

PLUTONTM

BIOSCIENCES

A research lab specializing in microbial
discovery

What We Do

- **Pluton extracts valuable natural resources from the earth**
 - We use an assay-based approach to discover new microbes (bacteria, fungi, viruses) and their most useful byproducts for development into viable and sustainable biosolutions
 - [First discovery](#): found two new bacteria to kill *Aedes aegypti*, the mosquito that carries the Zika virus
- **Pluton licenses our discoveries to global biosolution producers for commercialization**
 - Our approach is quick and efficient, capable of generating a robust license portfolio at a fraction of the time and cost incurred by academic researchers, in-house corporate research labs, or start-up labs relying on expensive cutting-edge biotech approaches to research
- **Pluton catalogues each discovery made into our microbiome data library**
 - We use genomics and assay data to map novel functions in the soil microbiome
 - Each experiment conducted adds to the microbiome library and enhances its predictive capacity
 - Creates future revenue opportunities to sell access to our soil microbiome data and research analytic tools
- **Pluton's potential customers include Bayer, Syngenta, Indigo, BASF, Eli Lilly, Merck, Intrexon...**

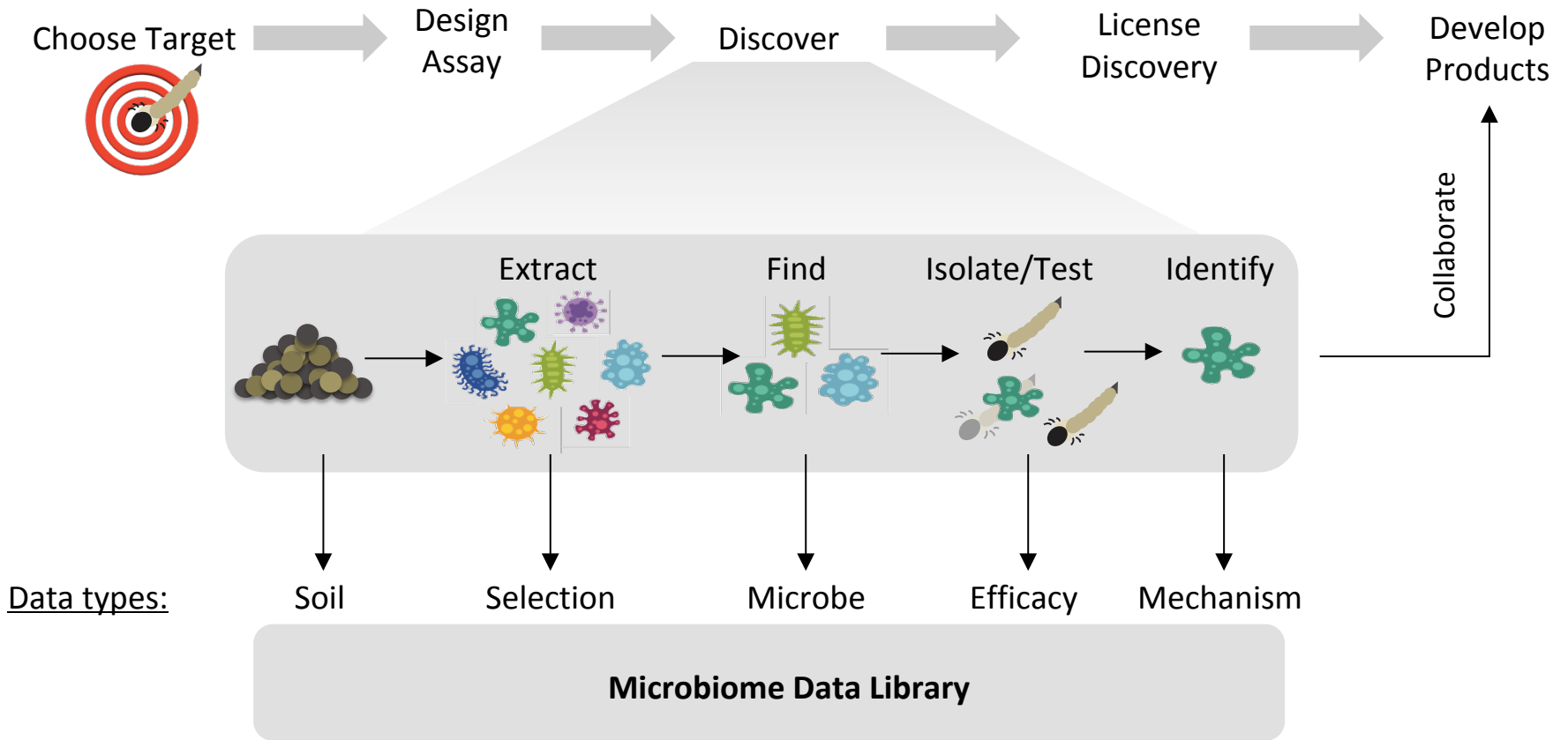
What We've Done

- **Pluton is making discoveries and has a customer**
 - Pluton has entered into a Joint Development Agreement with our first customer, [Terramera](#)
 - Terramera is using our discoveries to develop a broad-spectrum biopesticide for use in crop protection
 - We are independently developing a larvicide to kill mosquitoes using multiple microbe-derived modes of action
- **Pluton has generated intellectual property**
 - Provisional patents filed in April 2018 on insect inhibitory compositions derived from our microbial discoveries
 - Our selection criteria for targeted microbial discovery is a trade secret
- **Pluton has built a team to deliver results**
 - Our science founders and advisors have the technical expertise to execute our research approach
 - Our technologist has the expertise and connections to execute our data strategy
 - Our business founder and advisors have startup expertise both as entrepreneurs and investors
- **Pluton started in January 2017**
 - We have raised \$375,000 to date

