

A network graph with black nodes and grey lines connecting them, forming a complex web structure across the top and left sides of the page.

Institute for Data Valorization IVADO

*Canada's scientific and economic
data science hub*

A large, abstract geometric pattern composed of various colored polygons (blue, green, orange, red, black) arranged in a circular, radial fashion, resembling a stylized sunburst or a data visualization of interconnected nodes.

Taking AI to the Next Level: Machine Learning + Operations Research

Taking intelligent decisions requires two ingredients:

- 1 Understanding how the world works - **machine learning**
- 2 Taking optimal decisions based on that knowledge - **operations research**

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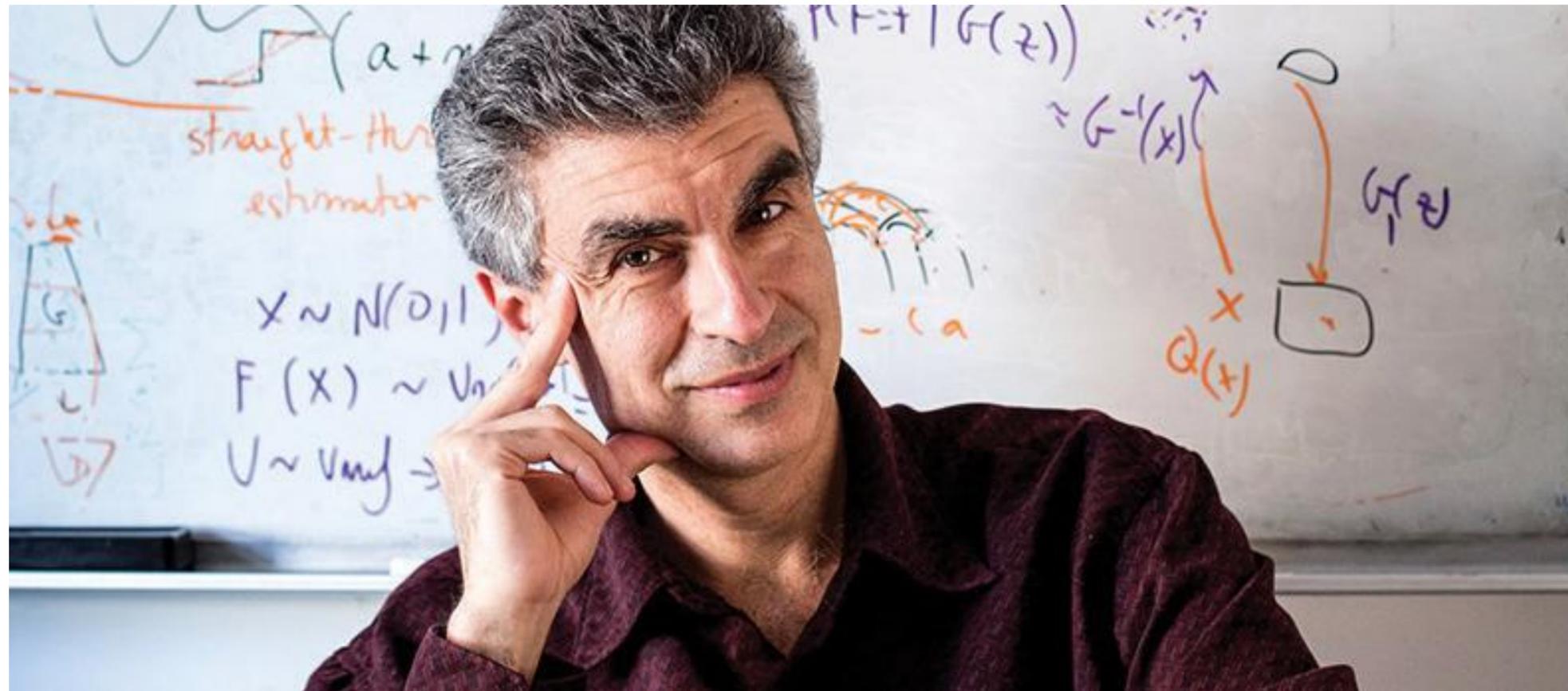
The proposed research capitalizes on the **synergy** between these two disciplines, at the intersection of applied mathematics and computer science

