



Dear friends of New Harvest,

I hope you are staying safe in the face of Covid-19 - our teams are working from home in New York and Massachusetts. [Industry Lab](#), our Massachusetts home base, has been empty for a while now, and we're getting into the rhythm of our new normal.

Even though we're working from home, we're looking into the future - [funding research](#) that could prevent the transmission of diseases from animals to humans by drastically reducing the number of animals in the food supply.

Our fellows are using cutting edge science to bring cultured meat a little closer by undertaking research that could optimize the cost, development, and structural integrity of these new foods.

Our November 2019 application cycle was one of our most competitive yet, and we are thrilled to fund one returning fellow and bring in two new researchers.

1. Dr. Ricardo Gouveia – our returning fellow – is a postdoctoral researcher at the University of Newcastle. He's studying how to grow more cells with less cell growth media using curved surfaces and other inexpensive methods. These techniques could drastically change the cost of cellular agriculture products.
2. Alexis Garrett is our first Nebraska-based fellow working in Dr. Michael Sealey's lab. She's studying stereolithography to make structured meat tissue. Alexis's work capitalizes on a new food-compatible stereolithography reagent. We're excited to follow her progress.
3. Sophie Letcher is joining the crew in Dr. David Kaplan's lab at Tufts University, testing new ways to change muscle cell development. There, she joins current New Harvest fellows Natalie Rubio, Andrew Stout, and John Yuen.

The sun never sets on the New Harvest research community!

Our [next application cycle](#) closes on April 15, 2020.

I'd like to take this opportunity to share a little about how we support our researchers. The New Harvest Fellowship program, started in 2015, provides a unique opportunity for students and researchers to undertake projects in cellular agriculture. It is truly one of a kind.

So — What exactly makes our fellowship program special?

- In the words of John F. Kennedy, "A rising tide lifts all boats." Our research program is designed to create a rising tide for cellular agriculture. Our goal is to create resources that help all players in the field by increasing the amount of open-source information on cultured meat. In a field where knowledge sharing and field-specific training are rare, New Harvest fills a crucial gap, providing tools, resources, and trained talent for cultured meat innovations.
- Like the National Science Foundation [Graduate Research Fellowship Program](#) and the [Shuttleworth Foundation Fellowship Program](#), the New Harvest Fellowship funds the individual researcher rather than the project they undertake. This gives our researchers the freedom to adjust their work to follow interesting leads and allows them the flexibility best forward the field as it develops.
- To complete our application process, individuals must find an advisor who is willing to take them on as a PhD student. Then, they must write their proposal in partnership with their advisor. This process is critical to ensure that both the student and the advisor are fully invested in the project, and that they have the expertise and the interest to successfully contribute to the research community.
- Once we receive a complete application, we send it out to subject matter experts – a process called external review – to help our applicants make their proposed work even better. This maximizes the applicant's probability of making meaningful (and substantive) gains to the discipline.
- Once fellows are admitted to our program, they participate in Fellow Up – a weekly distributed group meeting that connects our team around the world, and they attend yearly Lab Meets. These meetings keep researchers on track and give them a forum to ask questions and share protocols that are specific to their work, such as bovine muscle cell isolations. Most importantly, these meetings create a sense of community – a critical component to success in often lonely PhD and postdoctoral research, especially in such a small and novel field.

Why does our support matter?

- Each researcher represents precious New Harvest donor dollars, and each is a major investment for us. We want to protect this investment by making sure that our fellows have the best possible chance of publishing their results, sharing their knowledge, and graduating with a PhD.
- PhD programs have retention rates that can [hover around 50%](#), and students have [poor outcomes](#) for mental health. With odds like these, our fellows need all the support they can get.
- In fact, our first-ever New Harvest fellow [left graduate school early](#) due to the unique environment and lack of support that graduate students often face.
- To get a taste of the PhD experience, take a look at the film [Naturally Obsessed](#) – a good example of the environment and intensity of some PhD programs.
- Pushing the needle forward even [this much](#) can be an enormous effort. And yet, it's still the most effective way to learn things that are unknown, and an important way to forward the field of cellular agriculture.

How's it going so far?

- New Harvest funds have supported nine [publications](#) on cellular agriculture, advancing our mission. And there are many more in the review and writing process. Each publication leads us closer to innovations that could revolutionize cultured meat production.
- Studies show that [almost one in three](#) graduate students who leave early do so in their first year – this is a major loss of time and talent that could go toward productive research. So far, no one in our program has left graduate school this early – a great sign so far!
- We're on track to have an impressive graduation rate (in addition to number of publications) to back up our program's efficacy within the next couple of years. Our fellowship program has been around since 2015, so we're expecting our first thesis defenses soon.
- We have early success stories in our program alums, Marie Gibbons and Jess Krieger. Marie Gibbons is a research scientist at Memphis Meats, and Jess Krieger is co-founder of Artemys Foods. Jess also authored the first open [publication](#) of our fellowship program. It's great to see our alums pushing the field forward!

Some shout outs to the amazing people in our community!

- Shout out to New Harvest Fellows Dr. Cameron Semper and Dr. Ricardo Gouveia who are contributing to Covid-19 research and detection in addition to their New Harvest cultured meat research.
- Shout out to Jess Charlap for adding to the Boston bioprinting and tissue engineering scene with her organization 3DHeals. 3DHeals covers a number of bioprinting areas, including 3D printed muscle for medical applications. It's great to learn about muscle growth from another angle!
- Shout out to Dr. Jennifer Rossi, Chief Operating Officer at Kerafast, for a great conversation last month about Kerafast's commitment to sharing scientific materials. It's great to learn about organizations that create tools for foundational research, especially in cellular agriculture!
- Shout out to long-time cellular agriculture researcher Dr. Tom Ben Arye – whose recent paper entitled *Textured soy protein scaffolds enable the generation of three-dimensional bovine skeletal muscle tissue for cell-based meat* appeared in [Nature Food](#). Congratulations, Dr. Ben Arye!
- Shout out to New Harvest community member and strong supporter, Neil Cohen, the author of the [Exit Zero](#) trilogy, and Chase Purdy, the author of the upcoming book, [The Billion Dollar Burger](#). Books are great way to spend time while we're social distancing, as are articles, including [this excellent one](#) from the New Harvest community members at Future Fields.
- Shout out to the MIT Museum's series, [The Polaroid Project](#) where I happened to run into New Harvest Principal Investigator Dr. David Kaplan! The Polaroid Project offers a great opportunity to look back at scientific endeavors rather than forward – it gave me the opportunity to think about our work from a different perspective.

Thank you for your continued support! Our work would not be possible without you.

On that note, I'll leave you with a quotation:

"If you are able to state a problem - any problem - and if it is important enough, then the problem can be solved" – Edwin Land, the co-founder of Polaroid

Take care and stay well,

Kate Krueger, PhD
New Harvest Research Director

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