



INNOVATIVE NEW BIOTECHNOLOGIES SHOWCASED. INDIEBIO DEMO DAY REVIEWED

SIMON COCKING (<https://irishtechnews.ie/author/sarah-paddle-swim/>) * FEBRUARY 26, 2017

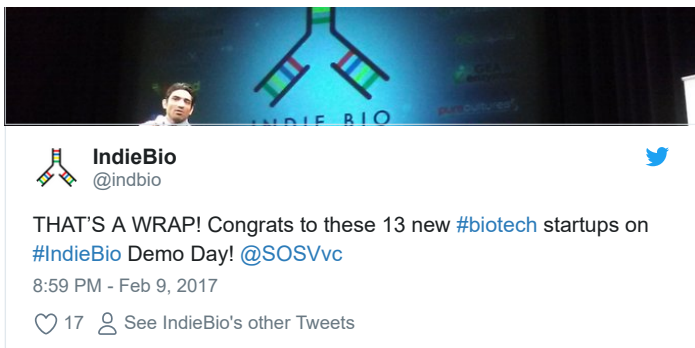
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IndieBio help scientists become entrepreneurs. Using biology to change the world. Scientist’s mindset are being shifted from academic discovery to product development. The companies at IndieBio tackle existing research issues and create new ideas too. The event took place at Herbst Theatre in San Francisco. 13 companies spoke at this event. Let me now give a breakdown of what each company does.

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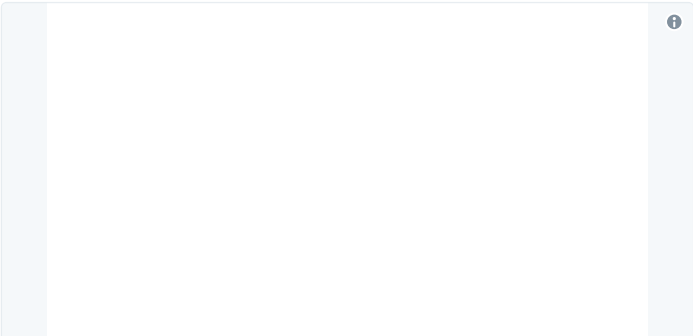
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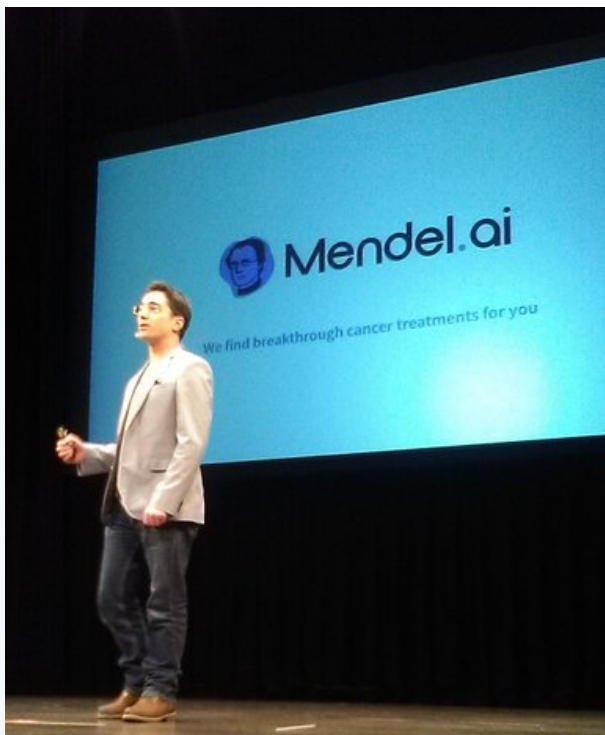
The world will need to store 100,000,000,000,000,000,000,000 bytes by 2020. Catalog Technologies are building infinite data archives in DNA. DNA is extremely cheap, easy to copy and can store data infinitely but DNA synthesis is expensive. Catalog can use pre-fabricated DNA to avoid this cost. The disaster recovery market is worth \$11.5B. Catalog Co-Founder Hyunjun Park was delighted to inform the audience that Catalog have reached their seed funding of 5 million and are accepting 40% more investment as I write this article.

A2A Pharmaceuticals is developing novel treatments for cancer and drug resistant bacterial infections with the help of a proprietary computational platform. Most of the pharmaceutical industry is focused on analysis of existing libraries of drug-like molecules with computational tools and high-throughput screening. By contrast, A2A is exploring 100s of millions of molecules in chemical space to develop proprietary databases of safe and effective new drug candidates. The approach enables rigorous pre-optimization of therapeutics before laboratory testing begins. Interest in A2As oncology programs with multiple pharmaceutical partner possibilities has picked up after revealing positive data from the Leukemia program.