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Yoshua Bengio

as Scientific Program Leader

- Member of pioneering trio who invented deep learning
- Only one of the trio to stay in academia despite pull from industry
- Among the most cited computer scientists in Canada:
 - h-index=84
 - 42,000 citations
- Canada Research Chair since 2000
- NSERC Chair 2005-2015
- Head of the Montreal Institute of Learning Algorithms
- Program Co-director and Senior Fellow, CIFAR
- One of only four Canadians invited to last Bilderberg meeting, a select forum of world leaders discussing megatrends and major issues facing the world, to address the economic and political impact of AI



Operations research: Taking optimal decisions in a complex context

Canada Excellence Research Chair in Data Science for Real-Time Decision-Making at Polytechnique Montréal, **Dr. Andrea Lodi** holds Canada's main chair in Operations Research.



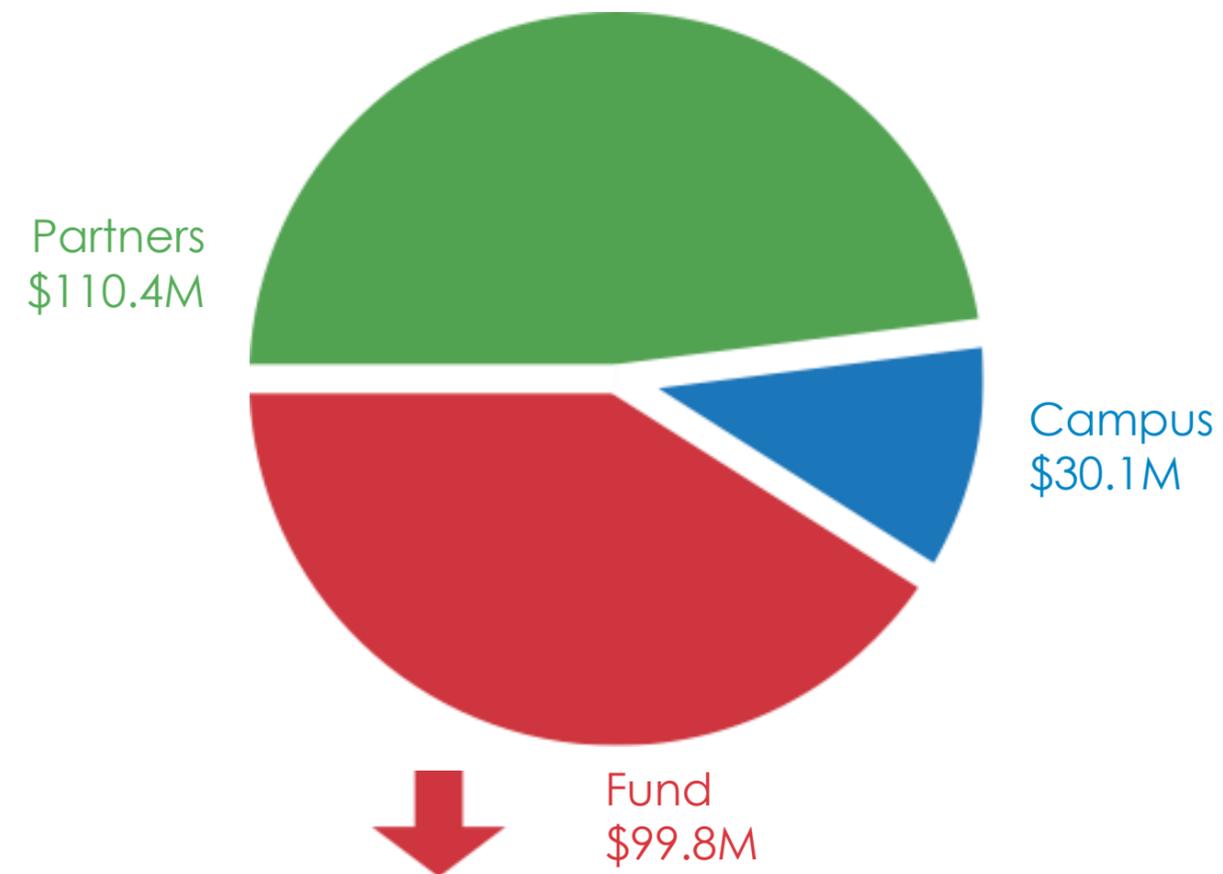
Jean-François Cordeau holder of Canada Research Chair in Logistics and Transportation was appointed to the College of New Scholars, Artists and Scientists of the Royal Society of Canada.



