

CENTER FOR PLANT SCIENCE INNOVATION STRATEGIC PLAN APPENDIX 10

Vision

Improving Nebraska and global well-being through innovative plant science research and education

Mission

The mission of the Center for Plant Science Innovation is to:

- (1) enable innovative plant biology research,
- (2) facilitate the translation of basic discoveries into applied technologies that improve crop productivity and quality,
- (3) foster a collaborative environment that bridges unit, department, campus, state, and national boundaries,
- (4) promote scientific education and professional development of students, staff, and post-doctoral scientists, and
- (5) improve public understanding of modern plant science research and its societal importance.

Core Values

The Core Values of PSI are:

1. To strive for excellence in individual and team research.
2. To stimulate and support innovation and creativity.
3. To work with professional integrity and mutual respect.
4. To foster collaboration within and outside PSI.

Priorities

Priority 1: Collaboration

Collaboration, both within and outside PSI, increases access to equipment and expertise, broadens opportunities for sharing information and ideas, and has the potential to increase grant funding. The ability of PSI to promote collaboration requires knowledge of resources available to research groups, open communication among faculty within and outside PSI, and stronger linkages with upper administration to seek funding for collaborations and to develop concepts for major external funding opportunities.

Priority 1.1. Create a database of equipment and expertise of PSI researchers

Rationale:

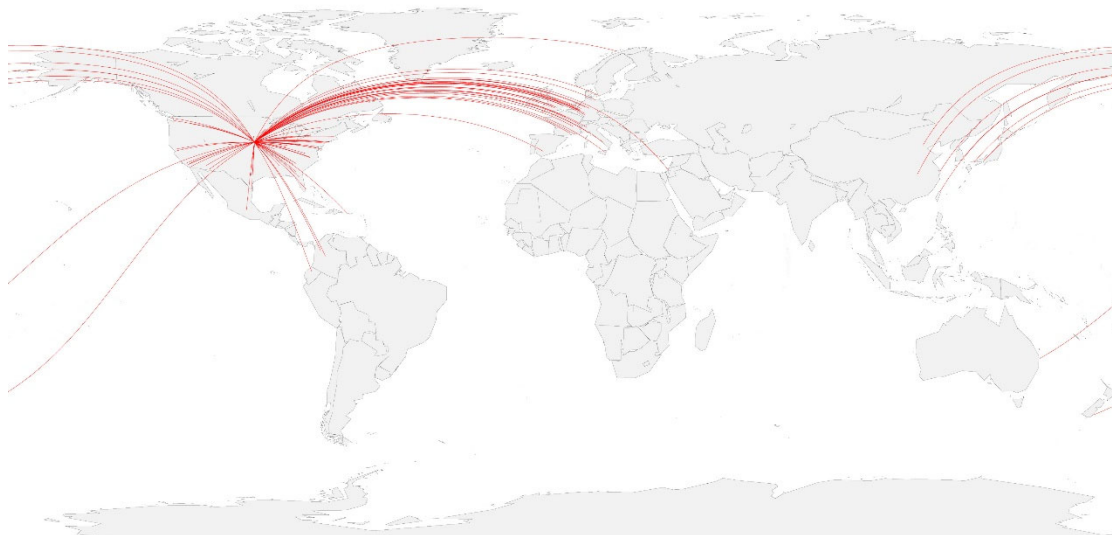
PSI labs have diverse instrumentation and technical expertise, which are often not widely known among PSI personnel.

Activities:

1. Assemble a searchable database of major instrumentation available for use and skill sets in PSI labs.
2. Disseminate database of instrumentation and research expertise in an online form among PSI labs.

Outcomes:

1. Knowledge of existing instrumentation will promote more effective use of resources by reducing duplication of instruments.
2. Knowledge of faculty instrumentation and skill sets will enhance collaborations and expand research capacity.



Priority 1.2. Form collaborative research groups of investigators from within and outside PSI with team-building events once or twice per year

Rationale:

A strength of PSI and the greater UNL scientific community is the diversity of research interests that when brought together allow for achievement of more impactful targets that are beyond the capability of individual research groups. Cross-disciplinary collaborations also increase the competitiveness of PSI and UNL researchers for major external funding.

Activities:

1. Have regular discussions on big grant ideas as standalone meetings (and/or reports during regular PSI meetings).
2. Have more social activities for PSI faculty and staff.
3. Work with other centers, departments, and upper administration to leverage seed funds to promote cross-disciplinary collaborations with high potential for significant scientific impact and external funding.

Outcomes:

1. Enhanced scientific and societal impact of PSI and UNL research.
2. Increased submissions and funding success of large grant proposals.
3. Increased stature of PSI in the UNL research enterprise and in the international plant science research community.

Priority 2: Funding

Funding for PSI is critical not only to the mission but for the future success of the Plant Sciences at the University of Nebraska-Lincoln. Currently the faculty in the Center are very active in both research and teaching. PSI is one of the most productive centers in terms of external research funding as compared to other centers on the UNL campus. PSI not only provides a very small amount of yearly flexible funds for the core faculty, but also uses funds for other important activities related to research and student education. In order to expand the Center to enhance its success and to help boost the national reputation of the University of Nebraska-Lincoln stable funding is essential, as is increased funding in the future.

