

2020



D O N A L D D A N F O R T H  
**PLANT SCIENCE CENTER**

**Strategic Plan**

**2021 – 2025**

## EXECUTIVE SUMMARY

The Donald Danforth Plant Science Center is a purpose-driven organization with a mission to improve the human condition through plant science. The Center exists to address both global and regional challenges – to help feed the hungry and improve human health, preserve and renew our environment, and enhance the St. Louis region. This five-year strategic plan charts a course for the Center in 2021-2025, and it follows from the “Expansion Plan” that guided growth and outcomes of the Center during 2011-2020. The plan presented here reaffirms our mission and values, and articulates a vision of how the world and the region will change if we are successful. Indeed, this plan is grounded tightly to our mission, vision and values.

The strategic plan articulates six sets of Desired Outcomes that are informed by our purpose, enabled by our capabilities and capacity, and sustained by our financial model. These outcomes focus on plant science knowledge generation and building new technologies, development of improved crops and systems for more sustainable agriculture, and delivery of technologies and crops to underserved small holder farmers. They also focus on growing and strengthening the AgTech innovation ecosystem that the Danforth Center anchors, and developing future scientists and a workforce pipeline. These will all be bolstered by outcomes focused on the Center itself becoming a more diverse, equitable and inclusive organization.

To concentrate effort, identify fundraising priorities, and focus investment, Strategic Goals and Initiatives are defined for each set of outcomes. The Strategic Goals and Initiatives focus on needs to further develop plant growth facilities on-site and a field research station off-site, and needs to accelerate research to address critical issues of nitrogen imbalances on the farm and in the environment. Strategic Goals and Initiatives also focus on better ways to deliver improved crops/systems and applicable technologies to small holder farmers in underdeveloped regions, and to the innovation community around the Danforth Center through acceleration of Center start-up companies. They also focus on how to better scale-up the reach to and impact on students and educators in our region, and how to better develop and support a diverse Danforth Center community.

The strategic plan that follows is intended to be brief but actionable. While it includes specificity around new Strategic Goals and Initiatives, it acknowledges that important, ongoing work to achieve desired outcomes will continue and have impact. Importantly, the plan does not over-prescribe specific research projects or other work done at the Center, as science and scientific approaches are fluid and highly influenced by creativity and risk-taking that can lead quickly to new directions.



2021 – 2025 STRATEGIC PLAN

**Mission**  
Improve the human condition through plant science.

**Vision**  
As a world center for plant science research, our discoveries will help feed the hungry and improve human health, preserve and renew our environment, and enhance the St. Louis region.

### Values

**Collaboration**

The Center community is a team of teams. We foster an environment characterized by excellence, trust, and interdependence. Every person's contributions and achievements are recognized, appreciated, and valued.

**Diversity and Inclusion**

Diversity and inclusion strengthen our community. We actively welcome diverse people, cultures, and perspectives. We strive to provide an environment in which everybody feels comfortable and excels.

**Innovation**

We act with curiosity and openness to new ideas. We apply creative approaches to discovery and problem solving. We foster free thinking and embrace constructive feedback.

**Integrity and Respect**

We are honest and promote ethical practices. We act with humility, empathy, and concern for others.

