

**Cooperative Extension Signature Program Proposal 2011-2012**  
**Signature Program Team (SPT)**

Signature Program Areas: Food and Fiber Production Systems; Community Economic and Environmental Vitality; and Water, Plants, and Natural Resources

**1. Title: The Extension Ag Team: Delivering Vital Programs and Addressing Key Needs of Agricultural Stakeholders Statewide**

Principal Leader / Contact: Al Fournier

**2. Situation**

**Problem or Need**

In 2009 (latest figures available), the value of Arizona's agricultural production for field crops, vegetables, and melon exceeded \$1.4 billion. This included over 700,000 acres of field crops and roughly 118,000 acres of vegetables and melons. Arizona's alfalfa yield surpassed the national average by producing 8.5 tons per acre (national average is 3.35 tons/acre) (NASS 2010).

Arizona's production agriculture is served by a professional industry of 1,125 growers, 204 registered Pest Control Advisors, and 866 certified private and commercial applicators (ADA 2011). Arizona's agricultural professionals face significant challenges producing high quality food and fiber in desert agroecosystems, including water and irrigation issues, crop and pest management questions, and fluctuating markets. They rely on the timely, unbiased, science-based information provided through UA Cooperative Extension to remain productive, profitable, and competitive. This year, higher commodity prices for cotton, alfalfa, and wheat have caused many growers to switch their operation to crops they are less familiar with or have not produced for a long time. Also, new Pest Control Advisors (PCAs) have entered the market with less experience than seasoned veterans. PCAs are professionals who advise growers on pest management decisions, including when and what pesticide treatments are needed to control insects, weeds, and diseases.

The multidisciplinary Extension Agricultural Team of specialists and agents is uniquely qualified to meet clientele needs for agricultural research and up-to-date information. Our team includes Extension Specialists with local expertise in irrigation, weather, agronomy, precision agriculture, integrated pest management (IPM), weed science, plant pathology, and agricultural economics, along with all statewide county agents with a role in agricultural extension. This "super-team" was formed in 2009 through the union of four formerly independently funded Extension working groups (Cotton IPM/ICM working group, the Cross Commodity working group, the Vegetable working group, and the Crop Pest Losses working group). To keep things manageable, we have also formed smaller "Leadership Teams", subcommittees that focus on the development of outputs in specific areas, including the Vegetable IPM Team, the Field Crops IPM Team, the Soil Fumigant Education Team, and the Crop Pest Losses Working Group. This re-organization

has greatly increased our efficiency, coordination, communication, and outputs, as detailed in our recent report to Cooperative Extension administration.

In the past year, we held two full team and four sub-team meetings; continued a comprehensive field crop stakeholder needs assessment; and delivered 28 extension meetings between 7/13/10 and 7/14/11, including 6 Crop Pest Losses workshops, indoor meetings, “tent talks” and other field-based meetings, delivering at least 94 Arizona Department of Agriculture CEUs, 56.5 California Department of Pesticide Regulation CEUs, and 19 Certified Crop Advisor CEUs to clientele. Meeting attendees are conservatively estimated at over 1,600 people. Collectively, members of the Extension Ag Team published at least 17 Extension publications, 8 research reports, 4 peer-reviewed journal articles, and 31 articles in agricultural trade magazines and press, reaching tens of thousands of readers throughout the west.

**The function of the Extension Ag Team is to provide coordination and planning to improve the effectiveness and reach of statewide agricultural extension programs.** The importance of this planning has never been greater. Fluctuating agricultural markets have pushed many growers into unfamiliar crop production scenarios; training is needed on crop management basics, new agricultural technologies, and management challenges posed by invasive pests such as the bagrada bug. With the recent hire of two new County Agents in central Arizona (Shawna Loper and Ayman Mostafa) and two new statewide IPM Assistants in Extension based at Maricopa Agricultural Center (Lydia Brown and Wayne Dixon), we have increased our capacity over recent years to deliver timely, relevant programs to clientele statewide. We also have assembled significant stakeholder input on current priorities for field crops via needs assessments conducted in 2010 and 2011. Results show an interest in education on pest management and agronomic topics like sampling, pest biology and identification, economic treatment thresholds, pest resistance, nutrition management, crop rotation, water use management, equipment, and new technologies. Through this Signature Program Team proposal, we request continued Extension team support to maintain and further enhance our stakeholder engagement, program planning, and delivery to agricultural audiences.

