



**I'm Dr. Al Fournier, IPM Program Manager with the University of Arizona. I'm a recent graduate in Entomology at Purdue University where I studied implementation of Integrated Pest Management programs in public schools. I also studied at University of MD, where I worked writing pest management profiles in agricultural crops. I'm now associate director of the Arizona Pest Management Center, which I'll be telling you more about.**



**I'm pleased to welcome everyone to the first ever Arizona Pest Management Center Summit. You might ask yourself, why a "Summit?" These are some of the other names for this event that some of my university colleagues came up with.**

**Summit Defined**

1. **The highest point or part; the top, esp. of a mountain.**
2. **A conference or meeting of high-level leaders, usually to shape a program of action**
3. **The highest degree of achievement or status**

American Heritage Dictionary

**Looking at these 3 definitions, I don't think we could have picked a better for today's meeting.**

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**We are here today to take very broad look at pest management issues in Arizona. To accomplish this, we've assembled perhaps the most diverse group of participants ever for a meeting about pest management in Arizona.**



**Pest management isn't one thing, nor is it limited to one sector, one agency or one discipline. An interest and involvement in pest management is what we all have in common today. We want to understand what pest management issues are important to you, to your industry, to your way of life, no matter which sector you work in. We are here to take the broadest possible view of Arizona pest management.**

**I realize that not every group with an interest in Arizona pest management is represented here today. But I think this a good beginning.**



**This second definition of the word “Summit” describes who is here, and why. You are among the leaders in pest management in AZ. Each of you bring your own knowledge and expertise. You are here today to help us identify pest management research, education, and implementation priorities statewide. These priorities will help us--all of us--to determine the best way to use limited resources to address the most urgent pest management needs in the state. They will guide us on our next course of action.**

### Summit Defined

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**By taking a broad view and working together to determine what is most important, we hope to reach the highest degree of achievement for UA pest management programs as we can.**

### What to Expect Today

- **Afternoon Focus Sessions: Identifying Integrated Pest Management (IPM) priorities in AZ**
- **Morning Program:**
  - Arizona Pest Management Center
  - Broad look at IPM
  - Regional resources and opportunities
  - Role of pest diagnostics
  - Role of the marketplace

**This afternoon we will identify pest management priorities in 4 breakout sessions: (1) agricultural IPM (2) community and school IPM; (3) noxious and invasive weed management; and (4) urban horticulture. This morning Peter Ellsworth, AZ IPM Coordinator and Director of the APMC, will present a broad look at “IPM.” Rick Melnicoe, Director of the Western IPM Center, will provide an overview of regional resources related to IPM. Carl Olson, Assoc. Curator in the UA Dept of Entomology, will talk about the important role of pest diagnostics. Tom Green, President of the IPM Institute of North America, will present on the role of the marketplace in IPM during the lunch program. I will start us off with an overview of the Arizona Pest Management Center.**

**Presentation Outline**

- The Arizona Pest Management Center: What, who, and why?
- Role of UA & federal partners in IPM in AZ
- Capitalizing on Trends in Federal funding for IPM
- Goals of Pest Management Summit

Here is an outline of what I will cover in my talk.



As a recently-transplanted Mid-westerter, I've been quite amazed by the wonders of Arizona. These are, in fact, some of my tourist photos. Beautiful natural areas, beautiful gardens and cultivated plants as well as crops adapted to the desert environment. But this beauty comes hand in hand with certain hazards (e.g., rattlesnakes). It is some of these unique aspects of Arizona that make our natural lands, our crops and urban areas, particularly susceptible to pests.

**A Unique Environment**

- Fragile natural environment
- Year-round irrigated crop production
- Insect pests with multiple hosts
- Shared urban and agricultural pests
- Fast-growing urban populations
- = Unique pest management challenges
- Limited resources

**Our desert environment includes fragile natural ecosystems, threatened by invasive weed species. Year-round irrigated crop production means year-round pest pressures. We are home to several insect pests that affect multiple crops and urban systems. This increases the importance of area-wide management strategies for pests. Quickly growing urban populations place pressures on the resources and often interface with traditionally agricultural areas. Urban pests include venomous arthropods and insect vectors of human diseases. In summary, we face some very unique pest management challenges in Arizona. And we have limited resources to address these challenges.**

