged access to scientific networks across Canada and abroad

- Streamlined privileged access to IRIC, Bio-Pharmacy, UdeM Platforms
- Close links with University Institutes & affiliated centres (MILA, IVADO, CHUM, others)
- Proactive support of multi-institutional partnerships

Hybrid Research-Business Model

Toward a clear path to commercialization



Project Maturation Support

Expertise to Academia and Early-stage Biotechs

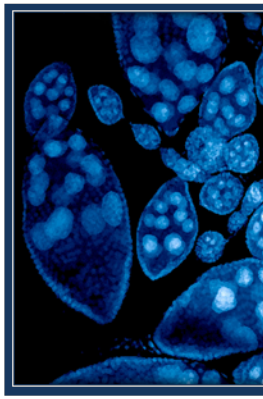
- Intellectual Property
- Drug Hunting
- Project Management
- Business Development

Technological Platforms

Access to the most disruptive technologies

DD Platforms

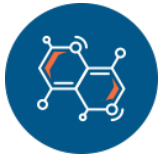
- IRIC's Core DD Unit
- Patient tissue banks
- Artificial intelligence
- Clinical centres
- Metabolomics
- Biomanufacturing
- Cell therapy
- CRISPR
- Genomics and Proteomics
- PDX



DD: Drug discovery/development

Privileged Access to Drug Discovery Infrastructure

IRIC's Core DD Unit - Medicinal Chemistry Expertise



STATE OF THE ART FACILITIES

State of the art facilities:
synthesis, purification, analysis

BIOPHARMACY COLLABORATION

Close collaboration with
Biopharmacy (UdeM)

MEDICINAL CHEMISTS

30 medicinal chemists
(~17 years industry experience): BMS, Merck, AstraZeneca, Boehringer Ingelheim, Shire, Pfizer, Wyeth

