



Deep Genomics

**Decode the genome, create life
changing therapies**

BRENDAN J FREY, PHD, FRSC

CEO AND FOUNDER, DEEP GENOMICS

COFOUNDER, VECTOR INSTITUTE FOR ARTIFICIAL INTELLIGENCE

PROFESSOR, ENGINEERING & MEDICINE, UNIVERSITY OF TORONTO

Deep Genomics team, Bocce Ball, October 2021

Multidisciplinary: Machine learning, computational biology, software engineering, experimental biology, chemistry, drug development, business development.



Team in place to execute our mission





Brendan Frey PhD FRSC
Founder & CEO





Amanda Kay PhD
Chief Business Officer







Amit Deshwar PhD
Sen Dir Predictive Systems

Ferd Massari MD
Chief Medical Officer



Matt Cahill MBA JD PhD
Head of Finance, Bus. Ops





Jeffrey Brown PhD
Head of Preclinical Res.



Strategic Advisors



Scientific Advisors



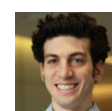
Steven Dowdy



Eric Marcussen



Stephen Scherer



Jordan Feld

Board Members



Adam D'Augelli
true Ventures



Alex Morgan
khosla ventures

Brendan Frey
Matt Cahill



Elena Viboch
SoftBank



Maryanna Saenko
FUTURE VENTURES



Tom Hughes
NAVITOR



RNA therapies: Medicines are digital information

CCCAAATGCACTCCTGG

**Digital RNA
Biology Platform**

x

**10¹⁷ Bytes
Data**

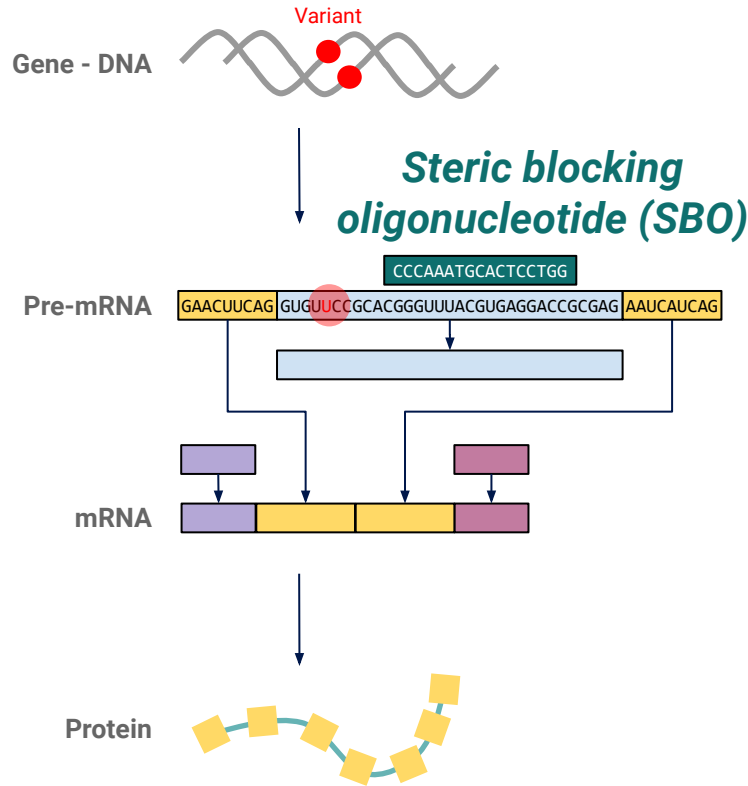
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**Artificial
Intelligence**

=  **deep
genomics**

**Programming the best RNA therapies
for almost any gene in any genetic condition**

A digital framework for untangling complexity



DIGITAL GENETIC TARGET

DIGITAL RNA THERAPY

DIGITAL RNA BIOLOGY

Discovering Spinraza for Spinal Muscular Atrophy - in one afternoon on a computer



