

Gouge, Fournier, Snyder, Foss, Stock, Lanier, Latchininsky, Gebre-Amlak, Tharp, Nishijima, Sutherland, Hodgson, Shao, & Hayes.  
August 21, 2008.

## **Progress Report to the Western Regional IPM Center, Aug 21, 2008.**

### **A. Grant Data**

- Grant #: USDA primary award # 20075112003885; sub-award # 07001492UA2
- Title: Western Region School IPM Implementation and Assessment
- Type: Work Group
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- Team members: Listed below
- State(s) involved: Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
- Funding year: 2007-2009
- Funding amount: \$10,000 per year for two years

### **B. Nontechnical Summary**

The Western Region School IPM Implementation and Assessment Work Group was established in 2007 to encourage collaboration between university, state agencies, federal agencies, industry, and advocacy groups working to encourage and enhance successful implementation of IPM in schools in the western region. We strive to accomplish this through development of an inventory of programs and resources, increased networking and communication, improved access to and sharing of resources, and identification of IPM implementation challenges and barriers.

This region encompasses a wide variety of geographic and climatic habitats. Thus, the pest spectrum is diverse and varies even within states. Many of the Western states support large urban centers with rapidly increasing populations. The level of extension help available within the region is highly variable, with some states having absolutely no Extension entomologists available to support urban initiatives. This work group is comprised of an enthusiastic group of scientists, educators, and regulatory participants, including Extension scientists, state and federal representatives, advocacy representatives and industry experts. While specific pests may vary, the process of implementing IPM in a school environment is oriented towards people management, and as such, is much the same anywhere. As such, our translation of programs within the Western region or from other parts of the United States is appropriate.

Extension and other School IPM (sIPM) programs rely on competitive funds to maintain programs. Although many such programs have been instrumental in providing resources and education to promote the implementation of school IPM, interrupted funding and limited personnel have hampered implementation efforts. Historically, school IPM efforts have often been focused in higher population areas in the eastern United States (Beyond Pesticides, 2003). However, western states now accommodate the fastest growing populations in the U.S., with Las Vegas, NV, and Phoenix, AZ, being two of the

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nation's fastest growing urban populations. While some western states (e.g., Arizona, Washington, California) have active school IPM programs in specific areas, they often struggle for resources, and many western urban areas lack implementation efforts completely. School IPM projects sponsored by state agency and non-governmental organizations are often disconnected from national networks that encourage collaboration and minimize duplication of efforts, and therefore often fail to make use of existing implementation resources. The result is an environment of fragmented school IPM programs throughout the West that are effectively isolated from one another.

The Western Region School IPM Implementation and Assessment Work Group has set out to combine efforts and collectively address commonly identified issues. We developed a school IPM assessment tool and completed a state-by-state inventory of sIPM resources among nine represented states, and succeeded in establishing productive collaborations among previously isolated programs. Original membership has continued to increase and almost all the states in the western region are now represented. Conference calls, personal communications, and regular e-mails have facilitated discussions on future collaborative efforts and potential funding opportunities and fostered partnerships among emerging and ongoing sIPM efforts.

### **C. Objectives**

1. Expand the Western Region School IPM Implementation and Assessment Work Group by inviting appropriate representatives from Hawaii, Alaska, New Mexico, and Idaho.

*Our group has representatives from: Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. We have not found an advocate in Alaska.*

2. Expand assessment of sIPM programs and activities in western states to include all additional states that join the work group in the coming term.

*This report contains appendices that contain the updated and expanded working group documents.*

3. Conduct a national assessment of sIPM implementation tools through the eXtension website.

*The western regional working group has made contributions to the eXtension community of practice, however, to make our implementation tools immediately available, they have been reviewed and posted as part of the school IPM PMSP.*

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4. Identify regional and national networking opportunities and promote work group involvement on emerging projects that support awareness, implementation, and assessment of sIPM.

*We are networking and resource-sharing with the other three regional school IPM working groups, as well as the national implementation team. We collaborate on state implementation and assessment projects (see Appendix 4).*

5. Promote work group objectives, members, activities, and resource findings to a national audience.

*Making our activities and products accessible to change agents nation-wide fosters awareness of sIPM resources in the West and thereby facilitates collaboration toward work group objectives. The Arizona Pest Management Center website (<http://ag.arizona.edu/apmc/>) is used as the repository for information generated by the working group*

#### **D. Results**

##### **2007 University Faculty:**

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Faith Oi (Florida University; Southern Region IPM in Schools Working Group Representative)

##### **2007 Collaborators:**

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Sherry Glick (U.S. Environmental Protection Agency, DC)  
Tom Green (IPM Institute of North America, Inc.)  
Lyndon Hawkins (IPM Professional, California)  
Gregg Smith (Salt Lake City School District, Utah)