**ARIZONA PEST MANAGEMENT CENTER**

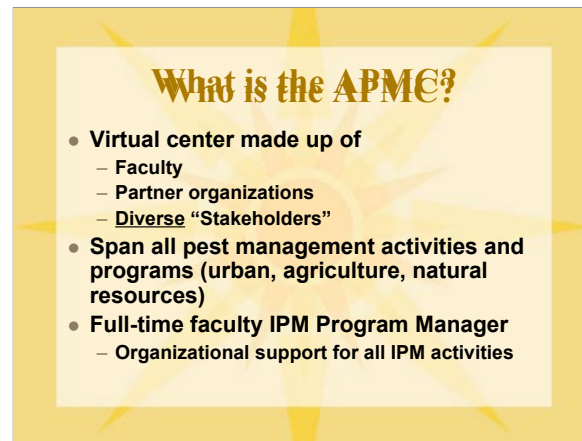
*A Strategic Re-Organization of Integrated Pest Management (IPM) Resources at UA to Enhance Pest Management Research and Education*

- ☀ Opportunity
- ☀ Focused Excellence
- ☀ Relevance

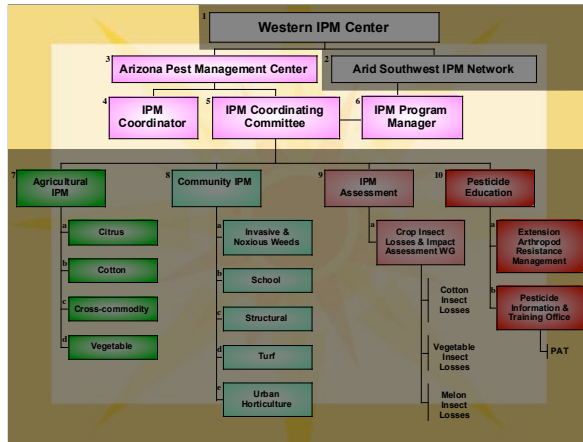
**The Arizona Pest Management Center represents a strategic reorganization of UA IPM resources to help Arizona to more effectively respond to these pest management challenges in urban, agricultural and natural areas.**



**The goal of the APMC is to create a working environment in which the science and implementation of IPM can thrive in AZ.**



**The APMC is a Virtual Center, a loose collection of people: UA faculty, partner organizations, clientele, basically anyone with an interest in "pest management" in Arizona. The APMC is Diverse, spanning all disciplines and programs related to pest management: Weeds, insects, diseases, nematodes, vertebrate pests in urban areas, agriculture, and natural environments. The APMC includes a faculty position to provide an organizational role for UA IPM applied research and outreach programs: an IPM Program manager (that's me!). The idea of my position was to have a person set apart from the day-to-day details of each program to look at the broad picture.**

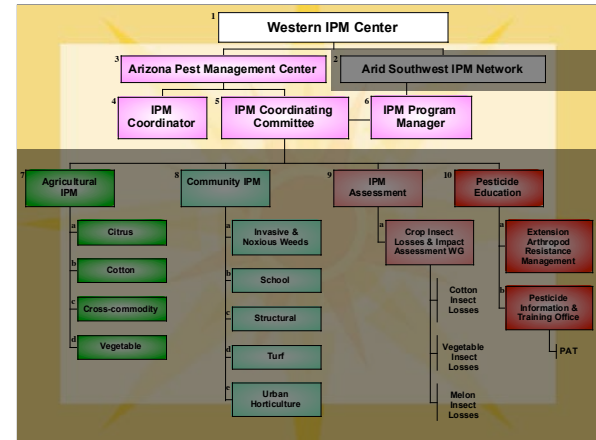
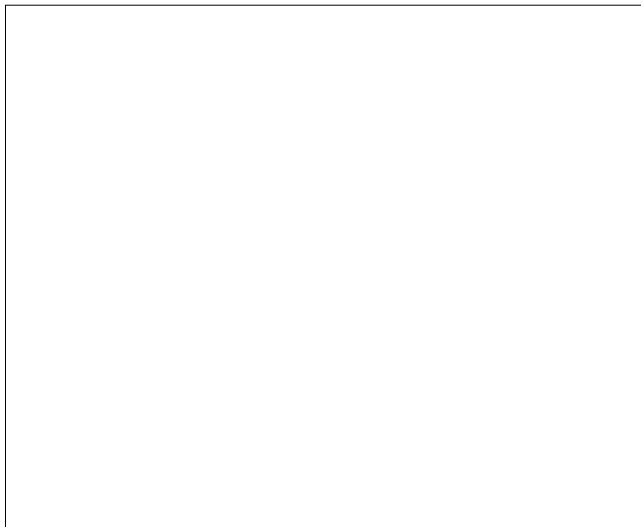
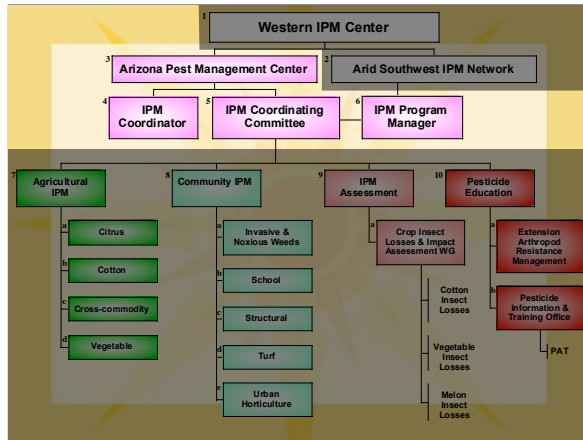