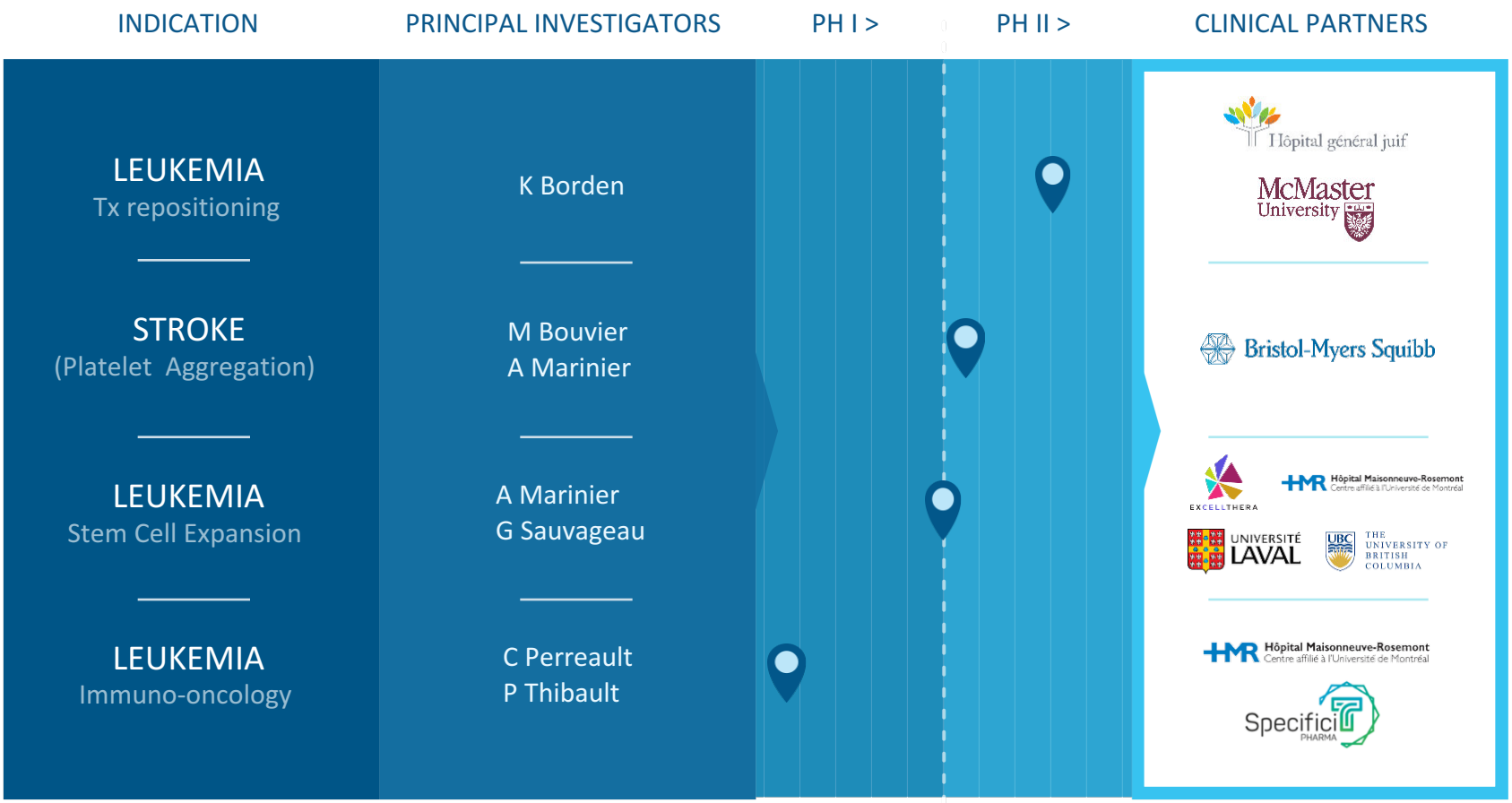
DEDICATED BIOLOGISTS

10 biologists dedicated to medicinal chemistry activities

PROVEN EXPERTISE

Proven expertise in hit to lead and lead optimization activities:
Delivered 3 molecules to the clinic

From Discovery to the Clinic



Prediction of patient-specific drug sensitivities

Leucegene Project

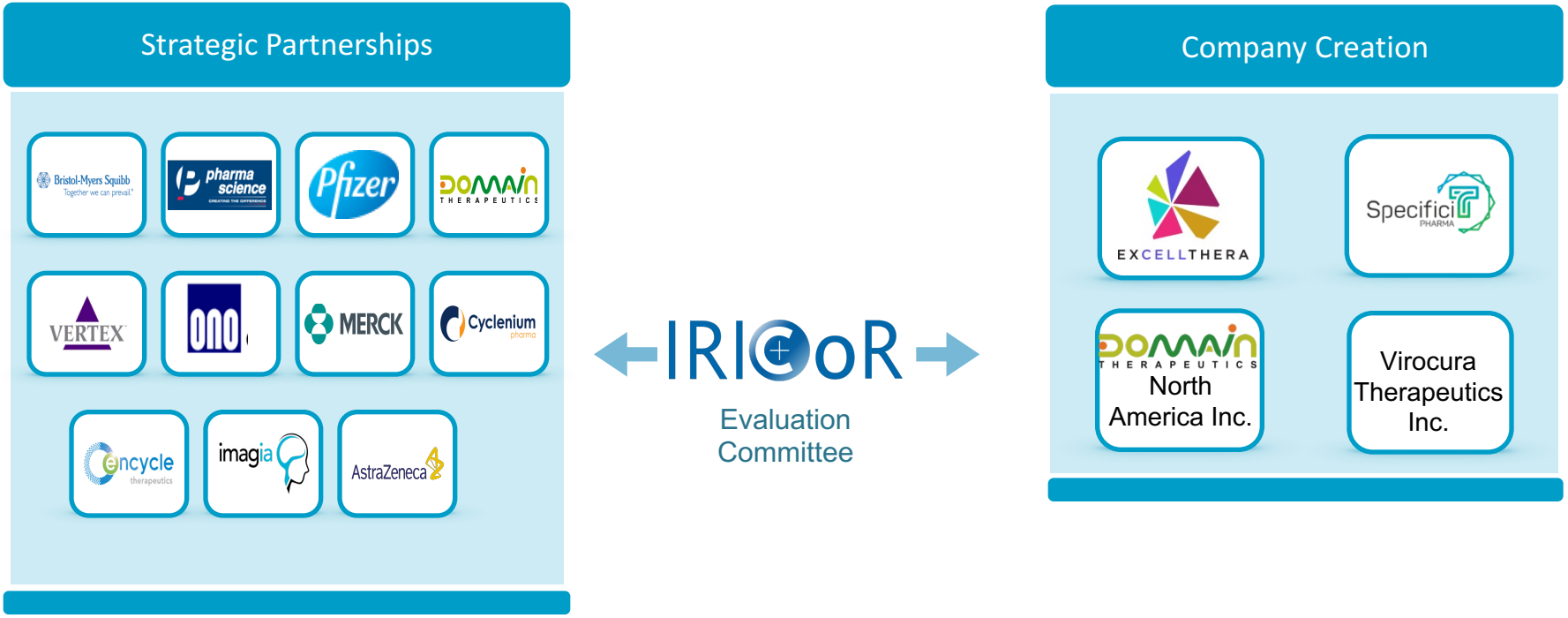
Objective: Explore the use of **deep learning algorithms** to exploit expression profiles (RNA-Seq) for the **prediction of patient-specific in vitro drug sensitivities**