Business Showcase : AnimalBiome (<https://irishtechnews.ie/business-showcase-animalbiome/>).

How many people do we know have a cat or dog? Be it the next door neighbour, ourselves or family relations. Cats and dogs are cherished by their home owners but they commonly develop digestive disorders and most antibiotics are ineffective. This is not good enough for a \$4.5B market. Holly H Ganz of Animal Biome explained how her team are providing an assessment of their animals microbiome gut to get an idea of overall health and wellness when healthy or sick to maintain good health or to choose which treatment option will avoid negative side effects. Animal Biome are on track to launch a clinical trial with UC Davis.





IndieBio
@indbio



.@MendelHealth uses artificial intelligence to help you find the latest clinical trials & treatments for your specific case. #IndieBio

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\$5B of gas is lost annually. Current gas sensing technology is too bulky and too expensive or too cheap and too small. BioInspira are taking gas sensing to the next level by making accurate, wireless and portable sensors from bacterial phages that can be attached to airborne sources, collect real time data and display the data on a pc. Ray Chin CEO BioInspira said he was inspired to produce this product after seeing the devastating effects of gas explosions in his home town Taiwan. Already 1.5m from national science foundation and 300K from the Taiwan government has been invested. 3m is being raised.

DxRx Inc can help people reduce their alcoholism. Discretion can be maintained as people can download this app on the app store. Using this app one can speak to a medical expert and receive suitable medicine, daily monitoring of their personal behaviour by speaking with psychologists and support access with other patients. According to DxRx CEO David Deacon 31 million people are untreated each year for alcoholism. The service is \$299 a month and in the first month there has been a 60% reduction in people's alcohol consumption.

GEA enzymes are a bioinformatics platform designing proteins for converting unhealthy saturated fats into healthy unsaturated fats maintaining texture, taste and aroma. This technology can rapidly develop thousands of protein candidates per day and identify the enzymes that are the most suitable to do the conversion of saturated to unsaturated fats. Companies in the US have spent more than \$10B to solve this problem. So far GEA have converted saturated fatty dark chocolate into the world's first spreadable unsaturated dark chocolate liquid opening a whole new market for chocolate manufacturers. GEA are working with companies responsible for 20% of the US chocolate market. The company was started in Chile and has a research lab there.

Karim Galil Mendel Health AI founder also a physician lost a patient to brain cancer and found out a breakthrough treatment that would have saved that patients life a week later. MD Anderson Cancer Center said patients do not get access to life saving treatment because of the lack of the awareness of the doctor. To address this problem Mendel Health have created a software platform that matches cancer patients to clinical trial treatment and FDA approved treatment. The software saves time by instantly analysing the patient's genetic data and medical records and recommending a method of treatment. This is more straight forward than a patient going through this tedious medical jargon. Mendel are raising 2M for matching patients to approved drugs and screening patients for guideline drugs where patients with complicated medical conditions need extra clarification to qualify for a particular treatment.

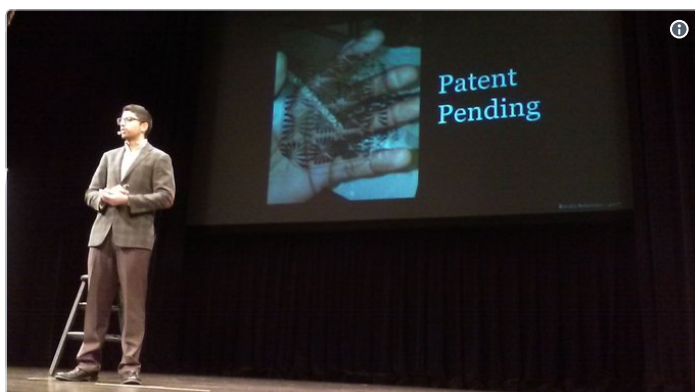
Every year more than 60m adults are diagnosed with clinical depression. Clinical depression is among few disorders in medicine where people are suicidal. According to NeuroQore founder Mehran Talebinejad

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\$11B a year is spent on prescription drugs and we are in a drug resistant depression crisis. Electro compulsive therapy treats clinical depression. It is a very informative therapy. From ECR we learn that depression is a functional problem and gridlocks exist in the brain that need to be unlocked however ECR has brutal side effects. NeuroQore are manufacturing medical equipment to treat patients suffering from depression avoiding ECR side effects. NeuroQore are looking for investment to manufacture more equipment and expand their team. NeuroQore currently have 750k revenue for 2016-2017.