**All IPM programs at UA are now organized within the APMC. This umbrella organization is managed by a the IPM Coordinating Committee, a steering committee made up of UA faculty from across the state with expertise in entomology, plant pathology and weed science. The committee is convened by Dr. Peter Ellsworth, who serves as Arizona’s IPM Coordinator. Every state land grant college has an IPM Coordinator that is responsible for managing federal resources related to IPM and reporting to back on outcomes. Day to day management of the APMC is my responsibility, as the IPM Program Manager.**

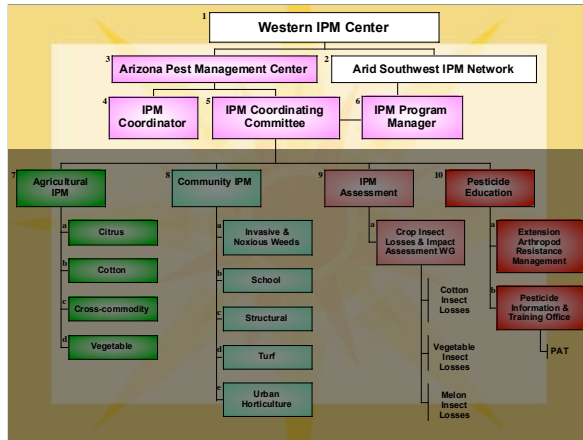


**This slide shows the current membership of the IPM Coordinating Committee.**

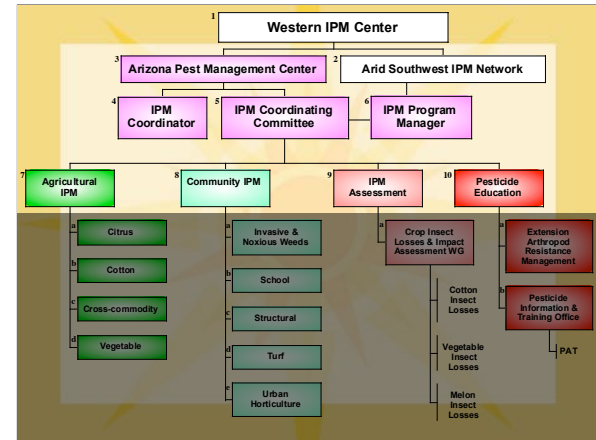




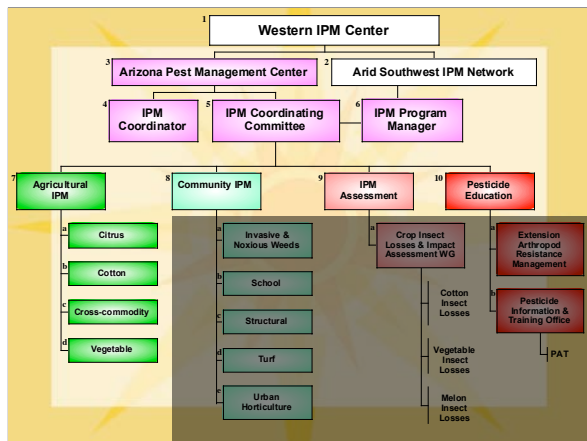
**Another function of the APMC is to link our pest management programs and Arizona clientele to the Western IPM Center (WIPMC). The WIPMC currently provides some of the funding for the APMC through competitive grants related to some of our projects. This communication link is important because the WIPMC is plugged directly into USDA's national programs, and also communicates with EPA on pesticide issues in the state. You'll be hearing more about the WIPMC and what they do later today from Rick Melnicoe, the Center's Director.**



