FLAGSHIP PIONEERING

SCIENTIFIC VENTURES FOR LIFE

Pioneering For Sustainability

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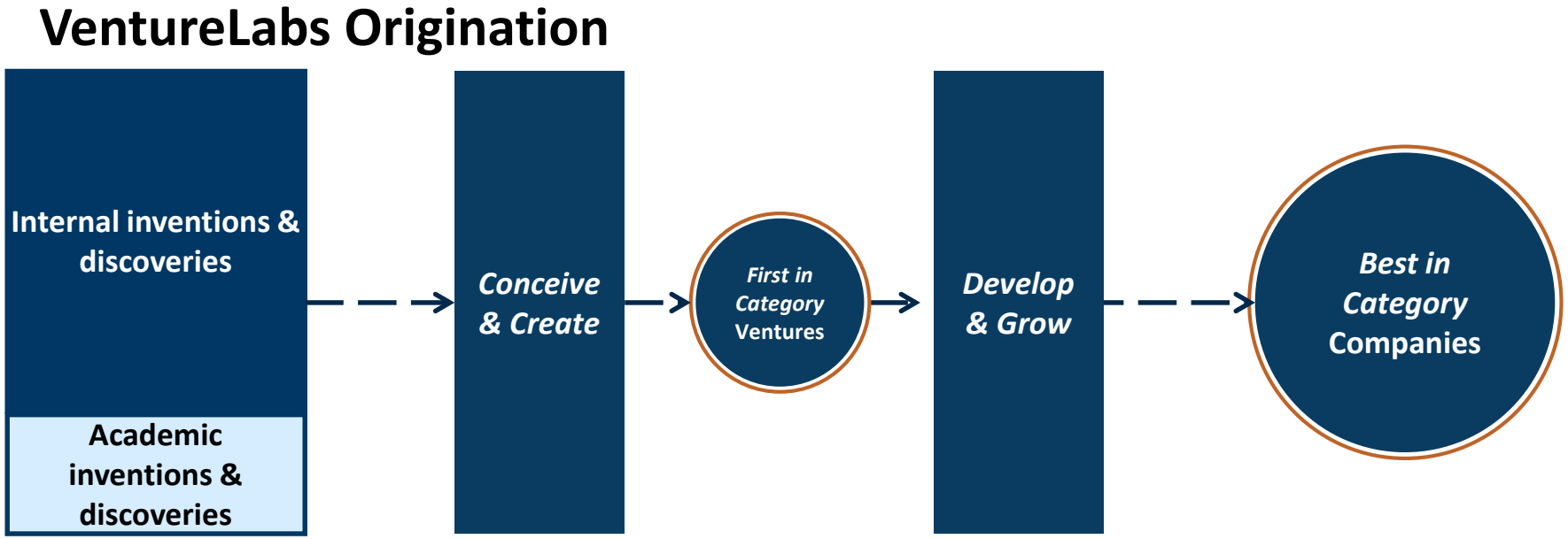
A UNIQUE LIFE SCIENCES INNOVATION ENTERPRISE

- Originate**, rather than invest in,** companies
- Targeting far beyond adjacencies **- insurgents not incumbents**
- **Proprietary process** for pioneering innovation and venture creation
- **Focus on building** multi-product platforms
- Broad, foundational intellectual property **underlying each venture**
- Principal ownership **role and responsibility**
- Ecosystem of 30+ companies **with common practices and networks**
- **Long-term** corporate innovation alliances