Priority 2.1. Develop a transparent budget to use current funds to most strategically achieve PSI mission

Rationale: Transparency creates trust and buy in from faculty and will help the Director to make the best decision on the use of funds by getting input from others.

Activities:

1. Review of last year's budget in the different categories.
2. Review of next year's budget with the Advisory Committee to help plan expenditures.
3. Develop a yearly wish list in April of equipment needs.

Outcomes:

1. A transparent budget will allow all members of PSI to have input into how the director is using the funds.
2. Forward planning for the use of funds will avoid scrambling at the end of the year to use the budget and avoid end of year purchases of equipment that is only used by few labs on an occasional basis.

Priority 2.2. Develop a plan for long-term use and obtaining stable funding base for PSI

Rationale: Use funding in a forward looking mode to proactively take advantage of future trends in plant science research which is vital to the agricultural economy and natural ecosystems.

Activities:

1. Seek funding for graduate students by leveraging PSI funds to obtain matching funds from ORED, ARD and IANR.
2. Develop an endowment for PSI by cultivating relationships with alumni and supportive faculty, farmers, and commodity boards.
3. Use funds to seed projects that will be most likely to be able to attract future external funding.

Outcomes:

1. Align PSI's desire to have more graduate students in the plant sciences with IANR's long term goal to increase graduate student enrollment.
2. Higher quality students will enhance PSI research profile.
3. Forward looking investments in faculty research and new scientific areas will enhance grant success and raise the level of excellence in the UNL Plant Sciences.

Priority 3: Increasing Visibility

Increasing the visibility of PSI activities and faculty is critical to obtaining funding resources and support, and attracting excellent students, postdocs, and new faculty. By increasing our visibility and engaging with stakeholders, we can broaden the impact of our research outputs. Increased visibility will enhance our reputation and prestige, and can lead to awards for PSI. We recognize the importance of our visibility at all levels - local, national, and international.

Priority 3.1. Improve web page and increase use of social media

Rationale:

The utilization of internet and social media communication are efficient ways to increase PSI's visibility and especially effective in recruiting students and postdocs. These communication methods can be implemented easily and with relatively low cost. Web page content is freely accessible to audiences and, more importantly, it is not limited by publisher restrictions. Therefore, the PSI and associated faculty web pages can potentially reach and influence a much wider and diverse audience. However, if content is not maintained and regularly updated, our web existence cannot be effective and it may even hurt our visibility.

Activities:

1. Form a committee to construct and improve the PSI web page and establish a means to maintain updated content.
2. Regularly update social media channels to report our achievements in research and outreach.

Outcomes:

1. PSI will have an aesthetically pleasing and informative web page, which will be updated regularly.
2. Various achievements by PSI faculty will be found on social media regularly.
3. We can recruit excellent students, postdocs, and future faculty.

Priority 3.2. Professionally create promotional and outreach materials

Rationale:

Professionally designed and prepared promotional materials will increase our visibility more efficiently.

Activities:

Contract communication professionals to produce promotional materials for PSI. Materials will include web templates, as well as promotional flyers, posters, and videos.

Outcomes:

Various types of promotional materials will be developed.

Priority 3.3. Invite external scientists to come in and interact with the group

Rationale:

The academic visibility is recognition by peers and it leads to reputation, prestige, and awards.

Activities:

1. Employ existing Biotech/Life Science Seminar Series to invite external scientists.

2. Organize symposiums, retreats, and workshops more frequently and invite more external scientists.

Outcomes:

1. External scientists in various fields will be invited more broadly and this will increase visibility within the plant sciences community.
2. PSI has the potential to be recognized nationally as well as internationally.
3. PSI faculty will be invited nationally and internationally more frequently in reciprocal speaking arrangements.
4. PSI students and postdocs can meet external scientists and make connections impacting their careers.

Priority 3.4. Develop outreach activities

Rationale:

Promotional activities such as PSI plant day (e.g., Fascination of Plants Day), state fair, and open house are great ways to enhance our research visibility for a broader audience. An annual open house, for example, can attract the general public, potential investors, administrators, and recruit students and postdocs.

Activities:

1. Establish presence at Plant Day and State Fairs.
2. Hold an annual open house.
3. Develop materials specifically for outreach (see 3.2).

Outcomes:

1. PSI will be more visible at various platforms.
2. PSI will be known locally with a wider audience.



Priority 3.5. Awards Committee

Rationale:

Establish an Awards Committee that will identify awards and recognitions suitable for PSI faculty. The Awards Committee will encourage and facilitate the application process. It will enhance our chance of being nominated for various awards and will increase the visibility of PSI and PSI faculty.

Activities:

Form the Awards Committee. It will identify awards suitable for PSI members, make recommendation, and guide their activities and application process.

Outcomes:

1. More PSI faculty will become aware of various awards process.
2. More PSI faculty will be nominated for national or international awards.