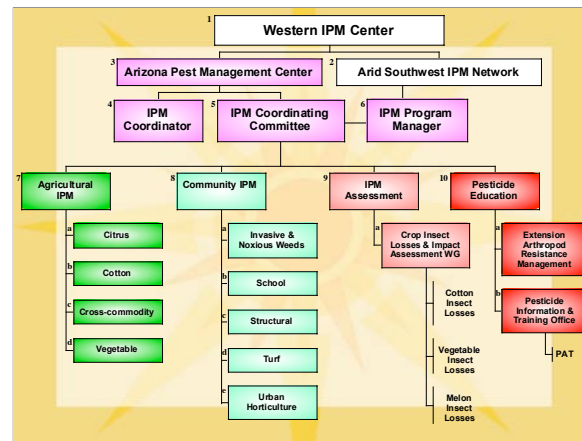
**The Arid Southwest IPM Network is one of the projects currently funded by the APMC. This is a loose communication network of pest management colleagues in AZ, CA, NM and NV.**



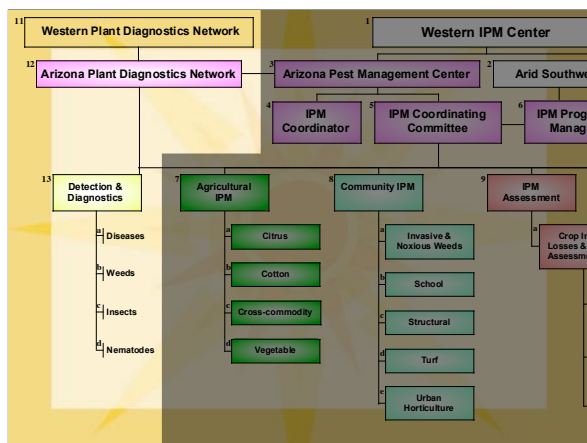
**The UA currently maintains four major foci, in agricultural IPM, Community IPM, IPM Assessment, and Pesticide Education. (An important fifth focal area, IPM diagnostics, is managed in conjunction with the Arizona Plant Diagnostic Network.) Within each focal area, there are one to four program teams that actively develop, manage, and implement IPM programs.**



For example, in the agricultural focus we have IPM programs in the areas of citrus, cotton, vegetables, and cross-commodity IPM. While faculty members maintain a program-oriented focus, the APMC serves the dual role of supporting program activities and interfacing with regional and federal agencies, including the Western IPM Center. The same is the case for our other focal areas. In general, a small team of faculty (sometimes only one person) is responsible for each of these program areas.



Another important role of the APMC is IPM Assessment. We have an investment and an interest in measuring what we are doing. Does the pest management education we deliver provide benefits to end-users? Even before the APMC, we have maintained a dialog with end-users of the cotton IPM program to measure insect losses, and this is now being expanded into other crops. Data we collect through this process, combined with quantitative data from pesticide use reporting in AZ are analyzed to help us measure the impact of our programs.

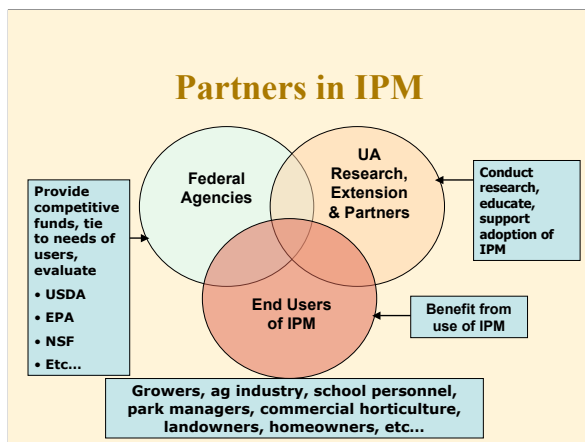


### Why Focus on the APMC?

- Enhance pest management efforts
- Better meet the needs of our local stakeholders
- Improve communication
  - Within AZ
  - Regionally
  - With federal agencies
- *Better compete for national and regional IPM resources*