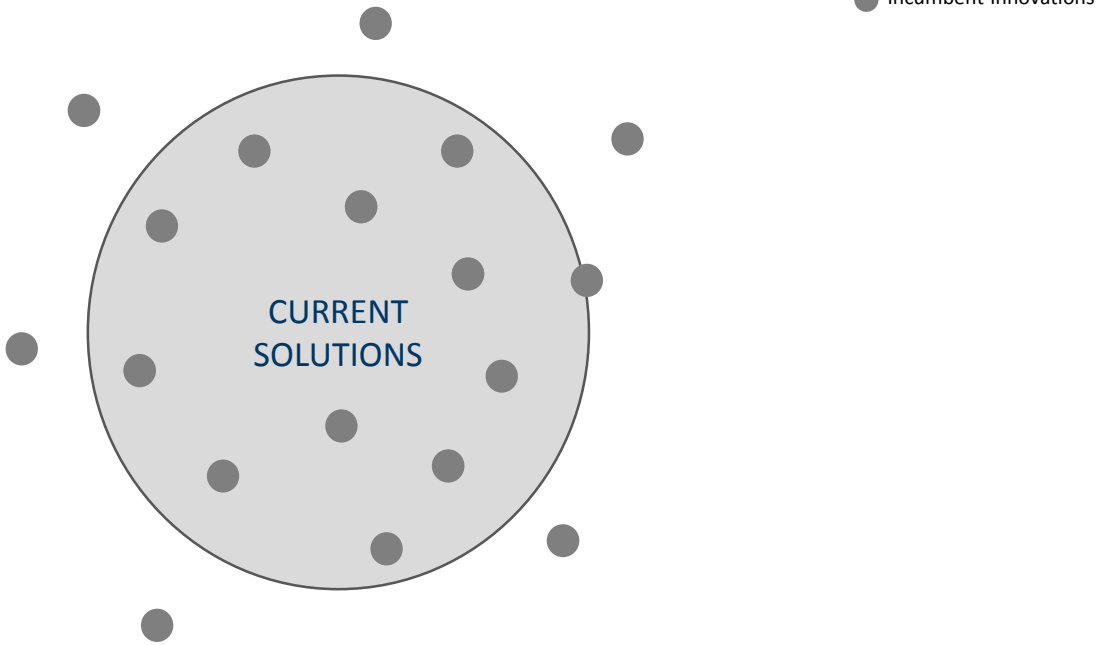
Maximizing Returns on Pioneering Innovations