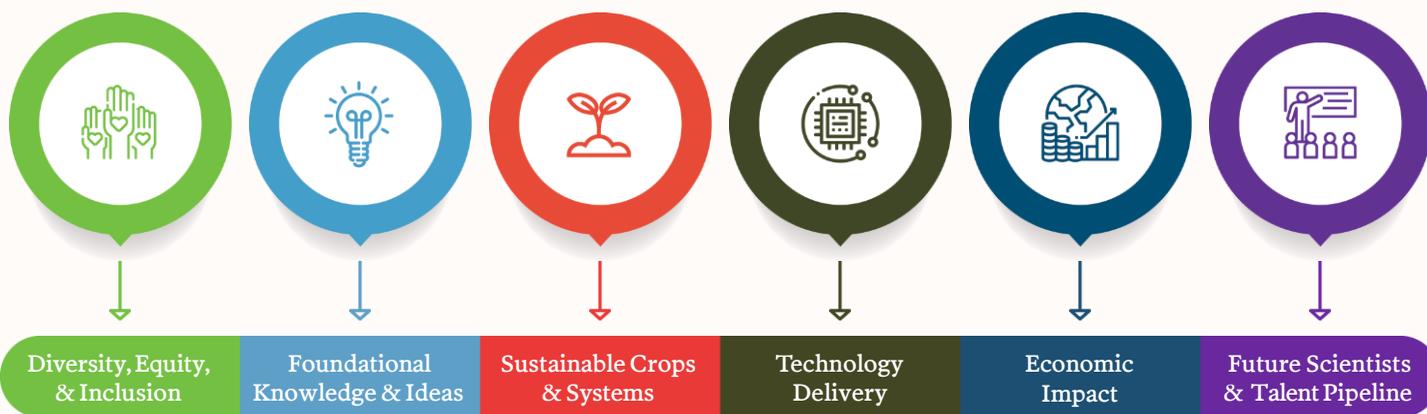
**Environmental Sustainability**

We manage and use environmental resources in an ethically responsible and mindful way. We seek to minimize our environmental footprint while we contribute to environmental sustainability through our research.

**Stewardship**

We understand that we are entrusted with public, private, and donor resources to deliver on our mission. We are accountable for intentional, efficient, and effective use of these resources.

## DESIRED OUTCOMES



**Diversity, Equity, & Inclusion**

- Increase diversity (PoC) at Center and on Board
- Improve people processes & systems to prioritize DEI
- Elevate and improve culture of DEI

**Foundational Knowledge & Ideas**

- Scientific discoveries
- Technologies and tools for discovery

**Sustainable Crops & Systems**

- Improved crops and traits
- New or improved agricultural systems
- Improved nutritional and industrial products

**Technology Delivery**

- New applicable technologies and IP
- Licensed or delivered technologies to end-users
- Expedited delivery of products to small holder farmers

**Economic Impact**

- New companies created
- New companies recruited or grown
- Stronger AgTech ecosystem in region

**Future Scientists & Talent Pipeline**

- In-house training
- Trainees supported through Education Research & Outreach
- Systems to disseminate knowledge

# Strategic Goals

## 2021-2025 Strategic Plan



### Outcome 1: Diversity, Equity, & Inclusion

Our strategic goal is to recruit, attract and train great, diverse community members who contribute to and enrich our culture and organization through monthly DEI-focused or influenced activities. Through these efforts, the Center seeks to meet a goal to hire or promote 2 or more people of color into PI positions by 2022, and increase measures of inclusive hiring and promotion at all levels of the Center through 2025.

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### Outcome 2: Foundational Knowledge & Ideas

Our strategic goal is to advance discovery by maintaining and expanding best-in-class research facilities. Develop and implement a fundraising plan resulting in the establishment of a Danforth Center Field Research Station by 2022 and initiation of Greenhouse Range D by 2025.

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### Outcome 3: Sustainable Crops and Systems

Our strategic goal is to expedite development of new, sustainable crops and systems for future climates by increasing grant and donor-based proposals to double the number of funded projects that focus on development of sustainable crops and systems by end of 2025.

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### Outcome 4: Technology Delivery

Our strategic goal is to enhance the value of agriculture and livelihoods in developing countries by expanding funded partnerships, resulting in delivery of 3 new crop products benefiting small holder farmers by 2025.

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### Outcome 5: Economic Impact

Our strategic goal is to establish Danforth Center and 39N as the #1 landing place for AgTech start-ups, existing companies, and entrepreneurs. Establish a funding mechanism and allocate resources to facilitate start-ups, doubling the rate of start-up company formation from the Danforth Center by 2025.

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### Outcome 6: Future Scientists and Talent Pipeline

Our strategic goal is to develop a diverse next-generation workforce that meets the hiring needs of the innovation community through creation of a scalable, Authentic Research Experience (ARE) platform to implement 10 AREs by 2025.