**Another important organization related to pest management is the Arizona Plant Diagnostics Network (AZ-PDN). This is a parallel organization that focuses on pest detection and diagnostics, including plant diseases, weeds, insects and nematodes. Pest diagnostics is critical to IPM, and will be the topic of Carl Olsen’s talk this morning. Detection of new invasive pests is critical to forming a rapid response. Like the APMC, the AZ-PDN is connected to a western center for plant diagnostics, the WPDN, which in turn connects to a national network.**

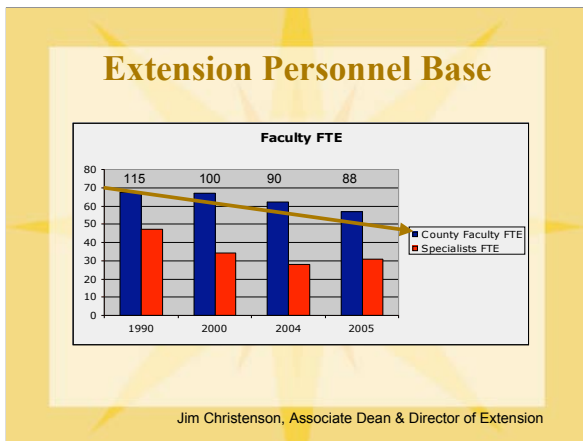
**Why go to the trouble to create this kind of organization? Changes in the structure of national IPM programs and changes in how these programs are funded have made it essential for us to re-organize at the state level. This new organizational structure will (1) Enhance the pest management research and education activities of faculty; (2) Help ensure our programs are on-course, meeting the needs of local clientele; (3) Improve communication among faculty, stakeholder, and colleagues; (4) Help us to better compete for National and Regional IPM resources.**



**IPM is a partnership that takes 3 groups of people: (1) Researchers, Extension faculty and partners that develop and deliver pest management solutions; (2) The federal agencies that provide the lion’s share of funding for IPM research that is identified as important to the third group: (3) the end-users of IPM. These are the people that benefit from the research dollars that are spent. Often we think of this group, the end-users, as being the IPM “Stakeholders.” But really all three circles represent the stakeholders in IPM.**



**The University of Arizona Cooperative Extension brings resources to bear on pest management issues. Helping Arizonans solve problems through science is central to our mission as a Land Grant College. The university provides a base of resources: outstanding faculty with pest expertise located on campus in Tucson, at 9 Agriculture Research Centers and in 25 Extension offices in counties and on the reservations. UA Cooperative Extension includes: 57 faculty based in counties, 32 faculty based on campus. These numbers are inclusive of all program areas. Only a fraction of these people spend all or part of their time focusing on pest management.**

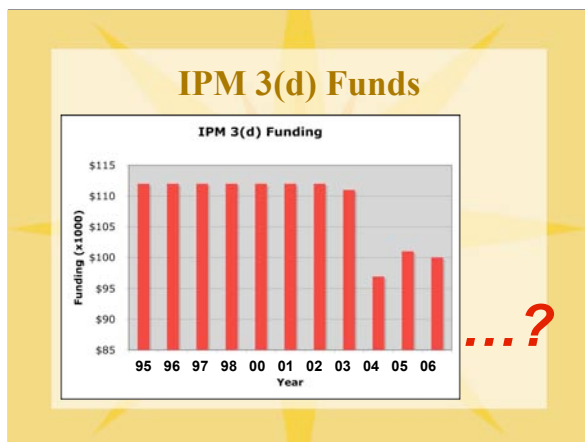


**This faculty base has been shrinking. Like other agencies, UA Extension has taken a hit with reductions in funding and personnel. We have fewer people trying to cover more needs.**

### IPM 3(d) Funds

- **Funds distributed to Land Grant Colleges based on federal formula (from 1972)**
  - Faculty salary support
  - Limited, shared resource for ALL potential IPM activities

**Another source of funds for IPM comes from federal “formula funds.” These funds go to each Land Grant College (LGC) as part of the Smith-Lever Act that founded the Extension service. These funds are often used for salary support for faculty with IPM responsibilities; whatever funds are provided are a shared resource for ALL potential IPM programs at the University. Different universities have different ways of distributing these funds among IPM programs.**



**Note that (a) these resources have remained flat for years and have been declining somewhat in recent years and (b) there is no guarantee that 3(d) funds will continue into the future. There has been talk for some time about shifting national IPM 3(d) funds into a competitive grants program. This could happen at any time, and changes like this are often made at the federal level with very little warning.**

