NFIPME IPM in Schools Workshop

Crystal Gateway Marriott, Crystal City, VA October 3, 2002

Workshop Proceedings

Executive Summary

On October 3, 2002, a school IPM workshop was held in Crystal City, Virginia. The goal of the workshop was to explore opportunities to increase IPM adoption and improve implementation in schools nationwide.

Workshop attendees were primarily participants in the US Environmental Protection Agency (EPA) Pesticide Environmental Stewardship Program (PESP), and particularly those who have implemented school IPM projects with funding from that program. These included 25 professionals from organizations in 14 states, including EPA's school IPM workgroup, land-grant universities and other educational institutions, state and federal agencies, and non-governmental organizations.

The group identified common, measurable goals including increasing the number of schools and school districts with IPM policies and programs in place, and increasing opportunities for coordination and information sharing among IPM and school professionals. Examples of action items identified and assigned to participants included:

- Forming a directory and association of school and urban IPM professionals;
- Introducing the Monroe County Model into additional states;
- Encouraging USDA to source IPM product for school meal programs;
- Submitting school IPM success stories for a January 2003 publication planned by Beyond Pesticides;
- Developing IPM-friendly architectural design standards and adding them to the *IPM Standards for Schools;* and
- Implement IPM certification for schools.

Results from the workshop and follow-up action items will be presented at the National IPM Symposium in Indianapolis in April, 2003, to engage the broader school IPM community including the national, regional and state associations of pest management professionals, Extension, USDA Pest Management Centers, American Association of Pesticide Safety Educators and other pest management professionals in planning next steps to increase IPM adoption in schools.

Pre-workshop assignments included participant responses to a series of questions regarding school IPM experiences, including projects, partners, challenges and goals. Results of the survey are attached as an appendix to the proceedings.

The workshop was organized by the National Foundation for IPM Education, a non-profit public foundation based in Austin, Texas, that promotes education, provides information and encourages research to increase the adoption of IPM. The Foundation has a cooperative agreement with EPA to further their mutual interests in pesticide risk reduction and IPM adoption. In addition to conducting workshops, the Foundation manages a national competitive grants program focuses on pesticide risk reduction.

Table of Contents

Workshop Attendees 3

A. Morning Session
- I. Introduction 4
- II. Outcome Statement 4
- III. Individual Perspectives: What are we here to Accomplish? 5
- IV. Results from the Monroe County Meeting 7
- V. Discussion of Homework Assignments 8
- VI. What are the Impacts of our Work in IPM? 9

B. Afternoon Session
- I. Introduction 19
- II. What are Appropriate Goals? 19
- III. What Partnerships can we Forge? 20
- IV. Plan of Action 21
- V. Concrete Goals and Action Steps 22

C. Side Discussions
- I. IPM Definition 25
- II. Awards and Recognition 25
- III. IPM: Results Based or Process Oriented? 26
- IV. Audits and Costs 27
- V. Using the CES Network 27

Appendix 1. Compiled Homework 29
Appendix 2. EPA Spending on School IPM 49
Appendix 3. Attendee Contact Information 51
Appendix 4. Monroe County Model Program Reports
- A. Model Overview 53
- B. Auburn Alabama 54
- C. Kyrene District, Arizona 55
- D. Navajo Reservation, Arizona 56

Workshop Attendees

1. **Sandra Alvey**, USAEC Project Officer
2. **Steven R. Bennett**, Army Senior Pest Management Consultant, US Army Environmental Center (USAEC)
3. **John Carter**, Director of Planning Monroe County School Corp., IN
4. **Edward Crow**, Program Coordinator for Licensing, Certification and Training and Urban IPM, MD
5. **Dan Dickerson**, Director NYC Department of Education Office of School Food and Nutrition Pest Control Division, NY
6. **Frank Ellis,** OPP, US EPA
7. **Al Fournier**, IPM Coordinator, Purdue IPM Technical Resource Center, IN
8. **Sherry Glick**, Office of Pesticide Programs (OPP), USEPA
9. **Fudd Graham**, Coordinator, Alabama Fire Ant Management Project
10. **Tom Green**, President, IPM Institute of North America, Inc., WI
11. **Albert Greene,** Administrator, IPM Program, US General Services Agency
12. **Paul Guillebeau**, Associate Professor, IPM/Pesticide Coordinator, GA
13. **Lyndon Hawkins**, Independent IPM Consultant, CA
14. **Deborah Hartman**, OPP, US EPA
15. **Janet Hurley**, School IPM Program Coordinator, Extension Assistant, Texas A&M
16. **Jerry Jochim**, IPM/Custodial Coordinator, Monroe County School Corp., IN
17. **Kathleen Knox,** OPP, US EPA
18. **Marc Lame**, Monroe IPM Model Program Leader
19. **Regina Langton**, OPP, US EPA
20. **Carl John Martin**, EPA Enforcement Officer, AZ
21. **Kagan Owens,** Beyond Pesticides, National Coalition Against the Misuse of Pesticides
22. **Edwin Rajotte**, Professor of Entomology and IPM Coordinator, Penn State
23. **Kirk Smith**, Research Entomologist, University of Arizona
24. **Mike Wallace**, President, NFIPME
25. **Jerry Baron,** Rutgers University and IR-4 Project, served as workshop facilitator

See Appendix 3 for contact information

A. MORNING SESSION

I. Welcome, by Mike Wallace, National Foundation for IPM Education

- This meeting is being conducted in cooperation with USEPA OPP
- Present today is a group of IPM *implementers*, with the purpose of investigating the successes and shortcomings of IPM in schools through candid and open communication
- We are not here to set policy, though our discussion may suggest policy

II. Meeting Outcome, Sherry Glick, Pesticides and Schools Coordinator

- All of us in attendance are *change agents*
- National Foundation for IPM Education, funds through 6-8 annual competitive grants for pesticide reduction projects
- Sherry Glicks' varied roles
  - Office of Pesticide Programs Pesticides and Schools Coordinator
  - Project Officer to Purdue and Texas and A&M IPM Centers
  - Chair, Pesticides and Schools Workgroup (EPA OPP, Region 5 and 9)
  - Staffer, Pollution Prevention Staff
- Pesticides and Schools Workgroup accomplishments
  - EPA Schools Website: epa.gov/schools
  - OPP Schools Website: epa.gov/pesticides/ipm
  - Schools Brochures " Protecting Children in Schools from Pests and Pesticides"
  - Feasibility Study for Pilot Schools Research Study (Health Effects Division)
  - Funding of two Pilot IPM Centers at Purdue and Texas A&M
- Commitment to Leadership and Unity needed to encourage and facilitate the implementation of IPM in our nation's schools
- Today we intend to examine, enhance and move ahead on models that show results.
- All stakeholders committed to the national adoption of IPM should be included

Intended Outcomes

1. One page listing guidelines/practices for what food "school IPM is"
2. Schools Certification Program
3. IPM Certification for the applicator/professional pest manager
4. Adoption of a model(s) that works to implement IPM in schools
   On the ground implementation and hands on training
5. Virtual Centers: Providing information for schools on how to implement their program
   To contact stakeholders and provide resources
6. Recognition Programs (either by EPA or other organization)
   Makes IPM visible to visitors
7. Consistent information dissemination—one national schools website, manual, etc
   Use preexisting information resources. No more funding to manuals

Thank You to Tom Green, Marc Lame, Mike Wallace, and Frank Ellis for participating on the organizing committee!

III. Individual Perspectives: What are we here to Accomplish?

1. Mike Wallace
   - Consensus and structure on how IPM in schools can move forward in efficient way.
   - Develop the next circle of resources. Identify *all* key players, e.g. Allied peoples advocacy groups
2. Lyn Hawkins
   - Specific business plan--realistic relative to its financial survival, sustainable
3. Janet Hurley
   - Cohesive method of diffusion.
     - Texas has seen struggles in the pilot programs. Texas has worked by C and C. Has not gone as well as hoped.
   - Across the board adoption, believes it will happen only by legislation.
   - Good buy-in from school organizations (e.g. ASBO), the business administrators.
4. Tom Green
   - Has a list prepared of those in the country working on school IPM.
   - Revising school certification program. The *IPM Standards for Schools* continue to be used as a resource for schools, Extension programs and others, but are cumbersome at best as a certification tool.
   - How might we best be useful in advancing school IPM?
5. Marc Lame
   - Messages of an inclusive future. To include more players in the IPM Program to show people that there is unity. To show to those that aren't here, that this group is coming together, and we all share the same goals with the others not attending
   - Not to scare the EPA. Politics runs rampant and so does fear. There are Politics that the EPA has to deal with, we must be respectful of this
   - To recognize those in the trenches. NCAMP, PMA.
6. Kagan Owens
   - To learn what is happening around the country. We can work together more than we have. Beyond Pesticides works with advocacy groups, would like to help disseminate information of successes in IPM.
   - Information sharing
   - Getting more schools to adopt IPM
7. Jerry Jochim
   - More exposure, recognition for IPM
   - Advertising: Pest Control Industry.
     - Some advertise IPM, but perhaps send the wrong message. Advertising can help to educate the general public
   - Education of the General Public
8. Kirk Smith
   - Different IPM definitions exist. We must unify our definition. For example, will IPM include turf? Issue must be defined

9. Dan Dickerson
    - Would like to see regulatory authorities, e.g. local health departments become more involved. Regulatory authorities not IPM informed work against IPM, and against own mission to protect health.
10. Al Greene
    - Business plan should include 2 things that are often ignored. The following groups should be a part of the discussion table and are not: ASBOs and Professional PMPs
        - Pest Control industry owns this problem. PCOs are frontline and are doing the work. We must interact in a positive, partnering way to affect change in that community. The vanguard of one mind with us. Structural Industry
        - Partnering: Procurement Community. The vanguard has no incentive to be part of the plan because procurement has no incentive to use acquisition techniques that will include the vanguard of the industry
11. Edwin Rajotte
    - Farmers don't get the full realization for activity in the marketplace because consumers don't understand IPM. Example, Pennsylvania: IPM must be taught in schools. Therefore there will be a better appreciation for IPM, better decisions in market
    - Greater appreciation of IPM across all industries, not just schools
    - Network of extension educators. They know how to describe IPM. Heavy investment in school IPM
    - Would like to see partnership with extensions. A network is in place and eager to move into this area
    - We have adopted "regulation is the mother of adoption" if the strongest way to move into IPM arena is regulation, this will create the push for strong adoption.

12. Deborah Hartman
    - Asks EPA to help push the ideas, like to see a connected curricula for public awareness campaigns
    - Office is interested in pushing IPM education. Best practices, Communications, or clearinghouse roles
    - Wants ideas on how to put educational materials together
    - Expand and better define the EPA's national role. Can push marketing.

13. Fudd Graham
    - Recognition for program will help the diffusion process.
    - Publicity and Award system extensions can partner with urban diffusion

14. John Carter
    - Some central focus
    - Include advocacy
    - Certificates and public relations go hand in hand, publicity in the media, local newspapers.
15. Ed Crow
    - Certification for custodial staff. There needs to be good communication between certification training program and IPM. From state's perspective it will be important to communicate where the two programs overlap
16. Carl Martin
    - State programs need to standardize or coordinate so that information can be shared.
    - A proven model that works has been established.
    - Move people at the ground level to participate even across diverse regions and culture

IV. Results from the Monroe County Model Meeting, September 2002, Marc Lame

Our goal is unified, three essential components:

1. Information Dissemination
2. Demonstration
3. Evaluation

Because of limited resources, the program must be demand driven. As parents demand the program, supply-side incentives are created. Professionalization plays a key role in creating demand

Pest Management is People Management, therefore, communication changes peoples behaviors. To do so a process must be carried out. On demand side, activists play key role. Supply-side key players are the PCOs

<u>The Monroe IPM Model: a transferable innovation</u>.

- The Indiana meeting provided a venue for evaluation of 5-6 years of experience with the Monroe Model
- Different players were included in process. Principals, PCOs, regulators, SLAs, EPA
- The Process: Start with the idea of working with a funding agency. End with the idea of rewarding area wide expansion
- Each of the steps evaluated and critiqued, consensus reached
- The model was named
- Team members that play a part in model were identified,
- Status was discussed for each of the states. AL, NV, CA, IN, Navajo, AZ

Status and Outcomes –Who has IPM impacted? Who are the peers and who are they able to contact for diffusion purposes? Identify these experts, exploit them so that their impact can

be far reaching (Over 1 million children so far) NV provided lessons on what not to do, we could focus on what IPM is not. Themes:

- Peer Development
- Exploitation

Proposals for national diffusion

1. Hometown Proposal:
    - Go to land grant universities.
    - Utilize non-competitive grants. Competition creates enemies. We need partners not enemies. Qualification: 1 year pilot, 2 year expansion to full school district, with final statewide expansion plan using peers. Bring hometown people together to compare notes. Maximize limited resources.
2. Coalition Proposals
    - Use school districts active in IPM, to work with disenfranchised school district, and a large school district. Work as a trio- move them forward for the snowballing of implementation

Creating an observable and trialable model that is visible.
A functioning model exists, let's use it!

Question /Answer session

Question

Edwin Rajotte:
State Partnerships will promote the program.--Don't overdo the nationalization, will cut off state mechanisms for diffusion.

Responses:

Marc Lame- state and nationalization are not mutually exclusive.
Mike Wallace- demand and partnerships with mothers, etc are state based.
Activism is state based
Lyn Hawkins- Activism critical. Notification doesn't create demand.
Jerry Jochim - Problem keeping it at state level is that is sacrifices uniformity
Marc Lame- Ownership is different than leadership
John Carter- understanding the system that you are working in means that the 20 steps are modifiable, according to specific needs of the school that you are working in.

V. Discussing the Homework Assignment- Tom Green introduces

1. Role
2. Most Important Audience
3. Techniques Used
4. Goals as Professional
5. Personal Goals

6. How to Evaluate

Refer to Attached Appendix for Individual Responses to the Homework

VI. Discussion: What are the impacts of our work in IPM?

- **Three Fundamental Questions**
  - **1. What is unique?**
  - **2. What are the Lessons learned?**
  - **3. What are the direct /indirect impacts of work**

Dan Dickerson- as a technician, the audience is the pest operators

Unique Attributes

- Effort was not mandated. State follows the lead of his group. Require certification process. Step-by-step process to reach pesticide reduction. We are as unique as the neighborhood we work in. From rural to converted movie theatres

Lessons

- This is definitely an educational process. 40 hours does not mean that a pesticide license is merited. January 20, 2000 everyone has to be licensed. 1989 begin license requirements. In-house program management leads to a uniformed program. Private Contracting was not as efficient. In house allows for standardized procurement and standardized trainings.