Priority 4: Students/Education

Since its inception, PSI has enabled faculty from different departments and colleges to synergize their research in molecular, biochemical, genomic and statistical aspects in the study and improvement of crop species. Faculty are adept at weaving together their roles as PSI members and successful and influential members of their own departments. However, there is a perception that the identity of students in labs of PSI faculty is less than clearly defined. How do graduate students see themselves with respect to PSI and their home departments? What does PSI mean to them? How can graduate students be encouraged to take ownership of PSI independently of their advisor? Similarly, undergraduates working in PSI labs have little or no understanding of the nature and function of PSI. This priority seeks to extend PSI's influence to graduate and undergraduate students both from UNL and outside.



Priority 4.1. Create a 1-credit class 400/800, 1 hour per week during the summer

Rationale:

PSI students attend the monthly research group meetings during which graduate students and post-docs present their research. Questions arising from presentations usually come from faculty and there is the sense that students are hesitant to ask questions. The proposed activity provides a separate forum to encourage graduate students to interact collaboratively and socially with other PSI lab members and share the in the innovation process of PSI.

Activities:

1. A one credit hour course will be implemented. The format will be one 30-minute research talk and one 30 minute journal club paper presentation per one hour class. All registered students could make one research and one paper presentation during the course and all masters and PhD students will be required to take the course once during their degree. Upper level undergraduate students and graduate students not affiliated with PSI labs will also be encouraged to take the course. Students will be graded on their presentations as well as their participation in the discussion and the quality of their questions. Faculty will be encouraged to attend but not required. Responsibility for running the course will be shared by two to three faculty members on a rotating basis with the

idea that all PSI faculty will contribute.

Outcomes:

1. Students gain practice in presenting their work and presenting published work that is relevant to current trends in plant science.
2. Students develop an appreciation of research being conducted in other PSI labs and the technical capabilities in the Biotechnology center.
3. Students become more proactive in their own research project, more creative and innovative, and more confident at scientific communication with their peers.

Priority 4.2. Develop summer undergraduate research opportunities for students (e.g., REU) and teachers

Rationale:

Related to a perceived need to increase PSI's outreach to the general public, we have great opportunities to provide more formalized research opportunities for undergraduates as they explore the possibility of research careers at UNL or elsewhere.

Activities:

We will apply for NSF REU (Research Experience for Undergraduates) scholarships to support three to five undergraduates per summer. We will also request a matching number of scholarships from the Agricultural Research Division at UNL as well as exploring the possibility of industry funded internships. Scholarships will be distributed at the discretion of the PSI Internal Advisory Committee. Eligible undergraduates will be current UNL students, and students from outside institutions such as Doane University.

Outcomes:

1. Undergraduates gain a research experience, possibly fulfilling their internship requirement.
2. Provides means for PSI faculty and undergraduates to identify future graduate student placings.
3. Helps PSI faculty create innovative educational aspects that fulfill the broader impacts sections of NSF projects.

Priority 5: Membership

Membership is currently defined in the bylaws as follows: Shall be limited to Faculty, holding a tenure-leading Assistant Professor or higher rank, with partial budgeted appointment to PSI or who contribute grant indirect costs to PSI, and whose research program is in accordance with the mission of PSI. It is expected that faculty considered for membership will be actively involved in graduate training and grant submissions

Priority 5.1. At the conclusion of strategic planning, formalize the dates of the internal advisory board committee meetings. Formalize a role for the committee in discussing and implementing membership policy.

Rationale:

Formalized dates will enable the Internal advisory committee to perform the duties defined in bylaws. The role of the internal advisory board in discussing and implementing membership policy was suggested by PSI faculties

Activities:

1. Set 2018 quarterly meeting dates.
2. Formalize the role for the committee in discussing and implementing membership policy.

Outcomes:

1. Have set committee meeting dates.
2. Have a committee to implement membership policy.

Priority 5.2. Redefine the bylaws based on a new membership strategy

Rationale:

PSI needs a mechanism to remove those who do not qualify and to add those who will be strong members.

Activities:

1. In 2017 PSI Faculty meeting, form a committee to redefine the bylaws.
2. Redefine the bylaws.

Outcomes:

PSI will have new bylaws with a new membership strategy.

Priority 5.3. Define who we are. Define what it means to be a part of PSI.

Rationale:

The core value of being a PSI member needs to be defined.

Activities:

1. In 2017, Internal Advisory Committee will set a date to discuss the core value of being a PSI member.
2. The result will be brought to PSI faculty meeting for discussion.

Outcomes:

Have a definition on responsibility and benefits of being a PSI member.

Priority 6: External Advisory Board

Establishment of an external advisory board will benefit PSI's research direction, graduate student training, and scientific excellence. In addition, an external advisory board will validate PSI's contribution to research at UNL and provide external perspectives. The External Advisory Board can also advocate for additional institutional investments to advance PSI's research, teaching, professional development, and outreach activities

Priority 6.1. Create External Advisory Board

Rationale:

PSI research directions, mission, progress, and resource limitations can be better assessed and more effectively communicated to UNL leadership by an external advisory board consisting of high stature scientific and industry experts.

Activities:

1. Assemble a gender-balanced external advisory board consisting of a prominent researcher, a representative each from small and large plant science companies, a director of a plant science center or similar program, and a philanthropist.
2. Set guidelines for expectations of external advisory board, including frequency of meetings with PSI members.
3. Develop a schedule and format for meetings with external advisory board.
4. Deploy the external advisory board for a meeting with PSI community.