- Collaboration with the MILA: Strong expertise in deep learning, led by Y Bengio.
- Built around exploitation of the Leucegene datasets
- 5,000 compounds tested against 20 leukemia patient samples
- Deep RNA-Seq and clinical characterization
- Exchange of anonymized chemical fingerprints

Slide from S. Lemieux

Strategizing Commercialization

Strategic Partnerships or Company Creation



IRICoR 2008 to Date

FROM DISCOVERY TO INNOVATION

~ 80 PROJECT FINANCINGS

~ 60 PATENT FAMILIES

~ 50 PROJECTS IN PARTNERSHIP

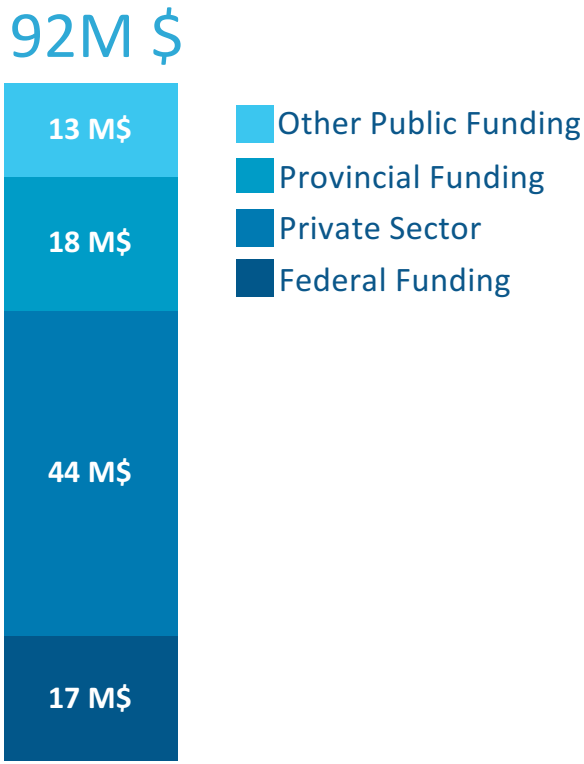
~ 150 HQPS PER YEAR

20 STRATEGIC PARTNERSHIPS WITH INDUSTRY

23 LICENSING DEALS

4 COMPANIES CREATED

6 CLINICAL TRIALS



Sources of IRICoR funding
2008-to date

Selected milestones and deals

March 2018

Collaboration to identify novel tumor specific antigens

Feb 2018

Collaboration to identify imaging biomarkers that are linked to specific genetic mutations in cancer using AI

Sep 2017

Collaboration to identify imaging biomarkers that are linked to specific genetic mutations in cancer using AI

Apr 2017

AstraZeneca make available to IRICoR diversity sets of selected molecules from the AstraZeneca chemical compound library

Dec 2016

IRIC expands its medical chemistry core facility and announces the launch of Phase II clinical trials for a molecule jointly identified by IRIC and Bristol-Myers Squibb