- ### Funding for the APMC
- **IPM Program Manager (100% Extension)**
    - 50% UA CALS (IPM 3(d) funds)
    - 50% Extramural Grants (USDA, WIPMC)
  - **Program support through internal IPM grants (IPM 3(d) funds)**
  - **Project-based state partner support (e.g., recent ACPA project)**

**3(d) funds are not all “program dollars” for IPM. In the past, the college has used these funds for partial salary support for some IPM faculty. Now they have invested this money into the APMC. Some of it pays half my salary, the rest goes into an internal call for IPM proposals that goes out to UA faculty to help support IPM project). The rest of the funding for my salary, 50%, comes from competitive grants. Support to develop substantial IPM research and education programs comes not from these IPM formula funds, but from competitive federal grants, and/or by leveraging small APMC internal grants with dollars from partner organizations.**

**Trends in Competitive Federal Funding**

- Regionalization of IPM resources
- Stakeholder needs & involvement
- Integrated collaboration
- Evaluating outcomes and impact

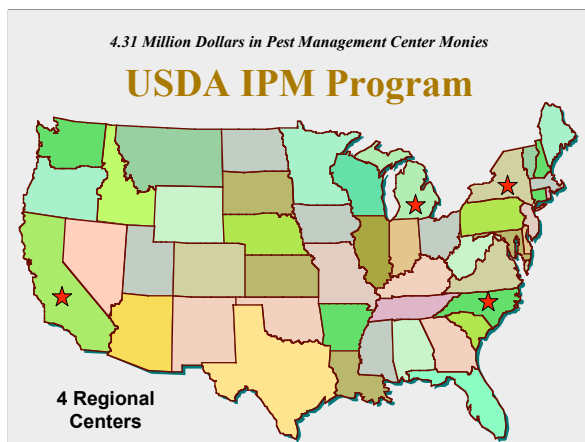
**The structure we have put in place with the APMC has us well-poised for success in obtaining competitive funding for IPM. Today I want to talk about 4 major trends in competitive federal funding and how the APMC helps to address these trends.**

**Trends in Competitive Federal Funding**

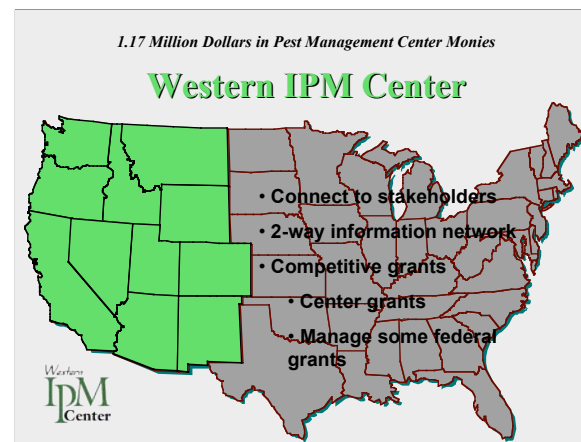
- Regionalization of IPM resources
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**In recent years, there has been a decentralization of the Federal IPM Program. USDA is one of the major funders of IPM research. USDA Resources for IPM used to be completely managed out of DC. A criticism of this approach was that federal officials who were disconnected from the real pest management needs of people out in the states were holding the purse strings.**

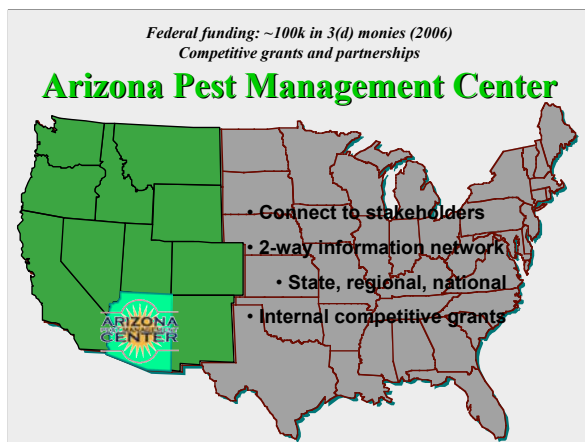




In 2000, Federal IPM Resources were reorganized to establish 4 Regional Pest Management Centers (now called IPM Centers) through a competitive grant system. The centers are a “nationwide pest management information network established to respond quickly to information needs in both the public and private sectors.” The idea of this network is to provide better connection to end-users of IPM programs. Arizona is one of 13 states included in the Western IPMC, currently hosted by UC Davis. The WIPMC is a collaboration between UC Davis and Colorado State U.