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# PROCESS, HISTORY AND CONTEXT

## Process

To create the 2021-2025 Strategic Plan, a Steering Committee was created and included: Jim Carrington, Anna Dibble, Hal Davies, Todd Schnuck, Beau Brauer, Toni Kutchan, Todd Hornburg, Tom Bander, Karla Roeber, Allison Miller, and Stephanie Regagnon. The Steering Committee functioned as a working group to develop the plan, and members served as bridges between the committee and their departments, functional areas and groups. Between Steering Committee meetings, an executive team composed of Jim Carrington, Anna Dibble and Hal Davies worked with the consultant partner to do refinements, set agendas and set expectations.

The Danforth Center enlisted CMA as a consultant partner to assist with the creation of the strategic plan. CMA facilitated the strategic planning process collaboratively, including steering committee meetings, gathering information from key stakeholders, and drafting the strategic plan.

The key steps undertaken to create the 2021-2025 strategic plan include:

- Revisit Mission and Values
- Make Vision official
- Define Desired Outcomes for planning period
- Gather information and input from the Board of Directors, Leadership Team and Faculty using surveys, interviews and focus groups
- Conduct a Strategic Analysis
- Establish Strategic Goals and associated metrics
- Identify select Strategic Initiatives
- Draft plan using an iterative review process
- Present to Board for approval
- Training for departmental action planning
- Roll out to Community

## History and Context

**Our Purpose.** The Danforth Plant Science Center is a purpose-driven, non-profit organization with a mission to improve the human condition through plant science. The Center focuses scientific research at the nexus of food security and the environment to address some of the most important global challenges of the 21st Century: improving global health, sustainably meeting and improving nutritional needs, and addressing climate change and its impact. These challenges directly affect the health and well-being of everyone on the planet. They threaten our desired standards of living, our economies and social organizations, and our ways of life. And they are extremely complex. None are solvable, in a sustainable way, using current capacity and current systems. The Danforth Center was formed on the premise that human ingenuity - science - will be required as a foundation to meet the needs of people in a warmer, more crowded and changing world. *Through our scientific discoveries, we will help feed the hungry and improve human health, preserve and renew our environment, and enhance the St. Louis region.*

**The Expansion Phase – 2011-2020.** From inception in 1998 to 2011, the Danforth Center grew from an ambitious start-up into an organization of 185 community members, 15 PIs, an operating budget of \$21M and competitive grants of \$11.8M, and an endowment of approximately \$140M. Transfer of remaining assets of the Danforth Foundation to the Danforth Center in 2011 was the catalyst for creation of the Expansion Plan, which articulated three areas for significant planned growth: 1) Addition of research space and facilities, including a new building; 2) Addition of 10 PIs and research teams; and 3) A fundraising campaign targeting \$170M to fund the new building and facilities, growth of the endowment to support a larger Center, and growth of annual giving for increased programmatic support. Research focus areas were defined as Fundamental Plant Science, Sustainable Food and Industrial Crops, and Staple Crop Improvement for Small Holder Farmers. The Institute for International Crop Improvement (IICI) was established to support the latter priority. Additionally, the Expansion Plan specified meaningful outputs and outcomes of our work, characteristics of PIs we sought to recruit, how research and discoveries would translate into economic outcomes and benefits, and how education and outreach would impact the next generation of scientists.

The Expansion Phase growth objectives were each met or exceeded by mid-2020. The Center opened the William H. Danforth Wing, doubled the amount of plant growth facility space, and added Data Science and Phenotyping technology facilities. We nearly doubled the size of the community to 350 people, grew numbers of PIs to 28, grew the operating budget to \$34M (2020), increased competitive grants to \$16.6M (2019 total), and increased the endowment to approximately \$300M. In part, growth in numbers of Center community members, including PIs, was leveraged through collaboration and joint hiring with partner universities. Scientific discoveries published annually increased 57% since 2011, with recognized strength in advanced whole-plant phenotyping, plant-environment interactions, epigenetics, natural variation and metabolism, and staple crop improvement for small holder farmers. Education research and associated outreach to the community have grown dramatically, with both scientific discovery and contributions to STEM pipeline development. The innovation ecosystem around the Danforth Center has grown to be one of the strongest AgTech hubs in the world, through start-up companies, recruitment of companies, new investment capital and new facilities. A second commercial building (EDGE@BRDG) was

completed on our campus in mid-2020 and now houses for the most successful Danforth Center Expansion Phase spinout company, Benson Hill. Execution of the Expansion Plan, which concludes on December 31, 2020, resulted in a stronger, more robust, and more impactful Danforth Center.

