

About Us:

My brother (Donald) and I (Mark) started this application with the concept of developing the future food system for Iowa that we want to live in. In the year 2050, I will be 54 and my brother will be 51. In many ways, through this application we have outlined our potential career goals. While they are lofty, we believe that through work, creativity, consideration for all stakeholders, and partnerships with the Practical Farmers of Iowa, the World Food Prize Foundation, and many other valuable organizations, we can help achieve a resilient and sustainable food system in 2050.

Our interests in agriculture, science, and food systems is the result of a combination of factors. We are from Iowa and have always grown plants. As a family, we grew vegetables on 2/3 of an acre that was part of the farm that my mother was raised on. We grew a wide range of produce and when I was ten and my brother was seven, we started a business to sell at the Johnston and Des Moines Farmers' Markets. My brother and I experimented with growing techniques, soil enrichment, pest control and crop rotation. Every spring we would plant, full of optimism, then watch as our crops had to fight against heat, drought, flood, insects, and disease. Our profits were never much, but the learning was always high. Fortunately, my family did not depend on our harvest to survive. This experience gave me a deep respect for smallholder farmers and the challenges they face.

In the past 10 years, we have talked with farmers on many different types of farms in Iowa on Field Days organized by Practical Farmers of Iowa, World Food Prize Foundation, and Iowa State University. These experiences helped us understand the diversity of farms that are present in Iowa. Every farm is unique. What is a solution on one farm, may not be on another. However, one similarity across all of these farm visits was the importance of soil.

Through these visits we have learned from ISU professors, large scale farmers, policy makers, farmer cooperatives, small organic farms, and many more. We sincerely appreciate the people who took our interest in agriculture seriously, even as young kids, and took time to invest in us.

We were also able to learn about the interplay between agriculture, technology, and policy at the World Food Prize Symposium. In 2009, Bill Gates gave a speech which made a big impression on us (even though I was only 13, I already thought this guy was cool). Every year, we returned to the conference and heard experts including Norman Borlaug, M.S. Swaminathan, Howard Buffett, and Gordon Conway talk about the importance of agriculture.

After high school, both my brother and I were selected to be Borlaug-Ruan Interns through the World Food Prize Youth Programs for a two-month internship. I went to the M.S. Swaminathan Research Foundation in India. With the help of researchers at the foundation, I developed and implemented a small study assessing the genetic diversity of millet in the Kolli Hills and how smallholder farmers there might adapt to predicted climate variability. This work helped me understand different agriculture systems, challenges facing smallholder farmers, and the importance of understanding and working within a culture.

I also completed a five month internship at CIMMYT in Mexico in 2014 where I worked for Dr. Ravi Singh's wheat breeding team. Dr. Singh uses the latest knowledge from genetics, pathology, engineering, and other disciplines to develop wheat varieties that better serve the needs of smallholder farmers. I spent my days in the field helping make selections for variety advancement, phenotyping disease resistance, weeding, irrigating, and harvesting. These experiences gave me a deep respect for those who make a living from agriculture and the potential for scientific advancement to have a broad impact, especially on smallholder farmers.

When I was 18, I set a goal of graduating from Purdue University with three degrees -- biochemistry, biological engineering, and agronomy. Why? Because I had experienced firsthand the challenges of agriculture in the United States, Mexico, and India and saw the significant need for, and impact of, interdisciplinary scientific discoveries to make a difference in the World, especially for smallholder farmers. My subsequent experiences in college, studying abroad at Wageningen in the Netherlands in the spring of 2018, and traveling in France, the United Kingdom, and Germany to learn about agriculture in the EU has reinforced this conviction.

I am now 24, attending graduate school with the support of a Beering Scholarship and am working towards an interdisciplinary scientific career to advance sustainable biological systems.

Donald has just completed his second year at Georgia Tech and will be able to complete his undergraduate and master's degree in Civil Engineering with a focus on water systems in four years with funding from the Stamps Presidential Scholar Program.

In 2017 after he graduated from high school, Donald worked at DuPont Pioneer in Johnston in Seed Quality Testing. His responsibilities included preparing germination samples, evaluating seedlings, testing seed vigor and viability, and analyzing data.

He then took a bridge year, mainly in France, to learn about European approaches to agriculture and the environment (in which he burned through all of the money that he made working at Pioneer). He went to farms, universities, conferences, expos, research centers, farmers' markets, and other places to learn about agroecology, watershed management, community gardens, agricultural and environmental engineering practices, and climate change mitigation strategies.

He met with many experts, notably Bernard Brillet, former Inspector General of Ecology and Sustainable Development. He had recently retired and really connected with Donald on a personal level, so Donald was able to spend time learning from him in Paris and places they would travel to see. Donald was invited to spend Christmas 2017 with his family in the village near Le Mont-Saint-Michel where Bernard grew up. Donald often talks about how Bernard taught him a lot of history especially about how France's Agricultural Policy was implemented in France and the impact on French farmers and rural towns.

After his first year in college at Georgia Tech, Donald went to the International Center for Integrated Mountain Development in Kathmandu, Nepal as a Borlaug-Ruan Intern. He worked on a team with three full-time researchers for two months. The goal of the ongoing project is to identify and implement practices to help better capture rainwater runoff to increase the output

and reliability of springs in order to increase food security and reduce dependency on deep boring wells. They interviewed small holder farmers and investigated the area surrounding springs to better understand socio-economic challenges and how changes in land use, climate, agricultural techniques, and infrastructure impact spring discharge. He collected water quality data from mountain springs including discharge rates, pH, total dissolved solids, salt concentrations, and temperature, and also attended conferences at ICIMOD including SAARC Cooperation Training on Building Resilient Agriculture.

Our backgrounds in agriculture, cities, engineering, and science have prepared us well to heed the Rockefeller Foundation’s call to “a fragmented system of actors to unite, source, and support positive Visions for the future of the global food system.” We are proud Iowans and believe in Iowa’s potential to transform its own food system and inspire other places to do the same. It will take cooperation from everyone, from large scale commodity growers to elementary school teachers, to achieve a sustainable food system in 2050.

Thank you,

Mark and Donald Gee