Outcomes:

1. PSI research that is better directed to solving major societal and economic challenges.
2. Validation of and empowerment of the PSI director to make changes in PSI research and administrative directions.
3. Advocate for increased resources to support PSI mission.

Priority 7: Linkages with plant science research groups and centers outside UNL

Fostering connections with other plant science research groups and centers will lead to increased research collaboration, educational opportunities for faculty, staff, and students, and increased visibility of PSI outside UNL. These connections can also expand the breadth of resources and expertise available to PSI and promote development of collaborative projects for large grant funding opportunities.

Priority 7.1. Hold combined symposiums with nearby universities

Rationale:

The Midwest region collectively is a powerhouse for plant science-related research, with a particular focus on addressing challenges for crop production. Increased collaboration among nearby universities will enhance the quality and impact of research, the availability of resources and research capacity for PSI labs, and the formation of regional research groups equipped to obtain large federal grants.

Activities:

1. Work with leadership of plant science research groups and centers at nearby universities to develop rotating plant science symposia.
2. Promote participation with regional universities and other research institutions in the PSI biennial plant biology symposium.
3. Develop and/or initiate a rotating Big10 plant science research meeting.

Outcomes:

1. Facilitate expanded opportunities for research collaborations.
2. Increased stature of PSI among Midwestern plant science communities.
3. Promote expanded opportunities for large grant applications.



Priority 7.2. Link to plant science centers at other universities.

Rationale:

PSI and UNL have unique and specialized research capacity and expertise that can complement plant science research at other universities and institutions. Conversely, other universities and institutions may have expertise that complements plant science research at UNL. By developing linkages with these universities and institutions, investments in research capacity can be more strategically directed, recognizing that resources at any one institution are limited by financial constraints.

Activities:

1. Identify plant science centers that complement or augment PSI research capacities.
2. Develop linkages with these plant science centers through activities such as invitations of key faculty from these centers for participation in existing seminar series at UNL.
3. Expand these linkages through development of research collaborations and collaborative publications and grant proposal submissions.

Outcomes:

1. Expanded research capacity and funding opportunities.
2. Increased ability to direct multi-institutional funding to research opportunities.
3. Increased stature of PSI research.
4. Increased success rates of large grant proposal submissions.

Priority 8: Outreach

Public perception and understanding of science in the USA is still lacking. To ensure public appreciation and support for the plant sciences it will be important to provide the public with a glimpse into the aims and outcomes of our research. Particularly in Nebraska where agriculture is a major industry, the appreciation for plant science research should be very high and citizens should be interested in supporting the Center for Plant Science Innovation. Proactive steps to interact with the public should be taken.

Priority 8.1. Hold annual outreach events

Rationale: Engage the public and enhance understanding of science and the importance of the plant sciences in feeding the world.

Activities:

One or more outreach events will be held each year with the goal of educating the public about our research activities. These activities may include Sunday with a Scientist events and outreach events in Beadle that engage the public in plant science research and its benefits for society.

Outcomes:

Increased support for research from the public and an enhanced profile of PSI at UNL and in Nebraska.



Priority 8.2. Outreach for educators

Rationale: Educating high school teachers in the plant sciences will have a higher return on investment than educating students and will facilitate the teaching of plant sciences in our high schools. Enthusiastic teachers will also help spread the word of the importance of plant science research and education.

Activities:

1. Develop online resource guides from basic to more complex concepts in plant sciences.
2. Organize workshops focused on adoption of the resource guides.
3. Seek funding opportunities for initial teacher reviews as well as continuing funds for teaching materials in the plant sciences.

Outcomes:

Greater awareness of plant sciences in high schools and primary schools will translate into more support for research, more student interest, and increased federal funding.

Priority 8.3. Outreach for journalists and politicians

Rationale: To influence public policy and to gain further support from the public we will also reach out to journalists and politicians.

Activities:

1. Form a panel to answer and compile FAQs about GMOs and other basic science advances.
2. Invite journalists and politicians to PSI events including symposia and outreach events.



Outcomes:

Elevate profile of PSI with the public.

Priority 9: Space and Infrastructure

To expand and perform research more effectively, more space and better infrastructure are needed.

Priority 9.1.

Rationale:

The current space in Beadle Center is limited and not able to accommodate all members of the Center. The overall feeling is that the Center would benefit from all the members being more closely located together. In comparison to other Big10 universities, infrastructure for cutting edge plant science research is lacking at UNL. As more members and grants come in, PSI needs more space and infrastructure to accommodate research and facilities. Additionally, the quality of growth facilities is not optimal at the current time.

Activities:

1. Discuss with upper administration to ask for more space and to improve infrastructure.
2. Develop a long-term planning process for PSI space on NIC or at East Campus.

Outcomes:

1. PSI will have sufficient space and infrastructure to foster and promote faculty research excellence.
2. More collaborative research and collaborative grants will be developed and promoted.



Priority 10: Accountability

For the strategic plan to be effective, we need to develop some mechanism for accountability for implementation. Accountability includes delegation and acceptance of share of work by all PSI members for implementing the action plan from strategic planning.