PREDICTED EXON TARGETS

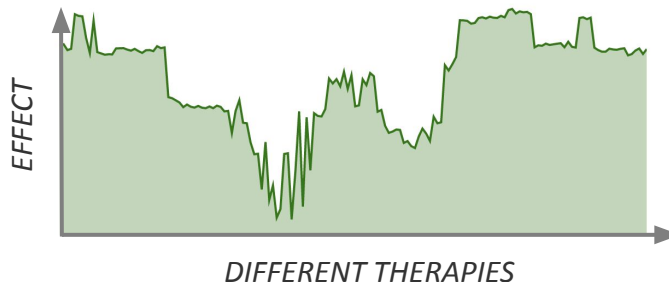
Top 10% - SMN2 EXON 7

- 10% to 20%
- 20% to 30%
- 30% to 40%
- 40% to 50%

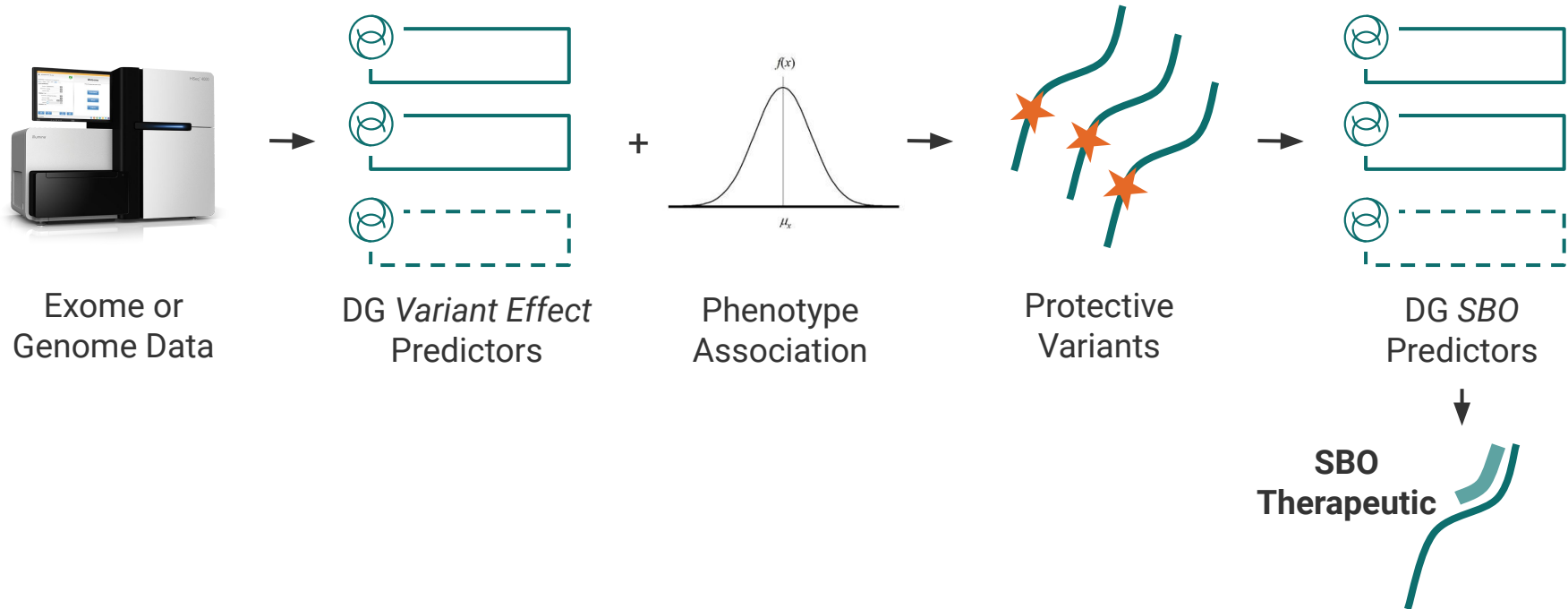


PREDICTED THERAPIES

SPINRAZA
TCACTTTCATAATGCTGG



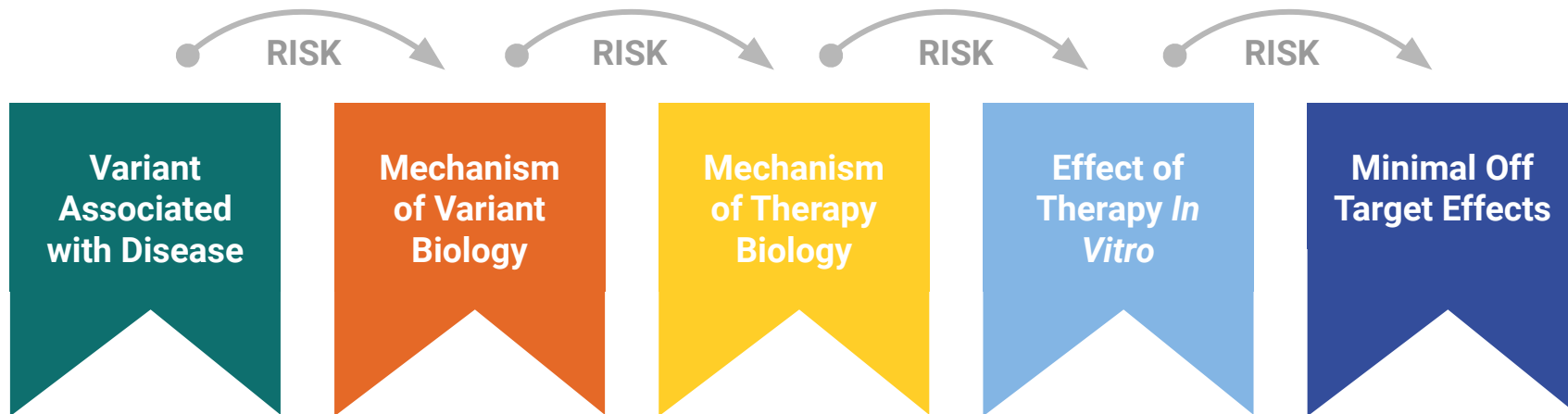
Discovering novel complex disease targets using exome or genome sequencing data