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Karl Arne (U.S. Environmental Protection Agency Region 10, Washington)  
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Jaslyn Dobrahner (U.S. Environmental Protection Agency Region 8, Colorado)  
Sara Leverette (Oregon Environmental Council)  
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**Added University Faculty:**

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**Added Collaborators:**

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**Objective 1. Expand the Western Region School IPM Implementation and Assessment Work Group by inviting appropriate representatives from Hawaii, Alaska, New Mexico, and Idaho.** Representatives from Hawaii, New Mexico, and Idaho have joined our

efforts. We have attempted to involve Alaska, but have not found an advocate there as yet. Additionally, many other representatives from western states have joined the group. We also connect with southern, north central, and north eastern regional school working group representatives. Several industry partners specializing in reduced-risk pesticide products are now participants, as well several members from the national school IPM implementation team.

Several university faculty in our working group have formed a WDC13 Coordinating Committee, the status of our group is “developmental” and will collaborate to address specific research and extension issues identified as areas of need in the national PMSP [http://www.ipminstitute.org/school\\_ipm\\_pmsp.htm](http://www.ipminstitute.org/school_ipm_pmsp.htm)

During 2007 and 2008, several of us have collaborated on implementation efforts in Utah and Colorado. Gouge, Foss, Stock, Lanier, Latchininsky, Gebre-Amlak, Hodgson, and Shao conducted implementation and program expansion activities in Utah. Gouge, Foss, Stock, Latchininsky, Gebre-Amlak, Tharp, Sutherland, Hodgson, and Hayes, will conduct a change agent practicum in Colorado Oct 15-17, 2008. Most of us will also participate in the national school IPM meeting Nov 20, 2008.

**Objective 2. Expand assessment of sIPM programs and activities in western states to include all additional states that join the work group in the coming term.** To fully assess the extent of school IPM practiced throughout the West, we required additional information from previously non-participating states on the status of their school IPM programs, resources and activities. The following documents have been expanded and are attached to the end of this report:

- Appendix 1 Rules and regulations by state
- Appendix 2 Working group members
- Appendix 3 Resources by state

**Objective 3. Conduct a national assessment of sIPM implementation tools through the eXtension website.** Implementation of sIPM is facilitated through the use of specific tools (inspection forms, pest sighting logs, monitoring protocols, etc.). We have gathered what we consider to be the best of the available tools and will obtain input on these from a national community of experts. Such input will help make these tools flexible for use by a variety of sIPM programs from a broad geographic area. The sIPM implementation tools will be assessed nationally via a new online resource, eXtension (<http://www.extension.org/>). Through this interactive forum, tools may be posted, critiqued, and improved by national implementers and stakeholders. This online information source is nationally supported by university extension dollars, and several work group members are themselves directly involved in developing the sIPM pages

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within the eXtension website (sIPM topics will be housed within the larger Urban IPM Community of Practice). The School IPM eXtension team is perfect for this undertaking, having a wide variety of participants who interact directly with stakeholders regularly.

Some development of the eXtension urban IPM website has occurred. Western regional working group members have made several contributions. However, the available tools collated and reviewed have been incorporated into the PMSP so they are fully accessible at this time [http://www.ipminstitute.org/school\\_ipm\\_pmsp\\_app\\_n\\_toolbox.htm](http://www.ipminstitute.org/school_ipm_pmsp_app_n_toolbox.htm)

Western regional entomologists have also formed an Entomological Society of America network, which provides a web 2 platform for communicating, sharing newly developed tools and coordinating collaborative events. This is currently under construction, and not fully functional at this time.

***Objective 4: Identify regional and national networking opportunities and promote work group involvement on emerging projects that support awareness, implementation, and assessment of sIPM.*** We are networking and resource-sharing with the other three regional school IPM working groups, as well as the national implementation team.

Regional and national networking and sharing news of resource opportunities that promote work group objectives are facilitated by conference calls throughout the grant period. Face-to-face meeting opportunities will be used whenever possible to promote dynamic information exchange (e.g., at the Entomological Society of America meeting in Nov 2008, in the form of an ESA School IPM Network). This will maximize funds and open opportunities for leveraged funds. Our next collaborative activity will be a change agent practicum in Bolder, Colorado, Oct 2008 (Appendix 4).

***Objective 5: Promote work group objectives, members, activities, and resource findings to a national audience.*** Our efforts and activities have garnered significant attention nationally. Making our activities and products accessible to change agents nation-wide fosters awareness of sIPM resources in the West and thereby facilitates collaboration toward work group objectives. The Arizona Pest Management Center website (<http://ag.arizona.edu/apmc/>) is used as the repository for information generated by the working group, including objectives, members, activities, and resource findings of the work group.

