



Bugs as drugs!



“Microbial Ecosystem Therapeutics”: orally-delivered, stabilized gut microbial ecosystems

Company founded in 2013

4 partners, 1 is an angel investor

2013: 1 MITACS postdoc employee, 1 bench in my existing lab

2021: 13 employees U of G; 5 employees Pearl River

# Drug portfolio

Drug formulation	Indication (s)	Trial phase	Clinical Trial Numbers
MET-1	<i>C. difficile</i> infection	1 (pilot)	NCT01372943
MET-2	<i>C. difficile</i> infection; ulcerative colitis; Depression & anxiety	1, 2	NCT04052451; NCT04602715; NCT03832400; NCT02865616
MET-3	Metabolic syndrome, obesity	1, 2 (3 starting in US)	NCT04507971; NCT03660748
MET-4	Checkpoint inhibitor potency booster in chemotherapy for oncology	1, 2	NCT03838601; NCT03686202
MET-5	Metabolic syndrome	1	NCT04507971
MET-6	Under development	-	-

# Patent portfolio

- Original patent filed by U of G
- “Media supplements and methods to culture human gastrointestinal anaerobic microorganisms”
- Bought by NuBiyota and used as a foundation for subsequent NuBiyota IP
  - Financial benefit to me and my graduate student patent co-author
- NuBiyota patent portfolio consistently expanding
  - Also several filings of the same patents in different countries
- Patents are not linked to drug formulations
  - Instead based on methods of development and QC/QA
- Successfully used to leverage partnerships with Big Pharma
  - Takeda (2016); other partnerships in discussion

# IP creation

- **Benefits**

- Builds value into scientific discovery
- Can be leveraged for company creation
- Relatively painless process, *if you work with people who know what they're doing*

- **Downsides**

- Can take a while to understand the thought processes of patent lawyers!
- Patent language is like a foreign language and takes time to learn
- Lawyers are expensive, and expenses accrue quickly (best not to do this alone!)
- Important to understand – and have trainees understand – what constitutes inventorship

# Generating IP is not just about generating personal wealth

- Academic work: The Good Project
  - Culturing 'missing microbes' from remote Amazonian hunter-gatherer people
  - Lots of ongoing discovery; lots of potential for IP
- Agreement struck with The Good Project
  - In exchange for (very precious) samples, any IP generated will be the property of The Good Project
  - Intended to help The Good Project generate revenue for its mission
  - I am still free to work on IP-protected material in an academic context
- For me, protecting this IP is a moral responsibility