### **Goals and Objectives**

- (1) Through ongoing **stakeholder engagement**, we will continue to identify research and information needs of agriculture clientele statewide.
- (2) We will further **enhance communication and collaboration** among specialists and agents statewide to enhance program planning and delivery to meet clientele needs.
- (3) We will provide quality up-to-date research-based **education and outreach** to stakeholders via Extension meetings and workshops, timely advisories, websites, and publications.

### **3. Inputs**

**Project Leaders.** Al Fournier- Arizona Pest Management Center, Maricopa Ag Center; Paul Brown, Soil, Water and Environmental Sciences, Main Campus; Peter Ellsworth, Entomology,

Maricopa Ag Center; **Shawna Loper**- Pinal, Pima & Maricopa County; **Lydia Brown**- Arizona Pest Management Center, Maricopa Ag Center

**Team Members** – representing 7 counties, 5 departments, and 3 agricultural research centers. **Pedro Andrade-Sanchez**, Agricultural and Biosystems Engineering, Maricopa Ag Center (MAC); **Rob Call**- Cochise County; **Wayne Dixon**- Arizona Pest Management Center, MAC; **Rick Gibson**, Pinal County; **Garrett Hughes**-Extension Assistant (PhD student), EIS, Main campus; **Bill McCloskey**- School of Plant Sciences, Main Campus; **Ed Martin**, Agricultural and Biosystems Engineering, MAC; **Linda Masters**- La Paz County; **Mike Matheron**- School of Plant Sciences, YAC; **Ayman Mostafa**- Maricopa, Pinal & Pima County; **Kurt Nolte**- School of Plant Sciences, Yuma County; **Randy Norton**- Graham County, Safford Ag Center; **Mary Olsen**- School of Plant Sciences, Main Campus; **Mike Ottman**- School of Plant Sciences, Main Campus; **Bob Roth**- Agricultural and Biosystems Engineering, MAC; **Jay Subramani**, MAC; **Theresa Smith** – Arizona Pest Management Center, Tucson; **Russ Tronstad**- Agricultural and Resource Economics, Main Campus; **Jim Walworth**- Soil, Water and Environmental Sciences, Main Campus; **Guangyao (Sam) Wang**- School of Plant Sciences, MAC

#### **4. Outputs**

##### **Activities:**

**Objective 1: We will engage stakeholders** through a variety of mechanisms to identify research and information needs of agriculture clientele statewide.

- Through the **Crop Pest Losses program** we conduct up to six workshops annually wherein we collect data on insect, weed, and disease pests that impact yields and profitability on key crops (cotton, melons, and leafy vegetables). These data help identify areas of focus for research and education efforts that often vary by geographic region within the state.
- **Needs Assessment.** We will continue to solicit stakeholder input through needs assessment surveys conducted at meetings and online. These data continue to provide focus for future research and education efforts centered around IPM for large acreage crops, especially alfalfa and wheat, as well as seed alfalfa. A key output of this proposal is to develop at least one extension publication that addresses priority educational needs we have identified.

**Objective 2: Improve Communication.** Successful, coordinated delivery of extension programming requires ongoing communication among faculty (agents and specialists). This will be achieved through a variety of mechanisms:

- **Team meetings** to coordinate program planning will be held 2-3 times each year. During meetings, team members will discuss identified stakeholder needs and arising issues in the agriculture arena, current and future research, and other issues that are important in meeting cliental needs. These meetings culminate in a plan for coordinated delivery of extension workshops, field days, and other outputs.
- **Team listserv.** We have set up an Agricultural Team listserv for use by all members to improve ongoing communication related to program planning, county-based activities, specialist and agent publications, and other outputs.

- **Team websites.** Another mechanism for improved communication is the APMC website, which is used to communicate activities and outputs of various sub-teams. With the merging of our former working groups, we have maintained focal areas of activity that are highlighted on separate web pages. These include our Agricultural Team page, the Crop Pest Losses Program, the Field Crop Leadership Team, and others. All are accessible through the APMC Working Groups page at <http://cals.arizona.edu/apmc/groups.html>.

**Objective 3: Education and Outreach** activities will deliver relevant research-based information to clientele in a variety of ways.