Our digital AI Workbench predicts drug discovery outcomes up front



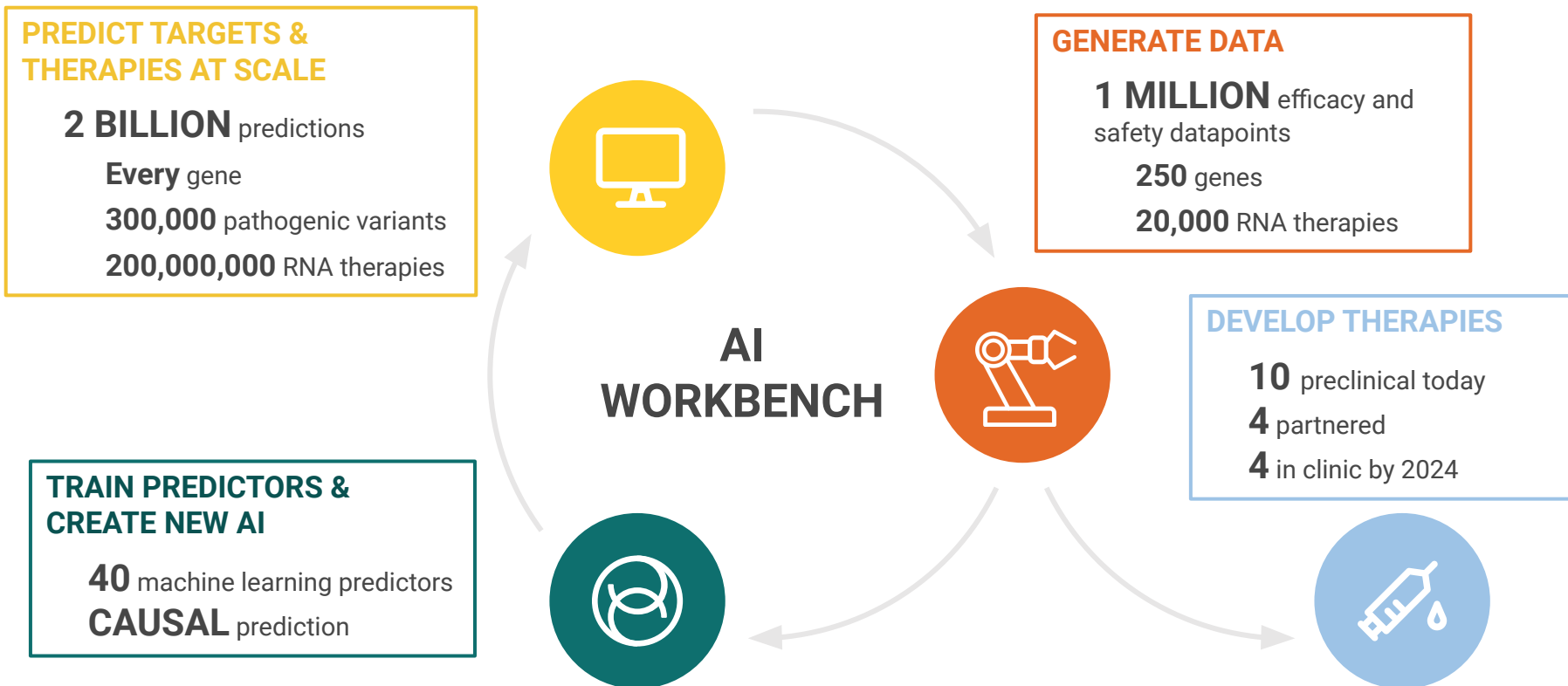
TRADITIONAL APPROACH - SEQUENTIALLY DERISK - EXPERIMENTAL TRIAL & ERROR - BESPOKE



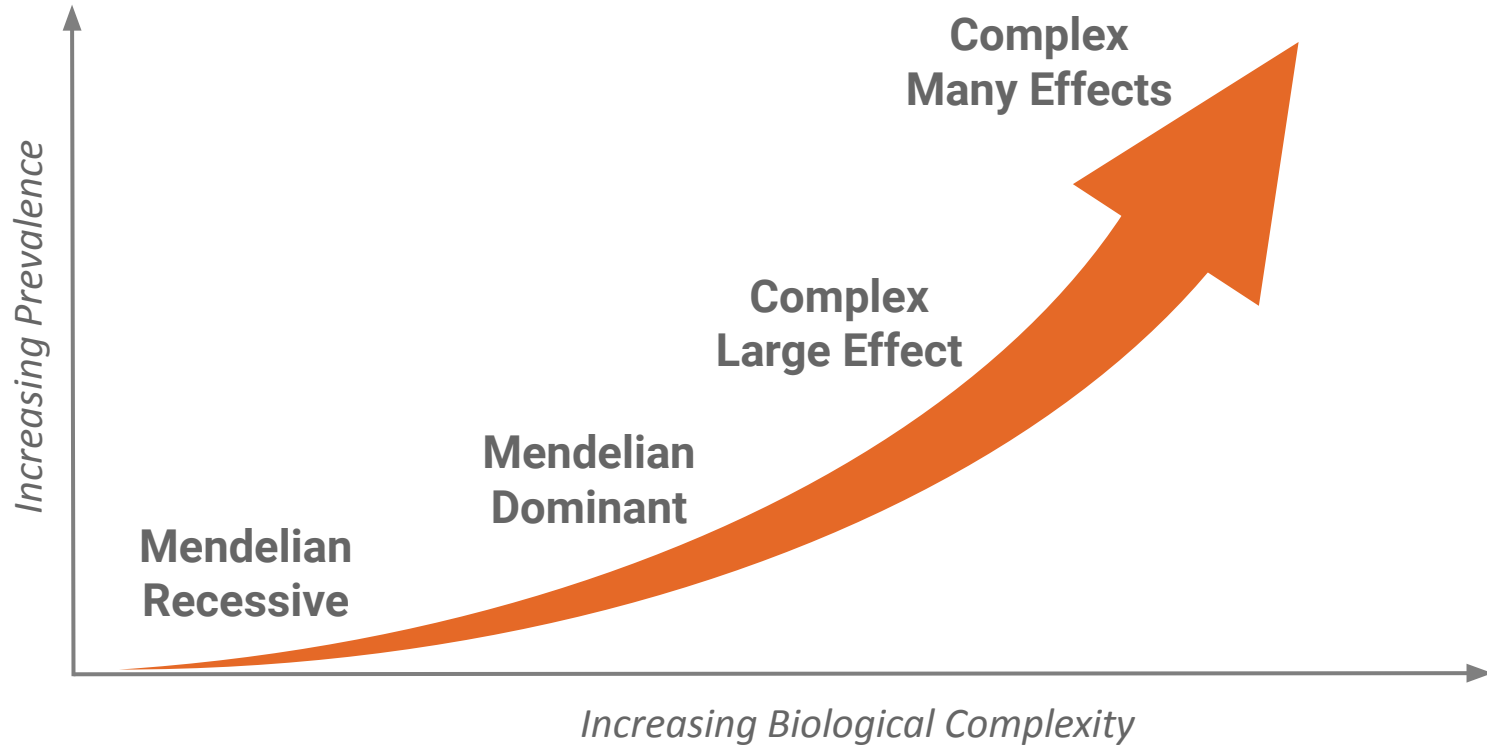
DEEP GENOMICS' ADVANTAGE:

PREDICTION AT SCALE - DERISK ALL UP FRONT - ITERATIVE LEARNING

Data driven prediction, positive feedback loops, and exponential growth



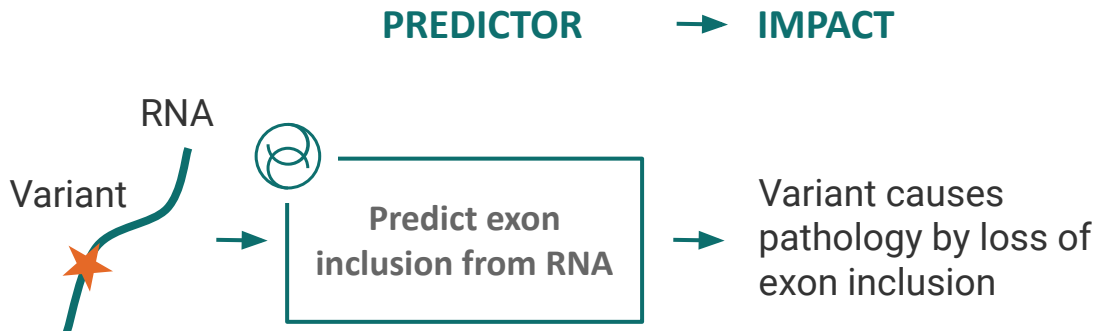
Tackling complexity - Our digital AI Workbench unlocks targets across the spectrum of genetic types



Predictors drive portfolio productivity, and we have 40 of them

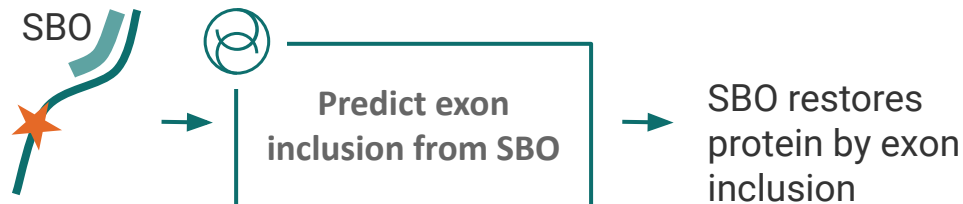
EXAMPLE APPLICATIONS

- Identify novel targets
- Design therapies
- Predict safety and toxicity
- Identify new patient populations
- Predict drug properties