Impacts

- Refrigerated garbage rooms. Mandated recycling. Sanitation and garbage issues have led to refrigerated garbage rooms. Physical output. Results oriented? 1/7 children has asthma. In 10 years perhaps we will see reductions in asthma. Removing hard pesticides has been accomplished, in long term, is indisputable benefit.
- NYS IPM Council: Cornell, Attorney General, Dept. of Environmental Conservation. Three years of involvement. NYC is no longer an experimental program. Are seen as a working program, State of NY has invested 1 m in community IPM

Questions and Comments

Paul How have asthma rates changed?

Dan Rates peaked two years ago, had previously been on an increasing trend. Causes: Pesticide use in public housing, schools, and diesel busses left running. Now, housing communities are on their way. (Dan Dickerson is on West Nile Task Force)

Mike Wallace

What are political problems assoc with IPM in a large metro area, and how did you handle them?

Dan On the local level, yes there are political problems. Health departments need to be educated in what we are doing. Uneducated regulators create bad image for IPM. Roaches on monitors get health code violations where IPM is being pushed. They get a violation, and call for spraying. IPM is health. Must be communicated to this agency. 1.2 million Children in schools with associated parental population. This

population what are short term successes, which parallels the short term pressures of politics. Structural challenges of IPM in NYC

Edwin Rajotte:
Interested in materials on education and certification program for employees. Teachings? Testing Process?

Dan Three levels of certification. NYC requires them. If new products and/or processes are introduced then there are new trainings and educational sessions. Sessions are followed up with quiz to ensure that each employee knows how to use each product.

Manufacturers are responding to shifts in demands. Responding with effective, safe products. There are schools that are historical sites.

Dan Dickerson will compile info for Edwin Rajotte

Tom Green

Unique Attributes

- *Who wants to be an IPM Super Sleuth?* for children. *IPM Standards for Schools*
- Agriculture and organics:
  - Rules for label as an organic producer, so what about IPM rules and labels?
  - A set of rules has been devised. E.g. **Food Alliance, Protected Harvest.** Takes IPM to the Market. Allows producers to show rule-set to consumers of goods, ex, markets in Europe. So this model was transferred to schools. Resources/rules for pest management in school. Funding ended on this project 2 years ago. Website gets 4-500 hits per day. Website tracks headlines for IPM in Schools. Keeps on top of what is going on around the country. Came up with a set of criteria that define least risk pesticide i.e., no dust, no danger labels that have been EPA identified as cancer causing, This resource is not currently used as a certification tool.
  - The audit is rigorous.
  - Green Flag program could be a way to integrate IPM cert into recognition mechanisms for schools. Getting kids and the parents involved.
  - Pesticide List: orig. idea was to allow pay annual fee to keep products on the IPM list.

Impacts

- Extension programs use of documents and incorporation into program. Don't have the same hardline info as AL

Fudd Graham

Unique Attributes

- Fire-ants in the school yards

Lessons Learned

- Getting people to cooperate is hardest element.

- How to work the red tape in school corporations.
- PCOs : We learned that there is an upfront cost which is a big problem for the PCO. On the back end, the PCO can make a profit from this. Changing the concept of PCO as someone who goes in and goes out to the role of an educator in the school can happen. The Role of PCOs
- Low bids won't get the job done, need extended contracts. Low bidders don't always know what they are doing.
- Almost lost Auburn. "Do I still have a mode school?" Talked with the BNG, if you get away from the model, it doesn't take long for the program to fall apart.
- Fudd comes at it the program from the **technician's perspective**. Getting the PCO on board is of utmost important.
- The Schools in auburn take ownership of the program. Ex. Sanitation .
- Get the teachers on board!

Impacts
- Working with SLA to diffuse state wide:
- SLA is setting up new cert categorization in Alabama.

Question-Answer:

- PAT System: (Edwin Rajotte) Include true IPM in the PAT system. (Carl) has been in grant guidance for many years (Ed Crow) Categorization: achieves a movement upwards in training, but could produce confusion if there are too many categories. Doing a white paper to the EPA, what credits can you accept for certification (Lyn) Dewey Pest Control Training conducts IPM training? Training occurs, what about implementation (Carl) States do minimum competency requirements. Licensure as grant guidance. There is a possibility of value added through the cert/training process,

John Carter

Lessons:
- Educate, educate, educate. Cooks were forgotten in pilot schools.
- PCOs weren't involved was a mistake.
- Include the advocacy groups was a step not taken.

Indirect Impacts
- Reduction pesticide use, education. Changing storage behaviors

Jerry Jochim

Lessons
- Education is key and contributes to cooperation with programs.
- Communication should be foundation of program. Maintenance staff is a principal' best friend. They are key to program, especially monitoring.
- PCOs and custodians in alliance keep school costs down. In some classrooms, students have taken a role in the program.
- **Exclusion and sanitation** should be a part of any pest control program.

Marc Lame

Unique Attributes

- Model based on school management. Jerry's role as a communicator with custodians is unique. Also John's role as nation-wide educator is unique.
- True partnership is unique attribute.
- For all programs, there is a **written process**. This is unique.
- The MOU process,
- The audit (pre-program and post-program) are included.
- A Public Relations and reward program are written parts of the program, pro-bono PR reps.
- Also written process of the expansion plans.

Al Fournier

Unique Attributes

- Advocacy push
- Different moving forces have helped to promote the model.
- policy implementation has helped to achieve 90% policy adoption.
- Pest management policies are put in place by political pressure indicating that regulation was imminent without voluntary
- Regional Center- creates an environment of enmeshment and networking which also promotes the center. Goal to share information. Has been an effective process as of yet.

Lessons

- The Model Concept**:** With initial pilots, need broader buy-in from school officials. Those that are connected in the social networks need to be contacted. (Rogers Model) Communication of schools/Education of PCO
- School organizational impact has an effect on program adoption.
- Site based management
- Organizational structure

Direct /indirect impacts of work

Direct:

- 3 School Districts, 38,000 students affected
- PCOs are taking IPM to new school districts (Gary)
- In each state there are several approaches to IPM in School

- Expanding beyond IPM in schools: Saginaw as example
- From implementers perspective: day cares are thrilled because there are unexpected positive externalities associated with program

Kirk Smith:

Lessons

- Attempted RFP Process. Schools charged 1000 for program.
- Education is most difficult.

- Time spent educating kitchen, maintenance and education programs have seen reductions in
- TAM videos
- Must meet with people face to face to sell program, which is very time consuming. There have been reductions in percent application and number of pests.

Problem

- 265 school districts=too much bureaucracy a problem without current solution. Conception that IPM stands for I pay too much.
- Once in place, no answer to who will run the program.
- Needs to be a tremendous push for education. "We want to learn and who will train us" BUT they don't want to pay for it.
- In sum, program will be a hard sell, depending on Carl Martins org. for help.
- State legislation will need to change to help make IPM in AZ work.

Unique Attributes

- Taking IPM into the Native American Community. BIA, unique pest situations (scorpions, centipedes) sanitation of children at home.
- Turf issue/ Landscape design in schools creates problems. Vector control in mosquito issue. With flooding irrigation on rock surfaces, there is a mosquito breeding problem, children can't go outside for day. Pumic acids, folic acids used to increase permeability of school so that water drains fast enough so that there is no mosquito problem. Fire Ants: assoc with poorly maintained turf.
- New insect borne diseases is bringing mosquito issue to the front line in Maricopa County

Carl Martin

Unique Attributes

- Working with school nurses, national meeting, state meeting.
- Got legislature to include certification requirements of applicators. Annual IPM classes. Agency has been slow in defining what IPM means. Legislature has Identified IPM principles in law.

Lessons

- SLAs are set up to certify, to require minimum competency, to protect pubic. Some practitioners try to bypass the certification process, getting by. Licensing.
- No entomologists on staff. No curriculum developed for diverse audiences. SLAs need to develop relationships with CEs and land grant Universities to augment areas in which program is deficient.
- Relationships- focus on building, will have positive impact on PCOs, other audiences in need of education, once a relationship is strong, agency management is more likely to cut loose funds to support programs and efforts in the interest of the mission to public protection.
- Tribes – when tribal council speaks, that's the game. Find the people with whom to communicate- do it effectively, and accept the limitations of reality

Direct /indirect impacts of work

- No correlation between reduced pesticide use and absenteeism, classroom performance. This is disappointing. Causal links are more difficult than previously thought to establish

Lyn Hawkins

- CA Law requires schools to identify IPM coordinator, to post, and to notify.
- Notification has associated costs- If not done properly, may have to notice parents which has a significant assoc. cost'
- Notification requests also depend on the form in which they are sent out to the parents.

Lessons:

Learn from IPM Failures

- Getting around the low bid. Request for Proposals
  - San Bernadino- interview process, and results are published
- Bids- come in close to low bid expectations. But get quality From company
- Stand bids- if you add in on contract, must pay. Will be greatest expense
- Quality control in the process: In house person with pest ID ability, a person to check those Ids.
- Kitchen help is busy, cant do quality control
- Pest id issues

- Pest control company once assumed that IPM meant no spray- and the pests went down! How? The answer is that better cleaning in the kitchen takes place absent spray
- **Trainings**: Rely on training materials that are not copyrighted. Need uncopyrighted training materials. It's not the info or the training, it's how you use it that is most valuable. Training costs: School nurses: training 300/day, Ag side: training 60/day. Be ware of these cost differentials
- Bottom up support is essential.
- **Assessment**: Bobby Corrigan's definition of conditions that are conducive to pests is important part of forming baseline.
- Risk Managers play a role: no actuarial data that over exposure to pesticides is an issue.
- Enforcement agencies: Don't enforce the law equally across the board because of political pressures. We must recognize this situation.
- Training the Trainer: Program in CA somewhat problematic. Getting people to take videos/ education resources is problematic. Need help to get trainers to do the training
- We can save money depending on baseline. – can only save money year to year
- San Francisco City Website. list of pesticides that you can use in IPM
- IPM Calendar- Looking for IPM Plans that are Calendar based to help guide maintenance and kitchen devise action plans for IPM.
- IPM Trailer- 18 months exposed 400,000 people through trailer. Expensive ($1/person) but very effective in training.
- The community is aware of hot topics- West Nile will be **port of entry** for IPM
- Clean water and the effect of pyrethroids will be another **port of entry**

The group liked the calendar- good for national

Edwin Rajotte

Unique attribute

- Cross agency groups working on IPM program

- **MOU**. Pennsylvania Dept of Ed, Health, and Environmental Safety have all signed the MOU. Also to school (501 school districts) boards.
- Video down links
- Newsletters: Information networks exist in the schools for diffusion purposes
- NGOs : Clean Water Action , **advocacy groups,** children's health issues big help
- Paper just published on pesticides and leukemia.
- Children's health is **port of entry**
- Create demand for the customer point of view
- A law requires that IPM be taught in schools- 1.2 million. Who devised the law? Penn is in process of upping education standards. Only state to adopt environmental and ecology standards, board member injected IPM into these policies because of its **practicality and proven successes.** K-12 **curriculum** for IPM Examples of curriculum are Pest Patrol (devised from a Minnesota resource)
    - Teachers guide-
    - creates interlinking possibilities
- **Media**: media creates demand. Penn hired PR person, news releases on various IPM assoc issues.
- **Outreach**: The Bug Mobile: talks to people (funded in part by PESP)
- Daryl Johnson: alliance with the Chesapeake Bay
- Pennsylvania IPM in Schools Manual:
- All are on PDF on Pennsylvania website:
- **Demand** has been created for the trainings.

Lessons Learned

- Learn the school bureaucracy of the state. Very intricate. Know how info moves, how things are paid for, model policy written with school boards

Kagan Owens

UniqueAttributes

- National Perspective; track what is being done at all three levels.
- Currently looking at schools that are required and schools that are voluntarily implementing IPM.
- Access to parents, concerned environmentalists
- Important to work together to create demand for the programs. Kegans group is strongest IPM. Communicate also the problems and hurdles to program implementation.
- Kegan's Group educate the parents, we all educate the Schools. Working together from opposite directions.
- Success Stories Report: submit article if anyone is interested.
    - Activists are invited to submit reports for local groups
    - These articles are a positive message to send to schools.

Sandra Alvey, US Army Environment Center

- Does Legislation exist to force Army to comply with FIFRA?
- First pilot project: Ft. Campbell (Kentucky) in DODA Schools.

Steven Bennett:

Law built on four premises:

1. Mayor speaks to implementation
2. Every installation has to operate under Pest Management Plan
3. Require approval of PMPs by a professional
4. Training: minimum standard is 1 year apprenticeship of an army employee. PC standards don't exactly parallel DOD standards.

- Installation PM Coordinators. These are points of contact utilized when questions arise as to pest control.
- Pest Control at child care facility falls under scope of Installation plans
- USDA Liaison-reaches out to the states for expertise
- Results oriented best practice.
- Guidelines are codified according to professional guidelines
- Don't have notification, posting, registration,
- Currently meeting resistance from administrators, due to dollars lost and extra time necessary.
- When local school administrators take on PM, ownership question must be embraced by schools and Bennett's office exists for guidance and technical support.
- Jurisdictional questions come in to play

Paul Guillebeau

Impacts

- University is close at work with county extension offices.
  Goal:
  - To make local extension in charge of program in community, these CE workers are often on the school board and well connected in the community
  - Get PCO and School System to understand what is happening. Risk Education and Cost, especially

Lessons

- PCO Training: How and Why. The why is important and often overlooked

Problem:

- Uninterested schools, tough to make IPM a priority
- To address this, USDA grant to work with public libraries. Place educational materials on IPM in libraries. Want also to do a better job of getting info to PCO organizations.

Janet Hurley

Unique to SW Tech Resource Center

- Direct contact with multiple school districts.
- Trainings to IPM coordinators. TX law has it that Coordinators need 6 hours of training. Pest control companies are invited to come. Have the schools and the PCOs at the same training venue.
- Ask Schools to do in-service trainings
- Using network of schools to help other schools. The result is more sharing of experience and information.

- Email network: 230 school district contacts.
- Bulletin Board on web-page—questions and info sharing
- Open recommendations by Texas Pest Control Board

Lessons Learned

- Not enough education for trainings. 6 hours does not suffice.
- Need for quality reference manual
- Support resources for school necessary. Reg agencies have wavered on what info to provide to schools
- Not enough inter-agency cooperation i.e., sharing and spreading info

Direct Influences

- Contact with over 100 diverse school districts.
- Contact with structural investigators

Indirect

- Safer schools
- Empowered IPM Coordinators
- IPM programs are improving. Posing challenges instigates improvement

Ed Crow- speaking from 2 perspectives

Unique attributes:

- IPM comes through reg agency
- Good relationship with Extension Agency.
- No buy-in from upper agency
  Voluntary program began in 1994, at time was pioneer in state-wide implementation
- School districts set up on county-wide basis, made contacts more available. Diverse school districts

Lessons

- Now focusing on up front education instead of regulation
- Education is very important.
- Workshops. EPA Pesticide grants and coop agreement grants supported Maryland on resource development
- ASBO- key group in addressing overall maintenance and health and safety questions
- Program sold itself.
- Complexity of Schools: Different Layers of regulation and implementation exist within the school systems. Be aware of these dynamics.
- Core Training.