Priority 10.1.

Rationale:

To ensure that the outcomes of the strategic report are executed efficiently and fairly.

Activities:

1. Director works with Internal and External Advisory Committees to annually assess progress toward implementation of strategic plan.
2. Allocate tasks related to strategic plan to all PSI members. Allocate resources dependent in part on research excellence and participation in implementation of strategic plan.
3. Document should be revisited annually.

Outcomes:

1. PSI will become a more cohesive group and a roadmap will be provided.
2. More fixed path for achieving excellence will be provided.
3. Greater visibility will be achieved.
4. All plans in the strategic plan will be addressed.

Timeline

Priority 1: Collaboration

Priority 1.1. Create a database of equipment and expertise of PSI researchers						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Assembly of a searchable database of major instrumentation and skill sets in PSI labs.	Sept 2017-April 2018 Spreadsheet of major instrumentation and skill sets.	Update of online database				All PSI members
2. Dissemination of database in an online form among PSI labs.		Sept 2018 Dissemination of database on PSI website in members only section	Update of online database	Update of online database	Update of online database	All PSI members
Priority 1.2. Form collaborative research groups of investigators from within and outside PSI with team-building events once or twice per year						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Have regular discussions on big grant ideas as standalone meetings (and/or reports during regular PSI meetings).	Jan 2018 Begin monthly lunch sessions	Sept 2018 Assess effectiveness of lunch sessions. Sept 2018-Aug 2019 Based on assessment, discontinue or revise approach.	Sept 2019 Assess effectiveness of sessions. Sept 2019-Aug 2020 Based on assessment, discontinue or revise approach.	Sept 2020 Assess effectiveness of sessions. Sept 2020-Aug 2021 Based on assessment, discontinue or revise approach.	Sept 2021 Assess effectiveness of sessions. Sept 2021-Aug 2022 Based on assessment, discontinue or revise approach.	PSI Membership
2. Organize retreat with chalk-talk session with people from other fields (e.g., computer science, statistics, engineering, etc.).		Sept 2018-Jan 2019 Plan format and other scope of chalk-talk sessions. May 2019 Implement chalk-talk	May 2020 Based on assessment, continue chalk talk sessions.	May 2021 Based on assessment, continue chalk talk sessions.	May 2022 Based on assessment, continue chalk talk sessions.	Education and Outreach Committee

		sessions. Jun 2019 Assess effectiveness of session.				
3. Have more social activities for PSI faculty and staff	Nov 2017 Poll faculty on types of social activities Nov 2017 and continuing: Implement social activities	Continue: Implementation of social activities and assessment of activities. Modify activities as needed.	Continue: Implementation of social activities and assessment of activities. Modify activities as needed.	Continue: Implementation of social activities and assessment of activities. Modify activities as needed.	Continue: Implementation of social activities and assessment of activities. Modify activities as needed.	PSI membership
4. Work with other centers, departments, and upper administration for funds to seed trans-disciplinary research		Sept 2018 Initiate discussions with other centers about transdisciplinary research opportunities. Sept 2018-Aug 2019	June 2019 Initiate activities such as seed funding to promote collaborations.	Continue: Assess effectiveness of activities to promote collaborations. Modify, if needed. Seek opportunities to expand collaborations.	Continue: Assess effectiveness of activities to promote collaborations. Modify, if needed. Seek opportunities to expand collaborations.	PSI Director, PSI membership, collaborators, upper administrators

Priority 2: Funding

Priority 2.1. Develop a transparent budget to use current funds to most strategically achieve PSI mission						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Look at last year's budget in the different categories	Oct 2017 Present budgetary allocations for previous fiscal year.	Oct 2018 Present budgetary allocations for previous fiscal year.	Oct 2019 Present budgetary allocations for previous fiscal year.	Oct 2020 Present budgetary allocations for previous fiscal year.	Oct 2021 Present budgetary allocations for previous fiscal year.	PSI Director, Beadle Business Center Director
2. Look at next year's budget with the Internal Advisory Committee to help plan expenditures	Oct 2017 Director and Internal Advisory Committee to discuss FY18 budget allocations.	May 2018 Director and Advisory Committee to discuss FY19 budget allocations.	May 2019 Director and Advisory Committee to discuss FY20 budget allocations.	May 2020 Director and Advisory Committee to discuss FY21 budget allocations.	May 2021 Director and Advisory Committee to discuss FY22 budget allocations.	Director, Internal Advisory Committee
3. Develop a yearly wish list in April of equipment needs	Jan 2018 Begin soliciting equipment needs and identifying possible sources for splitting costs. April 2018 Complete prioritized wish list and identification of funding sources.	Jan 2019 Begin soliciting equipment needs and identifying possible sources for splitting costs. April 2019 Complete prioritized wish list and identification of funding sources.	Jan 2020 Begin soliciting equipment needs and identifying possible sources for splitting costs. April 2020 Complete prioritized wish list and identification of funding sources.	Jan 2021 Begin soliciting equipment needs and identifying possible sources for splitting costs. April 2021 Complete prioritized wish list and identification of funding sources.	Jan 2022 Begin soliciting equipment needs and identifying possible sources for splitting costs. April 2022 Complete prioritized wish list and identification of funding sources.	PSI Members, Director
Priority 2.2. Develop a plan for long-term using and obtaining stable funding base for PSI.						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Seek funding for graduate students	Oct 2017 Begin discussion with Vice Chancellor in Consider using internal funding to kick start program.	Continue discussions as necessary in 2018. If not successful, decide whether to continue seeking funds for GRAs.				PSI Director and Education Committee

