Stephen Briggs, Launch Director

Plant Sciences Initiative: An Opportunity to Accelerate Discovery and Innovation

Our Aspiration....
To become the leading research and educational plant science program in the WORLD
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$160.2M Investment
44+ Commodity Groups
Opening Fall 2021
44+ Commodity Groups and Ag-Focused Organizations Have Pledged Their Support for the PSI

- Carolina Feed Industry Association
- Carolinas Irrigation Association
- Corn Growers Association of North Carolina
- Fair Products, Inc.
- Golden LEAF Foundation
- NC Agricultural & Life Sciences Research Foundation
- NC Agricultural Consultants Association
- NC Agricultural Foundation
- NC Blackland Farm Managers
- NC Blueberry Council, Inc.
- NC Cattlemen's Association
- NC Composting Council, Inc.
- NC Cotton Producers Association
- NC Dairy Foundation
- NC Dairy Producers Association
- NC Farm Bureau*
- NC Farm Credit Banks (3; AgCarolina, Cape Fear, and Carolina)
- NC Fisheries Association
- NC Forage & Grasslands Council
- NC Green Industry Council
- NC Herb Association
- NC Irrigation Society
- NC Muscadine Grape Association
- NC Nursery & Landscape Association
- NC Peach Growers Society
- NC Peanut Growers Association
- NC Pork Council
- NC Poultry Federation
- NC Small Grain Growers Association
- NC Sod Producers Association
- NC Soybean Producers Association
- NC State Grange
- NC Strawberry Association
- NC Sweet Potato Commission
- NC Tobacco Foundation, Inc.
- NC Tomato Growers Association
- NC Vegetable Growers Association
- NC Watermelon Association
- Tobacco Associates, Inc.
- Tobacco Growers Association of NC
- Turfgrass Council of NC
- U.S. Tobacco Cooperative, Inc.
- Weed Science Society of North Carolina

*Funding for the NC PSI Launch Director is provided by NC Farm Bureau
NC Plant Sciences Initiative Journey

2013
Strategic Plan¹

2014
PSI Economic Study²

2015-2016
$9M 44 NC Commodities Assoc.
$85M Connect NC Bond³
$48M Golden LEAF Grant⁴

2017
Launch Director Hired: Stephen Briggs
PSI Task Forces Report

¹ cals.ncsu.edu/strategicplan
² ces.ncsu.edu/spotlight/plant-sciences-initiative/
³ cals.ncsu.edu/plant-sciences-initiative/
⁴ news.ncsu.edu/2016/08/our-shining-future/
The Mission of the Plant Sciences Initiative is to **accelerate** the discovery, education, innovation and outreach. We will accomplish this by forming **interdisciplinary teams** and collaborate with **our stakeholders** to bring solutions and new knowledge for plant systems needed to promote the well-being of mankind.
NC Plant Sciences: Core Goals

Establish the world’s foremost Plant Sciences Enterprise

Foster partnership-driven efforts

Integrate world class talent/leadership

Build interdisciplinary teams

Construct world-class science hub

Train the “next generation student”
“The Battelle Technology Partnership Practice (TPP) performs science- and technology-based economic development projects across the world and has directed the evaluation and design of these programs in most U.S. states but in no location so far has Battelle seen such a promising convergence of assets poised to take advantage of large-scale expanding markets as North Carolina has in plant science and associated agbioscience.”
Why Here?

18 NC State/NCDA&CS Research Stations
10 NC State Field Labs
Located in Research Triangle Area
3 Tier 1 Research Universities
11 Large Agbiotech Firms
54 Small to Midsize Agbiotech Firms
100+ New Faculty in 3 year period at NC State

5 Geographic Regions: Mountains, Piedmont, Sandhills, Coastal Plain, Tidewater

Nation’s third most diverse agricultural economy - $87B Annually
90+ Crops & Animal Agriculture
Discovery and Innovation Pipeline

**Discovery**
- Ideation
- Problem to be addressed
- New science
- New lab tools
- Projected outcomes

**Refinement**
- Scale Up
- Replicate results
- Additional Input
- Clean-up process

**Application**
- User trials
- Hands on by others
- Peripheral tools added
- Troubleshoot

**Delivery**
- Supply chain implementation
- Wider audience “touches”
- Troubleshoot

**Implementation**
- Adoption
- Problem Solving
- Value-Add
- Go-to-market
- Success

- Failed
- Failed
- Failed

- Obsolete
- New technology
- No longer of value
- Replacement
Training the Ag Workforce of Tomorrow

• Plant science professionals will be trained to solve problems horizontally across discipline lines

• Graduating talent will excel in soft skills as well as technical skills/knowledge

• Talent will have demonstrated appreciation for how society needs to understands food production from field to fork (transparency)

• The “future ready” student will be grounded in plant science research but will have a firm understanding of the social, economic and political pressures associated with agriculture and food production
Vision for Discovery and Innovation

NC PSI’s research platforms...

PLANT IMPROVEMENT
- Crop protection
- Plant adaptation
- Microbiomes

DATA-DRIVEN AGBIOSCIENCE
- Predictive analytics
- Sensor-driven data
- Precision agriculture

RESILIENT AG SYSTEMS
- Food systems
- Sustainability
- Food security

- Rural development
- Regulatory training
- Resource efficiency
- Digital farming
- Tools development
- Food chain partners
- Plant microbiomes
- Food security
- Agricultural economics
- Plant breeding
- Ag engineering
- Crop diversification
- Sustainability
- Integrated weed/pest management
NC PSI Building:
World-Class Facility, Limitless Opportunities
Third Level

- OPEN LAB
- ANCHOR LABS
- LAB SUPPORT
- OPEN OFFICE
- ENCLOSED OFFICE
- PARTNER LABS
- THINK TANK
- BREAK
- COLLABORATION
- CONFERENCE
- OPEN LAB
- OPEN OFFICE
- ENCLOSED OFFICE
The overarching goal of GRIP4PSI is to build teams to do interdisciplinary research to solve the grand global challenges of agriculture.

We (CALS) can’t do it alone!
Thank you!