Impacts

- Extension came in to speak to risks assoc with pesticides. Helped promote environment of accepting program.
- Early implementers- Structural Maintenance mentors. Planted seed that the program has merit. PR Support from key players.
- State-wide implementation: plan on phone survey to pull out key elements of implementation and things that helped the states in their program implementation.

- Notification issues can be politicized, to what extent should it be involved in an overall IPM Program.

Al Greene
Unique Attributes

- **GSA for Public Buildings**
  Oldest cohesive, centrally run structural IPM Program. 14 years**.** Completed 10 year audit with 1988 as baseline year. 1989 first year of IPM Implementation- document has been published**.** Exhaustive accounting of a structural IPM Program**.** Output based, true measurements and pseudo measurements**.** Downloadable. Entomological Society of America, Journal of Economic Entomology. 1st issue of 2002 JEE**.** May serve as a model, some parts may be applicable to other IPM Programs.

Regina Langton joins us

B. Afternoon Session

I. Introduction

Desired Outcomes

- A Sustainable Plan
- Real Buy in from Stakeholder
- Inclusive Future
- Education of Public; marketing the benefits of IPM in Schools
- Standardized Procurement Process
- Expand the Network
- Awards Program
- Focus Centralized
  There is a great amount of IPM info available. However, how do we tailor this info and make it site-specific? Do we go for a standard national program, or do we stay at the state level?

Questions to consider this afternoon?

1. How do we get IPM transferred?
2. How do we evaluate progress?
3. What are the appropriate goals?
4. How can we improve information sharing?
5. How can we be most effective in communication?
6. Can we use limited resources more effectively?
7. How can we expand the pool?

II. What are appropriate goals for School IPM?

Marc Lame

- If we can demonstrate partnership and transferability, we can best deal with the question of limited resources.
- Strategic-based programs are necessary to get a hold of limited funding
- That school districts understand what real IPM is,
- To be able to see what it looks like via demonstration,
- A process to tell them how,
- Then how they will be evaluated and by whom. These are appropriate goals

Edwin Rajotte

- Split Problem into its Components
- Reduced resources doesn't mean zero resources
  - At the federal level: More communication between EPA and CCRS
  - At the state Level: Opportunities for partnership and funding. Perhaps create a system, produce specific rules based on state level laws.
  - Core national manual would be good, but added sections must be state specific

- Consistency among the EPA Regions

III. What partnerships can we forge to better use the resources that we have available to us?

Mike Wallace

- Senior Leadership of the EPA must be committed to IPM in Schools
- Partnerships: Requests that all attendees email to NFIPM a list of possible contacts and partnerships

Lyn Hawkins

- Look at two models. From national perspective, need one person to push the National IPM program. This leader must get into the mix at the national level, for example, to meet with the national PTA. This then filters down to the regions.
- Create a national directory for those people who are contacts. IPM is a dynamic process. National Directory will help to put allied groups in contact. Kagan's group has started to do this on their website. Over 600 school districts with associated contacts Why do we want this resource?
    - To establish demonstrations
    - To find out who is control of pest control
    - CE success comes from building partnerships with key implementers

Carl Martin

- The status-quo-take-home message has been, **emphasis on risk reduction** for agricultural workers. Articulate our mission in terms of risk reduction from children and school employees. Then demonstrate the benefits using that strategy.

Dan Dickerson

- Message that IPM protects workers in schools, **OSHA office**. Offered OSHA to take credit for IPM. Forged alliance with OSHA and offered to them resources. OSHA then acts as middle people between pest technicians and teachers

Carl Martin

- Constituents with impacts. For example, teachers. **Teachers unions** have power to set policy, and **labor policy fits nicely with risk reduction**. Argument can be made for larger issues OPP goals and certification programs, structural applicators into worker protection network.

Edwin Rajotte

- **Indoor Air Quality Model** by the EPA. It designates inclusive group and seems successful

Sherry Glick

- The **IAQM Model** is much better funded. Can educate and operate through the mushroom effect. Our challenge is work as they work with more limited resources. Can we forge a partnership with this group?

Deborah Hartman

- **Tools for Schools** packet. School focus programs exist, that may have more money than us. Do we bring them in to the discussion session?

Ed Crow

- Identify instead **school districts that have used pilots**, they have experience and lessons to share

Carl Martin

- Need to have activists. Investigate the options that we find in the Hometown Proposal. We need to focus more on action than talking- go in to the schools!

Marc Lame

- Brochures are most useful in the hands of the parents when taken to the school administrator. Use **comparison to other schools** as leverage

Janet Hurley

- Administrators are CEOs of School districts. Resources should not be spent on brochures that will be thrown in the trash.

Al Fournier

- Hometown advocate works at the local level. Mandates provide nuclear schools, expand from there.

John Carter

- Superintendents like the letters and the plaques.

Carl Martin

- Demonstrated programs of success. Do we want to create an action plan? How do we get the Monroe IPM Model out.

IV. What is our plan of action?

Marc Lame

- Need to identify groups with successes and newbie programs. Then identify friendly colleagues, spread to these areas. Uniform strategy necessary for these "colleague based" expansions to occur. For example Alabama and Georgia can perhaps sit and put their heads together.

Paul Guillebeau

- Contact Region 4: Lora Lee Schroeder, Troy Pierce (School Contract Issue).

Sherry Glick

- After funds have been allocated, EPA doesn't have the control over how the money is to be spent. Cannot say "Please don't fund manual Projects" under the existing system.
- Identify who are the requestors for IPM associated information, mainly school administrators

Marc Lame

- If the 100,000 brochures have already been published then perhaps they can be sent out to a more **targeted audience**
    - Send brochure out to PTA
    - GSA should get brochures out to their buildings
    - First make new actors aware, then follow-up is essential.

Carl Martin

- Look for new places to spread message.
    - Suburban schools.
    - Get on NPR.

V. Concrete goals with their associated mechanism and time line for accomplishment

Kagan Owens-Baseline information

- 3297 School districts required to adopt School IPM .
- 313 Voluntary adoptions

  These are a good start for measurable outcomes. Are the existing IPM programs really doing true IPM? Can we work to improve these numbers?
- 17,000 total school districts in country.

Six-Month Commitments for Measurable Outcomes

1. Arizona Expands to Utah: **Carl Martin**
   Arizona promises to spend $2000.00 in the next Six months to expand to Utah
2. Lobby USDA (Mike Fitzner, Al Jennings, Eldon Ortman, Harold Coldwell) Put Condition on food receipt from USDA. USDA purchase foods from IPM Growers. Link government programs USDA gives food to schools, food needs to be prepared in an IPM environment
3. Region Three. Measurable outcomes: Put in group proposal at group meeting PN, Maryland,
4. Submit 800 word articles to Kagan for publicity sake, by November.

Suggestions for action by EPA HQ:

1. Encourage all EPA regions to promote school IPM.
2. Promote consistency across EPA regions on this issue.
3. Develop national IPM policy and implement it!

4. Develop broad list of stakeholders and invite active participation in future meetings.
5. EPA develop creative ways of marketing school IPM, e.g., schools successful with IPM felt that implementing IPM made folks in school happier, more organized, involved etc.)
6. Expand audiences we market to!! (this can combine with #12.)
7. Get information from the Pilot centers for national distribution. E.g., maybe a guidance room by room for schools to use in implementing school ipm.
8. EPA should work to link the governments programs on this issue, avoid agency by agency approach.
9. EPA could hold regular conference calls of national IPM in schools workers
10. Use noncompetitive grant program to showcase "hometown" demonstrations of successful school IPM.
11. EPA consider school IPM issues as part of its development of definition of certified applicator.
11. EPA work to get USDA extension agents involved in school ipm
12. EPA role in educating on this issue - other audiences : county health departments, school custodians, food service directors, school nurses, etc.
13. EPA can help with promoting IPM in schools curriculum: eg. students (get involved in demonstrations of school ipm as a science project etc.)
14. Followup with some recipients of brochure to target school ipm training, other implementation tools, e.g., train the trainer programs
15. EPA designate national director for school IPM.
16. EPA national initiative could include: public campaigns, best practices, curriculum, highlight successes, also essential to focus on procurement issues for school ipm.

Action Items to achieve Goals
(Divide into Awareness and Evaluation)

1. Mailings: Mass or Targeted. Contact Influential School Officials. Get a hold of National PTA to find where fastest growing areas. Kagan has National PTA Contact.
2. Follow up mailings.
3. Incorporate/Engage the existing Extension networks for IPM diffusion, for example, the Family and Consumer Sciences Extension or the Food and Nutrition Extension. Use the **April Symposium on "Building Alliances**" as the venue to engage the EC
4. Call on EPA to take leadership role in asking NPMA to implement real IPM
    a. NPMA made a commitment for pesticide reduction. EPA can now use bully pulpit to engage NPM in pesticide reduction
5. The Expanding Circle: Include NPMA ,RISE, , Beyond Pesticides. Another Meeting?
6. State Extension Plans devised by each group here, for the dissemination of information
7. Task force with Tom Green to develop certification with schools. Partnership. Non-profit and CE and Gov't
    - Carl Martin and Ed Rajotte
    - **Certification-** minimum standards, demonstrated a commitment to children's health, low-no cost, simple, not time consuming. Contact Tim Gibb.
8. Promote Architectural Standards- **Kirk** will lead up. Make phone calls. Architectural Guide to IPM in Schools (recent Purdue Graduate)

10. Each member of this meeting needs to talk to one activist with the brochure

11. Report on this Meeting at the National Symposium. Take note of these points and measure our successes
12. PSAP Meeting, Hawaii, get on agenda
13. AAPSE- American Association of Pesticide Safety Educators, engage

Send the message that this is what (IPM) we should be doing because it's the right thing

ACTION ITEM PRIORITIZATION

High Priority

1. **Each Member** of this conference promises to take brochure into schools and return with outcome (i.e. a report of their meeting and any successes). This contributes to expanding the number of voluntary schools involved in IPM.
2. Creation of a white paper that identifies the issues. Ascertain the EPA HQ position. Region 5 , **Al and Marc** Commit to work together. Target audience is an EPA Regional person.
3. Mailings: **Kagan, Janet and Sherry** will coordinate to target the mailings(Sub-committee will decide to what area the mailings will be sent, perhaps in a region where there is little to no IPM in Schools which will provide as a baseline study
4. Engage the Cooperative Extension- **Edwin**, with the outcome of RFP development on various funds and who gets funded. Edwin will provide the CE with a new clientele. What tangible action can we define? 1) Were contacts made 2) How were ideas received by CE agents
5. EPA engages NPMA. **Marc**
    a. Federal Level
    b. State Level- PA, PCOs are attempting to separate themselves from the masses to testify to their higher quality of service. Could be operative in forming a collaborative effort with these people.
6. Expanding the Circle- including underrepresented IPM actors in IPM decision s making. **Mike Wallace and Al** are accountable to this short term action
7. National Association of School IPM Workers- California Meeting, **Lyn Hawkins**
8. Expansion commitments
    a. Arizona expands to Utah. **Carl**
    b. Pennsylvania meeting with Region 3 actors **Ed and Ed**
    c. Texas to promote trainings in New Mexico and Oklahoma **Janet**
9. Beyond Pesticide Success Stories by November. Kegan can contact Tom Neltner
10. Task Force for School Certification. **Carl Martin and Tom Green**
11. Architectural Designs/Landscape Architecture **Kirk Smith**
12. **Lyn Hawkins** as National IPM Director. Asks EPA to establish a school IPM Policy. ND will include all contact. Create Board? Contact Pat Cimino
13. Report on this meeting at National IPM Meeting. **Sherry**
14. EPA becomes leader in Establishing School IPM Policy, **Debora**

Low Priority

1. National IPM Directory

C. SIDE DISCUSSIONS

Every once in a while, discussion diverged from the established agenda resulting in discussion that highlights some issues worth examining

I. The Definition of IPM

- EPA definition- Sherry reads EPA definition of IPM
- Regulators can't deal with questions without a definition
- In terms of strategy, we must include all chemical agents
- Is definition of IPM a possibility or priority?

II. Awards and Recognition

Janet Hurley

- An award system is in place, though implementation has been slow. Solicits input from the rest of the group.
- How do we recognize the schools and what are we looking for?

Lyn Hawkins

- An example is the California Innovator Recognition Award
- Key ingredient is missing from the process --after recognizing the actor, there is no place for these innovators to network. As far as strategy, we must network these people, but how?

Paul Guillebeau

- The recognition problem is an issue,
- schools seem disinterested—no incentive
- Create recognition that means something to the schools- nothing pique the
- Perhaps recognition includes the children- tee shirts that the children take home so that the parents ask "What is IPM?"

Kagan Owens

- **Childproofing our Communities**, coordinated by CATJ (**Children's Health and Environmental Justice.**) They look at a national awards program called **The Green Flags Program**.
- Kagan offers to be a liaison between this group and us. Goals are the same, and a partnership could and should be created

III. IPM as a Results-based or Process-Oriented Program?

Carl Martin

- Results based on reduction can be problematic as far as methodology

Al Greene

- A philosophic difference exists. IPM is a means not an end as far as the policy of risk reduction. Public health, environmental health
- **Government is output oriented**. IPM is a means, but unless there is measurable output, (# complaints, % pesticide reduction) no advances will be made

Marc Lame

- Point heard, but without real IPM in place, any pest reduction action will not be able to sustain, ex when baits fail

Al Greene

- Must remember **goals** in the process of implementing IPM.
- Little testing done as to which parts of the process work. Need empirical evidence that process works. Consider the number of complaints dropping and number of pests dropping—what is **causal link** between program success and program methods?
- Results driven. If part of the process is not effective, there is no use for it.

- **Change in procurement process**- Traditional procurement for pest control was IFB (Invite For Bid, a low bid process). Changing to RFP (Request For Proposal) in which the winner becomes a legal adjunct . Most state procurement systems mirror federal system. Bring in the procurement process. Vanguard has no interest in a low bid system. Greater chance with a proposal type system.

Ed Rajotte

- IPM exists as a continuum, it is a process: Low level, e.g. baits→Higher Levels, e.g. architectural. Move people through the continuum to the higher levels.
- IPM is not homogenized
- Economic and human health goals drive the demand side
- How has IPM changed attitudes and perceptions of the public?

Sandra Alvey

- Program Ownership is very important
- Need to identify what the outputs are and how they are measured
- IPM in schools is a sub-part of Environmental Health in School program. There are many other considerations, e.g., asbestos. IPM won't be a stand alone program.

IV Audits and Cost
Lyn Hawkins

- The a**udit** is critical, serves as baseline data on who they are and what they are doing.
- How do we estimate program costs? Impact of costs of requirement when there is application notification. (hidden cost issue) Schools lose money when parents take children out of school during pesticide application.
- Companies don't know how to write RFB contracts. A need to educate the industry.