**The Next Phase – 2021-2025.** This strategic plan articulated here defines where we plan to go over the next five years (2021-2025). We started by reaffirming our mission and values, and articulating a vision that restates how we see the world and the region changing as a result of our work. We assessed the organizational or internal factors that underscore our capabilities and access to resources (strengths and weaknesses) and the environmental or external factors that impact the organization (trends, opportunities and threats). We identified six categories of significant outcomes that we seek from our work, along with associated major goals and initiatives. The outcomes encompass:

- Strengthening the Danforth Center community through becoming a more **diverse, equitable and inclusive** organization;
- Generation of **foundational knowledge and ideas** that grows our core function as a scientific research institution;
- Developing more **sustainable crops and systems** that address long-term, complex challenges in agriculture, such as the nitrogen cycle imbalance;
- **Delivering technologies** that are taken up in the marketplace and by underserved small holder farmers;
- Enabling, strengthening and growing the AgTech innovation ecosystem around the Danforth Center to achieve positive **economic impact**;
- Developing **future scientists and a talent pipeline** to address grand challenges and build a workforce in the region.

Next, Strategic Goals and Initiatives were developed to support and drive outcomes. While the Strategic Goals and Initiatives focus attention, future planning and future effort toward outcomes defined above, they do not encompass or reflect the entirety of what we plan to do or achieve. Rather, they focus on important areas that have an outsized impact on achieving outcomes. The Initiatives will focus resources and investment to address complex scientific problems and critical global challenges, enable us to scale up our reach and impact, or bridge a critical gap within the organization. Action plans for implementation at the department or other levels will be done using the strategic plan as a guide.

Finally, what about growth of the Danforth Center over the next five years? We are not planning for new Center laboratory facilities on our campus. We are not planning for a major increase of community members, other than growth associated with hiring new PIs and teams planned in the Expansion Phase. We have current laboratory and on-site working spaces to accommodate roughly three or four more scientific groups, and this will occur at a pace calibrated to realization of fundraising pledges. Outstanding donor pledges made during the Expansion Phase, most of which we expect to receive in 2021, will fund three new PIs/teams. Principles for hiring of new PIs who are collaborative hubs, who align with our mission/vision/values, and who align with Desired Outcomes, remain in place. We will also place high weighting on recruiting PIs and team members who help make the Danforth Center a more diverse, equitable and inclusive organization.

## STRATEGIC ANALYSIS

The Strategic Analysis provides information that is helpful in matching the organization's resources and capabilities to the competitive environment in which it operates. The Strategic Analysis can be used to develop competitive advantage by helping to align the work of the Center and Desired Outcomes with mission/vision, capabilities and resources. It includes two parts:

- Organizational Analysis
  - Strengths: Resources and capabilities that can be used as a basis for developing a competitive advantage.
  - Weaknesses: Can be the absence of certain strengths, the flip side of strengths, or gaps in resources and capabilities.
- Environmental Analysis
  - Trends: Key continuous and discontinuous changes occurring in the fields relevant to the Center.
  - Opportunities: Changes in the external environment that could result in gains for the organization.
  - Threats: Changes in the external environment that pose risk for the organization.

The Organizational and Environmental Analyses summarized below were distilled from a SWOT analysis done by management between 2018 and 2020, input from the Board, and input from the Steering Committee.