SBO PREDICTORS

- Protein restoration
- Protein expression Increase
- Protein knockdown



AI Workbench and “plug-and-play” SBO technology powers high-value, low risk therapies



THERAPEUTIC AREA

CNS

- Frontotemporal Dementia
- Niemann-Pick Disease Type C
- Pediatric Epilepsy
- Parkinson's Disease

Metabolic

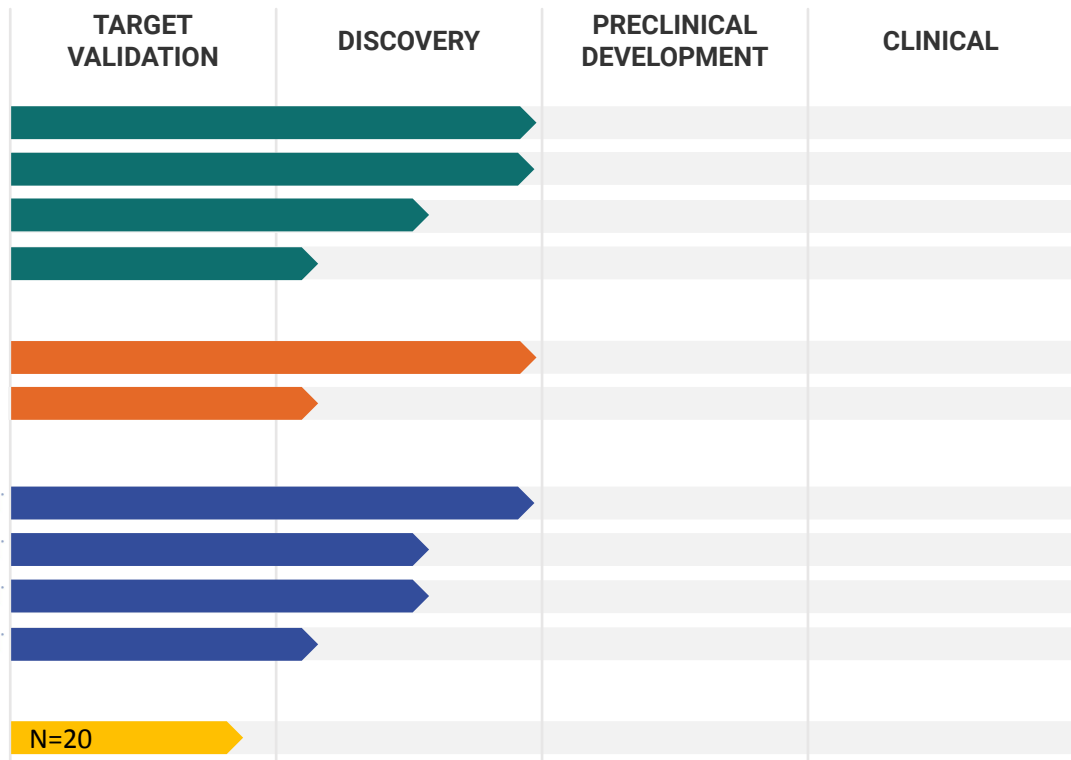
- Wilson Disease
- Refractory Gout

Partnered

- Undisclosed B:OMARIN
- Undisclosed B:OMARIN
- Undisclosed B:OMARIN
- Undisclosed B:OMARIN