2. Develop an endowment for PSI		<p>April 2018 Come up with a list of potential donors. Meet with Foundation to solicit input and help.</p>	<p>Jan 2019 Start cultivating potential donors by inviting them to key events related to PSI and EPSCoR project.</p>			PSI Director and PSI Members
3. Use funds to seed projects that will be most likely to be able to attract future external funding		<p>Mar 2018 Develop plan for yearly seed funding activities. Try to get matching funds from Dean. June 2018 Open up call for proposals. Line up external reviewers for proposals. Identify internal committee to review. Make awards.</p>	<p>Mar-June 2019 Develop and implement new call for seed grants</p>	<p>Mar-June 2020 Develop and implement new call for seed grants</p>	<p>Mar-June 2021 Develop and implement new call for seed grants</p>	Director, Internal Advisory Committee.

Priority 3: Increasing Visibility

Priority 3.1. Improve web page and increase use of social media						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Form committee to construct and improve PSI web page and establish a means to maintain content	June 2017 Form outreach committee. Select new page design and obtain and insert up to date bios from all PSI members	June 2018 Unveil new website Recurring: Obtain requests for updates and new publications and update publication lists for all PSI members in January for previous year	Recurring: Obtain requests for updates and new publications and update publication lists for all PSI members in January for previous year	Recurring: Obtain requests for updates and new publications and update publication lists for all PSI members in January for previous year	Recurring: Obtain requests for updates and new publications and update publication lists for all PSI members in January for previous year	J. Alfano. lead PSI Members L.Vonfeldt (web admin)
2. Regularly update social media to report research and outreach achievements	Recurring: Make regular requests to PSI members for newsworthy items and upload to social media.	Recurring: Make regular requests to PSI members for newsworthy items and upload to social media.	Recurring: Make regular requests to PSI members for newsworthy items and upload to social media	Recurring: Make regular requests to PSI members for newsworthy items and upload to social media	Recurring: Make regular requests to PSI members for newsworthy items and upload to social media	Outreach Committee, PSI Director, PSI Members
Priority 3.2. Professionally create promotional and outreach activities						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Contact communication professionals to produce promotional materials		June 2018 Identify campus communication professionals and plan promotional materials.	June 2019 Prepare promotional materials and begin distribution.			Outreach Committee

Priority 3.3. Invite external scientists to interact with PSI faculty, students, and postdocs						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Use Biotech/Life Sciences seminar series to invite external speakers		Apr 2018 Propose speakers for Fall seminar series; Engage students and postdocs in speaker selection. Sept-Dec 2018 Host speakers, involve students and postdocs in speaker hosting	Apr 2019 Propose speakers for Fall seminar series; Engage students and postdocs in speaker selection. Sept-Dec 2019 Host speakers, involve students and postdocs in speaker hosting	Apr 2020 Propose speakers for Fall seminar series; Engage students and postdocs in speaker selection. Sept-Dec 2020 Host speakers, involve students and postdocs in speaker hosting	Apr 2021 Propose speakers for Fall seminar series; Engage students and postdocs in speaker selection. Sept-Dec 2021 Host speakers, involve students and postdocs in speaker hosting	PSI Members, students, postdocs
Priority 3.4. Develop outreach activities						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Establish presence at Fascination of Plants Day and other venues (e.g., Sunday with a Scientist, State Fair)		Jan-June 2018 Develop materials for displays. June-Dec 2018 Participate in outreach activity.	Jan-Dec 2019 Participate in outreach activity.	Jan-Dec 2020 Participate in outreach activity.	Jan-Dec 2021 Participate in outreach activity.	PSI Education and Outreach Committee, PSI Members
2. Develop an annual open house			Jan-Dec 2019 Develop and present open house	Jan-Dec 2020 Develop and present open house	Jan-Dec 2021 Develop and present open house	PSI Education and Outreach Committee, PSI Members
3. Develop materials specifically for outreach		Jan-June 2018 Develop materials for outreach displays.	Jan-Dec 2019 Update materials for outreach displays.	Jan-Dec 2020 Update materials for outreach displays.	Jan-Dec 2021 Update materials for outreach displays.	Education and Outreach Committee, PSI Members

Priority 3.5. Form awards committee						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Form awards committee	Sept 2017 Committee formed. Sept 2017-Aug 2018 Committee meets quarterly or as needed to discuss nomination of PSI faculty for university and external awards.	Sept 2018-Aug 2019 Committee meets quarterly or as needed to discuss nomination of PSI faculty for university and external awards.	Sept 2019-Aug 2020 Committee meets quarterly or as needed to discuss nomination of PSI faculty for university and external awards.	Sept 2020-Aug 2021 Committee meets quarterly or as needed to discuss nomination of PSI faculty for university and external awards.	Sept 2021-Aug 2022 Committee meets quarterly or as needed to discuss nomination of PSI faculty for university and external awards.	

