### FY18 REQUEST FOR PROPOSALS

**RFP Title:**
Biotic Stresses Management

**Proposal Manager’s Name:**
Rich Joost

**RFP Contact:**
Connie Davis

**Proposal Start Date:**
10/1/2017

**Completion Date:**
9/30/2018

**Proposal Deadline:**
4/24/2017

**Anticipated Decision Date:**
7/22/2017

**Action Team:**
Supply

**Target Area:**
Sustainability

**Program Goal:**
Sustainable Production

**Road Map:**
Sustainable Production Practices - Advancing sustainability by developing and promoting advanced production practices and facilitating adoption of digital farming technology.

**Track:**
Technical Solution (Creating competitive advantage for U.S. soy growers by differentiating soy offerings throughout the value chain, leveraging the latest technological advancements and innovations)

**Milestone(s):**
Create soybean germplasms that contain new genetic sources of resistance to soybean diseases and tolerance to environmental stresses.

**Audience:**
Public Researchers

**Objective:**
Objective G: Public researchers will create innovation in soybean yield protection and yield improvement that can be incorporated into commercial products.

**Stage:**
Technical Solution Stage 2 - Investigation Stage - Explore important problems, opportunities & potential solutions for feasibility

**Innovativeness:**
Moderate (New but familiar market or solution)

<table>
<thead>
<tr>
<th>Description/Purpose of RFP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Issue/Opportunity:</strong></td>
</tr>
<tr>
<td>Soybeans are subject to a variety of diseases, insect and nematode pests that reduce yield potential and threaten production annually. The prevalence and impact of these pests vary by location due to environmental factors that influence the distribution of these pests and the stress they impose on the growing plant. Management practices, and the development of</td>
</tr>
</tbody>
</table>
genetic resistance in soybean varieties, varies by region depending on the most prevalent disease pests and their potential impact. Soybean researchers in each region need to evaluate management practices and work with plant breeders to develop genetic resistance to the key pests in each region.

**Current Market Environment:**

Soybean cyst nematode is estimated to cause soybean yield loss of over 120 million bu annually according to the USB disease loss survey. Currently there is concern that the most commonly used source of resistance to SCN derived from the plant introduction PI 88788 is losing its effectiveness due to the development of nematode populations that have overcome this source of resistance. Other soybean diseases are more regional in their impact, and control measures vary due to environmental differences by region. Seedling diseases caused by fungi such as *Fusarium* sp. and *Rhizoctonia* sp. and oomycetes like *Phytophthora* sp. and *Pythium* sp. have been identified in the same survey to be the second most devastating disease group, causing an estimated 58 million bu. annual loss, often necessitating costly replanting. Depending on environmental conditions early in the growing season in northern regions, Sclerotinia can cause substantial soybean losses, estimated at 28 million bu over the past three years. Damage from charcoal rot, primarily in the southern region has been equally as damaging. Given the regional nature of these diseases and the impact of environmental conditions on their development, regional collaboration on their management is critical to success.

**Proposal Direction:**

We are seeking collaborative regional proposals that address the key soybean pests in each region. Coordinated efforts with regional programs are the most effective means of combating these pests. This includes SCN which varies in impact by region and the effectiveness of soybean resistance to SCN also varies by region. This RFP seeks collaborative regional proposals to address key diseases and nematode pests through management practices and development of effective soybean resistance packages. This approach includes addressing the need to identify new sources of genetic resistance and development of adapted soybean germplasm that contains new sources of resistance. It also includes research to improve our understanding of genetic resistance and how organisms overcome resistance. There is also benefit to proposals that address the development of pesticide resistant pest populations and approaches to combat this development.

**Proposal Submission Instructions:**

To request a proposal worksheet to assist you in developing your proposal in USB’s correct format, please contact:  
Connie Davis; codavis@smithbucklin.com

For strategic and project specific questions, please contact:  
Kelly Whiting; kwhiting@smithbucklin.com

For budget and compliance questions, please contact:  
Connie Davis; codavis@smithbucklin.com