Pr François Soumis, IVADO's general director received the Prix Lionel-Boulet—one of the highest awards handed out to researchers by the government of Québec—in recognition of his career, research results, leadership in scientific development and contribution to economic growth in Québec.



Data Serving Canadians: \$240M



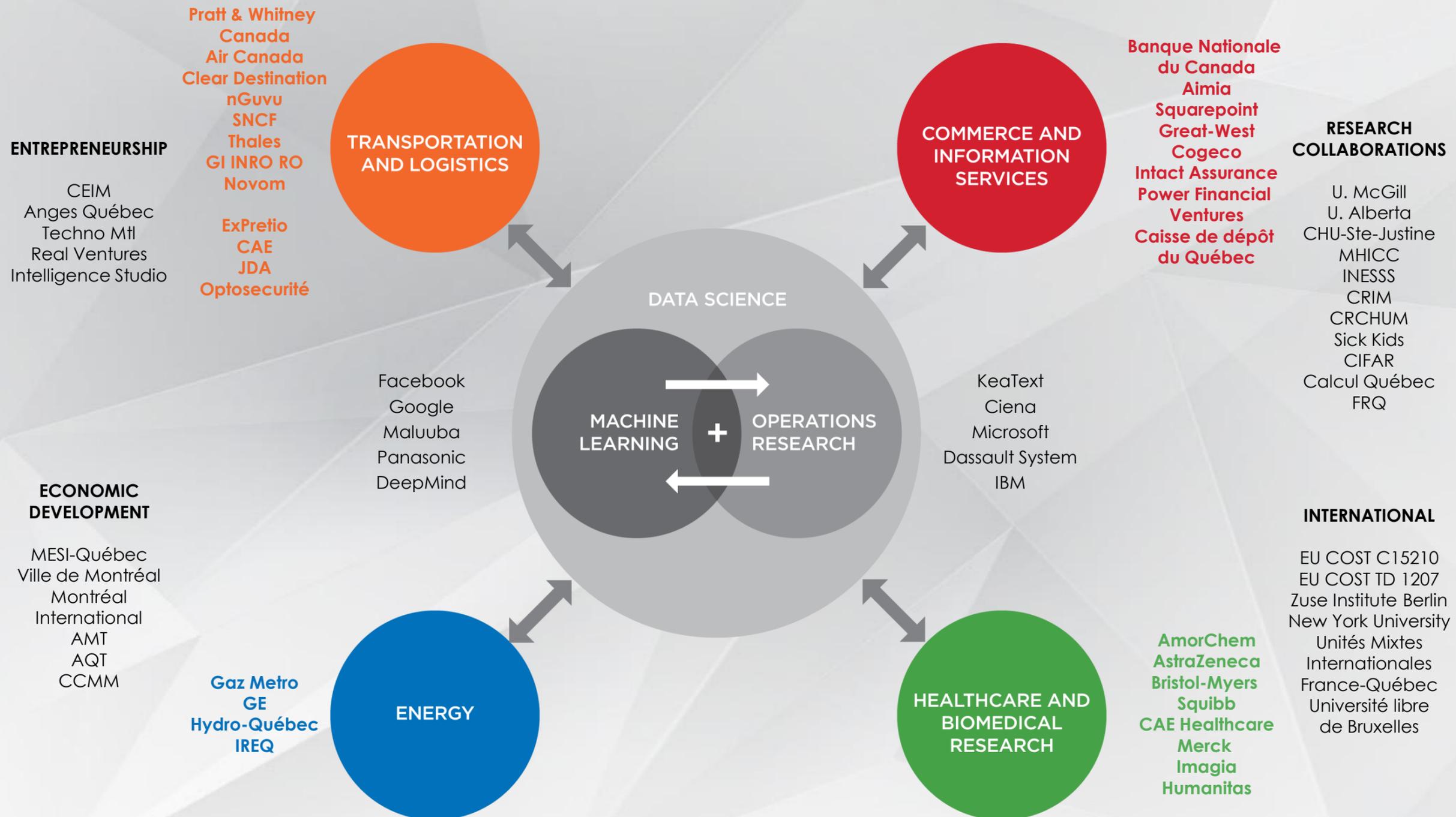
↓ Fund
\$99.8M

CFREF FUNDING:

73% Long-term science
27% Transfer to industry
25 New faculty

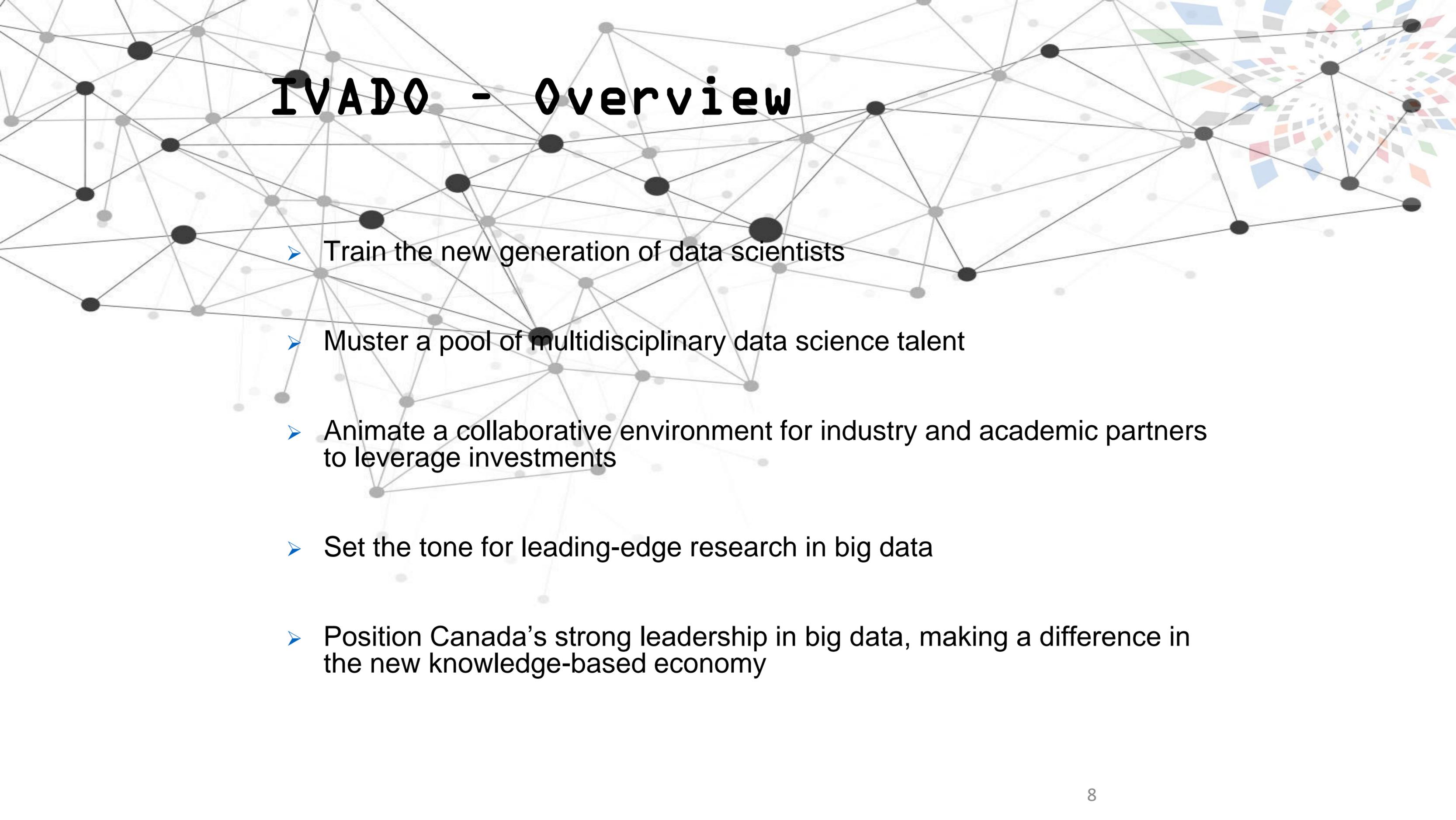
IVADO Fundamental Data Science – Applied

With a strong innovation ecosystem of more than 70 partners



IVADO Governance





IVADO - Overview

- Train the new generation of data scientists
- Muster a pool of multidisciplinary data science talent
- Animate a collaborative environment for industry and academic partners to leverage investments
- Set the tone for leading-edge research in big data
- Position Canada's strong leadership in big data, making a difference in the new knowledge-based economy