- **Clientele meetings.** County extension meetings address local needs and support county agents in delivering the most appropriate up-to-date research topics to clientele. At least 15 extension meetings will be held across Arizona to deliver information to clientele. These will include workshops, field days, seminars, and grower meetings that will be held during the different growing seasons to present timely, relevant research information. Continuing education credits from the Arizona Department of Agriculture, California Department of Pesticide Regulation, and Certified Crop Advisor program (as appropriate) will be made available to clientele at these meetings.
- **Extension publications, websites, and advisories.** In the coming year we will develop at least one peer-reviewed Extension publication based on key needs identified through stakeholder surveys. We continually review existing extension publications and team members commit to revising as needed. Publications are be printed and distributed at meetings and posted on the web (e.g., ACIS) for increased clientele access. Advisories are timely, focused updates provided to clientele on a routine basis throughout a growing season. These are typically delivered by agents through email lists and include information developed collaboratively by specialists and agents. To ensure timely delivery, advisories are not subjected to peer review. Examples of ongoing advisories the Vegetable IPM Updates, posted biweekly on ACIS and sent out via smart-phone updates (<http://ag.arizona.edu/crops/vegetables/advisories/advisories.html>), and the Field Crops IPM Shorts ([http://ag.arizona.edu/crops/cotton/agronomic\\_ipm.html](http://ag.arizona.edu/crops/cotton/agronomic_ipm.html)), posted weekly. All advisories are distributed via agent email lists and many are picked up and further distributed by Western Farm Press and other media outlets as popular press articles, reaching thousands. We will deliver at least 15 such popular press outputs in the coming year.

### **Participation:**

Over 1000 growers, 200 PCA's, and up to 800 certified commercial and private applicators in Arizona will be reached via meetings, email advisories, publications, and web outputs. In addition, tens of thousands of agricultural stakeholders throughout the Western region will be reached via Western Farm Press and other media outlets.

### **5. Outcomes/Impacts/Evaluation**

**Short-term:** Stakeholders will provide input on program planning for Cooperative Extension. This will help us prioritize clientele needs and determine effective methods of program planning and information delivery. Through the listserv, websites, and meetings, better communication among agents and specialists will be realized.

**Mid-term:** An increase in more targeted extension outputs that better address the needs of stakeholders will lead to increased knowledge and adoption of new practices. Through improved communication we will increase efficiency, reduce redundancy, and improve focus of extension outputs. Outputs will be centrally tracked by Al Fournier on an “outputs spreadsheet”.

**Long-term:** Adoption of improved crop and pest management practices will lead to improved yields, better economic returns, and reduced risk to human health and the environment. We have the capacity to measure and document some of these long-term impacts using the Crop Pest Losses data and Arizona Pest Management Center pesticide use database.

## **6. Communication of Program Impacts**

In our first two years as a “super-team”, the Ag Team has achieved new levels of communication and transparency for statewide agricultural extension. Our Ag Team website provides a hub of communication, team meeting notes, and a place to post reports and outputs. Sub-team activities and outputs are similarly documented. Peer-reviewed research outcomes and updates are provided to end-users in research reports such as the Cotton Report, Forage and Grain Report, and the Vegetable Report, available through ACIS. These reflect impacts of ongoing research and outreach to specific commodity areas. Ag Team grant reports summarizing the impacts of our activities will be posted annually and submitted to Extension Administration. Furthermore, each team member will provide information related to individual and team efforts on their APR.

## **7. Plan for Sustainability**

Everything we do in Extension is already highly leveraged. In our report on last year’s activities, the Ag Team *conservatively* estimated over \$455,000 in grants for a one-year period that directly supplement agricultural extension activities. ***This is more than a 300-fold return on investment of Cooperative Extension dollars!*** Team members will continue to actively seek other funding sources to supplement Cooperative Extension dollars. Also, our meetings typically include a meal sponsored by industry partners.

## **References**

ADA 2011. 2011. Arizona Department of Agriculture Website: License and Certificate Holders.  
<http://www.kellysolutions.com/az/>

NASS 2010. 2009 Arizona Agricultural Statistics Bulletin, Issued September 2010. United States Department of Agriculture, National Agricultural Statistics Service, Arizona Field Office.

**Budget:**

## Travel

Mileage	\$979.00
Hotel	\$351.00
Per Diem	\$170.00
<b>Total Travel</b>	<b>\$1500.00</b>
<b>Total Requested</b>	<b>\$1500.00</b>

**Budget Justification:**

Funds are requested for partial support of team members for travel to team meetings and Extension meetings throughout the state. These monies will be used to pay for mileage, overnight stays, and a per diem allowance for those traveling for these purposes. Rates were calculated using the "Maximum Transportation, Lodging and Meal Reimbursement Rates" posted on the University web site. The funds requested for hotel and per diem will provide the team with 5 hotel stays and 5 per diem days, depending on location. The mileage, based on 44.5 cents per mile, will pay for 2,200 miles of travel.