THE FLAGSHIP PIONEERING BUSINESS MODEL
SCIENCE-BASED INNOVATION, PROFESSIONAL VENTURE CREATION



APPROACHES TO INNOVATION

INCUMBENTS FOCUSED ON PRODUCT EXTENSIONS AND ADJACENT OPPORTUNITIES

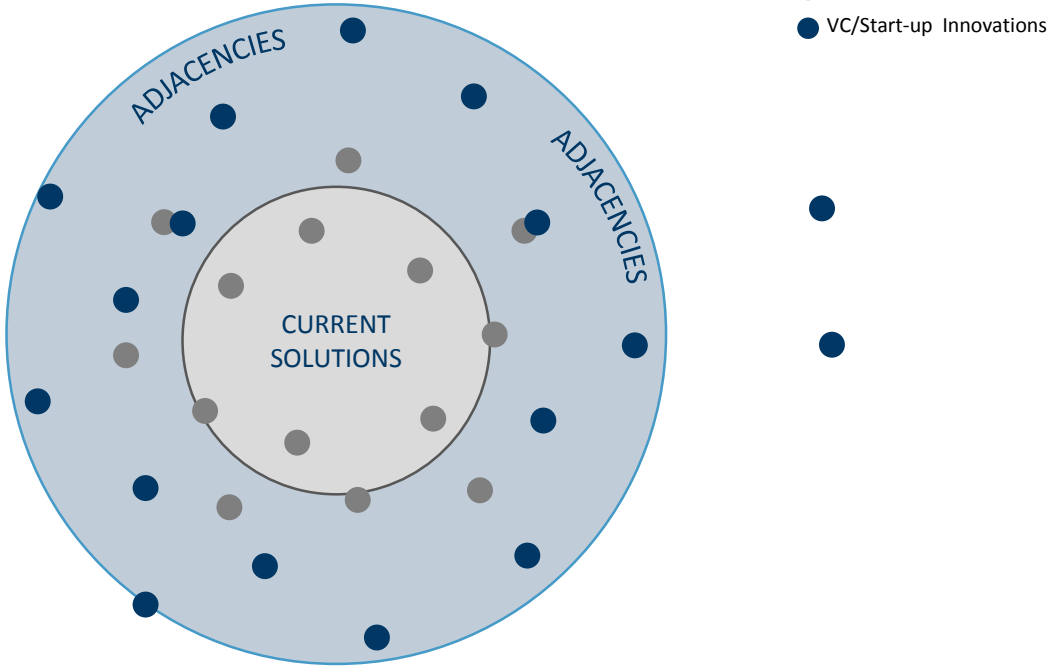


LEGEND

Incumbent Innovations

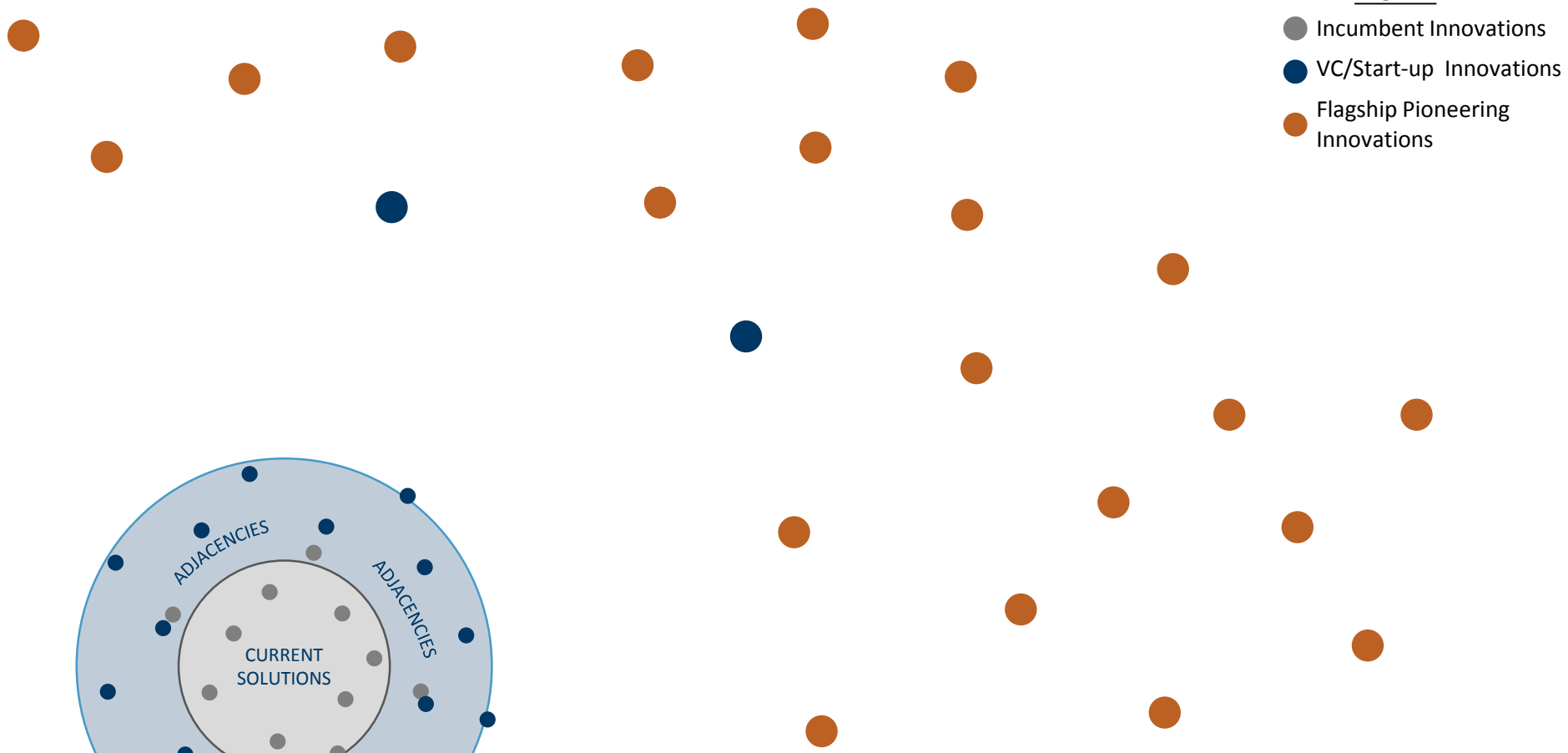
APPROACHES TO INNOVATION

VC/START-UPS TARGET INNOVATIONS BASED ON ADJACENCY



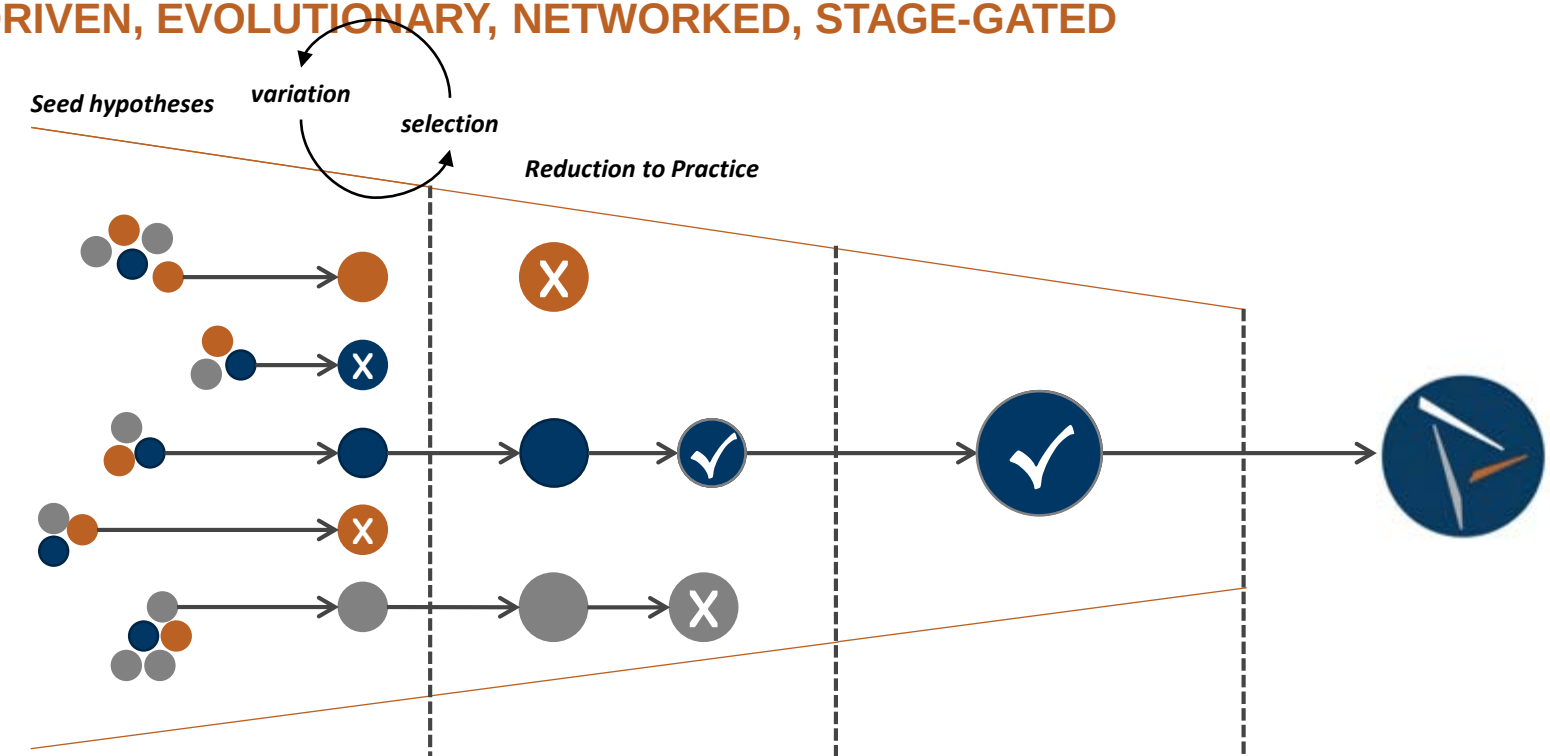
THREE APPROACHES TO INNOVATION

FLAGSHIP EXPLORES UNFORESEEN OPPORTUNITIES TO PIONEER THE NEXT WAVE OF INNOVATIONS – BROADEST IP PROTECTION POSSIBLE



THE VENTURELABS PIONEERING PROCESS

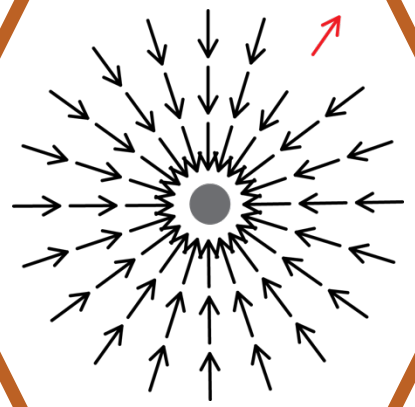
HYPOTHESIS-DRIVEN, EVOLUTIONARY, NETWORKED, STAGE-GATED



Phase 1: Explorations	**Phase 2:** ProtoCo	**Phase 3:** NewCo	**Phase 4:** FIC Venture
Hypothesis Generation	***Feasibility Testing***	***Internal Venture***	***Spin-out Venture***
• White space seeded by multiple hypotheses • Network engaged to iterate/refine	• Project team focused on Proof of Concept • Patent generation • Team formation • Network engaged to critique and evolve	• Execute product and platform development plan • Assemble broader team and board • Flagship leadership and founding team	• CEO recruited • BOD governance • Separate from Flagship resources • Grow and thrive

LIFE SCIENCES INNOVATIONS PIONEERING A SUSTAINABLE FUTURE

UNBOUNDED UNPRECEDENTED INNOVATIONS



ENABLE EXECUTE EXPAND

IMPACT AT SCALE

Maximizing The Potential of Proprietary Transformative Innovations: Unique Process to Maximize Success, Returns, and Impact