The IPM Center provides a direct connection to stakeholders; serves as a 2-way information network; facilitates communication among stakeholders; and provides broad access to IPM information. Each Center also manages a competitive grants program in their region. This includes “center funds” available for IPM research and education as well as management of some of the federal grant programs at the regional level. Through the Centers, the federal government is asking for direct input from all stakeholders on *what is important in IPM*. They are prepared to reward those that can provide documented input on IPM needs through a formal process. The more organized we are at the local level, the better our chances of capturing resources to address our needs.



The APMC organizes us at the state level to become players in this new paradigm of federal funding. We gather input from stakeholders to set priorities for our IPM programs; we provide a communication link back to the regional level through the WIPMC, and improve communication among faculty and partner groups. We have a small competitive grants program of our own for UA faculty to provide some program funds. This organization will greatly strengthen the voice we have in helping determine regional and national IPM priorities. These priorities affect the projects that get funded, so it all circles back.




The second trend in competitive federal funding is an increased focus on documentation of stakeholder needs, and end-user involvement in project design, implementation, and evaluation. Without citing genuine, documented needs of stakeholders, grant proposals today stand little chance of being funded. There is an increasing emphasis on *formal*, citable documentation of these needs. The APMC will give voice to our needs, by incorporating the priorities we develop into the Regional priorities for this and other calls for proposals.



## Stakeholder Involvement

“Applications must include explicit citations or other documentation that stakeholder-identified needs are being addressed (e.g., Pest Management Strategic Plans). Explicitly citing such sources demonstrates that a project is important and that the project directors are engaged with the community.”

- Western Regional IPM Competitive Grants RFP



## Stakeholder Involvement

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- Western Regional IPM Competitive Grants RFP

**Here is a citation from one of the federal IPM grant program applications. It emphasizes the importance of applicants providing citations of stakeholder need from very specific types of process.**

**For example, Pest Management Strategic Plans (PMSPs) are a process Rick will talk about later, where stakeholders for a given commodity identify pest management needs for research and education. Other formal processes, such as we will engage in this afternoon, are also acceptable sources for pest management needs.**

**Trends in Competitive Federal Funding**

- Regionalization of IPM resources
- Stakeholder needs & involvement
- **Integrated collaboration**
- Evaluating outcomes and impact

**The third trend in federal funding I want to mention is the need for Integrated Collaboration: Projects must be multi-disciplinary, multi-state, involve many partner organizations, and often must address research, education, and implementation aspects. Multi, multi, multi!**

**CSREES**

**Integrated Collaboration:  
Multi, multi, multi!**

- “Projects are multidisciplinary, involve multiple pests, are typically multi-state or regional in scale”
- “Extensive collaboration between individuals and institutions is expected”


USDA Risk Avoidance and Mitigation Program (RAMP) RFP

**As an example, have a look at this citation from the RFP for the USDA’s Risk Avoidance and Mitigation Program (RAMP).**

### Trends in Competitive Federal Funding

- Regionalization of IPM resources
- Stakeholder needs & involvement
- Integrated collaboration
- Evaluating outcomes and impact

**The final trend in competitive funding I want to mention is an increased focus on evaluating project outcomes and impacts.**



### Plan for Evaluation

**“Measures and outcomes:**

- What will be different as a result of this project?
- How will you evaluate the success of the project in terms of measurable environmental results?
- Quantifiable risk reduction measures should be described.”


(EPA Pesticide Environmental Stewardship Program RFP)

**A plan for evaluation must be submitted with most federal grant proposals. There is a strong effort nationally to develop indicator measures for successful programs and adoption of IPM. This example is from the EPA Pesticide Environmental Stewardship Program. It asks for “quantifiable risk reduction measures.” This means measuring the pesticide use patterns before and after the program was delivered and documenting a change in practices that lowers pesticide risk. This evaluation requirement is not unique to EPA and USDA, but is a general trend across all federal grants programs. Program evaluation and measurement of IPM outcomes and impacts is another support function of the APMC.**

