DESTINATION STARTUP

CellDrop Biosciences, Inc.

One-Sentence Summary of What You Do: CellDrop is commercializing a stem cell therapy developed to quickly and permanently heal musculoskeletal injuries in race horses.

Affiliated Institution: University of Wyoming

Have you formed a company yet? Yes

Funding/Financing: Direct/Indirect University Support

Please describe your company and the problem you are trying to solve: As part of an NSF I-Corps project, CellDrop identified a significant need among competitive horses of which 80% suffer from suspensory ligament injuries which can take years to heal. As one of the leading causes of missed performances these injuries drastically reduce quality of life for the animal and lose owners tens of thousands of dollars for each event missed. Based on initial findings, CellDrop can reduce missed starts by half, giving our product a $34,000 value-add per horse/year putting approximately $1.35 billion back into the pockets of horse owners. The therapy is based on a stem cell encapsulation technology developed at the University of Wyoming to extend the therapeutic window for cell-based tissue regeneration therapies by encasing stem cells in inert, injectable microparticles. This delivery vehicle is unique as it preserves cell viability and localizes cells at an injury site for significantly faster healing. In vitro testing of the stem cell encapsulation technology using simulated soft tissue environments has demonstrated the ability to maintain greater than 90% cell viability and localization for more than 14 days as compared to less than 3 days for un-encapsulated cells. We are preparing to conduct a small animal study, and aim to begin studies in equine patients as soon as funding will allow— with the goal to launch an equine product 12-16 months after that. The IP is protected by 5 pending patents and 2 patent filings made by the University of Wyoming's Technology Transfer office with an exclusive license to CellDrop.

What is/was your go-to-market strategy? After market research, including equine veterinarian interviews, CellDrop's initial market will be thoroughbred and quarter-horse racing. After establishing ourselves in the market, we will expand to other segments including competitive hunter/jumpers, dressage, and western. The research indicates racehorse vets have the biggest need for our product due to high competition value. The Jockey Club reports approximately 50,000 registered racehorses in 2018, and roughly 300,000 race starts per year. With 80% of these horses sustaining a suspensory ligament injury, the target market is 40,000 horses / year. With a product price of $10,000 this equates to $400 million target market. Customer discovery revealed veterinarians are the primary customers. For the product to be adopted, veterinarians need evidence of safety and efficacy in horses, which will be presented at several key conferences. The performance horse

market is geographically very concentrated in the US (Ocala, FL and between Louisville and Lexington KY for racehorses and Wellington FL for hunter/jumper and dressage). Based on this information, CellDrop sales reps will call on veterinarians in the target market; armed with the clinical results. Current stem cell therapies use standard cell injections that provides only a short window of healing because cells quickly migrate away from the injection site and have a short lifespan. CellDrop's competitive advantage is its patented cell encapsulation that localize live cells at the site of injury for more than a week, greatly accelerating the healing process and minimizing the chance of re-injury by enabling extensive cell signaling to quickly repair damage.

How will/do you generate revenue? CellDrop will sell individual treatments to veterinarians. The price charged per treatment is targeted at $10,000 with one treatment necessary to achieve the desired therapeutic result. With a Cost of Good Sold of $4,7000, CellDrop's gross margin is ~53%.

How will this showcase benefit your company or technology? CD has raised 20K from a University of Wyoming competition. This capital will allow the company to prove the treatment's efficacy and safety in rodents. After achieving this milestone, CellDrop will either pursue small animal testing (with a cost on the order of $50,000-75,000) or go straight to horse trials with an expected cost of between $750,000 - $1 million. The team has raised $10 million of investment capital for startups in various markets but not in the animal health market. Destination Startup will allow CellDrop to learn about animal health investing and begin to build our network so when the company is ready to raise either $100,000 or $1 million, we will have the contacts necessary to do so. While CellDrop's beachhead market is animal health, the same technology has the potential to be used to treat osteoarthritis in human knees. This market was thought to be the original target for the I-Corps project but the company pivoted after seeing how long and expensive regulatory and market penetration would be. None the less CellDrop would like to meet strategic partners to learn about human health therapies and potentially pursue the 14 million people who have symptomatic knee osteoarthritis, reduce the 600,000 knee replacements / year and upend the $10 billion knee replacement machine.

Who are the members of your team and why is this the right team to get the job done?

The CellDrop team includes both technical and business co-founders:

- Ben Noren; Co-founder & CEO: Ben holds BS and MS degrees in Chemical Engineering from the University of Wyoming and recently defended his PhD in Chemical Engineering with a focus on Biomedical Engineering. He has authored multiple papers on his research involving engineering cellular environments to control biological functions, and has presented his work at over a dozen conferences world-wide including a speaking invitation at the 6th annual Perinatal Stem Cell Society Summit.
- John Oakey; Co-founder & CTO: John is a Professor of Chemical Engineering at the University of Wyoming with research interests in applying microfluidics to investigate

biomaterials for tissue engineering and translational medicine. His translational research has generated eight patents and two startup companies. He was also active in pushing several technologies toward commercialization with the MGH Center for Technology Development prior to joining the UW faculty where his current research focus is on the development of microfluidic technology for high-throughput cellular analysis and biomaterial design.

- Peter Scott; Co-founder & COO: Peter is currently the Entrepreneur in Residence at the University of Wyoming where he leverages over 20 years of working with entrepreneurs and technology companies. His previous experience includes advising 25+ technology start-ups in strategy, marketing/sales, finance and securing commitments of over $10 million of investment. These companies have been in varying markets from solar, to wind turbines, fuel injection, engine controls, consumer products, and medical devices.