Al Fournier

- 35,000 per year spent on 18 schools. Individual school costs. Education may call for overtime for staff for trainings.

Marc Lame

- Red-herrings on costs. Public Finance
- Amateurization,
- Externality attribution

Dan Dickerson

- Costs per year. $450.00 per school per year.
- How to determine what costs are pest control costs and what costs are maintenance costs.

Edwin Rajotte

- If parents demand IPM, then the **school board/ PTO** will be willing to spend more. Discussions of cost in the administrator's office are perhaps misplaced. There is a media and PR component that will affect money spent on the program.

Lyn Hawkins

- Costs are $<400/year. Carl backs produce losses, administrative time for posting is also a cost, sums of $1000.00 per school (word on street, year contract goes for 1200)

V. Using the Cooperative Extension Networks

- Using the extension system, how many extension units are there
- Extension is at risk funding-wise
- Separate urban/suburban, move this IPM through the extension agencies.
- Why don't extensions work on School IPM? Certain small shifts in direction could give IPM a whole new base of support. (Extension left out of the mix, wastes resources and limits opportunities for expansion)

- **Family and Consumer Sciences**- a new avenue!! Better than agriculture, because they are advocates of behavior change
- Food and Nutrition
- Rutgers Opportunity- Urban
- USDA has not formally recognized Urban IPM

Marc Lame

- CE is problematic. They are busy; don't recognize schools as a customer base. (prefer industry) CE should partner up with groups beyond NPMA for example Tom Green or Kagan's groups

Edwin Rajotte

- This is the teachable moment. Capture the resources.
- Urban includes different partners: 4H, Urban Gardening. No one wants to include structural control.
- Net agents will survey a new clientele

VI. PCOs :Internal or External?

Kegan Owens

- On website, that represents 30-35 states asking what alternative pest control options they pursue.150-160 companies in a directory of their pest control practices. Referral resource, services for school.

Al Fournier

- Safer Pest Control has devised template

Carl Martin

- Monroe IPM Model addresses in house and out of house PCO involvement in school. Critical Mass occurs and makes it $ feasible to bring PC in house. But before critical mass, contracting is necessary

Marc Lame

- Proposes a follow up meeting to include RISE, NPMA, Beyond Pesticides

Jerry Baron

- suggests to Create National School IPM Workers Association

Janet Hurley

- Acting President of NPMA is a Texan, Janet has had contact with him. Need industry to support IPM. Texas Structural Pest Control is not part of NPMA.
- Bobby Corrigan is chair of some NPMA sub-committee

Appendix 1. Compiled Homework

Participants were asked to respond to the following questions prior to the workshop. Responses are on the following pages.

Your Name, Title:

1. What is your role in the implementation of IPM in Schools?

2. What do you consider your most important audience for implementing IPM (school personnel, PCOs, Cooperative Extension, other – you may list in order of importance)?

3. What types of techniques (e.g., manuals, websites, pilot/demonstration programs, workshops specific to audience, other…) are you using to implement IPM in your program areas? Why?

4. Based on your current position, what are your goals for IPM in Schools?

5. What are your personal goals for school IPM?

6. How have you evaluated program success?

7. What have been your personnel or institutional costs for the program on an average annual basis?

8. How do they compare to pre-program costs?

9. In terms of quality/cooperation, what is the relationship between you and other program implementers (PCO, SLA, Cooperative Extension, Children/environmental activists…other) in your state regarding IPM in Schools?

10. What do you consider to be the major problems with regarding the implementation of IPM in schools?

11. What have been your solutions to these problems?

12. What are your future expansion plans?
   a. State
   b. National

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Steven R. Bennett, Army Senior Pest Management Consultant	Develop program guidelines; Support installation efforts to implement.	i. School/ Child Development Center Program administrators ii. Installation Pest Management Coordinators/Supervisory PCOs iii. Sources of Expertise/Information (various to include Extension) iv. State program administrators	DOD/DA Regulatory requirements and technical guidance (re IPM practices) - AOD/ Army Homepages (with linkages nationwide to sources of "best IPMinSchools related practices" - small modification and reemphasis of existing installation programs.	i. Test and demonstrate select IPM-in-Schools approaches ii. If "successful" then to broaden implementation at Army installations world-wide iii. Inform other DOD Component services and DOD school administrators of Army experiences and commitments in this area.	Same as in #4	First demo project started August 02; evaluation ongoing.
John Carter, Director of Planning, Monroe County School Corp., IN	I am responsible for the custodial staff and have some responsibility for facilities at Monroe County Community School Corporation. It was our department that decided to move from monthly spraying to an IPM program once the information on IPM was put forth.	School personnel – The administration must buy into the program and say they support it. Then, the service staff (who are in the trenches) must be trained (empowered) so they know what IPM means. This is true for our system with an in-house PCO. PCO – If the PCO is not an employee of the school, then their training in IPM is vital.	We began with a pilot project at 3 schools. Training was done with staff in two parts, custodial staff and then convocation with students and teachers. Currently, training for the IPM program is on going with regular visits to buildings and a once yearly meeting with custodial staff. Presentations for instructional staff at regular monthly staff meetings are scheduled through building principals.	To continue with a top notch IPM program at MCCSC. To improve our outside IPM program and practices. To continue to present other schools and organizations with our IPM in Schools Model.	Same as #4	Number of complaints, amount of pesticide used, number of pests present.
Ed Crow, Program Coordinator for Licensing, Certification and Training and Urban IPM, MD	Coordinate and provide oversight for the statewide implementation for IPM in schools	From the perspective of statewide implementation it would be school personnel, especially the individuals responsible for maintenance and environmental health.	Manuals in conjunction with workshops. Manuals and other written resources are important to provide the schools in order to give them easy access to resources and references to assist them in the implementation of IPM. This could be in the form of specific information regarding the actual identification and control of pests or information used to provide overall guidelines and background on IPM philosophies. In addition provides information that can be used to pass on to students, staff and parents regarding IPM. This is followed up with workshops for these same groups in order to explain the reference materials and components of and aspects of IPM. The workshops are also used as question and answer sessions to help with the interpretation of IPM issues and procedures.	To keep up with new technology and techniques developed for pest control and have schools incorporate effective tools and techniques into their programs.	To have schools utilize the best and most effective tools and techniques available for conducting pest control while minimizing exposure to pesticides.	Through compliance inspections to ensure school districts are following state regulations and that they are following their IPM plans.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
To date unknown, but minimal (only one "installation School system being evaluated). Better idea in Spring 03.	N/A	Good; Voluntary, not coercive.	Newness of the concept to School Administrators. Fears about administrative time drains from concerned parents with heightened pesticide exposure concerns.	Story in progress	See comments to question #4 above.
Half the cost of IPM/Custodial Coordinator position ($20K plus 3K for supplies).	Pre-program cost $35K	We include and are included with program implementers whether it is for program development, presentations or advice.	A qualified individual who can tell the school what they need to do to implement a quality program must do the initial inspection of facilities. Someone like Bobby Corrigan.	We try to do these inspections ourselves, but have the experience of seeing Dr. Corrigan do them 15-20 times. The best way to learn is to teach, which is what we've done when Corrigan isn't there.	a.State - been there! b.National - done that! c.The World.
It has been variable. There was no state funding until this past fiscal year, which has now been cut. The program has received it's funding from EPA grants which has been at different levels of funding. Personnel costs specific to IPM has been absorbed as part of my program responsibilities and the Section head's.	N/A	With extension specialists it has been very good. However, the extension administration has not placed IPM in schools as an issue high on their list and as a result, it has been a struggle at times getting some of the objectives accomplished. Also, there is not an extension specialist for the structural pest control field that has also presented additional challenges. There has also been cooperation with the state pest control association. In regards to special interest groups, there has been some cooperation, but at the same time there has been friction. Finally, there has been very good cooperation from the school personnel, especially with the state Association of School Business Officials (ASBO) and other maintenance and facility managers.	Notification issues. Notification certainly has a role in an IPM program, but the notification has actually become the dominant issue. Depending on how notification programs are set up they can be counter productive to an IPM program. Often times the incurred expenses and personnel time for school districts are associated with the notification aspects of the program. Another issue has been with the use of products not registered as a pesticide. Our pesticide law specifies that only products registered with either the U.S. EPA and/or the Maryland State Chemist can be used for pest control.	Since notification and how notification is accomplished is defined by law there are not any alternatives. Suggest that address the issue and come up with a notification program that will satisfy the concerns of individuals while still allowing the flexibility to perform IPM and pest control without placing unnecessary burdens and constraints on school districts. The issue regarding the use of products that are not registered pesticides has been handled through an educational process.	a.State - At some point other government facilities b. National - To provide guidance through the American Association of Pesticide Safety Educators (AAPSE) to assist other states in the implementation of IPM.

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Dan Dickerson, Director, New York City Department of Education, Office of School Food and Nutrition Pest Control Division, NY	As director of the pest control services division I have had the opportunity to research, test, and develop strategies utilizing more "environmentally friendly" products as they have become available. My role involves implementing an ongoing training program on the appropriate use of these "least toxic" products and designating their use as the exclusive materials for pest control in the schools along with coordinating efforts with other school staff, on both the central board and individual school level.	Our target audience consists of the same schools and personnel to which we are providing service. While we envision a website to publicize our efforts and recruit further cooperation, currently our most often used tool is hands on advice and specific suggestion handout sheets geared to individual school problems as they are encountered.	I have sought and continue to educate all levels of school management as to our efforts to drastically reduce/eradicate the use of pesticides within our schools. However, without a doubt it is my direct influence on the pest control technicians that ensures that only approved principles of IPM are adhered to in our pest control program. I have enlisted the educational resources of our associations and Cooperative Extensions in our training programs as well	As my experience dictates that problems within our schools are often a direct result, or extension, of existing problems in the ambient neighborhood, I would like to see the IPM efforts become more community based. Specifically, I am finding it difficult to reduce the amount of rodenticide necessary to thwart the ongoing rodent problems that exist in certain areas.	As an individual, I would like to see schools on nationwide level adopt acceptable standards of IPM which would reduce/eliminate pesticides while providing acceptable levels of control.	I see each step we have taken as a goal completed and a new goal presented. Our total elimination of the common classes of insecticides was the fruition of several years of attaining small goals with acceptable alternatives. As we continue to provide satisfactory pest control without the use of hydrocarbons, organo-phosphates, carbamates, pyrethroids, and even pyrethrin, I hope we continue to see the trend of continued reduced use of pesticides of all types.
Al Fournier IPM Coordinator, Purdue IPM Technical Resource Center, IN	Coordinator of Purdue's IPM Technical Resource Center, which works to promote IPM adoption in the Midwest (IL, IN, MI, MN, OH, WI). Each state has their own school IPM programs and approaches. We have developed state working groups to assess available school IPM resources and facilitate sharing and communication. At the state level, my affiliation is with Cooperative Extension. I oversee implementation of the several IPM pilots in schools and daycares, organize trainings, plan for/conduct inspections, assist/consult with/train PCOs, evaluate the IPM pilots, write reports, help facilitate and plan for statewide expansion. I conduct workshops for school personnel and contribute to trainings for PCOs. I am on a state committee for school IPM and a committee developing pesticide policy recommendations for child care facilities in the state.	I think the most important audience is the school decision-makers (potential adopters). My primary audience is school administrators and personnel. However, we have taken a multi-pronged approach to IPM education in the state, educating PCOs and parents as well. These are two important drivers that we feel will encourage schools to adopt IPM.	The Center has developed an IPM manual, maintains a website, and provides IPM technical assistance for schools, PCOs, and childcare facilities via a toll free hotline. These resources are important, because they provide the basic technical knowledge needed for IPM implementation. In addition, the availability of one-on-one technical assistance via the hotline is important. School personnel and PCOs have somewhere to turn for definitive answers about IPM. We provide workshops and other trainings for these audiences as well. We have developed IPM pilot programs in 3 school corporations and 4 childcare facilities that serve as demonstration models in the state. We involve staff from the pilot centers in our workshops. This approach of peers teaching peers has been very effective in promoting adoption of IPM. Another reason for our success is that we have worked through the existing administrative organizations in the state to promote IPM adoption. A pest management policy passed by the state Pesticide Review Board was accepted by the state School Board Association as a model	• To document statewide adoption of IPM in schools in 2003 survey • To facilitate statewide adoption of IPM in schools, using the pilots as models • To increase parent awareness of IPM in schools • To encourage and support development of IPM programs by PCOs • To create awareness of IPM among child care providers • To facilitate increased adoption of IPM in child care centers, using the pilots as models • To improve reporting and promotion of our program successes to stakeholders, funding agencies, and the public	• To better understand the factors the influence adoption of IPM by schools and childcare facilities • To create increasingly effective educational methods and strategies to promote IPM adoption and implementation	Individual pilots have been evaluated using initial inspection reports as a baseline. Each pilot has been evaluated with regard to program goals (structural and sanitation repairs, establishment of monitoring programs, reduction in pest levels, reduction in pesticide use, and communication). Evaluations were conducted based on follow-up inspection, document analysis, and informal interviews with school administrators, staff, and pest control professionals. More broadly, quantitative measures have been used to assess the effectiveness of program components: number of website hits, number of manuals distributed, persons trained, phone calls logged, etc. This data has been complimented by anecdotal reports of IPM successes and challenges. In 2003, a statewide survey will be conducted to get a better measure of school IPM implementation.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
The most recent audit during 1994 showed our costs to be the same as pre IPM costs.	We have found that the increased costs of monitoring and inspection are offset by the savings in the preventive wholesale application of pesticides.	We have been fortunate enough to serve on a council of like minded associations within our state.	Aside from perceptions of increased cost, I see firsthand that the regulatory inspectors of the school and specifically the schools food facilities must be involved from the onset if possible. Its unfortunate when a district attempts IPM only to suffer setbacks in the form of health violations for things like a specimen trapped on a pest monitor. It is at least as important to educate the school staff and students served by the program as those in the regulatory community.	As we are an in-house program, the cost factor concerns are not a direct school concern or conflict. The regulatory conflicts aspect of IPM, ie monitor board thresholds continue to be a bone of contention but have not impacted our resolve to provide a quality IPM program.	a.State: I look forward to being in a position to serve in any statewide or national efforts to expand the IPM philosophy. b.National: See above.
Data unavailable.	Data unavailable.	I think it is a very good relationship, for the most part. However, we need to do a better job of communicating our program and the resources available to schools through county Extension.	10. What do you consider to be the major problems with regarding the implementation of IPM in schools? "IPM" Definition. School priorities. School administrative structure. Ongoing communication. Low bid. Pilot projects. (For details, see final page attached)	Education is the primary solution to most of these problems. Education consists of defining and clarifying the components of effective IPM programs, providing information, IPM forms, and tools to administrators, school staff, and PCOs. Making IPM more of a priority for schools has been done through political maneuvering and education. I am not sure how to address the low bid issue.	State: • Statewide survey to determine adoption and implementation of IPM in schools. • Development/refinement of a plan for statewide expansion (diffusion) of the IPM model. • Continued technical support of IPM implementation via telephone hotline, websites, and trainings as funding allows. • Development of recognition/awards program for schools and childcare centers implementing IPM Regional (IL, IN, OH, MI, MN, WI) • Assessment of existing school IPM resources in the state • Continued technical support of IPM implementation via telephone hotline, websites, and trainings as funding allows. • Sharing of IPM resources to promote regional adoption and implementation of IPM • Development of state-based IPM resource handbooks for schools