Priority 4: Students/Education

Priority 4.1. Create a 1-credit class 400/800, 1 hour per week during the summer						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Implement a one-credit hour course	Sep 2017-June 2018 Plan course content.	Work with appropriate department and CASNR to get the course listed. Class implemented June 2019. Assess class.	Conduct class June 2020. Assess class.	Conduct class June 2021. Assess class.	Conduct class June 2022. Assess class.	Education and outreach committee
Priority 4.3. Develop summer undergraduate research opportunities for students (e.g., REU) and teachers						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Apply for NSF REU scholarships to support 3-5 undergrads per summer	June 2018- Aug 2018 Plan and submit NSF REU proposal.	Pending outcome of proposal, Spring 2019 advertise for student participants and conduct program from June 2019-August 2019. If proposal is not funded, plan and resubmit revised proposal in August 2019.	Spring 2020 advertise for student participants and conduct program from June 2020-August 2020. If proposal is not funded, plan and resubmit revised proposal in August 2020.	Spring 2021 advertise for student participants and conduct program from June 2021-August 2021. If proposal is not funded, plan and resubmit revised proposal in August 2021.	Spring 2022 advertise for student participants and conduct program from June 2022-August 2022. If proposal is not funded, plan and resubmit revised proposal in August 2022.	Education and outreach committee and/or other PSI faculty

Priority 5: Membership

Priority 5.1. At the conclusion of strategic planning, formalize the dates of the internal advisory board committee meetings. Formalize a role for the committee in discussing and implementing membership policy.

Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Set quarterly meeting dates	Oct 2017-Dec 2017 Set up the quarterly meeting time	Continue, and makes change as needed.	Continue, and makes change as needed.	Continue, and makes change as needed.	Continued, and makes change as needed.	Membership committee
2. Formalize the role for the committee in discussing and implementing membership policy		Jan 2018 Provide charge for committee June 2018 Develop draft policy and present to membership.	Jan 2019 Implement approved policy			PSI Members; Membership committee

Priority 5.2. Redefine the bylaws based on a new membership strategy

Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Form a committee to redefine the bylaws	Nov 2017 Form membership committee to redefine bylaws					PSI Director
2. Redefine the bylaws		June 2018 Membership committee generates new bylaw draft and presents to membership	June 2019 Revisit and update bylaws as needed.	June 2020 Revisit and update bylaws as needed.	June 2021 Revisit and update bylaws as needed.	Membership Committee

Priority 5.3. Re-discuss what we are to define who we are. Define what it means to be a part of PSI.						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. In 2017, Internal advisory committee set up a date to discuss to core value of being a PSI member.		April 2018 Internal advisory committee meets to discuss core values of being a PSI member. June 2018 Internal advisory committee drafts statement of PSI member core values.				Internal Advisory Committee
2. The result will be brought to PSI faculty meeting for discussion		Sept 2018 Internal advisory committee presents draft of PSI member core values.	Jan 2019 PSI members approve statement of PSI member core values.			Internal advisory committee; PSI membership

Priority 6: External Advisory Board

Priority 6.1. Create External Advisory Board						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Assemble an external advisory board		Jan 2018 Identify and recruit external advisory board members				Director & Internal Advisory Board
2. Set guidelines, expectations, schedule, format for external advisory board	Oct 2017 Develop guidelines, expectations, schedule, format for external advisory board					Director & Internal Advisory Board with approval from entire PSI membership
3. Deploy external advisory board		Oct 2018 Convene first external advisory board meeting Frequency of future meetings TBD				Director

Priority 7: Linkages with plant science groups and centers outside UNL

Priority 7.1. Hold combined symposiums with nearby universities.						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Work with leadership of regional plant science research groups and centers to establish rotating plant science symposia.			Sept 2019-Aug 2020 Reach out to leadership of other regional plant science centers about rotating symposia.	Sept 2020-Aug 2021 Establish rotating regional symposium	Sept 2021-Aug 2022 Continue rotating regional symposium	Director and Visibility Committee
2. Promote participation of Midwestern universities and other research institutions in PSI symposium		May 2019 Begin advertising 2019 PSI symposium to other Midwestern universities and beyond		May 2021 Begin advertising 2021 PSI symposium to other Midwestern universities and beyond		Director and Visibility Committee
3. Develop rotating Big10 plant symposium in plant science research or specialized aspects of plant science research			Sept 2019-Aug 2020 Reach out to Big10 plant science programs to develop interactions, workshops, and symposia.	Sept 2020-Aug 2021 Reach out to Big10 plant science programs to develop interactions, workshops, and symposia.	Sept 2021-Aug 2022 Reach out to Big10 plant science programs to develop interactions, workshops, and symposia.	Director and Visibility Committee
Priority 7.2. Link to plant science centers at other universities.						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Identify plant science centers that best complement PSI research	Sept 2017-Aug 2018 Research other plant science centers and identify those complementary to PSI					Director and PSI Members

2. Develop linkages with these plant science centers		Sept 2018-May 2019 Reach-out to leadership of complementary plant science centers for establishment of linkages	Sept 2019-Aug 2020 Develop joint activities with other plant science centers.	Sept 2020-Aug 2021 Develop joint activities with other plant science centers.	Sept 2021-Aug 2022 Develop joint activities with other plant science centers.	Director, Visibility Committee, and faculty volunteers.
3. Expand linkages through research collaborations, collaborative publications, and grant proposal submissions			Sept 2019-Aug 2020 Develop formal research linkages with other plant science centers	Sept 2020-Aug 2021 Develop formal research linkages with other plant science centers	Sept 2021-Aug 2022 Develop joint activities with other plant science centers.	Director, Visibility Committee, and faculty volunteers.