## **Summary**

Through the Western Region School IPM Implementation and Assessment Work Group:

- We have created and continue to expand a multi-state work group capable of responding to IPM information needs for our region, including implementation support for school managers, and pest management professionals.
- We have developed improved relationships with multiple government agencies both state and Federal, that will facilitate improvement and measurement of our

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- IPM programs, and enhance our ability to respond to critical pest management issues and information requests.
- We have built collaborative partnerships that further IPM goals in Western states and facilitate sharing of resources.
  - We have solicited stakeholder input, in order to identify major IPM priorities for efficient implementation in schools.
  - We have compiled a thorough inventory of school IPM programs and resources throughout our region, which will serve as baseline data for measuring progress in school IPM implementation.
  - We have opened an important dialog among key stakeholders in the west on the barriers and challenges to supporting full adoption of IPM practices in schools throughout our region.
  - We have leveraged significant resources and activities to accomplish these objectives.

We have built a foundation of collaboration and have documented a thorough inventory of existing resources and programs. We seek continued funding of this work groups activities, to further address the goal of the IPM Roadmap with respect to school IPM.

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## E. Appendices

### Appendix 1 Rules and regulations by state

Inventory of School and Child Care IPM Laws and Regulations Western Region School IPM Implementation and Assessment Work Group								
	Indoor posting	Outdoor posting	Pre-notification	Reentry requirements beyond label	Minimal training for applicators	IPM law or rule <sup>1</sup>	Product restrictions or green list	other
Arizona	sc	sc	sc	-	sc	v	sc	sc <sup>2</sup>
California	sc	sc	sc	-	-	v	-	sc <sup>3</sup>
Colorado	-	sc <sup>4</sup>	-	-	sc <sup>5</sup>	-	-	-
Idaho	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	-	-	-	-
Montana	sc	-	sc	-	sc	v	-	-
Nevada	-	-	-	-	-	-	-	-
New Mexico	s	s	s	s	s	-	-	-
Oregon	-	-	-	-	-	-	-	-
Utah	-	-	-	-	s	-	-	-
Washington	sc	sc	sc	-	sc <sup>6</sup>	-	-	-
Wyoming	s	s	s	-	-	-	-	-

**s = schools; c = child care centers; v = voluntary; ns = not sure**

<sup>1</sup> Information for this column from Beyond Pesticides (October 2006)

<sup>2</sup> Emergency pesticide applications restricted to Caution label or exempt products

<sup>3</sup> In schools and childcare facilities, CA law prohibits the use of pesticides with registrations that are conditional, interim for experimental use, cancelled, suspended or with a required phase out.

<sup>4</sup> Only notification applies to turf & ornamental

<sup>5</sup> Commercial applicator/technician is required to have minimal pesticide applicator training, and the business employing them must be licensed. School janitors and custodians are exempt from licensing/training requirements, and are able to apply pesticides on school grounds

<sup>6</sup> Not required unless the applicator is using an RUP or power equipment

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## Appendix 2. Working group members

### **EPA**

**JULIANN BARTA** - Pesticides Coordinator for Washington, Pesticides Outreach Coordinator  
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### **JASLYN DOBRAHNER**

Pacific Technical Manager, U.S. EPA Region 8

Jaslyn Dobrahner, EPA Region 8, Denver, CO Jaslyn is currently working with Dr. Marc Lame (Indiana University) and the Salt Lake City School District to implement the Region's first school IPM program. Jaslyn is also working with several Indian Tribes in the Region to conduct school IPM evaluations as a first step to introducing school IPM in Indian country.

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## **ARIZONA**

### **PAUL BAKER (AZ)**

Extension Specialist / State Pesticide Coordinator, University of Arizona

Dr. Paul Baker is the Director of Arizona Pesticide Information and Training Office (PITO) and a structural pest management researcher at the University of Arizona. Paul's current research focuses on termite identification and survey work throughout Arizona. He also serves a commissioner on the Arizona Structural Pest Control Commission (SPCC), the state agency that regulates the use, disposal and storage of pesticides. Paul's experience in both urban/structural IPM and pesticide and pest management regulation in Arizona will benefit the work group.

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### **AL FOURNIER (AZ)**

IPM Program Manager, University of Arizona Maricopa Agricultural Center

- As Associate Director of the Arizona Pest Management Center (APMC) at the University of Arizona I work with faculty and stakeholders to identify IPM needs, develop and allocate resources, and evaluate IPM programs in urban, agricultural and natural settings.
- Worked for nearly 5 years coordinating the School IPM program at Purdue University, where I also completed my PhD focusing on "factors affecting adoption and implementation of IPM in Indiana public schools."
- Role in the work group: develop the evaluation instrument to be used to assess IPM tools in school IPM programs; assist with coordination and communication through the existing APMC infrastructure.