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Sherry Glick, Office of Pesticide Program, US EPA	Funding Agency Rep; advocate, working to promote IPM - getting internal support	I believe that you must first get the buy-in from school personnel. This starts at the highest level. Once that's accomplished, you need to work school by school getting personnel on board with the Program. Both the PCO and Cooperative Extension certainly play a role in the implementation of IPM, however. The PCO (whether custodial or contracted) needs to work with the school and understand the school's	The Office of Pesticide Programs/US EPA has several tools that we are using to promote IPM in schools. Through the work from the cross-divisional/regional workgroup and from PESP activities, much has been accomplished. Website: http://www.epa.gov/pesticides/ipm Brochures: "Protecting Children in Schools from Pests and Pesticides." The brochure provides resources, success stories and examples of IPM practices for safer pest management within our Nation's schools. EPA booklet, is designed to encourage and assist school officials in examining and improving their pest management practices. It identifies ways to reduce the use of pesticides in school buildings and landscapes, as well as alternative methods of managing pests commonly found in schools.	Some of the projects/programs that are envisioned include: Schools Certification; Consultants - - "Taking it on the road and showing how to do IPM in your school." Virtual Centers: Providing information for schools on how to implement their program; Recognition Programs; Consistent information dissemination - - one national schools website, manual, etc.; IPM Certification for the applicator	As an EPA staffer, I would like to be more involved in the implementation of School IPM. Being very committed to our PESP members, I would like to use that common bond and work together on accomplishing this goal.	At EPA, success can be measured in different ways. Overall, I am pleased that we have several key PESP members leading the way towards implementation of IPM in schools. I am also excited that we were able to fund two Technical Resource Centers for IPM during the last year. This is a start. By leveraging other funds and combining resources, we can work together to advance school IPM. We also have some key success stories, EPA likes to use these stories to show some success with the Program. On another note, we have also been given opportunities to brief our Office Director and are trying to schedule a briefing for our AA. What I personally would like to see is some real measures in place so that we can measure its success. Can we show it through risk reduction/use reduction - - the spray records can indicate that. But, how can we measure behavior change - - that's what I am personally interested in.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
School IPM activities within OPP have been minimal. Just recently (2 yrs), a cross-divisional/ regional team was formed to address needs/ projects/issues. This team recognized that EPA needs to take a "bully pulpit" approach to implementing IPM and was also responsible for awarding and managing two technical resource centers tasked with implementing IPM in Schools and Day Cares. In addition, the team lead also works on the Pesticide Environmental Stewardship Program. Part of her goal is to work with members to enhance the partnership between PESP members and EPA. Many members already do IPM in schools or promote activities relating to that.	I am unable to answer this question.	I am the pesticide and schools coordinator within the Office of Pesticide Programs at US EPA.	Since I have not been directly involved with setting up this model, I can assume that difficulties arise with getting buy-in from the top (Superintendent). Also, some habits are hard to break and that would most likely be the case when trying to teach staff about sanitation practices. The cost issue might be a problem too.	I think that by having several case studies available, you can "sell" the IPM story. It also takes a charismatic individual to push implementation and EPA takes the role of "bully pulpit." We need to ensure that no additional dollars are spent on manuals. There are enough materials available for implementation. There needs to be a one-stop shop website for schools as well.	

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Dawn H. Gouge, Urban Entomologist, University of Arizona	U of A Urban IPM working group leader (motivator, fund raiser-ever hopeful and program planning coordinator - FLUFF), school based audit and training coordination and implementation, arthropod ID and IPM recommendation support.	1. Schools facility managers 2. Custodians 3. Kitchen staff 4. Maintenance managers 5. Teachers 6. Students 7. Directors of school curriculum 8. PTO groups 9. Principals 10. PCOs 11. Legislators. We recognize the importance of these people but are not good at getting their attention; we promote our program each year at our experiment station directors reception, a few legislators attend this function. We also report urban IPM progress each year in the research reports which are sent to all state legislators. So far we can see no sign of life from this group. 12. My BOSSES (head of department, extension, etc.)	1. Pilot/demonstration programs in schools (100% implementation of Marc's Model, experiential learning all round). This has been the most useful tool for us as well as participants. 2. Training work-shops 3. ID clinics and IPM extension teaching 4. PCO training (PCOs put your CDs and game boys away please). 5. Promotion of IPM via media (channel 3 Phoenix, channel 4 Tucson, AZ Republic newspaper, radio, etc.) – mainly a lot of fun, sometimes terrifying. 6. Extension style fact sheets on hot IPM subjects 7. Urban IPM resource website 8. Working with AZ SPCC	Our IPM in Schools program is a permanent and fully integrated part of the Urban IPM shot term and long term plan. I need to find short term and long term funding.	1. Reduce pesticide dependence in public, private and tribal school systems 2. Reduce pests in public, private and tribal school systems 3. Increase pest awareness, especially vector borne disease issues 4. Involve students more to generate an enlightened new generation (enlightened or indoctrinated, I'd settle for either) 5. Increase PCO industry standards 6. Increase general public basic knowledge re. IPM (this is how I justify all the Saturday mornings with Channel 3 TV) 7. At some point I'd like to run the program with a budget in the black.	* Empirically using pesticide and pest data * Monitoring how the recommendations from the peat audit have been instigated * Subsequent pest auditing * Objectively by asking school based personnel their experiences * Subjectively by asking school principals * Ultimate program success is measured as the district becomes increasingly independent * Expansion beyond district boarders has not occurred but is of-course desirable

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
* Large amount of time (approx. 20 hours a week) * Some travel costs (local) * Little in the way of consumables or equipment costs. We use equipment secured for multiple projects.	All our urban IPM programs are integrated so its' difficult to tell	* PCO companies are cautious/ interested or a little threatened * SPCC is supportive and Carl Martin is a 100% splendid chap all round * Cooperative Extension is interested and has dedicated $5,000 of funds to the program so far. * Department of Entomology is happy to receive awards * We need to team with other groups involved to a greater extent	* Lack of an enthusiastic and dedicated group is a killer (need to have a motivated group of radicals) * School facilities budget cuts suck big time * Tribal policies CAN take a program down like a concrete parachute * School dependence on the PCO industry * School principal apathy and disinterest * Ignorance re. disease vectors	* Lots of chocolate and thick skinned determination * Offer free lunch/pens/bags, etc. at initial program planning meetings * Initial foot-in-the-door feel good promotion (would you like to have less insect body parts in your lunches?), then threaten (is this school in compliance with federal and state law?), cry (I need this job, please give me a break), finally resort to relying on the FEAR FACTOR (bottom line offer to reduce pesticide reliance, reduce pests, reduce costs long-term, reduce hazard and chance of vector-born disease incidence). * Work with groups who will work with us (some simply won't, even if individuals are well intentioned) * Find subversive ways to support groups who need information but can't officially accept it * If groups are apathetic and are not engaged by the fascinating mating rituals of Centruroides exilicauda then terrify them with the symptoms of West Nile Virus/conenose bite anaphylaxis/LAWYERS, etc.	a. State-Continue support for existing programs and initiate new ones. New projects will all be based on tribal reservations as various tribes have been successful in obtaining EPA support. Promote the model hoping other groups will get involved as training participants and training attendees. b. State-Initiate other programs within EPA district IV area. Interact more effectively with groups in other sates. Promote the model hoping other groups will get involved as training participants and training attendees. c. The World and Beyond-Learn from groups conducting similar programs else where (if there are any). To boldly go where no one has gone before. Promote the model hoping other species will get involved as training participants and training attendees.

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Fudd Graham, Coordinator, Alabama Fire Ant Management Project	On-site Technical IPM Coordinator of Auburn, Alabama School IPM Program	School personnel, school administrators, PCO's, parents.	Workshops for school personnel & maintenance personnel– personnel cooperate with program goals if they understand the why's of the program, thus we get better cooperation with sanitation and maintenance goals. Pilot program – we are using the Auburn School system/Indiana model to expand our school IPM program to the Mobile County school system. Initially the Indiana model was set up in three schools in the Auburn School System. This has been expanded to the entire school system, to a Lee-Scott Academy and to several daycares. The success of this program was the selling point to convince the Mobile County School system to allow us to set up three pilot schools in their system.	I would like to see all schools in the state using an IPM program for pest control. We will attempt to recruit more systems to use IPM as time allows. I will be available to provide technical training for PCO's and school personnel as we are able to expand the program. In my position, I am not able to administer an expansion of the program, but I will be available to assist with training.	I have worked with IPM programs in agricultural or urban areas since I was an undergraduate. I realize the difficulty of getting people to change when they cannot initially see the benefit of the change. I would like to be involved in the expansion of this program to all school systems in Alabama. I am committed to working with our Extension urban entomologist and the Department of Agriculture and Industries to meet this goal.	Records were compiled of pesticide use in the Auburn School System for the year before our program started and have been kept since the program was initiated. In addition, we have kept records of numbers of insects trapped in insect monitors. Pesticide use has been reduced over 95% in the school system (lbs a.i. applied) while numbers of insects in the schools has declined. Teachers in the school system are aware of the program and the goals of the program. In fact, if a problem does require the use of a traditional chemical treatment (this does happen occasionally, e.g. ants nesting in a wall), teachers have been known to stop the technician and tell him that that type of pest control is not being done in the school anymore.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
Initially, the cost to the PCO was more than the traditional pesticide treatment in the school (insect traps, inspection time, setting up the program, extra time treating problem areas). The PCO did not pass this cost on to the school system, so the cost to them did not change. At present, the cost to the PCO is less than the cost of the traditional pesticide treatments that were being used before the program was initiated. Time spent checking traps, making inspections, and talking with personnel in the school is less than the time it took to apply the traditional treatment. Pesticide costs and other costs have remained essentially the same (less traditional pesticide is used, but baits, traps, etc are more expensive).	Costs of the program to the school system essentially have remained the same, but the quality of pest control has improved.	We have good cooperation between the Alabama Cooperative Extension System, the Department of Entomology and Plant Pathology, the Department of Agriculture and Industries, and the Auburn School System. We are currently attempting to expand this to the Mobile County School System. We have worked with both Auburn University and Auburn University in Montgomery to develop IPM programs at the universities.	I have been asked this question many times and most people expect me to list an insect pest as the major problem. The major problem that we have encountered is people. It is difficult to get school personnel to adopt change that they do not feel they need. One of the biggest problems I had in the Auburn School System was determining how to get required maintenance jobs initiated in the school.	Persistence and education were the solutions. Once the principals and teachers became aware of the goals of the program, they were the agents that initiated change and contacted the maintenance crew for repairs. Once the custodial staff, teaching staff and administrative staff at each school became aware of the goals of the program, they became advocates of the program.	a. State We began implementation of a new pilot program in the Mobile County School System on Oct 1. b. National Work with Marc Lame to promote the Indiana Model. It has worked well for us in Alabama.

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Tom Green, President, IPM Institute of North America, Inc., WI	We are an independent non-profit focusing on market-based incentives for IPM adoption in agriculture and communities. We develop and support audited, practice-based IPM certification programs including serving as an information clearinghouse, drafting IPM certification guidelines and procedures, and training and certifying auditors to verify compliance with program requirements.	School staff and students, pest management professionals, IPM educators in Extension and NGOs, parents.	Our website is a clearinghouse for information on school IPM, including legislation, surveys, news headlines and curricula. "IPM Standards for Schools" is an on-line resource including IPM resources and protocols for administration, and indoor and outdoor pest management, developed collaboratively with more than 40 professionals from around the US. www.ipminstitute.org/ipmstandards.htm "Who wants to be an IPM Super Sleuth?" is an interactive educational resource for teaching children about IPM for homes including word searches, matching, crosswords, graphic map searching. IPM in Schools Week, an opportunity to focus school ipm outreach and education during one week of the school year. Presentations at trade and professional meetings on the need for and effectiveness of school IPM and IPM education in school curricula.	a. Contribute to the continued reduction of pest and pesticide risks in schools. b. Increase awareness of students, parents and teachers about IPM for schools, homes, other community settings and agriculture. By building IPM awareness among today's and tomorrow's consumers we can improve market demand for IPM adoption in agriculture, landscape care, etc. and taxpayer support for continued IPM funding. Currently consumer awareness of IPM is less than 15%. c. An effective system for measuring progress in reducing pest/pesticide risks nationwide, to help identify where efforts are most needed and ensure continued funding support. This is a need for IPM as a whole, not just school IPM. d. Integrating IPM as a key component in improving overall health impacts and environmental sustainability of schools and communities along with energy, soil, water and wildlife conservation, and healthy building materials, maintenance products and school siting.	a. No fears about the practices and products my children might encounter in their schools b. Know that learning about IPM and other health and environmental risk reduction strategies are an integral part of their school experience.	a. Number of visits/page views on our website b. Number of programs using materials we have developed c. Number of positive comments about our work.
Paul Guillebeau, Associate Professor, IPM/ Pesticide Coordinator, GA	I am the coordinator for pesticides programs and IPM for the UGA Cooperative Extension Service.	PCO, school personnel, Extension	Manuals, workshops, face-to-face meetings with school personnel and PCOs. We think that a variety of programming helps us to reach the widest audience.	To help every school that is interested in IPM to implement an effective program. To help every school understand the principles and value of IPM.	Same as #4	Number schools participating. Number of workshops held. Number of PCO/School participants at workshops.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
a. 2000: $25,000 grant from USDA to develop "IPM Standards for Schools" b. 2002: $15,000 grant from NFIPME and EPA to develop "Who Wants to be an IPM Super Sleuth" c. Ongoing investment of ca. $5000/year in unrestricted revenues (publication sales, memberships, donations) in supporting maintenance of our School IPM web pages.	N/A	As a national organization, the majority of our interactions are with organizations outside of Wisconsin. Relations with others have been excellent with very few exceptions. "IPM Standards for Schools" was a collaborative effort with more than 40 IPM professionals from schools, research, Extension, industry across the US.	a. Educating decision-makers that IPM is effective and costs the same or less than conventional pest management, and motivating them to make the change. b. Awareness and ready identification of least-risk practices and products by decision makers and users. c. Establishing a measurement bar for IPM in schools, i.e., how do you know if your school is using IPM? d. Documenting measurable risk reduction as a result of our collective efforts.	a. Promoting success stories, e.g., NYC; Monroe County, IN; etc. and building awareness of school pest management risks, e.g., our "School IPM-related Headlines" report at http://www.ipminstitute.org/school_headlines.htm b. "IPM Standards for Schools" as an educational list of least-risk practices and assessment tool. c. Created a conceptual model "Pest Controls for Certified Schools" to solicit manufacturer submissions of "least-risk" pest controls that meet specified criteria, e.g., no carcinogens, no acute toxics for listing on our web site. Such a list was part of the proposed SEPA legislation.	a. We're participating in a multi-stakeholder effort to explore IPM certification in the context of a "green" schools program that addresses multiple aspects of reducing risks to environmental and human health in schools. b. We're collaborating with the University of Florida on an EPA-funded project to develop an IPM certification program for woody ornamentals and exploring potential linkage with certification for other aspects of community IPM, including schools. c. Activating our "Pest Controls for Certified Schools" program.
We do IPM in Schools as part of our overall program; the component costs have not been itemized.	Same as #7	We have good cooperation with all interested groups in the state.	With all of the other demands on their time and resources, schools are not very interested in a new program. They are not anti-IPM; they just don't see the need.	We provide lectures and printed materials at school professional meetings. We discuss IPM in Schools in a monthly newsletter that is also carried by the Georgia Pest Control Association.	a. State: we have a grant to educate the public about IPM in cooperation with public libraries. We will also tie in IPM in Schools. We will continue to work with GPCA and county Extension programs to expand the program. b. National: if the library project is beneficial, we will share the strategy and results with other states.