Oct 2016

Partnership to co-develop orally-bioavailable macrocycle drug to treat inflammatory bowel disease

Sep 2016

Expansion of the 2013 license and partnership agreement with Domain Therapeutics for new technologies - Domain Therapeutics NA created in Dec 2013

Jun 2015

Creation of ExCellThera, a NewCo Focused on stem cell expansion and gene therapy Update: Phase I/II trial ongoing

Jun 2014

$2M investment in 2 Genome Québec/Genome Canada-funded large-scalepersonalized medicine projects (Total Funds: ~ $25M)

Feb 2014

Clinical trials initiated for PAR4 antagonist jointly identified by IRIC and BMS. $13.9 investment by Quebec to support IRICoR oncology projects

Apr 2013

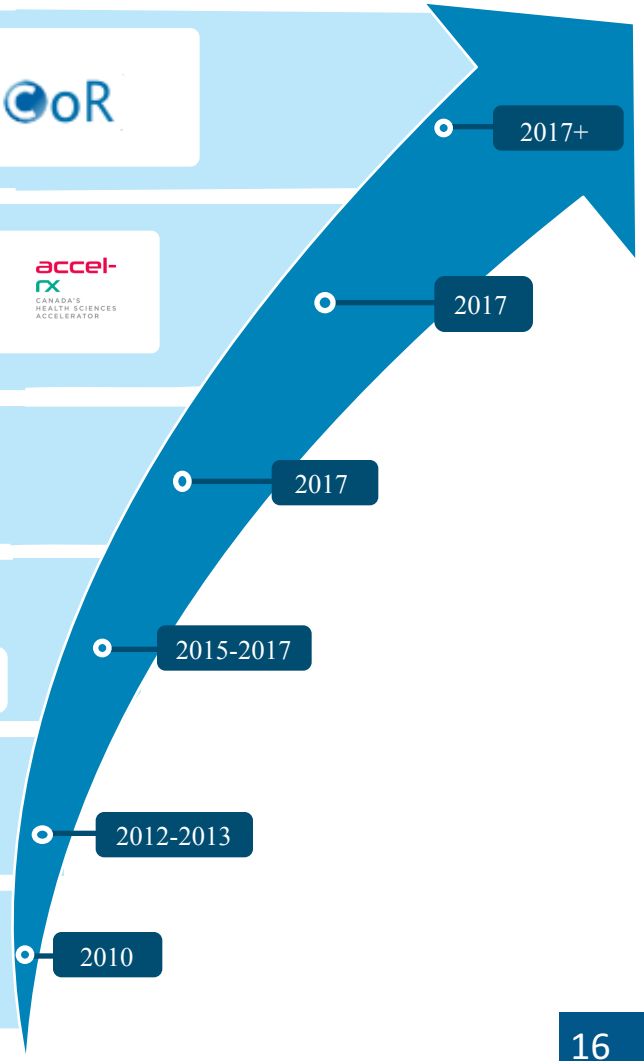
$4M investment to catalyze the development of a pan-Canadian drug discovery initiative in collaboration with MaRS Innovation and CDRD

Case Study: Creation of ExCellThera

SCIENTIFIC ACTIVITIES	BUSINESS ACTIVITIES
Phase I/II clinical trial launched 18 patients treated to date	EXCELLTHERA, Centre for Commercialization of Cancer IMMUNOTHERAPY, IRICoR — 2016-2017
UM171-derived cell production development. Revised manufacturing pre-CTA	Business modeling of NewCo NewCo incorporated and patent granted IRICoR, CCRM — 2014-2015
UM171 pre-clinical characterization, GMP manufacturing	NewCo exploration IRICoR — 2013
Lead optimization – Identification of UM171	Funding support and Filing of US provisional appl. IRICoR — 2012
HTS and Hit Identification – Phenotypic screen on stem cell expansion in blood cells	Preliminary market assessment IRICoR — 2011