LIFE SCIENCES IS POISED TO REVOLUTIONIZE THE WORLD

SUSTAINABLE RESOURCES

Mobius

TRANSFORMATIVE IDEA:

High efficiency sustainable metal extraction applied first to cobalt

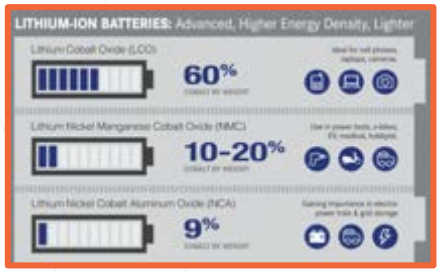
ENTREPRENEURIAL APPROACH:

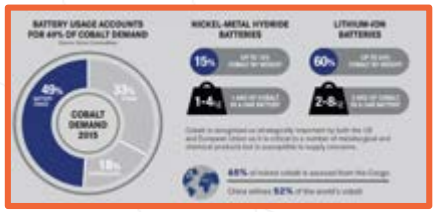
Rapid scale up and deployment, building on transformative technology and experienced leadership team

Life-Sciences Inspired Solutions for Mining

- Proprietary non-toxic approaches to extract metals at high efficiency
- Leveraging billions of years of evolution for precision extraction
- Scalable systems allow for social benefits for a range of metals

The Cobalt Industry Is Ripe For Innovation





- Cobalt is Mobius' first market
- Cobalt is the most limiting metal for Li-ion batteries: current electric car projections put the world in deficit by 2020
- >65% Cobalt from DR Congo, primarily mined artisanally, with children a major part of the work force

Low cost, high efficiency, scalable innovations are essential for low-carbon transportation

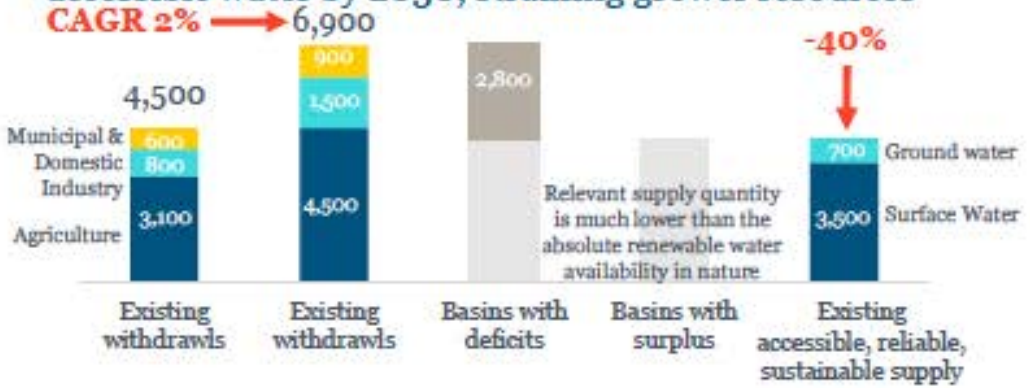
Opportunity to displace children from the mining workforce: actively exploring multi-stakeholder collaborations

Battery scalability enables further deployment of solar and other variable renewables

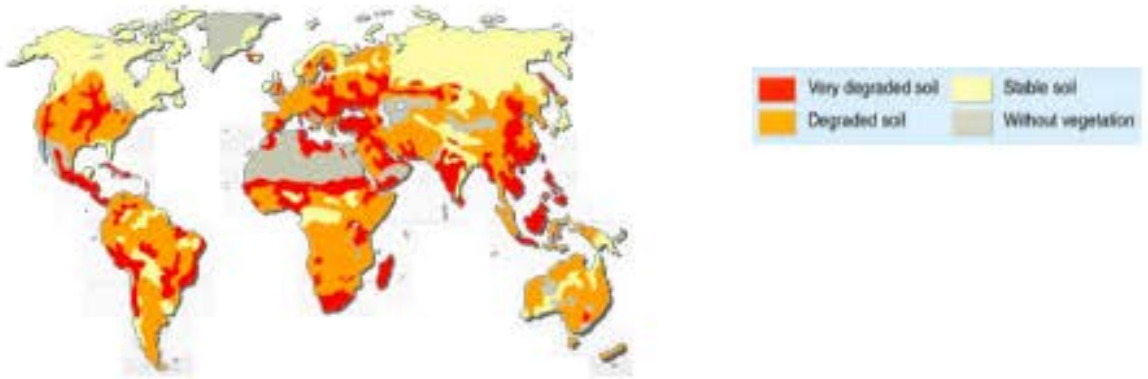
Cobalt is necessary for decarbonization—enabling batteries for low carbon mobility