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Lyndon Hawkins, Independent IPM Consultant, CA	a. Host School IPM workshops thru AAIE. b. Market IPM at school oriented conferences. c. Survey facilities regarding conditions conducive to pests. e. Participate in school IPM workshops. f. Assist schools in contracting for IPM services.	a. EPA. b. Environmental groups. c. School IPM coordinators.	a. Workshops (one day) (hands-on, demonstrations) – leads to contacts for future work specific to their needs. b. Use of report on conditions conducive to pests – leads to training.	a. Improve process relating to contracting for pest control services incorporating quality control. b. Reduce pesticide use by improving decision-making and helping school staff to better understand pests.	Same as above	a. Review pesticide use records b. Rely on surveys conducted by others
Janet Hurley, School IPM Program Coordinator, Extension Assistant, Texas A&M – NM REPORT	My current role in New Mexico is dissemination of information. The New Mexico movement has been slow to proceed. In an effort to have something for IPM that was workable, the New Mexico Pest Management Association (NMPMA) and Department of Education (NMDE) worked together to develop a voluntary regulation that was adopted by the State Board of Education. School districts have been told that they are to follow IPM guidelines; however, there is currently no regulating body that checks to see if schools are following IPM. I have had several opportunities to speak in front of the PCO's in NM and they are very much for IPM, it is the schools that have been slow to adopt.	All agencies would benefit from this topic. The NMPMA has been most receptive to this subject and have been instrumental in the implementation of IPM in schools and child care facilities. School personnel would be the best audience; however, to this date I have not discovered a good way to get in front of this audience. The local Extension office has shown some interest, but again the process is slow.	The original implementation was between the New Mexico Department of Agriculture (NMDA) and NMDE, back in 2000. They held a one day workshop in 2 areas of the state. I was told the turnout was low. The participants received a small package of handouts and had some classroom training about IPM. Since then there has been no formal training with any origanization. Currently, I am using the quarterly newsletter and web page for disseminating information.	To work with NMDA, NMDE and NMPMA to develop a School IPM Training program for schools and child care facilities. I hope to make contact with an organization that works with school districts on other environmental issues to see about setting up workshops in conjunction with other workshops.	No specific personal goals, all professional – that's enough!	None have been conducted that I am aware of. I have had personal contact with a couple of school districts and their programs vary. The SWTRC is looking at writing a grant for the Southern Region IPM program, if funded we would be looking at the New Mexico program a little bit more in depth.
Janet Hurley - OK Report (from Jim T Criswell, Pesticide Coordinator)	As part of the Oklahoma State University Urban IPM team and the person responsible for pesticide applicator certification, I want to see true IPM implemented into schools. This includes both the IPM practitioners and school personnel understanding state and federal pesticide regulations and the label. I assist in facilitating the regulation and label understanding.	When we get a program actually going, I anticipate two major audiences. The school system and PCOs. The school system would include school employees, administration and the parents.	We have used some material from Texas and have created some of our own for special needs – childcare facilities.	Voluntary IPM in Oklahoma Schools with the emphasis on true IPM.	Same as above.	No.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
Too variable to assess. Example: cost of training can be estimated, but access to records is problematic to evaluate change. Too expensive to do unless data is incorporated into routine IPM program.	Generally, training does not focus on IPM and there is no follow-up as to what changes occurred. Not institutionalized.	PCO – some (a few) are proactive regarding school IPM SLA - ??? Coop. Ext. - Called upon to assist in workshops; they are very helpful Children/Environmental Activists – Favorable and useful in pushing important issues	a. Contracted pest control is based on low bid with no built in quality control procedures – lack of interest and training of school staff. Also, there are no incentives to do it right. b. In-house pest control is based on reacting to pest problems and there is no data on actual costs. c. Level of tolerance of pest problems is actually quite high and problems are solved quickly and temporarily with a spray, even if spray is relatively safe.	a. Change contracting procedures to get company to provide IPM services; train company middle managers on aspects of quality control; get school staff to understand importance of quality control. b. Demonstrate methods to solve pest problems to key pest control staff. c. Wait for crisis and offer to help solve problem when school staff and management is ready.	a. State – Market IPM to risk managers who can strongly encourage change b. National – Maintain contacts with key IPMers and seek collaborative projects to demonstrate IPM to school decision-makers. c. Track activities by environmental groups that are likely to influence change.
Our institutional costs have been close to $50,000 that is from August 9, 2001. This cost entails my salary and travel dollars over the last year. This does not include funds that were generated by New Mexico Department of Agriculture or New Mexico Department of Education.	Unable to answer this question.	Currently, I have good relationship with NMDA, NMDE, and NMPMA. However, the cooperation is very limited. All of the agencies have many issues and School IPM does not appear to be high on their agenda. I have been told that if I want to initiate anything, that I would have their support. However, the support comes in the form of letters of recognition or some other form. There are currently no funds or personnel to help with this issue.	Lack of funding, physical support and time.	Keep plugging away. Time and perseverance with pay off, eventually.	None, I would like to see this program kept at the State level with no outside involvement from the Federal Government. However, for this program to be successful, I believe the state lead agency needs to be NMDA, not the Department of Education.
NA	NA	We have worked with the Oklahoma Department of Agriculture and Oklahoma of Health with childcare facilities.	Working with childcare facilities, pest control is way down on the list of importance. The only times pest control is considered is when there is an issue raised by either the Department of Health or a parent.	Highlight potential pest problems to the facility manager and show the manager and staff simple ways of both monitoring and managing pests.	a. State We hope to work with public schools and childcare facilities statewide. b. National

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Janet Hurley – TX REPORT	My role has been more in compliance assistance, rather than actual implementation. In Texas, our law has been in effect since 1995. The first people to have a role in implementation were Texas Structural Pest Control Board employees Evangeline Smith, investigator and Benny Mathis, Executive Director. Ms. Smith sole purpose in the mid- 90's was to spread the word about the School IPM law. She met with several lead agencies - Texas Education Agency, Texas Association of School Boards, Texas Association of School Administrators, and TAEX (Texas Cooperative Extension). Between these two individuals and the lead agencies they were responsible in getting the word out about IPM in schools.	This audience is truly widespread. In order for a school IPM program to be successful everyone must be informed. Can one person transfer this information successfully, the answer is no! In Texas, we have seen that just informing the school districts assigned IPM coordinator about the law and basic IPM has NOT been effective. To be successful the information needs to be conveyed to the pest control companies who service the schools, the school staff, School Superintendents. The problem arises when training just one appointed person, there is not enough power given to the school district IPM Coordinator that they become frustrated and the IPM program stagnates. I believe that Extension plays a vital role in getting the information out to the proper "ears." The majority of Extension Agents have contacts within their local communities; often some of those contacts are with school personnel, an excellent way for Extension to educate a public they are already familiar with.	As stated before IPM in Texas has been a regulated law for several years now. In the beginning personal site visits were used in conjunction with IPM Coordinator training. Texas Agricultural Extension Service with the aid of an EPA grant developed a training manual and the ABC's of IPM video series. The training manual has since gone out of date; however, the videos were written to be used for any school in any state. We have learned that the videos serve as a great learning tool when schools offer in-service training to their personnel. However, what has come to light more recently is that hands on training with IPM Coordinators and PCO's needs to be more extensive. The state of Texas requires that every IPM Coordinator attend a 6-hour mandatory required course, within the first 12 months of appointment. Unfortunately, we have learned that this is not enough training. I have recently developed a more extensive training for IPM Coordinators and PCO's. However, both the Basic IPM Coordinator and the Advanced IPM Coordinator training utilize a variety of handouts and hands on scenarios. This	Continue educating school districts within Texas. To constantly improve our training programs to suit the needs of schools and school personnel. Implement our training for childcare facility personnel. To educate all of those individuals who have influence over our children's learning environments	No specific personal goals, all professional – that's enough!	Whenever IPM Coordinator training is conducted, a detailed evaluation sheet is completed by the class participants. This helps us to identify our week areas and what we can offer for future trainings. There is also personal communication with IPM Coordinators in response to trainings or compliance assistance. Finally, within the last fiscal year, the Structural Pest Control Board has begun heavy enforcement on the School IPM law and regulations. These investigations have been a great learning tool as to how well the information has been disseminated to school districts over the last seven years. As the new fiscal year begins, the SPCB will be looking at a variety of school districts. Some of these districts have been assisted by the SWTRC; so far the initial investigations show that the SWTRC has been instrumental in aiding schools to become compliant with the Texas School IPM law.
Jerry Jochim, IPM/Custodial Coordinator, Monroe County Schools, IN	I am in charge of the IPM program in our school corporation. I inspect schools, check traps, recommend repairs, apply pesticides if necessary. I give a lot of presentations, especially to custodial, food service and teaching staffs.	Administrative support is essential to have an IPM program work. If they are on board, then it is the custodial and food service staffs. After them, I like to focus on teachers and PTO's.	Our IPM program was started with a three school pilot project. It showed us how well IPM works and made it easier to implement into the rest of the schools. We also use this model to help other school districts implement the program.	I would like to continue improving the indoor program and expanding the outdoor IPM program.	I would like to see all schools institute a quality IPM program.	We monitor pest sightings and pesticide applications.

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
Our institutional costs have been close to $50,000 that is from August 9, 2001. This cost entails my salary and travel dollars over the last year. This does not include funds that were generated by Texas Cooperative Extension prior to my arrival or fund that have been used by Dr. Michael Merchant or Dr. Don Renchie who originally began the IPM Coordinator training.	Unable to answer this question.	In the beginning, the SPCB looked to all agencies to get their message across. Over the last several years communication between organizations began to dwindle. Since, my hiring I have begun to increase knowledge sharing and communication between several organizations, including Cooperative Extension Agents. The center is becoming known for its knowledge and willingness to help schools and pest control companies who want the help. As I move forward my goal is to bring together these organizations so that we all can have a better understanding of IPM and help each other out.	FUNDING – lack of! This was an unfunded mandate, the schools were told to do, they were given little information and little help. The initial trainings were done so fast that most schools did not have the adequate knowledge and support to implement these programs successfully. To date there is still not enough people to help with district by district implementation. Most Texas school districts do not receive the administrative support that is needed for them to be successful. What is needed is funding to help with developing training materials, the manpower (womanpower) to get the message out and support from Superintendents so that the IPM Coordinators have the power to oversee their programs.	Keep plugging away. Even when I feel overwhelmed by the magnitude of 1,040 school districts in Texas, I still give it my all. I apply to any and all grants that I feel I can. I have started charging for IPM Coordinator training. Finally, I simply rely on the graciousness of others when and where it is allowed. I would like to see my position become full-time paid position by the State of Texas (Texas Cooperative Extension) or some other agency. The schools are behind me; however, they too do not have a voice with the powers that be.	None, I would like to see this program kept at the State level with no outside involvement from the Federal Government.
Our annual cost is approximately $23,000.	Our costs in 1995 were about $35,000.	We work very close with Purdue in implementing IPM throughout the state. We have also worked with PCO's and architects, traveling around the state to help schools implement IPM.	I think people's fear of change is the greatest obstacle.	Education.	a. State Been there. b. National Done that. We want to go global.

Name	1. Role	2. Most important audience	3. Types of techniques used	4. Goals as professional	5. Personal goals?	6. How evaluate?
Carl John Martin, EPA Enforcement Officer, AZ	I am the Agency lead for IPM in Schools implementation in Arizona and act as a liaison to the Arizona Tribes.	The most important audience for IPM is the school contracting officers. My efforts are most directly felt by PCOs in the course of their work.	SPCC requires annual IPM training by applicators wishing to renew their certifications. SPCC supports the implementation of the Indiana model (Marc Lame, Jerry Joachim, et al) in Arizona and participates in the pilot programs being undertaken. SPCC believes additional resources directed to website or manual development are wasted resources. Excellent resources already exist and need to be used fully.	IPM should be implemented in all schools, public buildings, parks & playgrounds, and etc.	To build the political will to shift the pest control paradigm to the IPM model.	By the shift in attitude among the regulated and protected public.
Ed Rajotte, Professor of Entomology and IPM Coordinator, Penn State	In collaboration with Pennsylvania Department of Agriculture, we have a two part school IPM program. The first part is the management of pests in school buildings and on school grounds. Pennsylvania has a newly passed law requiring that all school districts have an IPM plan. We provide training, manuals, web site, etc. The second part is IPM in the curriculum. IPM is an academic standard of Pennsylvania public schools meaning that 1.25 million K-12 students have to learn about IPM. We provide teacher training and teaching resources.	Our practice has been to form stakeholder groups representing all of these audiences. Presently, we are working closely with Pennsylvania Association of School Business Officials, an organization of school physical plant personnel.	In our management program we: -Published an IPM manual -Have an extensive web site -Co-wrote IPM policy with the Pennsylvania School Boards Association -Publish news releases and news letters -Produced a video -Distributed the Texas School IPM video	We view IPM in schools as our best long term opportunity to make the general, non-ag public aware of IPM	IPM taught to every student in Pennsylvania public schools. IPM used as the pest management strategy in all school districts.	Numbers of resource materials delivered, School IPM baseline survey, number of teachers trained (includes pretest-posttest)
Kirk Smith, Research Entomologist, University of Arizona	a. Education and training for on site personnel as well as local pest control companies. b. Conduct arthropod ID and provide IPM recommendations. c. Conduct pest audits and provide an IPM based pest management program for local school districts and the Bureau of Indian Affairs on the Navajo Reservation.	a. School bureaucrats such as superintendents, facility managers and school principals b. Teachers c. School support personnel such as custodians, kitchen staff, volunteers etc. d. Legislators e. Pest Control Companies	a. Direct person-to-person discussions of the current program. Usually conducted during the pest audit and follow-up visits. b. PowerPoint presentations to teachers and other school personnel c. PCO training programs d. Urban IPM resource website e. Personal appearances on local television to promote program, and interviews with local newspapers. f. Working with the state Structural Pest Control Commission.	a. To get all school districts in Arizona and on the Indian Reservations to adopt the program. b. Educate the general public to the benefits and restrictions of the program c. Get the message across to the Pest Control Community that IPM is not anti-chemical and that this is the direction in which their companies will have to evolve if they want to stay in business. d. Creation of an EPA regional office at the Maricopa Agricultural Center	a. To convince the pest control community that this is a program that can really work with their cooperation and approval. b. Convince institutions that this program is working and that we can use their financial assistance. c. Get the state legislation to draft laws supporting the IPM in School program.	a. Follow-up discussions with school administrative personnel b. Talk with teachers and students about the program c. Exam pesticide application logs d. Look over monitoring stations and access pest populations e. Talk with the local pest control company