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### **DAWN H. GOUGE (AZ)**

Urban Entomologist, University of Arizona Maricopa Agricultural Center.

Co-Direct the Western Regional School IPM Implementation and Assessment Working Group, which involves participants in 13 western states. Serve on the National School IPM Pest Management Strategic Plan (PMSP) Team. Research efforts focus on developing biocontrol options and reduced-risk management options for venomous arthropods and disease vectors (scorpions, spiders, ants and mosquitoes). Support Arizona law enforcement entities conducting

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medicocriminal investigations. Teach course accredited classes on Urban IPM, Arthropod Pest Diagnosis and Forensic Entomology.

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### **JENNIFER L. SNYDER (AZ)**

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Jennifer comes from a wildlife and entomology background with a B.S. in biology (2000, The Evergreen State College). Her interests in entomology and sustainability led her to work with Dr. Dawn Gouge at the University of Arizona. Jennifer has worked in university extension (entomology) for over five years, assisting with coordination of a statewide sIPM Coalition, regional work groups, implementation of sIPM, publishing materials, providing presentations to various urban groups, and participating in research with arthropods at the UA and Arizona State University. Jennifer enjoys volunteering with local and national projects in environmental health, entomology, and wildlife conservation. She will be coordinating the activities of this work group.

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## **CALIFORNIA**

### **SEWELL SIMMONS (CA)**

Acting Lead, CA School IPM Program, Cal/EPA Department of Pesticide Regulation.

Sewell is a weed and vertebrate biologist with thirteen years experience in School IPM. Sewell also has experience with IPM projects on cropland, rangeland, parklands, rights-of-way and in residential areas. The California School IPM program elements include: providing IPM training to school district staff; assisting districts in establishing IPM policies and programs; establishing and maintaining a California model school IPM program guidebook; establishing and maintaining a comprehensive school IPM Web site; evaluating IPM adoption in school districts; and collecting pesticide use data.

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### **KYRRHA SEVCO (CA)**

Program Manager, Ecology Action

The goal of the Model School Program is to reduce flooding, erosion and the use of toxic chemicals in schools. Implementation of the program locally is based on the success of the Marin and Madera County Model School Integrated Pest Management (IPM) and the Waste Free Schools Programs. Ecology Action works with Monterey Bay Area Schools in holistically adopting best management practices (BMPs). Activities include providing technical consulting about IPM, water quality, and storm water BMPs. EA also provides in classroom activities fieldtrips and assemblies for students. Finally we provide all day, hands on training for maintenance directors, IPM coordinators, and grounds and custodial staff on structural land landscape pests. The program started in the fall of 2002 and will conclude in December of 2008.

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### **WILLIAM LANIER (MT)**

Insect Diagnostician and ICPM Assistant, Montana State University

Mr. Lanier, M.S., has been with MSU as the IPM assistant for seventeen years.

In that time he has developed and maintained a regional cutworm monitoring program, the Pest Recommendation Network, Crop Pest Management School and improved and expanded the MSU Insect diagnostics lab to meet requirements of the Great Plains Diagnostic Network. Mr. Lanier was directly involved in developing and evaluating the High Plains IPM Guide Web site, a regional recommendation source for insects and diseases of the high plains.

The Guide is sponsored by the USDA, Cooperative States Research Service, Western Region IPM Special Grants Program and Environmental Protection Agency, Region 8. He has delivered presentations and training to community, producer and commodity groups throughout the state, and peers at national annual meetings like the National Integrated Pest Management Symposium, Entomology Society of America and National Extension Technology Conferences. Currently he is developing decision support systems and distance delivery methods for IPM information.

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## **NEVADA**

### **JON CARPENTER (NV)**

Nevada Department of Agriculture

IPM experience began in the IPM program at the University of Nevada Reno as part of an overall “plant science” degree. Nevada Department of Agriculture work involves a lot of IPM related training for agriculture etc. When the IPM in schools “*program*” came along I just fit it in with the rest of the programs. Our most recent IPM experience has lasted for about 5 years. It started out as a legitimate IPM program with the Washoe County School District which included two pilot schools. It has evolved into our agency (Nevada Department of Agriculture) being the district’s personal pest control consultant (at no charge). We are trying to get back on track by conducting training programs for custodial staff but it has been an uphill climb. I do believe that we will be able to get an IPM back on track eventually. We have to get the administration to buy off and that is where we are now.