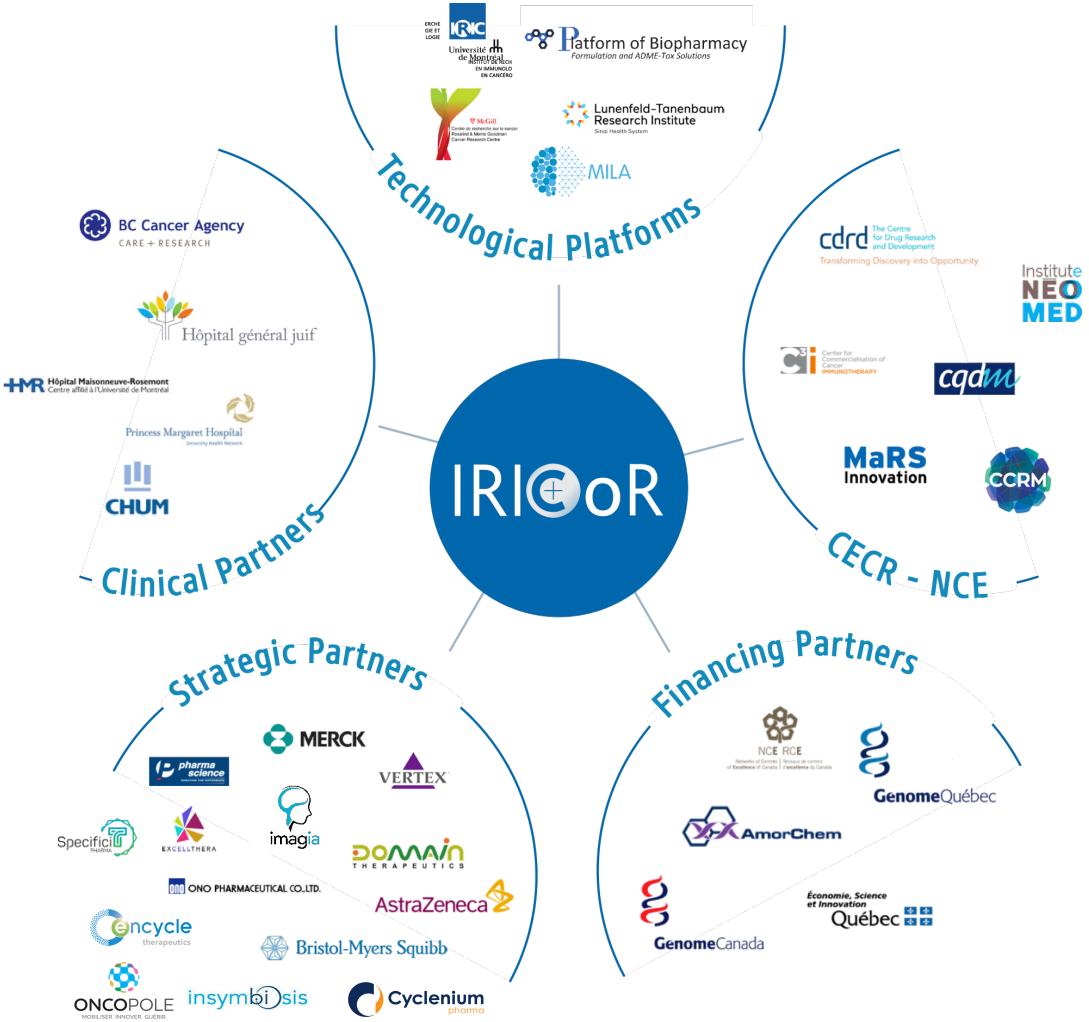
Case Study: Creation of SpecificiT

SCIENTIFIC ACTIVITIES	BUSINESS ACTIVITIES
Definition of the TSA Landscape	
Automating manufacturing Planning Phase II trial	
Phase I clinical trial	License Terms Negotiations with investors
Proprietary know-how	Patent Filings and Patents Granted NewCo Incorporation
Validation and optimization	Funding support and Patent filings
MIHA Identification	Funding and preliminary market assessment



At the heart of the drug discovery ecosystem

ACADEMIC COLLABORATORS



The Future - Increasing interactions between flagship programs to accelerate discovery and development

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IRICoR

Leading the way to
next-generation therapies