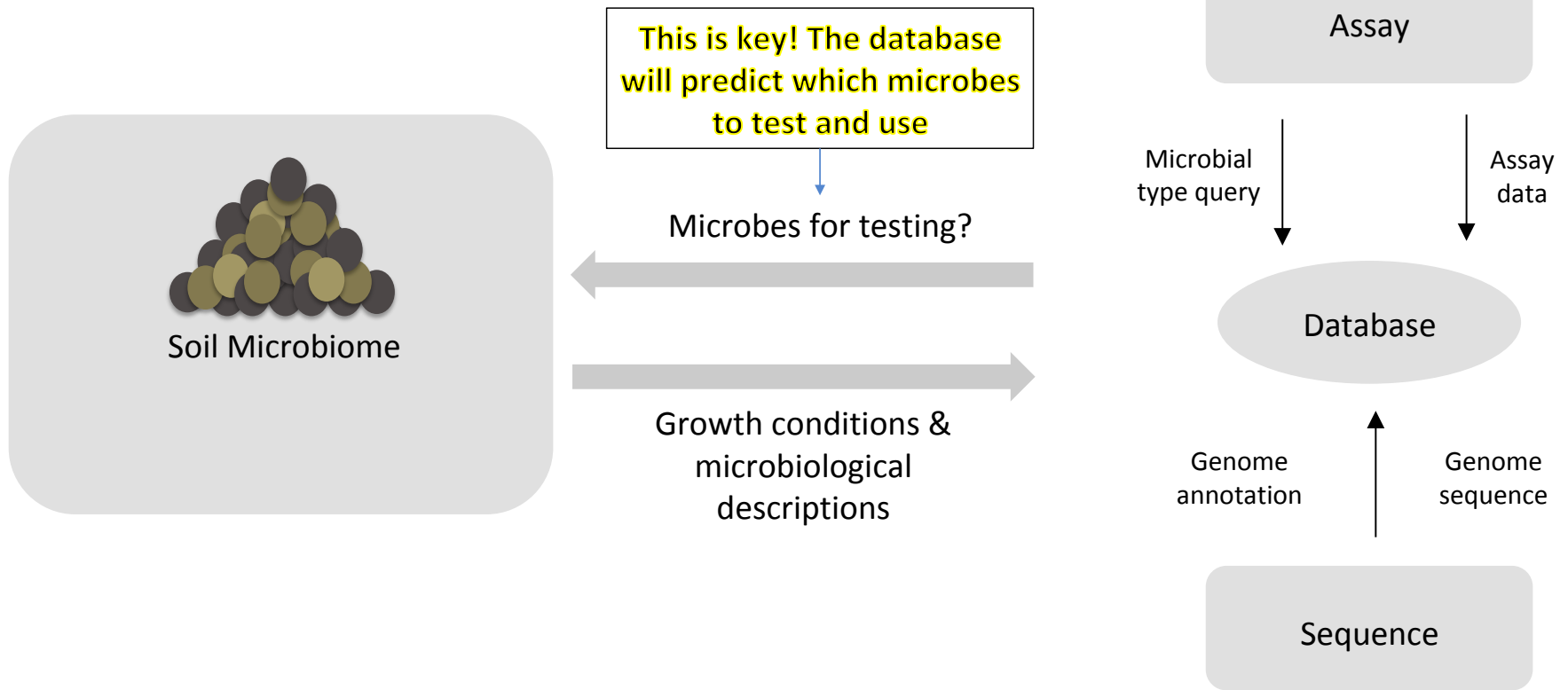
Market Opportunity

- **There are a trillion species of microbes on planet; only 1 in a million have been discovered**
 - Billions in bioproduct revenues have been generated from existing discoveries (e.g., penicillin from fungus, biopesticides and seed coatings from bacteria)
 - Assay-based approach requires low cost of capital and has high ROI potential
- **Nature is outpacing Research & Development pipeline**
 - Market slow to respond to rising environmental threats – antimicrobial resistance, spread of vector-borne diseases and invasive species, global warming, pollution, pressures on food supply and waste disposal by rising global population
 - Global biosolution producers increasingly reliant on academia for basic research; increasingly adverse to funding in-house discovery research
- **Microbes are nature's master inventors; an abundant resource to be mined**
 - Pluton's assay-based approach to discovery augments the research pipeline by licensing development-ready microbial leads to global producers of biosolutions
 - Pluton's team is positioned to gain market share quickly – our targeted approach shortens research timeline, lowers price of acquiring new microbial leads, derisks early stage research for global producers of biosolutions

How We Kill Insects



Microbiome Data Library



Pluton's Team

- **Charlie Walch, CEO, Board Member, Investor.** BA in History from Kenyon College. Lifelong entrepreneur and experienced Fortune 100 salesperson. 25+ yrs starting, running, buying, selling businesses
- **Glen Schuster, CTO, Board Member, Investor.** MBA from Washington University. Senior Technology leader; oversaw I.T. and tech strategy at Centene Corporation as CNC grew from \$1B to \$50B Fortune 100 company. 10+ yrs C-suite experience; 10+ yrs senior level business consultant
- **Barry Goldman, Board Member, Investor.** PhD in Microbiology from Utah. Has built world-class microbial discovery pipelines for Monsanto and Indigo Ag. 20+ yrs industry; 10+ academia
- **Kirk Narzinski, Founder.** BS in Biology, Missouri S&T. Has led teams in data management, automation and robotics, protein expression and cloning. 15+ yrs industry; 5+ academia