## Organizational Analysis

### Strengths

- A well-defined, understood, and purposeful mission
  - o ~95% of community identifies with it!
- Community-articulated values
- Strong financial position
  - o Competitive grant-getting PIs
  - o Adequate endowment
  - o Committed donors
  - o Diligent oversight
- Excellent research teams and PIs; clarity of focus on science
- Community with people of intelligence and integrity
  - o Leadership
  - o Competitive PIs and scientific teams
  - o Staff
- Outstanding facilities
- Openness to change; a “nimble” organization with minimal bureaucracy
- Strategy for promoting commercial applications, start-up companies and innovation ecosystem
- Experienced donor-based fundraising operation
- Collaborative hub concept for extending scientific networks
- Very good reputation in St. Louis; strong association with positive future of region
- Clear, documented evidence of outcomes that help St. Louis

### Weaknesses

- Diversity gaps in the Board, leadership, PIs
- Limited emphasis and investment in marketing
- Long lag time between research and some outcomes
- Becoming overweighted at senior PI level relative to other PI levels
- Lack natural constituency for donor-based fundraising
- Limited fundraising capacity outside of STL region
  - o Weak fundraising brand awareness outside of STL
- Lack of key research facilities, such as a field research station owned by Center
- Limited advancement or promotion tracks outside of PIs
- Lack of clear succession plan at leadership level

## Environmental Analysis

### Trends

- Economic uncertainties beyond COVID-19 pandemic
- Damaged international reputation of the United States, St. Louis
- Anti-technology/anti-science sentiment
- Consumer sentiments are moving away from reality, towards idealism
- Anti-government sentiment or disarray could impact federal grant funding
- Donors wanting more immediate impact
- Non-project fundraising possibilities from foundations, companies are narrowing

### Opportunities

- Better align desired outcomes, impact with our capabilities
- Appeal of donor-based fundraising in food and the environment
- High enthusiasm among supporters for “the St. Louis piece” of our vision
- Supporters, donors and granting agencies interested to fund education and outreach
- Opportunities to convey greener technologies to public
- AgTech community recognizes opportunities, leadership of 39N innovation district
- Improved technologies, scalability to market Center to constituents to help with commercialization, education and recruiting donors
- PI hiring in projected higher impact areas
- Increased leveraging of productive relationships with partner universities

### Threats

- Increased competition for scarce grant funding
- Impatience of donors
- Loss of Dr. Danforth’s influence
- Actual and perceived limited diversity, equity, and inclusion at all levels
- Perception associated with loss of high-profile PIs, leaders



# STRATEGIC PLANNING FOR 2021-2025

## Mission

Improve the human condition through plant science.

## Vision

As a world center for plant science research, our discoveries will help feed the hungry and improve human health, preserve and renew our environment, and enhance the St. Louis region.

## Values

### Collaboration

The Center community is a team of teams. We foster an environment characterized by excellence, trust, and interdependence. Every person's contributions and achievements are recognized, appreciated, and valued.

### Diversity and Inclusion

Diversity and inclusion strengthen our community. We actively welcome diverse people, cultures, and perspectives. We strive to provide an environment in which everybody feels comfortable and excels.

### Innovation

We act with curiosity and openness to new ideas. We apply creative approaches to discovery and problem solving. We foster free thinking and embrace constructive feedback.

### Integrity and Respect

We are honest and promote ethical practices. We act with humility, empathy, and concern for others.

### Environmental Sustainability

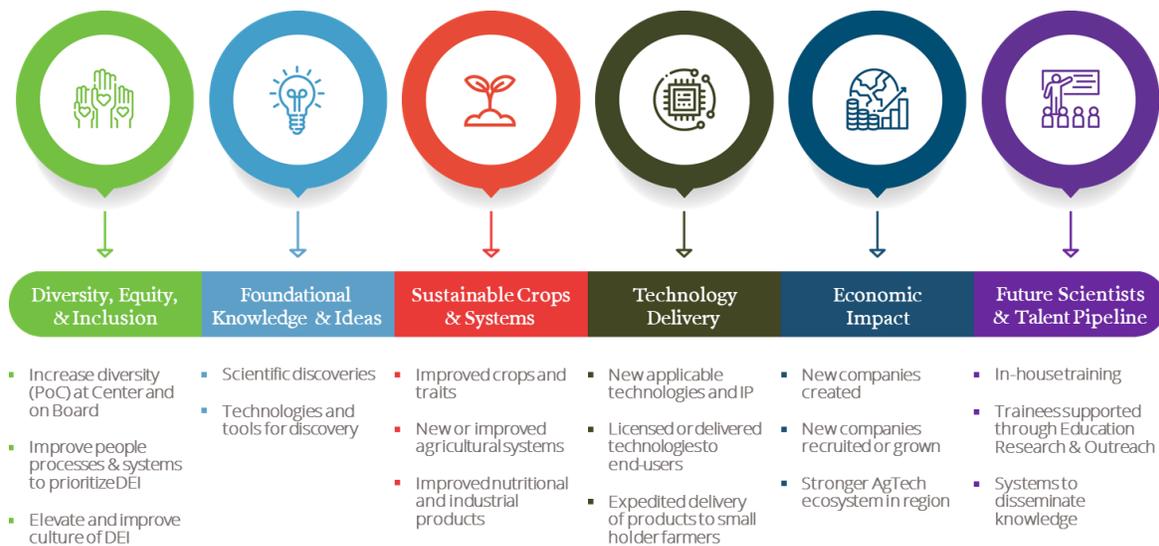
We manage and use environmental resources in an ethically responsible and mindful way. We seek to minimize our environmental footprint while we contribute to environmental sustainability through our research.