### Example of Success: RAMP

- Area-wide Lygus suppression & management (\$2.5m, 4 yrs)
- 17 scientists, 30 projects, 4 states, 6 institutions (multi, multi, multi)
- Documented stakeholder need
  - Narrative (~ 9 pgs)
  - ~ 30 Letters of support
- Plan for evaluation (APMC)
- Leveraged resources (including APMC)

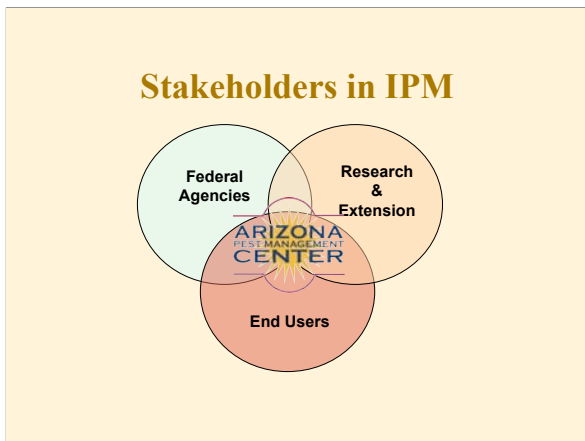
A recently funded USDA Risk Avoidance and Mitigation Program (RAMP) project demonstrates how addressing these 4 trends in federal funding can help us capture funds for IPM. This project focuses on area-wide suppression and management of lygus bugs in multiple crops in the West. This 4-year project, led by Peter Ellsworth, includes over 12 multi-disciplinary collaborators from AZ, NM, TX and CA; the proposal cited extensive documentation of the need for Lygus research and outreach from relevant sources such as Pest Management Strategic Plans. We also included letters of support from growers, researchers, and commodity representatives. The proposal included a plan for evaluation and cited leveraged resources.



### Role of the APMC

- Communication link to stakeholders and state, regional, and Federal partner organizations
- IPM program support:
  - Identification of needs (stakeholder input)
  - Support efforts to secure grants
  - Measuring outcomes and impacts

Despite reductions in funding, challenging new requirements for competitive grants, we see NOW as a time of OPPORTUNITY IN ARIZONA. By re-investing existing resources into the APMC, we believe we really become a playing in the region. By providing support to some of these “non-program” functions of all the IPM programs, we hope to increase our opportunities, benefits to clientele throughout the state, and our relevance.



### Goals of the Workshop

- Develop IPM priorities for AZ
- Develop shared vision for the future
- Strengthen existing partnerships and create new ones

**By working together, we can accomplish great things for IPM in Arizona.**

**The goals of today’s workshop are: (1) To develop pest management priorities for several sectors of pest management (focus sessions); (2) Through this process, to develop a shared vision for the future of Arizona pest management programs; (3) To strengthen existing partnerships and create new ones; (4) To examine available funding resources and limitations for pest management programs; (5) To introduce the Arizona Pest Management Center as a shared resource for helping us to achieve pest management excellence, and to solicit your input on its priority functions.**

### How Priorities Will be Used

- Inform the use of limited UA IPM resources
- Contribute to IPM priorities for the Western region and beyond
- Provide documented “stakeholder input” for UA IPM programs
  - Develop new programs
  - Improve existing programs
  - *Essential for winning competitive resources!*

The priorities developed through this process will be used in 3 ways. (1) They will inform the APMC call for proposals (UA IPM funds); this will help us to use our limited IPM funds effectively. (2) They will be shared with the Western IPM Center, influencing regional IPM priorities that go into their calls for proposals, including the Western IPM Competitive grants. (3) The proceedings from this meeting can be cited in future grant proposals put forth by UA faculty or others. This will increase the odds of getting funding to address these needs.

### Our Challenges to You:

1. Tell us what's important in pest management
2. Contribute to the vision and goals of the APMC: help us make this your organization
3. Partner with us to leverage university and federal resources: maximize IPM impacts & benefits to end-users

**My closing challenge: You are here because of your knowledge, interest and involvement in some aspect of pest management in Arizona. I urge you to contribute this vision for pest management excellence in Arizona. Get involved by telling us your needs, working with us to devise solutions, and partnering with us to provide resources to accomplish these goals. We welcome your input in creating this shared vision, and hope you will continue to be a part of the Arizona Pest Management Center. Work with us to leverage resources among our organizations to accomplish more than any of us could alone. They say the world is run by those who show up. Thank you for showing up today.**