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## **OREGON**

### **AIMEE CODE**

Water Quality Coordinator, Northwest Coalition for Alternatives to Pesticides

Aimee received her M.S. in Environmental Health at Oregon State University. During graduate school she worked at the National Pesticide Information Center where she provided people with science-based information about pesticides and pesticide-related topics.

For the last eight years Aimee has worked at the Northwest Coalition for Alternatives to Pesticides. At NCAP she works on a number of issues including improving pesticide use tracking in Oregon. NCAP helps pesticide users find effective non-chemical solutions to pest problems. We actively work with parks departments, farmers and the general public to reduce their dependence on pesticides.

While Aimee has followed Integrated Pest Management issues for years, she only recently became engaged in the issue when, in late 2007, she was asked to join Oregon Legislature's Workgroup on Pesticides Use In and Around Schools.

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### **SARA LEVERETTE (OR)**

Outreach Program Director, Oregon Environmental Council

This is my first experience with IPM. My background is in outreach and social marketing. I joined the Oregon Environmental Council three weeks ago to work on their environmental health and children programs. Previously I directed the Coalition for Commercial-Free Schools and the Oregon High School Earth Club Network for the Northwest Earth Institute. My degree is in Environment, Economics and Politics with a double in Spanish from Claremont McKenna College.

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### **TIM STOCK (OR)**

IPM Education Specialist, Integrated Plant Protection Center, Oregon State University

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Tim received his MS degree in Agricultural Extension at the University of Reading in England. Over the past 20 years he has developed participatory education programs in Washington, California, and internationally.

As IPM Education Specialist, he focuses on pesticide risk reduction training and IPM in Schools. His program is charged with developing an outreach and training program to promote the implementation of IPM in schools. This is in the early stages, and will progress as resources become available. His assessment of what is needed to move forward in Oregon is in a white paper "Improving Pest Management and Reducing Pesticide Risks in Oregon Public Schools, Parks, and Sensitive Sites (Care Facilities)", available at

[http://www.ipmnet.org/Tim/IPM\\_in\\_Schools/IPM\\_in\\_Schools-Main\\_Page.html](http://www.ipmnet.org/Tim/IPM_in_Schools/IPM_in_Schools-Main_Page.html)

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## **UTAH**

### **GREGG SMITH (UT)**

Director (Facility Services), Salt Lake City School District

The Salt Lake City School District received the IPM STAR Certification from the IPM Institute of North America in May, 2008 as recognition of their implementation of a comprehensive IPM program throughout the District's thirty-six schools. The District has also been instrumental in the formation of the Utah IPM Coalition whose objective is to introduce other school districts to IPM and promote the practice statewide.

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**WASHINGTON**

**CARRIE FOSS (WA)**

Urban IPM Coordinator, Washington State University

As the Urban IPM Coordinator, Carrie manages the WSU Urban IPM Program in western Washington. This program includes the WSU IPM Certification Program for Landscape and Turf Professionals and the Structural Pest IPM Facility. The goal of the IPM training is to provide research-based information for effective plant problem management while minimizing impacts on human and environmental health. The WSU Urban IPM Program promotes IPM in schools by working with the IPM Institute of North America to implement IPM programs and achieve IPM STAR certification. As a member of the Western School IPM Work Group, Carrie also works on regional School IPM implementation projects with other work group members. She chairs the Urban Pesticide Education Strategy Team, an interagency committee that delivers web-based information for IPM in schools and households. The WSU Urban IPM Program assists Salmon-Safe, a non-profit organization, to provide third-party validation of IPM practices at corporate

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and university campuses in Washington and Oregon. Carrie's background includes plant problem diagnosis and research on beneficial microorganisms, and management strategies for turf and ornamental diseases.

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## **WYOMING**

### **ALEXANDRE V. LATCHININSKY (WY)**

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Alex received his B.S. and M.S. in Entomology from St. Petersburg State University in Russia and his Ph.D. in Entomology from the University of Wyoming. He is the only faculty-level Extension Entomologist in the state of Wyoming. His research expertise involves the development of IPM approaches to rangeland pest management, such as grasshoppers in North America and locusts in Africa and Asia. His Extension program promotes IPM strategies and addresses questions of rangeland, horticultural, crop, forest and urban pest management. Alex contributes to pesticide education and training in Wyoming (EPA Region 8) on a regular basis. In the past five years, via collaboration with USDA-APHIS-PPQ, he delivered grasshopper IPM training programs to 10 western states.

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**PAT COPPS (CA)**

Pacific Technical Manager, Orkin, Inc.