### Stewardship

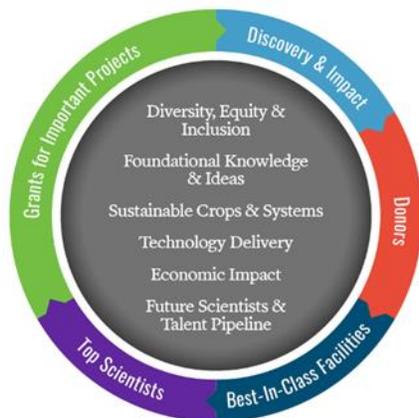
We understand that we are entrusted with public, private, and donor resources to deliver on our mission. We are accountable for intentional, efficient, and effective use of these resources.

## DESIRED OUTCOMES – 2021-2025

Through assessing the state of the Danforth Center and what we want to achieve over the next 5 years, six categories of Desired Outcomes were defined. These outcomes will happen if we stay true to our mission, aim to realize our vision, and live our values. These form the basis for reportable annual progress and accountability.



These Desired Outcomes are worth aiming for, and can be achieved, because they locate at the intersection of three critical factors: 1) They align with our mission/vision/values; 2) We have the necessary core capabilities (people, expertise, facilities) and capacity; and 3) We have resources and a financial model to sustain the necessary work. We conceptualize a “flywheel” that turns to generate outcomes. Excellent, capable scientists with great ideas, and working in best-in-class facilities, compete successfully for external grant funding, which enables research and other work to achieve outcomes that align with mission/vision/values. Success in achieving outcomes attracts and inspires donors who provide financial resources that enable hiring of excellent scientists and building best-in-class facilities.



## STRATEGIC GOALS AND INITIATIVES

In support of the Desired Outcomes, six Strategic Goals and Initiatives were developed. Strategic Goals are priority goals that must be achieved. They answer the question: *“If every other area of our operation remained at its current level of performance, what is the one area where change would have the greatest positive impact?”* They help focus the Center on consistently investing time and energy into the most important and impactful efforts. The Strategic Initiatives are specific, coordinated actions that help achieve the Strategic Goals. Developing Strategic Goals and Initiatives helps elevate the Center’s attention on those activities to a strategic level, and helps define where investment is needed.

While the Strategic Goals and Initiatives define important actions to take in the next five years to reach the Desired Outcomes, they are not exhaustive and do not necessarily span the entire range of Desired Outcomes. That is, the Center will continue programs and projects that contribute to the Desired Outcomes, even if they are not listed specifically as Strategic Goals or Initiatives. The Center engages in broad, meaningful work in varied areas that align productively with mission, vision and values. In fact, major drivers of progress at the Center are innovative ideas that take advantage of opportunities, cause us to change course, or reveal critical needs that may not be anticipated. We expect that to continue throughout the 2021-2025 strategic plan period.

