



News Release

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Bayer and Ginkgo Bioworks Unveil Joint Venture, Joyn Bio, and Establish Operations in Boston and West Sacramento

- Joyn Bio's initial efforts focus on nitrogen fixation to enhance sustainability in agriculture
- Researchers will broadly explore application of beneficial microbes to plants for next generation solutions to agriculture's biggest challenges
- Dr. Mike Miille appointed as CEO

Leverkusen, Germany / Boston, Mass., March 20, 2018 – Today, [Bayer](#) and [Ginkgo Bioworks](#) announced the official name of its joint venture, [Joyn Bio](#). Bayer and Ginkgo founded Joyn Bio in September 2017 and have since established research operations in Boston, Massachusetts and opened additional facilities in West Sacramento, California. Joyn Bio was founded with the goal of bringing advanced techniques in synthetic biology to agriculture to support the industry's sustainability efforts, starting with reducing the environmental impact of nitrogen fertilizer.

The plant microbiome living in roots and soil is vital to global farming practices, as it provides nutrients to plants, protects them from pests, and aids them in difficult environmental conditions. Joyn Bio's first effort in this arena is focused on improving microbes' ability to provide cereal crops their nitrogen requirements, offering major benefits for sustainable agriculture by reducing the need for additional chemical fertilizers.

"Nitrogen fertilizer is a key component in modern agriculture, but is costly, damaging to the environment and challenging to dose precisely. We are committed to bringing innovations to the agriculture industry that give growers a smarter and more sustainable way to grow our food," said Johan Kers, Head of Nitrogen Fixation, Joyn Bio. "I'm thrilled to be Joyn Bio's first employee and help the team in creating a solution that benefits growers and our environment."

While nitrogen fixation is Joyn Bio's first focus area, the company is exploring other disruptive applications of synthetic biology in the agriculture industry. The name Joyn Bio references the partnering of the two parent companies, as well as the natural symbiosis between plants and microbes, which is the foundation of the company's mission.

In addition to the initial USD \$100 million Series A investment by Bayer, Ginkgo, and Viking Global Investors LP, Ginkgo is providing access to its organism design technology, laboratory, and office spaces, as well as outfitting a new facility specifically for Joyn Bio. Bayer is providing exclusive access to its own archive of microbial strains and the necessary development intelligence for the application of microbes onto seeds in agriculture.

“We are excited to engage the broader life science community through Joyn Bio. As we establish the company’s scientific programs, this partnership will provide us with state-of-the-art infrastructure and access to the vibrant biotech innovations of the Boston area and agriculture expertise within the Crop Science division of Bayer and their global network of ag customers,” said Dr. Mike Mille, CEO of Joyn Bio. “Advancing our mission even further, we’re looking forward to bringing together the brightest minds in synthetic biology and AgTech as we grow the company.”

The Joyn Bio team is currently characterizing Bayer’s extensive library of more than 100,000 proprietary microbial strains using the high-throughput advanced analytics of Ginkgo’s foundries. The unprecedented scale of biological data generated using the sophisticated foundry tools is enabling Joyn Bio to identify the strains and characteristics necessary to further develop nitrogen fixing bacteria for sustainable agriculture.

Joyn Bio is the 5th investment of [Leaps by Bayer](#), a unit of Bayer investing in the solutions to some of today’s biggest problems. Previous Leaps investments include Casebia (CRISPR/Cas technology) and BlueRock (induced pluripotent stem cell technology).

Joyn Bio has recently entered into an agreement for approximately 20,000 square feet of laboratory and office space within Ginkgo’s Boston Seaport facility hosting up to 30 employees and forming the company headquarters. Additional research efforts are performed at the West Sacramento facility, a global Bayer R&D site for microbial-based solutions in agriculture with 160,000 square feet, over 200 researchers, a state-of-the-art pilot plant, and greenhouses. Joyn Bio’s West Sacramento presence will initially be located in the recently opened, “CoLaborator,” which is Bayer’s newest biotech startup lab space dedicated to housing and fostering innovative ventures to transform modern agriculture.

To date, Joyn Bio has 10 employees split across the two sites and is actively recruiting for scientific positions related to synthetic biology, plant-microbe interactions, and soil ecosystems. Joyn Bio will have its own scientific leadership and management team enabling the company to run as an independent and sustainable organization. For more information, visit www.joynbio.com.

About Joyn Bio

Joyn Bio is a joint venture founded by Bayer and Ginkgo Bioworks developing probiotics for plants to provide growers with next generation solutions to their biggest challenges. Joyn Bio’s first area of focus will be on engineering microbes that provide cereal crops with their nitrogen needs to reduce agriculture’s reliance on nitrogen fertilizer and its environmental impact. Joyn Bio brings together microbiologists, synthetic biologists, plant scientists, and ecologists at its headquarters in Boston, Massachusetts and its plant research facility in West Sacramento, California. For more information, visit www.joynbio.com.

About Ginkgo Bioworks

Headquartered in Boston, Ginkgo Bioworks uses the most advanced technology on the planet – biology - to grow products instead of manufacture them. The company’s technology platform is

bringing biotechnology into consumer goods markets, enabling fragrance, cosmetic, nutrition, and food companies to make better products. For more information, visit www.ginkgobioworks.com.

About Bayer

Bayer is a global enterprise with core competencies in the Life Science fields of health care and agriculture. Its products and services are designed to benefit people and improve their quality of life. At the same time, the Group aims to create value through innovation, growth and high earning power. Bayer is committed to the principles of sustainable development and to its social and ethical responsibilities as a corporate citizen. In fiscal 2017, the Group employed around 99,800 people and had sales of EUR 35.0 billion. Capital expenditures amounted to EUR 2.4 billion, R&D expenses to EUR 4.5 billion. For more information, go to www.bayer.com.

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