GLOBAL PRODUCTION IS CONSTRAINED BY A SCARCITY OF NATURAL RESOURCES, CLIMATE CHANGE AND DECLINING PRODUCTIVITY GAINS

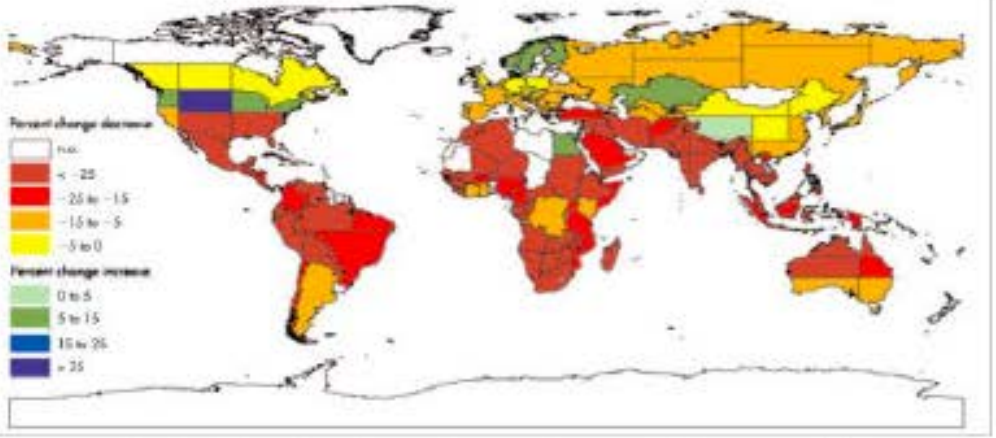
A. Water: 40% gap between demand and easily accessible water by 2030, straining grower resources



B. Land: over 20% arable land already degraded

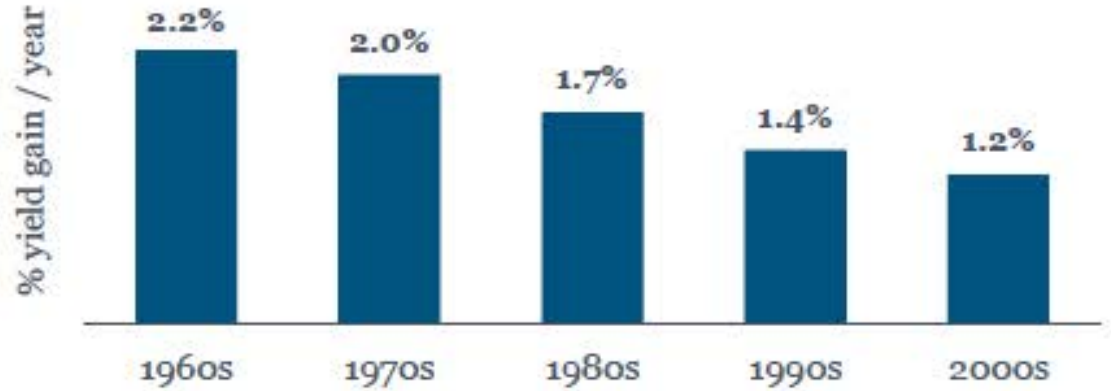


C. Climate change: 3-16% lower productivity by 2080



D. Productivity gain: steadily declining gains

Annual yield increase of major crops
Decade average, percent



THE PLANT MICROBIOME IS EMERGING AS A POWERING DISRUPTIVE INNOVATION FOR SUSTAINABLE AGRICULTURE

The last two revolutions in agriculture started in pharmaceuticals:

Antibiotic discovery

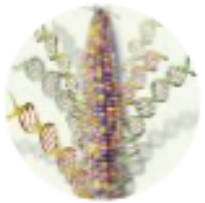
Ag chemicals industry

Therapeutic biotech revolution

Ag biotech industry

Innovations in the plant microbiome will lead to the next step-change in crop yields