## Outcome 1

### Diversity, Equity, & Inclusion

- ✓ Increase diversity (PoC) at Center and on Board
- ✓ Improve people processes and systems to prioritize DEI
- ✓ Elevate and improve culture of DEI

Our **Strategic Goal** is to recruit, attract and train great, diverse community members who contribute to and enrich our culture and organization through monthly DEI-focused or influenced activities. Through these efforts, the Center seeks to meet a goal to hire or promote 2 or more people of color into PI positions by 2022, and increase measures of inclusive hiring and promotion at all levels of the Center through 2025.

Our **People Initiative** will improve and reengineer systems and processes to create a more diverse, equitable and inclusive Danforth Center community. The initiative will focus on:

- Recruitment, retention and career development
- Onboarding and orientation
- Professional development, coaching and learning
- Performance management and recognition
- Compensation
- Workplace climate

#### Interpretation Notes

- Examples of monthly activities: Seminars, networking events, internal workshops, society-sponsored workshops on DE&I; Hosting people of color and women at Center events, like scientific seminars; Career fairs, education and training sessions; Network-building activities to expand and elevate interactions with people of color; Participation in social media to highlight people of color; Participation in programs at Historically Black Colleges and Universities; Provide programming for DE&I awareness and development.
- The Center uses a broad definition of the term “people of color” and strives for inclusive participation of diverse people. Within the Center, however, there are current, notable gaps that we seek to bridge in employment of Black and Hispanic professionals.
- Lead Measure for Strategic Goal: Monthly activities focused on relationship building with scientists of color.
- Lag Measure for Strategic Goal: Hire or promote at least two (2) people of color into PI positions by end of 2022

## Outcome 2

### Foundational Knowledge & Ideas

- ✓ Scientific discoveries
- ✓ Technologies and tools for discovery

Our **Strategic Goal** is to advance discovery by maintaining and expanding best-in-class research facilities. Develop and implement a fundraising plan resulting in the establishment of a Danforth Center Field Research Station by 2022 and initiation of Greenhouse Range D by 2025.

Our **Advanced Plant Growth Facilities Initiative** will serve the Danforth Center and AgTech innovation community. The initiative will focus on:

- Recurring assessment of plant growth needs on campus, including needs for specialized plant growth facilities
- Design and development of a Field Research Station to initially serve the broad needs of the Center, and eventually the broader AgTech community
- Development and implementation of fundraising plan for Plant Growth Facilities

#### Interpretation Notes

- Lead Measure for Strategic Goal: Develop and implement a fundraising plan for research facility development
- Lag Measure for Strategic Goal: Establish a Danforth Center Field Research Station by 2022 and initiate building of Greenhouse Range D by 2025.

## Outcome 3

### Sustainable Crops and Systems

- ✓ Improved crops and traits
- ✓ New or improved agricultural systems
- ✓ Improved nutritional and industrial products

Our **Strategic Goal** is to expedite development of new, sustainable crops and systems for future climates by increasing grant and donor-based proposals to double the number of funded projects that focus on development of sustainable crops and systems by end of 2025.

Our **Center of Excellence for Subterranean Influences on the Nitrogen Cycle** (SINC Center) initiative, a foundational platform to enable and accelerate research to develop sustainable crops and systems. This increases the competitiveness of funding for projects geared to develop sustainable crops and systems. The SINC Center will:

- Develop a technology platform to analyze, at unprecedented resolution, the key factors that affect the use and release of nitrogen underground around the rhizosphere
- Understand the roles of microbes, soil, roots and environmental factors affecting uptake and use of nitrogen
- Accelerate testing and development of improved nitrogen-use crop varieties and biologicals (e.g. beneficial microbes)

#### Interpretation Notes

- Development of sustainable crops and systems refers specifically to projects that are direct crop and systems development or improvement projects, not research that is simply relevant to sustainable crops and systems. An example today would be the VIRCA Plus Project, which seeks to develop cultivars with increased virus resistance. As of October, 2020, there are eight such crops or systems under development.
- Lead Measure for Strategic Goal: Increase grant and donor-based proposals
- Lag Measure for Strategic Goal: Double the number of funded projects that focus on development of sustainable crops and systems by end of 2025

## Outcome 4

### Technology Delivery

- ✓ New applicable technologies and IP
- ✓ Licensed or delivered technologies to end-users
- ✓ Expedited delivery of products to small holder farmers

Our **Strategic Goal** is to enhance the value of agriculture and livelihoods in developing countries by expanding funded partnerships, resulting in delivery of 3 new crop products benefiting small holder farmers by 2025.