Priority 8: Outreach

Priority 8.1. Hold annual outreach event at Morrill Hall (Sunday with a Scientist-move to Beadle at some point)						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Aim for holding two outreach events per year with the goal of educating the public about our research activities.	Sept 2017-Aug 2018 Hold events.	Sept 2018-Aug 2019 Hold two outreach events.	Sept 2019-Aug 2020 Hold two outreach events.	Sept 2020-Aug 2021 Hold two outreach events.	Sept 2021-Aug 2022 Hold two outreach events.	Education and Outreach Committee
Priority 8.2. Outreach for educators						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Resource guide online which can start small and expand	Dec 2017-Aug 2018 (simultaneous with web development)	Request additions Dec 2018	Request additions Dec 2019	Request additions Dec 2020	Request additions Dec 2021	Education and Outreach Committee
2. Workshop focused on the resource guides		May 2018-Aug 2018 Hold workshop	May 2018-Aug 2018 Hold workshop	May 2018-Aug 2018 Hold workshop	May 2018-Aug 2018 Hold workshop	Education and Outreach Committee
3. Funds for initial teacher reviews, continuing funds for materials		Dec 2018 Based on assessment of workshop	Dec 2019 Based on assessment of workshop	Dec 2020 Based on assessment of workshop	Dec 2021 Based on assessment of workshop	Education and Outreach Committee

Priority 8.3. Outreach for journalists and politicians						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Form a panel to answer and compile FAQs about GMOs and other basic science advances	Sept 2017	Sept 2018-rotate committee		Sept 2020-rotate committee		Education and Outreach Committee
2. Invite journalists and politicians to PSI events including symposia and outreach events		Sept 2018-Aug 2019 Invite journalists and politicians to symposium and outreach events.	Sept 2019-assess to continue Sept 2019-Aug 2020 Invite journalists and politicians to symposium and outreach events	Sept 2020-assess to continue Sept 2020-Aug 2021 Invite journalists and politicians to symposium and outreach events	Sept 2021-assess to continue Sept 2021-Aug 2022 Invite journalists and politicians to symposium and outreach events	Education and Outreach Committee

Priority 9: Space and Infrastructure

Priority 9.1 PSI needs more space and infrastructure to accommodate research and facilities						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. Discuss with upper administration to ask for more space and to improve infrastructure	Sept 2017-Aug 2018 If space issues arise, discuss with upper administration and space committees.	Sept 2018-Aug 2019 If space issues arise, discuss with upper administration and space committees.	Sept 2019-Aug 2020 If space issues arise, discuss with upper administration and space committees.	Sept 2020 -Aug 2021 If space issues arise, discuss with upper administration and space committees.	Sept 2021-Aug 2022 If space issues arise, discuss with upper administration and space committees.	Director with input from membership.
2. Develop long-term planning process for PSI space on NIC or East Campus		Sept 2018-Aug 2019 Initiate discussion of long-term planning for space outside of Beadle.	Sept 2019-Aug 2020 Present plan to upper administration.			Director, Internal and External Advisory Committees with input from membership.

Priority 10: Accountability

Priority 10.1 Increase accountability to achieve the goals of PSI						
Activities	Checkpoints and Milestones					
	Year 1	Year 2	Year 3	Year 4	Year 5	Responsible
1. The internal and external advisory boards discuss progress toward implementation of strategic plan	Sep 2017 and continuing	Sep 2018 and continuing	Sep 2019 and continuing	Sep 2020 and continuing	Sep 2021 and continuing	PSI Director, Internal and External Advisory Committees with input from PSI members
2. Allocate tasks for implementation of strategic plan to all PSI members and link allocation of resources to excellence in research and participation in implementation of strategic plan	Sept 2017 and assessment of faculty contributions Aug 2018	Sept 2018 and assessment of faculty contributions Aug 2019	Sept 2019 and assessment of faculty contributions Aug 2020	Sept 2020 and assessment of faculty contributions Aug 2021	Sept 2021 and assessment of faculty contributions Aug 2022	PSI Director and Internal Advisory Committee with input from PSI members
3. Revisit and revise, if needed, strategic plan document once per year.	Jan 2018 faculty meeting discussion	Jan 2019 faculty meeting discussion	Jan 2020 faculty meeting discussion	Jan 2021 faculty meeting discussion	Jan 2022 faculty meeting discussion	Director and Internal Advisory Committee with input from PSI members