Genome

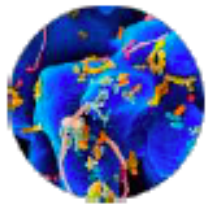


>$15 B Biotech Seeds

>$20 B Conventional Seeds

X

Microbiome



indigo

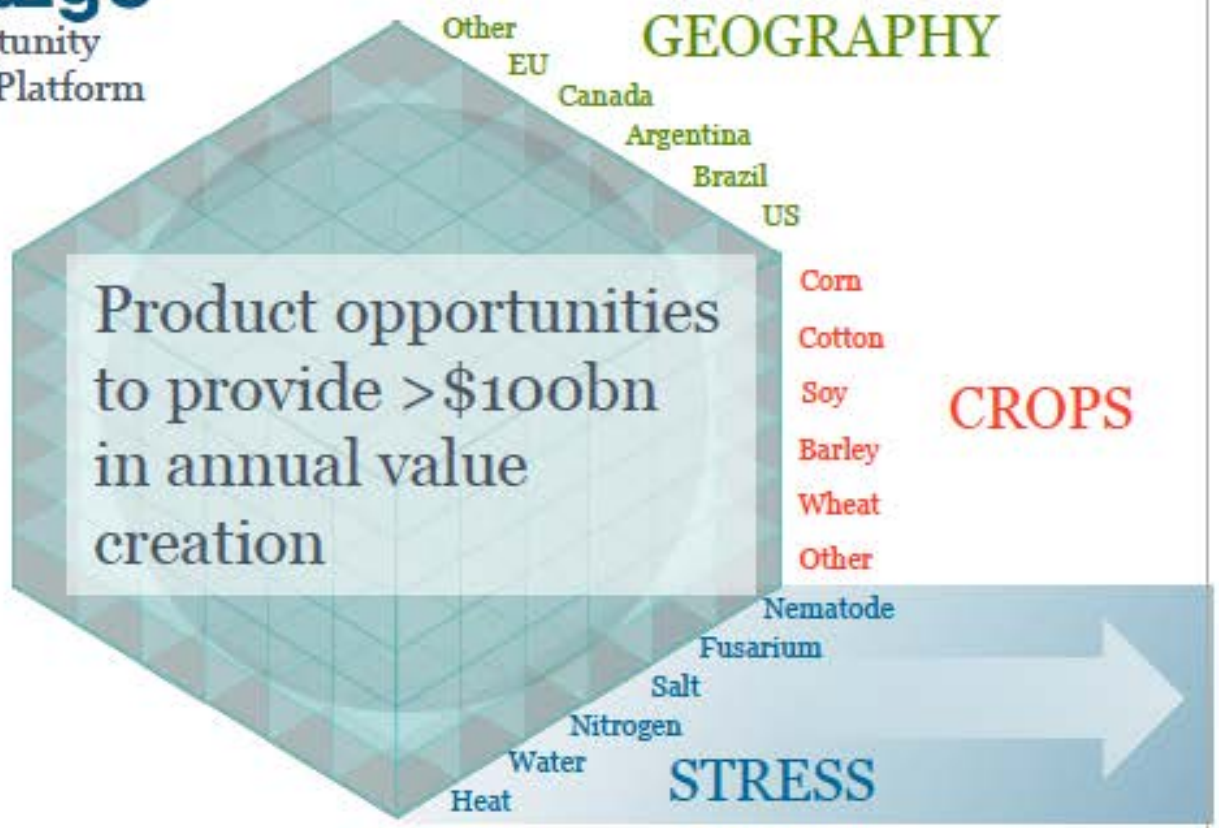
X

Environment

>$40 B Pesticides >$160 B Fertilizer and Herbicides

THE PLANT MICROBIOME OPPORTUNITY

indigo
Opportunity
Cube/Platform



Product opportunities to provide >**$100bn** in annual value creation in incremental improvement alone

Abiotic

- Water Optimization
- Yield
- Nutrient Use
- Vigor/Stand
- Cold Tolerance

Biotic

- Seedling Disease
- Above Ground Insects
- Foliar Disease
- Sucking/Piercing Insects
- Nematodes

Indigo Water Optimization Products

Indigo Soy | Control | Indigo Cotton

INARI AGRICULTURE: PIONEERING RATIONAL CROP DESIGN

Mendelian breeding relies on serendipitous recombination events for novel alleles, and **6-8 generations** of propagation & field testing to develop a product.

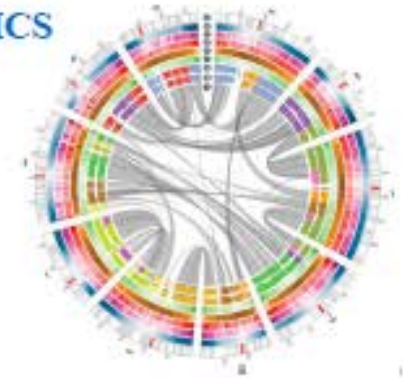
- Recombination is inefficient and doesn't cover full genome; especially poor in polyploids.
- Genetic drag, epistasis and environmental interactions further complicate selections.
- Programs go through ***up to 2000 inbreds*** to make a single commercial product.