- Pat obtained both a B.A. and B.S. (Ag) from the University of Manitoba before completing his Masters of Science in Entomology from the University of Guelph (Ontario Agricultural College) in 1983.
- He is a Board Certified Entomologist in Urban and Industrial Entomology (Certified in 1994).
- Pat began his career in Vector Control in 1971. Since then, he has held various positions in the pest management field, serving in both technical and managerial roles with PCO Services (Toronto, Canada); the Arabian American Oil Company (Dhahran, Saudi Arabia); Prism Pest Elimination (Los Angeles, California) and Orkin Pest Control.
- Pat served on the Sanitation Education Committee for the National Pest Control Association (1988-89), the Board Certification Committee for the Entomological Society of America (2003) and the Food Safety Education Committee for the Orange County, CA Food Safety Advisory Council (2006). He has assisted in the preparation and oversight of integrated pest management programs in agriculture, urban/industrial environments and mosquito mitigation.
- Pat is a Licensed Operator and Qualified Applicator (CA & ON) and a Registered Food Safety Instructor (NRA). His current position is Technical Services Manager for Orkin's Pacific Division.

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**WILLIAM (Bill) E. CURRIE (AZ)**

Director, International Pest Management Institute

Bill is an IPM consultant/entomologist, with a background in entomology, botany and pesticide chemistry. His federal career included USFDA, USDA and EPA. While at EPA in 1979, Bill helped the National Park Service start their IPM program and has written IPM plans for nine (9) National Parks to date. Despite “retiring”, Bill and his wife Jean operate the International Pest Management Institute, providing IPM training and consulting around the United States. Bill is currently the independent IPM expert for the Los Angeles Unified School District, where he completed IPM training for over 7,500 staff members (over 25 job descriptions). Bill’s concerns with the adverse effects of pesticides on children have led to increased work with school systems and other urban sites, with a focus on reducing risks from pests and pesticides. As each site is different, Bill has had greatly varied experience in the implementation of low-risk pest management methods in schools and other urban sites.

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**LYNDON HAWKINS (CA)**

Independent Contractor, CA

Lyn Hawkins retired from the IPM program with the California Department of Pesticide Regulation. One recent project was writing the IPM ordinance for Santa Clara County. I am currently working with the County of Sacramento on their IPM policy and I am a trustee for the Sacramento-Yolo County Mosquito and Vector Control District having just completed two years of significant outbreaks of West Nile Virus.

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**JACK MARLOWE (WA)**

President, Eden Advanced Pest Technologies

Our company, Eden Advanced Pest Technologies, currently provides pest management services in one form or another for 18 school districts in Washington and Oregon. I have been involved with both our company’s attempts to improve our delivery of IPM programs to schools, and also with working with schools to improve their internal processes for adoption of IPM. I have worked on Washington State’s IPM in Schools Working Group and have participated in various training events and workshops.

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Appendix 3. Resources by state

<b>SCHOOL IPM RESOURCE LIST</b>				
Arizona; California; Colorado; Montana; Nevada; Oregon; Utah; Washington; Wyoming				
<b>STATE</b>	<b>TOOL</b>	<b>AGENCY/ ORGANIZATION</b>	<b>SOURCE</b>	<b>DESCRIPTION</b>
<b>Arizona</b>	Annual meeting	Arizona Children’s Environmental Health Coalition	Offered by University of Arizona Urban IPM staff; please contact for more information.	UA and guest speakers address timely school IPM topics, provide PowerPoint presentations, and take-home informational materials. Includes networking opps., discussions, etc.
	Annual workshop	Arizona Children’s Environmental Health Coalition	UA Urban IPM staff	Agenda, activities, notes, feedback, etc.
	Urban IPM Website	UA	<a href="http://cals.arizona.edu/urbanipm/">http://cals.arizona.edu/urbanipm/</a>	Contains introductory information on IPM in schools and child care facilities; implementation resources: posters for specific school staff, sample IPM policies, contracting guidance, PowerPoint presentations for training staff, list serv, monthly IPM updates, newsletter, state laws governing pesticide use, arthropod fact sheets, urban IPM extension publications, links, and more.
	“Pest Press” Newsletter	UA	<a href="http://cals.arizona.edu/urbanipm/">http://cals.arizona.edu/urbanipm/</a>	Bi-monthly newsletter for school staff covering basics on IPM, staff role in program, management of a featured pest, scenario, etc. Audience: primarily schools, also