Steve Kazemi has worked in the probiotics field for over 20 years. Joining Indie Bio allowed Steve to implement old knowledge and old ideas in a new way and make probiotics the way he wants to. Pure Cultures are probiotics that can be used by Animals for the meat industry reducing the use of antibiotics promoting healthier meat products for the Customer. Factory production is all about higher profit meaning antibiotics are being used. Consumers are demanding a change as antibiotics are harmful to human health. Chipotles introduced antibiotic free pork and their demand was higher than the supply. The Antibiotic Market is worth \$2.2B and growing by 34% annually. In a chicken farm in Colorado Pure Cultures increased yield 2x, increased animal weight and decreased chicken death. They have a pilot scheduled with a large egg corporation and have an agreement with the largest food supplier to work with that suppliers scientists on novel pet products. Pure Cultures are looking for a \$2 million seed round to expand headcount and improve sales.



"#IndieBio brought @RavataSolutions from an idea on a piece of paper to a product"

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I could not believe it when Ravata Solutions Co-founder Arshia Firouzi told me that he came to IndieBio with a piece of pen and paper and 4 months later they had their own hardware embryonic engineering platform device and very first mice. Ravata applied to IndieBio before but were unsuccessful however their persistence paid off as they were chosen for this current batch of companies. Mice are the workhorse of medical research. Mice production is costly because of the rate limiting microinjection step. Ravata use electroporation to customize embryos. Scientists can take their own mouse embryo and reagents and use the technology to impregnate a mouse. Ravata's device transforms embryos with a 100% survival and 75% transformation rate. Core units are being sold at \$80,000 and a patent is pending surrounding their chip technology. This device is capable of transforming any cell and over the next 2 years the plan is to adapt technology to work with other organisms. A €900,000 seed round is being raised to scale production, meet customer demand and continue R&D.

Drew Titmarsh Co-founder of Scaled Biolabs told me of how his team have developed a miniaturized fluid circuit experimentation platform that allows you to carry out thousands of experiments at the one time. From these experiments users can deduce which is the best option. This would be a great asset for research scientists. Lots of time would be saved by combining all the experiments at once and not as much money would be spent because the best outcome would be got in a shorter space of time. Fewer drugs make the market each year because of the same manual repetitive tasks involved. Academic collaborators of Scaled Biolabs were able make a human kidney from stem cells using this technology and they are working with manufacturing partners to produce the equipment.

2 people in the world died from snakebite during Venomyx Therapeutics presentation and are continuing to die. What's worse is this problem can be avoided but access to snakebite treatment in poverty-stricken countries is limited. Dan Dempsey CEO Venomyx Therapeutics is trying to change this by developing an anti-snake venom epipen synthetically in the lab using a single domain antibody that is multi-snake breed compatible. Traditionally anti-snake venom is made by taking the venom from a particular snake breed, inserting it into a horse and then extracting the sample from the horse. This takes too much time and requires a lot of manpower. Venomyx hope to finish with phase 1 clinical trials by end of next summer and are expecting commercial rollout by the end of 2019. The product also qualifies for fast track status with the FDA.


Viaex is the future of filtration. No one is doing what they are doing. Conventional solid filtration methods can produce stinky by-products and require a lot of pressure to push liquids through tiny pores. Viaex produce selective functionalised membranes from chitin bio-waste that can remove undesirable compounds. Their technology was successfully applied to remove undesirable compounds from a wine making process leaving the rest of the solution intact and has excellent applications to the food, beverage, wastewater and pharmaceutical industry. It's possible to reduce steps in WWTP process reducing cost and labour and energy usage x 10. Cost of technology is competitive with existing products in the market and Viaex have reached a 19+ merv rating. Hudson Liao CEO of Vieax is delighted to be involved in a product that is addressing the high demand for more advanced filtration systems. Speaking with Hudson he also highlighted that the product is also environmentally friendly. It starts and ends in environment with no negative consequences. Viaex have raised 3m of their 4m seed round.

It is great to see these companies addressing unmet needs in the world today making the world a better place. To see these companies raise millions of dollars and generate revenue after 4 months is an unbelievable achievement. With the right work culture IndieBio are proving that impossible barriers can be broken.

[Successful Northern Ireland San Francisco Tech Mission event takes place in California](https://irishtechnews.ie/successful-northern-ireland-san-francisco-tech-mission-event-takes-place-in-california/)
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