7. Program costs	8. Pre-program $	9. Relationship with others	10. Major problems	11. Solutions	12. Future plans
SPCC has spent approximate $3000.00 annually on salary, training materials, travel, etc.	Costs have simply been re-directed in a zero-sum budget process.	Our relationship has been significantly strengthened by our participation with our partners in this program. The same is true with regard to our relationship with legislators.	Contracts do not specify that the training PCOs have received be utilized within the school setting. Until contracts require IPM practice, and bids are evaluated on the basis of IPM proficiency prior to award, PCOs can talk-the-talk but not walk-the-walk.	We are working with our political contacts to require contracting to reflect IPM principles and are contemplating an advanced certification/designation for PCOs that have demonstrated mastery of IPM principles as an aid to contract officers in evaluating bids. SPCC has also developed IPM guidelines (draft) for distribution to school budget officers.	a. State - attempt to build critical mass in the direction of IPM. b. National - influence national policy development.
For the IPM management program I estimate about 1.5 person-years and about $70,000/year For the IPM in curriculum program I estimate about 2 person years and about $90,000/year.	I am not sure. We began school IPM when I took over as coordinator in 1996. Previous to that the majority of IPM funds went into a small grants program.	We have good cooperation with all concerned.	Training thousands of people.	Using print and electronic media as much as possible. We also have face to face and video downlink training sessions.	a. State- expansion dependent on increased funding b. National- collaborate with nearby states
a. For 2001 and 2002 about 50% of my time is involved with this program. b. Due to the physical size of Arizona some of the Indian Reservations take at least 6 hours of driving to visit. c. Much time is spent on the telephone with follow-up discussions and relevant questions.	a. Higher for me personally. b. For the Kyrene school district I would say they have reduced their pesticide application costs by about $1000.	a. We have a good relationship with the AZ Structural Pest Control Commission, Regional 9 EPA office, Bureau of Indian Affairs personnel and some regional school districts. b. Pest Control Companies are cautious and have yet to adopt IPM principals c. Many school districts are still in a wait-and-see mode. d. Poor support from local politicians.	a. Lack of understanding what IPM truly means b. No support from the pest control community c. School district administrators still believe in the short term pesticide applications to solve problems d. Many schools believe they are not in the financial position to adopt IPM. In part this is true due to the deterioration of many schools. Up front expenses to fix structural defects would cost $XXXX in materials and labor.	a. PATIENCE b. Continue working with the Commission and hopefully get legislative support	a. State: Get more school district to adopt the program (currently there are about 125 school districts in the state). Locate individuals who believe in the program and are willing to help spread the word. We need the help of several pest control companies who are willing to get involved in training programs. b. National: Work with the EPA to help establish these programs throughout district 9.

Appendix 1. (continued)

Al Fournier, Problem Statement:

"IPM" Definition. There is considerable disagreement over the details of IPM implementation, even among knowledgeable implementers. Schools requesting IPM programs from contractors may get programs ranging from soup to nuts, depending on the company. I think a few key elements need to be understood as standard to IPM practice to overcome this discrepancy.

School priorities. More than almost any kind of organization, schools are subject to a high degree of government regulation over a wide range of issues. Until recently, school pest management programs have been considered a pretty minor component of ongoing facility management. Raising this issue to a higher priority is challenging, with concerns such as drugs, guns, and teen pregnancy (to name a few) plaguing administrators.

School administrative structure can vary considerably, often in ways that affect IPM education or program implementation. For example, some schools maintain a high level of local control over building management issues, with the principal or assistant principal in charge, while others may have a district level supervisor who determines standards and priorities for facility management. The latter (centralized) structure is more expeditious for change agents, who can "train the trainer" by educating the district contact, as opposed to requiring multiple individual trainings for each school.

Ongoing communication. Once an IPM program is up and going, the biggest impediment to its success may be maintaining ongoing communication between the pest management professional, the school staff, and administration. The use of appropriate forms for documenting pest problems and pest control activities, as well as regular face-to-face communication, is important. The use of these tools seems to diminish over time in many programs, leading to problems.

Low bid. IPM programs are not cheap, at least not at the outset. Effective IPM requires a considerable amount of time investment for PCOs at the front end, conducting inspections, teaching school personnel how to use IPM forms and how to reduce pest potential, and addressing pest concerns "left over" from previous programs. Several PCOs have commented to me that they cannot afford to do "real" IPM for the money being offered.

Pilot projects: I think one of the challenges of IPM pilot/model implementation is providing adequate understanding of the model's elements and principles to many partners with very diverse backgrounds, interests, and involvement. The model requires a high level of cooperation, communication and energy to carry out properly. Careful attention should be paid to the selection of school opinion leaders in the early (pilot) phase. However, the difficulty of identification of opinion leaders may make this impractical, particularly if program planners are unfamiliar with school communication networks.

Appendix 2. Spending at EPA for IPM/Schools

EPA Regional Initiative Grants Involving IPM in Schools

Regional Initiative Grants (also termed Regional PESP grants) support pollution prevention projects that are important to and complement ongoing efforts in the EPA regional offices. These projects are funded with STAG money that is Congressionally appropriated for use by the states. Each Regional Office is responsible for soliciting, receiving, and reviewing the proposals from organizations within their region. Each Regional Office selects one project for automatic funding. Then, the top unfunded projects from each regional office are pooled, further reviewed (by a committee of several Regional representatives and one HQ representative) and funded until the balance of available funds are obligated. The extent of BPPD/PPS involvement in the process is to serve as coordinator for the process, participate on the second round review committee, and post information to EPA website (www.epa.gov/oppbppd1/PESP/regional_grants/funded_regional_grants.htm).

2002

Region 1 - $40,000 Implementing Integrated Pest Management in Maine, New Hampshire and Vermont Schools; Maine Department of Agriculture, Food, and Rural Resources

Region 4 - $39,976 Action Thresholds and Residue Analysis for Integrated Pest Management in North Carolina Elementary Schools, North Carolina State University

Region 6 - $38,003 - Interactive IPM Assistance Program for Schools in Texas, New Mexico and Oklahoma; Texas Cooperative Extension & Southwest Technical Resource Center For IPM in Schools and Child Care Facilities

2001

Region 3 - $39,982 - IPM in Schools: Developing Local and Interstate Partnerships and Strategies for Implementation; Penn State University, Pennsylvania Department of Agriculture, & Pennsylvania Department of Health

2000

Region 2 - $40,000 - The promotion of integrated pest management in New Jersey and New York schools, Rutgers University

1999

Region 1 - $40,000 - Integrated pest management for indoor and structural pests of schools in the Northeast USA, University of Massachusetts

Region 3 - $40,000 - Demonstration of model IPM curriculum and evaluation of effects on students' and teachers' perceptions about pests and pesticide use, Pennsylvania State University

National Foundation for IPM Education Projects Involving IPM in Schools

EPA has a cooperative agreement with the National Foundation for IPM Education (NFIPME). NFIPME chooses to use a portion of the funding from this agreement to fund, through a competitive process, 6 to 8 pesticide risk reduction projects per year; certain invitational grants are offered at a higher funding level. For the competitive grants, NFIPME announces their call for proposals and members of their Board of Directors serve as reviewers. BPPD/PPS

involvement in this process is to serve as project officer for the cooperative agreement and provide an observer to their final review committee. Invitational grants are offered directly by NFIPME to the recipient organization which must submit for approval a proposal addressing the issue of mutual interest. Previously funded project proposals and final reports are available at www.pesp.org/grants.htm.

2002
$16,000 - School IPM Program (Monroe Co., IN implementation model) Evaluation and Program Improvement as a Tool for the Future National Implementation of IPM in Schools; Indiana University School of Public and Environmental Affairs

$30,000 - IPM workshops for local school councils and school boards in Chicago and surrounding suburbs, Safer Pest Control Project

2001
$20,000 - National IPM in Schools Week: Homework Project IPM Institute of North America

$20,000 - Integrated Pest Management Training for Chicago Public Schools Safer Pest Control Project

$36,200 - Extension of a Successful IPM Model to Pilot Schools on the Navajo Reservation Navajo Nation

2000
$50,000 - Extension of a successful IPM model to pilot school districts in states currently not practicing IPM in public schools Monroe County Community Schools Corporation

$44,250 - IPM in schools: Making a safer school environment University of Georgia - College of Agriculture & Environmental Sciences

1997
$30,000 - Implementation of IPM in Indiana School Corporations Monroe County Community Schools Corporation

1996
$30,000 - Implement in all 18 MCCSC schools a pilot IPM program that eliminated 90% of pesticide applications in three elementary schools Monroe County Community Schools Corporation

Region 9-Funded Projects Involving IPM in Schools Through our Cooperative Agreement with the National Foundation for IPM Education

2001
$39,500 (with additional funding from the State of Nevada) - Implementation657ui of Integrated Pest Management in Clark County Schools Clarke County, Nevada

$12,000 - Use of Organic Acids to Reduce Population of Ants and Mosquitoes Breeding in School Turf, University of Arizona

Appendix 3. Attendee Contact Information

Sandra Alvey
USAEC Project Officer for IPM in Schools
U.S. Army Environmental Center
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401
(410) 436-1273; FAX (410) 436-1680
sandra.alvey@aec.apgea.army.mil

Jerry Baron
IR-4 Project
Technology Centre of New Jersey
681 U.S. Highway #1 South
North Brunswick NJ 08902-3390
(732) 932-9575 x605 Fax (732) 932-8481
jbaron@aesop.rutgers.edu

Steven Bennett
Army Senior Pest Management Consultant
U.S. Army Environmental Center
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401
(410) 436-1565; FAX (410) 436-1680
steven.bennett@aec.apgea.army.mil

John Carter
Director of Planning
560 E. Miller Dr.
Bloomington, IN 47401
(812) 330-7720 FAX (812) 330-7791
jcarter@mccsc.edu

Edward Crow
Maryland Department of Agriculture
Pesticide Regulation Section
50 Harry S. Truman Parkway
Annapolis, MD21401
(410) 841-5710 Fax (410) 841-2765
crowea@mda.state.md.us

Dan Dickerson
NYC Board of Education
44-36 Vernon Blvd., Ste 1
Long Island City, NY 11101
(718) 729-6100 Fax (718) 729-0849
ddickerson@nycboe.net

Frank Ellis
EPA/OPP/BPPD
1200 Pennsylvania Ave., NW (7511C)
Washington, DC 20460
(703) 308-8107
ellis.frank@epa.gov

Al Fournier
Purdue University
School IPM Technical Resource Center
1158 Smith Hall
West Layfayette, IN 47907-1158
(765) 496-7520 Fax (765) 494-0535
al_fournier@entm.purdue.edu

Sherry Glick
Pesticides and Schools Coordinator
EPA/OPP/BPPD
1200 Pennsylvania Ave., NW (7511C)
Washington, DC 20460
(703) 308-7035 Fax (703) 308-7026
glick.sherry@epa.gov

Fudd Graham
Auburn University
Dept. of Entomology & Plant Pathology
301 Funchess Hall
Auburn University, AL 36849-5413
(334) 844-2563
fgraham@acesag.auburn.edu

Tom Green
IPM Institute of North America
1914 Rowley Ave.
Madison, WI 53705
(608) 232-1528
ipminstitute@cs.com

Albert Greene
US General Services Administration
NCR Special Services Division
3101 Pennsy Dr
Landover MD 20785
301 436-6000
albert.greene@gsa.gov

Paul Guillebeau
University of Georgia
Department of Entomology
Athens, GA 30602
(706) 542-9031 Fax (706) 542-3872
pguillebeau@bugs.ent.uga.edu

Deborah Hartman
EPA/OPP Field and External Affairs Division
1200 Pennsylvania Ave., NW (7511C)
Washington, DC 20460
(703) 305-7100
hartman.deborah@epa.gov

PARTICIPANT LIST (Continued)

Lyn Hawkins
P.O. Box 1775
Elk Grove, CA 95759
ipmexpo@yahoo.com

Janet Hurley
TAEX
SW Technical Resource Center of IPM In Schools
17360 Coit Road
Dallas TX 75252-6599
(972) 952-9213 Fax (972) 952-9632
ja-hurley@tamu.edu

Jerry Jochim
MCCSC
560 E Miller Dr.
Bloomington IN 47401
(812) 330-7720 fax (812) 330-7791
jjochim@mccsc.edu

Kathleen Knox
EPA/OPP/BPPD
1200 Pennsylvania Ave., NW (7511C)
Washington DC 20460
(703) 308-8712 Fax (703) 308-7026
knox.kathleen@epa.gov

Marc Lame
Indiana University
School of Public & Environ. Affairs
1315 E. 10th, Room 240
Bloomington IL 47405
(812) 855-7874 Fax (812) 855-7802
mlame@indiana.edu

Regina Langton
EPA/OPP/BPPD
1200 Pennsylvania Ave., NW (7511C)
Washington DC 20460
(703) 305-7161 Fax (703) 308-7026
langton.regina@epa.gov

Carl John Martin
Arizona Structural Pest Control Commission
9535 East Doubletree Ranch Rd.
Scottsdale AZ 85258-5514
(602) 255-3664 x2272 Fax (602) 255-1281
cjmartin@sb.state.az.us

Kagan Owens
Program Director
Beyond Pesticides/NCAMP
701 E St SE Suite 200
Washington DC 20003
202 543-5450 Fax 202 543-4791
kowens@beyondpesticides.org

Edwin Rajotte
Professor of Entomology and IPM Coordinator
Penn State University
501 ASI
University Park, PA 16801
814 863-4641
Fax 814 883-3048
egrajotte@psu.edu

Kirk A. Smith, Ph.D.
Maricopa Agricultural Center
37860 W. Smith-Enke Road
Maricopa, AZ 85239-3010
520 568-2273 Fax 520 568-2556
cpt-kirk@ag.arizona.edu

Mike Wallace
President
National Foundation for IPM Education
111 Congress Ave. 4th Fl
Austin TX 78701
512 391-4998 Fax 512 370-3101
mwallipm@ev1.net

Appendix 4. Reports from Monroe County Model Programs

A. THE MONROE COUNTY (INDIANA) COMMUNITY SCHOOL CORPORATION (MCCSC) IPM MODEL AND ITS EXTENSION TO PILOT SCHOOLS DISTRICTS IN AZ, AL, CA, NV AND THE NAVAJO INDIAN RESERVATION

Dr. Marc L. Lame

The Monroe County (Indiana) Community School Corporation (MCCSC) has been a Partner in the PESP since 1996. During this period they have fully implemented an IPM program into their district (20 facilities with over 10,000 students, 15 "extended day" program schools and one "infant care" program). The results of this program are impressive: A 92% reduction in pesticide use; cost savings so as to internalize pest management with a district wide coordinator, and receiving local, state and national press recognition, as well as awards from the Governor of Indiana and the USEPA. The model developed from this experience has been successfully transferred to public school districts in Indiana (including daycare facilities), Arizona, Alabama, California, and the Navajo Indian Reservation with almost identical results.