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				offices and general public.
	Peer-reviewed publication	UA, Indiana University	D. H. Gouge, M. L. Lame, and J. L. Snyder. Use of an Implementation Model and Diffusion Process for Establishing Integrated Pest Management in Arizona Schools. <i>American Entomologist</i> . 52 (3): 190-196	Describes model process used by UA staff for implementation of school IPM in Arizona.
	Office of Children's Environmental Health	Arizona Department of Environmental Quality	<a href="http://www.azdeq.gov/ceh/">http://www.azdeq.gov/ceh/</a>	Contains information on pesticides and children's health, indoor air quality (IAQ) and asthma, pollution prevention, and other environmental health risks to children.
<b>California</b>	School IPM Website	California Department of Pesticide Regulation (DPR)	<a href="http://www.schoolipm.info">http://www.schoolipm.info</a>	A comprehensive directory of resources describing and promoting least-hazardous practices at school sites and compliance instructions for the Healthy Schools Act of 2000.
	School IPM HELPR pages	DPR	<a href="http://www.schoolipm.info/health_issues/main.cfm?#usehelper">http://www.schoolipm.info/health_issues/main.cfm?#usehelper</a>	Provides the public with all appropriate information regarding public health and environmental impacts of pesticide active ingredients, and ways to reduce use of pesticides at school facilities.
	School IPM workshops	DPR	Offered by DPR staff; please contact for more information.	Four school IPM workshops per year for district IPM coordinators (totaling approx. 160 participants each year); include site assessments, demonstrations, tours, and class exercises.
	Interactive Pest Management DVDs	University of California IPM and DPR	<a href="http://www.ipm.ucdavis.edu/IPMPROJECT/cdroms.html">http://www.ipm.ucdavis.edu/IPMPROJECT/cdroms.html</a>	Two IPM DVDs are currently available. One DVD covers general IPM (39 minutes) and ants (33 minutes). The second DVD covers cockroaches (33 minutes) and weeds (35 minutes). Question and answer

				sessions are included to generate group discussion. Target audience is District IPM coordinators.
	School IPM Guidebook	DPR	<a href="http://www.schoolipm.info/managing_pests/guidebook.cfm">http://www.schoolipm.info/managing_pests/guidebook.cfm</a>	Indoor/outdoor (structural and landscape) pest management for invertebrates, vertebrates, weeds; sample IPM record keeping forms and contracts; classroom pest posters and curricula.
	Publications	DPR	<a href="http://www.cdpr.ca.gov/docs/pmap/schoolipm_articles.htm">http://www.cdpr.ca.gov/docs/pmap/schoolipm_articles.htm</a>	Trade and peer-reviewed publications/articles; school IPM curricula (yellow jackets, burrowing rodents, landscape weeds, turf weeds, and structural pest management); fact sheets; surveys (2001, -02, -04, 06, -07); IPM record keeping calendar; pest prevention posters.
	School IPM List server	DPR	<a href="http://schoolipm.info">http://schoolipm.info</a>	List server providing periodic updates
	School IPM Advisory Group	DPR	<a href="http://www.schoolipm.info/overview/90_advisory.cfm">http://www.schoolipm.info/overview/90_advisory.cfm</a>	Consists of 37 members from pest control businesses, advocacy groups, consultants, legislature, school organizations, higher education institutions, etc.
	District Facilities IPM Website	Los Angeles Unified School District	<a href="http://www.laschools.org/efm/mo/ipm/">http://www.laschools.org/efm/mo/ipm/</a>	District IPM Policy, IPM procedures manual, inspection reports, posting notice form, <u>pest sighting log</u>
	Regional Training	Ecology Action	<a href="http://www.ecoact.org/">http://www.ecoact.org/</a>	Regional training (Monterey and Santa Cruz counties) in landscape and structural pest management  School outreach program
	IPM Workshops	San Francisco Estuary Project:	<a href="http://www.up3project.org/up3_about.shtml">http://www.up3project.org/up3_about.shtml</a>	IPM workshops on stinging insects; guidance on how to contract for IPM