Post-Medelian breeding combines

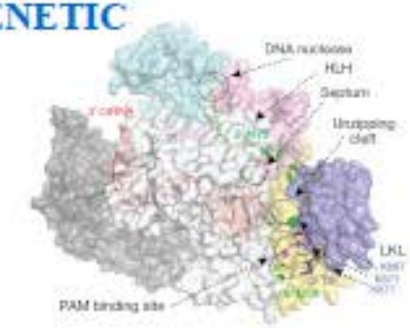
- Genomic and epigenomic connections to phenotypes;
- Efficient molecular breeding tools for precise (epi)genome modification; and
- Novel delivery strategies for single-generation molecular breeding

to enable the identification, optimization, and production of rationally designed crop products.

GENOMICS



(EPI)GENETIC TOOLS



DELIVERY TOOLS

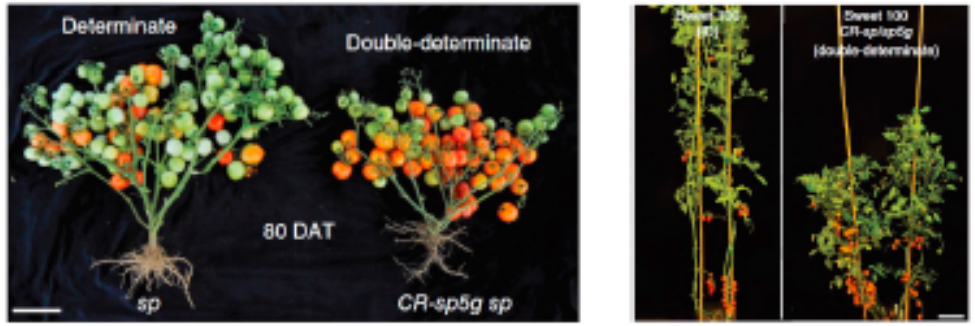
RATIONAL CROP DESIGN

inari

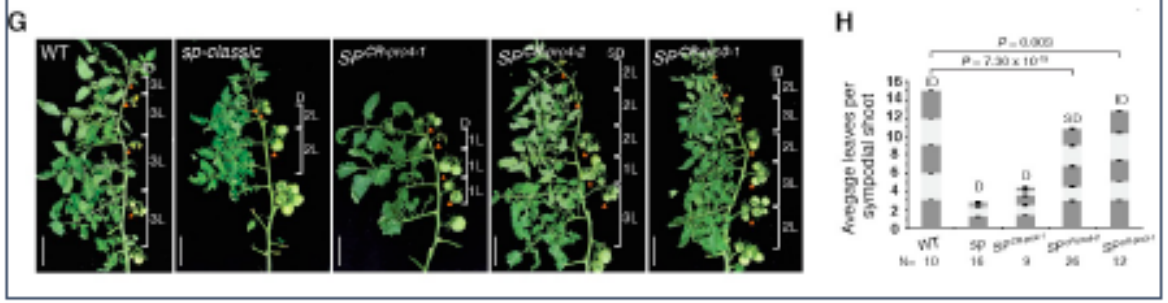
PRECISE TUNING OF TOMATO ARCHITECTURE

- Many gains in breeding have come from tweaks to the activity of **architectural** and **flowering** genes.
  - Upstream promoters or heterozygous weak alleles.
  - Highly sensitive to coding changes in such critical genes, so very few non-lethal variants to work with.
- Precisely changing relative expression levels of architectural genes = **"analog" optimization**.
- SAB member **Zach Lippman** has demonstrated targeted weak allele creation and graduated promoter strengths for tuning expression levels.
- Early Inari PoC: precisely tune branching + architecture for higher-, earlier-yielding tomatoes.
  - Project would exemplify every pillar in Inari's platform.

Weak alleles of antiflorigen gene *sp5g* lead to earlier flowering, higher harvest index (tomato, cherry)



Randomized *sp* promoter deletions lead to graduated architectural phenotype (tomato)



Soyk, *et al. Nat Genet.* 2017 Jan;49(1):162-168
Rodriguez, *et al. Cell.* (Under Review)

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WE DO NOT INHERIT THE EARTH FROM OUR ANCESTORS, WE BORROW IT FROM OUR CHILDREN

-NATIVE AMERICAN PROVERB