This model has been successful in the school environment because the cultural (sanitation) and mechanical (exclusion) strategies of IPM can be incorporated into the existing custodial and maintenance activities such as sanitation, energy conservation, building security and infrastructure maintenance. Further, monitoring efficiency is enhanced via the virtual full time presence and perception of the school community. This model is dependent on an educational approach, which creates an awareness of all school occupants that monitoring, sanitation and exclusion strategies represent a proactive management strategy versus the more reactive strategy of chemical pesticide treatment. Finally, by incorporating IPM into existing school operations (sanitation, maintenance, and classroom education) the school district has overcome the natural resistance of "adding pest management to an already full plate" often found in institutional staff.

The successful extension of the MCCSC model will initiate a proven pesticide reduction program to two fundamental audiences- the school community and to change agents (State Lead Agencies, Cooperative Extension, PCOs, and future pest management professionals). It will provide education through training, demonstrate technological and program planning innovations, develop and disseminate outreach materials, conduct audits of pesticide use, cost and exposure outlining tangible progress for the mitigation of risk to the tribal school community, and is designed to be transferable to other tribal school communities.

GENERAL OBJECTIVES FOR TECHNOLOGY TRANSFER:

1) To demonstrate the IPM innovation (using the MCCSC model) to school communities by coordinating/implementing a successful pilot program in representative schools.

2) To educate entities (change agents) involved with the implementation of IPM (BIA, State/Tribal Pesticide Officials, School Officials, Extension, Pesticide Applicators, Public Health, and others...) with regard to program initiation, implementation and evaluation of IPM in the public school environment.

These objectives are accomplished through:

EDUCATION:

- Train change agents associated with the pesticides/pest management to assess and implement public school IPM programs
- Train staff at schools to incorporate IPM into their existing operational activities (sanitation, maintenance, food service, health, and education)
- Train those providing pest control technology (pest monitoring and pesticide application) with the state of the art regarding child sensitive facilities

DEMONSTRATION:

- Demonstrate IPM program planning, implementation and assessment to environmental/health officials and school districts through the successful implementation of an IPM pilot program

OUTREACH:

- Disseminate and/or develop IPM materials to change agents associated with schools
- Disseminate and/or develop IPM materials to representative school districts
- Assist the pilot school district in becoming future Partners in the Pesticide Environmental Stewardship Program

RISK REDUCTION (MEASUREMENT/MONITORING):

- Develop and conduct a pest management audits (pests, pest management technologies, number, type and exposure of pesticide applications and cost of current pest management) in the pilot schools through document research, surveys, and site monitoring.

RISK MITIGATION:

- Implementation of an IPM program in public schools modeled after the MCCSC program. (92% reduction in chemical pesticide use –three year average)

TECHNOLOGY TRANSFER:

- Transfer the IPM innovation through the MCCSC model to representative school districts.
- Transfer the diffusion techniques employed in the MCCSC model to environmental/health officials, and other current change agents (Extension), and to future change agents

PRINCIPALS

The MCCSC IPM IMPLEMENTATION TEAM
Dr. Marc Lame-IU, School of Public and Environmental Affairs
John Carter-MCCSC Planning Director
Jerry Jochim-MCCSC IPM Coordinator
Dr. Bobby Corrigan-RMC Pest Management
Dr. Tim Gibb-Purdue University, Entomology Department
Dr. Fred Whitford, Purdue University, Entomology Department
Al Fournier-Purdue University, Entomology Department
Tami Johnson-Indiana Department of Environmental Management

B. AUBURN, ALABAMA SCHOOL IPM PROGRAM
Dr. Marc L. Lame, Program Coordinator

As of September 2000 the Auburn City Schools have decided to expand the pilot program to ALL city schools including their "pre-school" program. This decision is based on the enthusiasm of the pilot school principals and district administrators upon realization that, as decision makers, they were able to incorporate IPM into their existing management without increasing their workload, significantly decrease pesticide use by 90% and "take back the schools from the water bugs (German cockroaches)". Most of all said one of the school principals: "We are doing this because it is the right thing for the children."

Two education and training programs have been conducted (May and September) for: 1) pilot school principals, maintenance, custodial, and food service staff (content: principles of IPM particular to sanitation and exclusion, pests of the pilot schools, venue: half day "sit down and walk through"); 2) three Auburn Extension IPM specialists, the Alabama State Lead and contracted Pest Control Operator (content: IPM particular to the school pests and the specific pilot school environment). Three school newsletters and a statewide "tri-fold" have been developed and distributed. It is notable that the contracted Pest Control Operator (PCO) has proven to be an enthusiastic convert and has donated significant time and materials (monitors and cockroach bait). The initial and midterm pest management evaluations were conducted by Drs. Corrigan and Lame (report provided to the state coordinators and school administration). Dr. Graham (Onsite IPM Coordinator) has conducted and submitted inspection/treatment reports each month. These evaluations demonstrate that the school system is complying with recommendations to improve sanitation and exclusion practices which were integrated with chemical bait for cockroaches. These evaluations showed a radical decrease in pest populations.

Communication is on a bi-weekly basis between PESP partners and the state program partners. However, most communication is limited to the technical aspects of IPM with the Onsite IPM Coordinator or program coordination with the Extension IPM Coordinator. Dr. Graham has developed and utilized considerable expertise implementing IPM in the pilot schools and has been the key component in our training program – especially with the technical transfer to the private sector PCO. The Auburn University Department of Entomology and Plant Pathology has proven to be an incredible resource for this type of program. The remarkable success of the current program is in large part due to their dedicated personnel and community based philosophy.

PRINCIPALS

I. Pesticide Environmental Stewardship Program (PESP) Partnership
Dr. Marc Lame-Indiana University, School of Public and Environmental Affairs
John Carter-Monroe County Community School Corporation (MCCSC) Planning Director and Grant Administrator
Jerry Jochim-MCCSC IPM Coordinator

Dr. Bobby Corrigan-RMC Pest Management

II. Alabama Partners
Richard Pont, USEPA Region 4
Dr. Mike Williams-Chair, Auburn University Department of Entomology
L.C. Graham, Coordinator – Alabama Fire Ant Management Program (Onsite Technical IPM Coordinator)
Tony Cofer, Alabama Department of Agriculture and Industry
Jimmy DeVenny, Auburn City Schools Representative
Richard Lumpkin, PCO

C. KYRENE SCHOOL DISTRICT IPM PROGRAM
Dr. Marc L. Lame, Program Coordinator

After the initial 2000, three-school pilot the Kyrene School District expanded the integrated pest management program to all 26 district schools thereby, reducing the exposure of possibly dangerous pesticides and pests to over 20,000 of the district's students, faculty and staff. This program has also become a model to other schools in the Southwest including the Navajo Indian Reservation.

In the pilot program, two education and training programs have been conducted (May and November) for: 1) pilot school maintenance, custodial, and food service staff (content: principles of IPM particular to sanitation and exclusion, pests of the pilot schools, venue: half day "sit down and walk through"); 2) three University of Arizona Extension IPM specialists (content: IPM particular to the school pests and the specific pilot school environment). Two school newsletters have been distributed and a statewide manual/newsletter "Critters Corner" (Dr. Dawn Gouge) has been developed. The evaluations were conducted by Drs. Corrigan and Lame (report provided to the state coordinators and school administration). Mike Lindsey (Onsite IPM Coordinator) has conducted and submitted inspection/treatment reports each month. These evaluations demonstrate that the school system is complying with recommendations to improve sanitation and exclusion practices which were integrated with chemical bait for cockroaches. These evaluations showed a significant decrease in pest populations (85%) accompanied by a similar decrease (90%) in pesticide use.

Finally, John Carter and Stan Peterson were able to conduct an excellent analysis regarding the true cost of pest management for the district. Like the vast majority of districts in the country, Kyrene did not delineate pest management as a line item from the overall operations budget. Thus, in the initial analysis it was apparent that the district ascribed a nominal budget for the contractual cost of pest management in twenty-five schools. Upon further analysis, it was determined that the actual cost of pest management (contract + extra pesticide applications + administrative hours) was approximately three times the original estimate. This finding illustrates what our team is finding in all program areas: That traditional pest management is no more cost effective than a quality IPM program, is less efficient addressing short and long term pest problems/complaints and un-necessarily exposes children and adult inhabitants of the school to pesticides.

In 2000-2001 Dr. Kirk Smith and Mike Lindsey conducted assessments of all schools with subsequent training. KSD designated an IPM Coordinator (Roy Morris) and has received numerous press coverage as well as awards from the USEPA and NFIPME for there excellent work.

PRINCIPALS
I. Pesticide Environmental Stewardship Program (PESP) Partnership
Dr. Marc Lame-Indiana University, School of Public and Environmental Affairs
John Carter-Monroe County Community School Corporation (MCCSC) Planning Director and Grant Administrator
Jerry Jochim-MCCSC IPM Coordinator
Dr. Bobby Corrigan-RMC Pest Management

II. Arizona Partners
Mary Grisier, USEPA Region 9
Stan Peterson, Director of Facilities, Kyrene School District
Mike Lindsey, PCO (Onsite Technical IPM Coordinator)
Dr. Dawn Gough, University of Arizona Extension Entomologist
Dr. Kirk Smith, University of Arizona Extension Entomologist
Carl Martin, Arizona Structural Pest Control Board

C. IPM IN SCHOOLS PROGRAM ON THE NAVAJO INDIAN RESERVATION
Dr. Marc L. Lame, Program Coordinator

In May 2001 a Cooperative Agreement with the USEPA, OPP to create a pilot program for IPM in BIA school facilities on the Navajo Indian Reservation was initiated. We initiated this program at the Eastern Navajo Agency (ENA) Facility Offices (there are five agencies on the Navajo Indian Reservation with a total of 126 BIA school facilities) with a "workgroup" consisting of members of the Navajo EPA, BIA facility managers, and the contracted pest control operator (PCO). Three of the 18 schools managed by the Region had been selected for this program initiation – Crown Point Community School, Lake Valley School, and Mariano Lake School. I found the attendees of this meeting to be highly motivated. On-site implementers for the pilot program include Bob Villarreal (ENA Facilities Manager), Chad Bourgoin (ENA Environmental Specialist – a position unique to this agency), and Robert Begay (the PCO). A successful program could be expanded Reservation-wide with additional help from Debbie McBride (BIA, Environmental Scientist), the Navajo Nation EPA, Pesticide Program (Herb Holgate, Jeff Biakeddy, and Calvert Curely) and Lavern Gene, EPA Region 9.

The schools and dorms are in good shape to develop as models. I attribute these "better than expected" conditions to above average facility management and to the fact that the Indian Health Service inspects these facilities (regarding sanitation) on a more frequent basis than what we find in the public schools.

I found pest pressures to be low. Flying insects and spiders (bees, wasps, and house flies) were not problematic in terms of presence or tolerance, and roaches were non-existent (though we had one report of a possible roach). This location has a very dry climate and is at a high altitude – tough on traditional structural pests. Harvester Ants and what residents called "Sugar Ants" were present and considered pests. The "Sugar Ants" were entering facilities via cracks and crevices. The Harvester Ants were external only. I did find one large centipede (Scolopendra spp.) and heard of the very occasional scorpion. Of real interest are the more than occasional head lice and bedbug infestations. And, of course, the Deer Mice implicated in the transmission of Hanta Virus.

Evidently, these inspectors are very concerned about disease transmission. Crown Point is "ground zero" for Hanta Virus. The community is acutely aware of this disease regarding the sanitation and rodent exclusion necessary for prevention. From our point of view, this awareness will aid in the development of further cultural controls for more complete IPM.

All non-pilot school arthropod pests are being treated with at least a bi-monthly, scheduled application of a pyrethroid – WP (Tempo@). I was able to witness such a treatment by Mr. Begay's son - Steve. He uses approximately one gallon of solution (B&G) per facility building on the baseboards, and directly on ant mounds. Mattresses, walls and baseboards are treated for the specific bedbug infestations. However, these treatments do not include any "flushing agents". Further, no monitoring traps for any pests are being used. And finally, there is no attempt to educated facility managers regarding pest prevention by the PCOs. Clearly, there is lots of room for improvement in terms of sophistication and un-necessary use.

To date, all pilot school staff (and most faculty/administration) have attended two training sessions conducted by the implementation team, the PCO(s) have attended one training session, and an intern from Indiana University's School of Public and Environmental Affair spent three weeks in the spring of 2002 working with school and ENA personnel to further adoption and amend newsletters for increased readability. Except for two bedbug treatments of Tempo@, there have been no applications of pesticides in the pilot schools since October, 2002 – a 70% reduction in pesticide applications and a near 100% reduction of pesticide use in the schools complex.

All ENA schools will begin the adoption of IPM in the 2002/2003 school year. Reservation-wide (68 schools) expansion is being considered for 2003.

PRINCIPALS
IN/MCCSC IPM IMPLEMENTATION TEAM
Dr. Marc Lame-IU, School of Public and Environmental Affairs
Dr. Bobby Corrigan-RMC Pest Management
John Carter-MCCSC Planning Director
Jerry Jochim-MCCSC IPM Coordinator

ARIZONA and USEPA
Sherry Glick, USEPA, HQ
Regina Langton, USEPA, HQ

Mary Grisier, USEPA Region 9
Lavern Gene, USEPA Region 9
Dr. Dawn Gough, U. of Arizona Extension
Dr. Kirk Smith, U. of Arizona Extension
Carl Martin, Arizona Structural Pest Control Board
Stan Peterson, Director of Facilities, Kyrene School District
Mike Lindsey, Licensed Pesticide Applicator

BIA and NAVAJO NATION
Herbert Holgate, Navajo Pesticide Coordinator
Chad Bourgoin, Environmental Specialist, BIA Eastern Agency
Bob Villarreal, BIA Eastern Agency, Facilities Manager