Target Identification

- Under Assessment

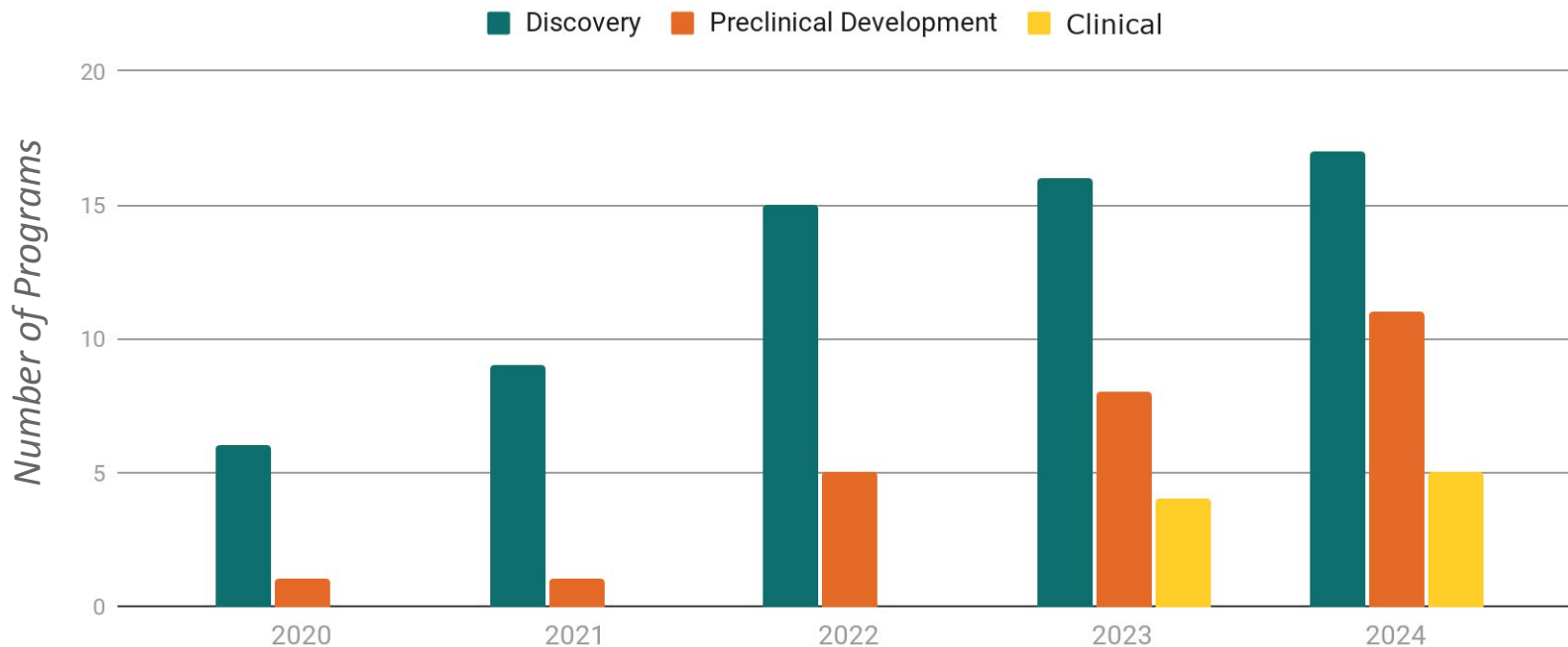


EST. WW PEAK SALES

\$600M - \$1B
\$900M - \$1.2B

\$700M - \$1.1B
\$800M - \$1.2B

DG Portfolio: At tipping point to significant clinical expansion



Company goals to mid-2024



PREDICTORS

Expand AI for complex disease,
SBO effect and SBO safety



GENES SCREENED

60 complex, 40 Mendelian
Enabled by AI and robotics



TARGETS WITH PATENTED LEADS

Complex and Mendelian



EXPAND PARTNERSHIPS

Broaden pipeline, access
non-dilutive funding



PRECLINICAL PROGRAMS

Internal, partners, CRO



PROGRAMS IN THE CLINIC

Key question for Canadian genomics community

Some big datasets are exponentially better than others - which datasets should public money be used to generate?

1. Good: Genome sequencing produces high quality data
2. Proof points from industry: Biotechs request sequencing money, demonstrate their capacity to use it, then GC signs a cheque with the understanding that the data is public.
3. Input from Industry: Council of Canadian Biotech Entrepreneurs - a committee to help identify big genomics datasets of strategic value to Canada



Thank You