Our **Initiative on Co-Development for Product Delivery** seeks to create a new model for staple crop product development and delivery for small holder farmers. The model aims to:

- Engage farmers and other downstream stakeholders throughout the development process
- Establish leadership in new precision breeding technologies (post-GMO) for rapid product development and delivery
- Form and engage regularly with of a 5-person international advisory council within the Institute for International Crop Improvement

#### Interpretation Notes

- Lead Measure for Strategic Goal: Expand funded partnerships for small holder farmer product development
- Lag Measure for Strategic Goal: Deliver 3 new crop products through partnerships to benefit small holder farmers in developing countries by 2025.

## Outcome 5

### Economic Impact

- ✓ New companies created
- ✓ New companies recruited or grown
- ✓ Stronger AgTech ecosystem in region

Our **Strategic Goal** is to establish Danforth Center and 39N as the #1 landing place for AgTech start-ups, existing companies, and entrepreneurs. Establish a funding mechanism and allocate resources to facilitate start-ups, doubling the rate of start-up company formation from the Danforth Center by 2025.

The **Innovation Initiative** will enhance capacity and success of start-up companies, facilities to support the innovation ecosystem, and growth of 39North. The initiative will focus on:

- Proof-of-concept and de-risking fund for Danforth Center scientists and their technologies
- Creation of new vehicles to enable more fluid start-up company formation and early stage funding
- In-house entrepreneur expertise, assistance and training for Danforth Center start-ups
- Partnerships to develop more facilities and graduation space for 39N growing start-up companies
- Rededication to partnership with St. Louis Community College program at BRDG
- Leverage IN2, AgTechNext and other assets to better recruit, retain companies to campus, 39N
- Culture and community development, marketing for AgTech community in 39N

#### Interpretation Notes

- The current rate of start-up company formation by Danforth Center scientists is approximately 0.7 per year since 2009. Companies include Benson Hill, Intuitive Genomics (now part of NewLeaf Symbiotics), and RNAissance Ag.
- Lead Measure for Strategic Goal: Establish a funding mechanism and allocate resources to facilitate start-ups and increase chances for success
- Lag Measure for Strategic Goal: Double the rate of start-up company formation from the Danforth Center by 2025.

## Outcome 6

### Future Scientists and Talent Pipeline

- ✓ In-house training
- ✓ Trainees supported through Education Research & Outreach
- ✓ Systems to disseminate knowledge

Our **Strategic Goal** is to develop a diverse next-generation workforce that meets the hiring needs of the innovation community through creation of a scalable, Authentic Research Experience (ARE) platform to implement 10 AREs by 2025.

Our **Scientist-Educator Collaboration Network Initiative** will build and strengthen a network of scientists, educators and professionals in the St. Louis region to engage, train and incentivize educators and schools/programs in underserved districts. The initiative will include:

- 50 science educators in target geographies/districts from middle/high schools, higher education, and informal education (e.g. JJK)
- 25 PIs – PIs with teams, inside or outside Center
- Professional development training and tools – collaboration tools/training, communication tools, assessment and feedback tools, funding for educators

#### Interpretation Notes:

- An “Authentic Research Experience” (ARE) is a participatory experience of students/teachers, working with Center scientists around an actual research project, in schools or programs. AREs will co-align with funded projects from Danforth Center PIs. A database platform will allow students to interact, gain instruction/resources/tools, and transfer data back and forth with the Center. This platform also allows the ARE to scale to larger numbers of students, schools and programs.
- “In-house training” outcomes include graduate students, undergraduate students, and high school students and other trainees working in our laboratories.
- Lead Measure for Strategic Goal: Creation of a scalable, Authentic Research Experience platform
- Lag Measure for Strategic Goal: Implement 10 Authentic Research Experiences (AREs) by 2025.