- **Ann Guggisberg, Founder.** PhD in Molecular Genetics and Genomics from Washington University with expertise in parasitology, genetics, metabolism, and biochemistry. New to industry; 5+ yrs academia
- **Diana Beckman, Founder.** PhD in Molecular and Cellular Biology from Washington University. Extensive experience in assay design, lab management, and safety. 5 yrs industry; 25+ academia

Pluton's Advisors

- **Eric Hardgrave, Business Advisory Board.** BA in Economics from Stanford. General Partner in Acuity Ventures, San Jose, CA. Former Member Sand Hill Capital and Silicon Valley Bank. 20+ yrs in venture capital, 10+ yrs in banking
- **Dave Mell, Business Advisory Board.** BS in Aerospace Engineering, University of Colorado. Current Director of Operations at CA Technology's accelerator in San Francisco. 15+ yrs in software development, nearly 10 yrs in aerospace engineering
- **Gautam Dantas, Science Advisory Board.** PhD in Biochemistry from U of Washington. Professor at Washington University; world expert on microbial genomics, ecology & physiology. 15+ yrs academia
- **Roy Welch, Science Advisory Board.** PhD in Microbiology and Genetics from Wisconsin. Professor at Syracuse University; expert on microbial physiology, behavior & genomics. 25+ yrs academia
- **Audrey Odom John, Science Advisory Board.** MD PhD in Medicine & Biochemistry from Duke. Associate Professor at Washington University & attending infectious disease physician at St. Louis Children's Hospital; expert on the mosquito-borne disease malaria, drug development & molecular biology. 20+ yrs academia

What we are looking for

- Advantaged relationships
- Seeking additional capital
- Takeaways for investors
 - We successfully completed a Proof of Concept showing we can find new ways to kill insects
 - Proof of Concept was delivered on time and within budget
 - First customer Terramera expects to produce results in Q1/Q2 2019
 - In contact with five other prospective customers
 - Founding Team has requisite technical expertise and entrepreneurial leadership
 - Charlie Walch, Ann Guggisberg, Diana Beckman currently engaged full-time at Pluton