		UP3 Project		services.
	EcoWise IPM Certification	Association of Bay Area Governments	<a href="http://ecowisecertified.org/">http://ecowisecertified.org/</a>	A partnership of municipal and agency staff who provide certification for pest control officers (PCOs), and
	EcoWise IPM Toolkit	Association of Bay Area Governments	<a href="http://ecowisecertified.org/">http://ecowisecertified.org/</a>	Provide toolkits for cities on how to adopt IPM.
	IPM Manual	Bio-Integral Resource Center	<a href="http://www.birc.org/">http://www.birc.org/</a>	A how-to manual on school IPM
	Workshop	The Watershed Project	<a href="http://www.thewatershedproject.org/default/index.php?q=educ_prog/educators/workshops">http://www.thewatershedproject.org/default/index.php?q=educ_prog/educators/workshops</a>	“Healthy Schools Inside & Out” workshop is for K-12 educators and those who work with children. Addresses ingredients in pesticides and household cleaners; offers least-toxic alternatives.
	Model School IPM Project	Marin County Schools and Marin County Department of Agriculture	<a href="http://www.co.marin.ca.us/depts/AG/Main/IPM/specificallyfor_schoolstaff.cfm">http://www.co.marin.ca.us/depts/AG/Main/IPM/specificallyfor_schoolstaff.cfm</a>	A school IPM project designed to implement the Healthy Schools Act (CA state law, 2000) and to help schools make the transition to integrated pest management (IPM). Comprehensive “information and resources” for school staff.
	Website	UC Davis	<a href="http://ipm.ucdavis.edu/">http://ipm.ucdavis.edu/</a>	General urban pest management guidelines, educational resources and IPM research.
	IPM Implementation Strategy and Reports	City of Santa Barbara	<a href="http://www.santabarbaraca.gov/Resident/Community/Parks_and_Beaches/Integrated_Pest_Management.htm">http://www.santabarbaraca.gov/Resident/Community/Parks_and_Beaches/Integrated_Pest_Management.htm</a>	The city adopted IPM in 2004. They have an adoption strategy, several reports, and a model for a “pesticide hazard and exposure reduction zone” (PHAER).
	Healthy Garden Guide	Contra Costa County Sanitation District	<a href="http://www.centalsan.org/">http://www.centalsan.org/</a>	Offers IPM fact sheets for garden pests.

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<b>Colorado</b>	Pilot program	Colorado State University	Contact Assefa Gebre-Amlak	A pilot program is planned to begin in fall 2008. More resources may developed at that time.
	Insects Online Fact Sheets	Colorado State University Extension	<a href="http://www.ext.colostate.edu/Pubs/insect/pubins.html">http://www.ext.colostate.edu/Pubs/insect/pubins.html</a>	Covers: crops; home & garden; trees and shrubs.
	Pesticide and IPM fact sheets	Colorado State University	Colorado Environmental Pesticide Education Program: <a href="http://wsprod.colostate.edu/cwis79/FactSheets/Index.cfm">http://wsprod.colostate.edu/cwis79/FactSheets/Index.cfm</a>	“Getting Started with IPM”, managing mosquitoes around homes, etc.
<b>Montana</b>	School IPM Website	Montana State University (MSU)	<a href="http://ipm.montana.edu/SchoolIPM/">http://ipm.montana.edu/SchoolIPM/</a>	PowerPoint resources covering guidelines and ideas for school IPM implementation and general IPM principles
	Pest identification and recommendations	MSU Schutter Diagnostics	MSU IPM Staff ( <a href="http://diagnostics.montana.edu/">http://diagnostics.montana.edu/</a> )	Diagnosis of pest problems; identification of insects, mushrooms, plants, and plant diseases
<b>Nevada</b>	IPM Fact sheet	Nevada Department of Agriculture (NVDA)	Available by contacting NVDA	Identification of problems mainly related to sanitation. For teachers, administrators, custodial and maintenance staff.
<b>Oregon</b>	School IPM Website	Oregon State University – Pesticide Safety and Education Program	<a href="http://www.ipmnet.org/Tim/PSEP_home.htm">http://www.ipmnet.org/Tim/PSEP_home.htm</a>	Information on current and future OSU school IPM initiatives

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	“Insects: Taking a Closer Look at the World of Bugs”	Oregon State University – Rural Science Education Program	<a href="http://cropandsoil.oregonstate.edu/gk12/index.htm">http://cropandsoil.oregonstate.edu/gk12/index.htm</a>	Insect curriculum resource for school-age kids (grades 3-8); classification, trapping and tending, behavior, etc.
	School IPM Website	Northwest Coalition for Alternatives to Pesticides	<a href="http://www.pesticide.org/schools01.html">http://www.pesticide.org/schools01.html</a>	Landscape IPM, pesticide exposure case stories, pesticide reduction steps for parents and teachers, regional and state school pesticide use reports.
	“Unthinkable Risk: How Children Are Exposed and Harmed When Pesticides Are Used at School”	Northwest Coalition for Alternatives to Pesticides	<a href="http://www.pesticide.org/UnthinkableRisk.html">http://www.pesticide.org/UnthinkableRisk.html</a>	26-page report available in .html or .pdf formats. For hardcopies, contact NCAP. By Becky Riley, April 2000.
	“Pest Control Practices in Oregon Public Schools”	Oregon Environmental Council (OEC)	This is a .pdf document available from OEC	Report on a statewide survey conducted 2002-2004 by OEC in collaboration with OR Dept. Education; includes pesticide use, compliance, and IPM practices.
	IPM Program Manual	Portland Public School District	<a href="http://www.facilities.pps.k12.or.us/www.pps.k12.or.us/depts/fam/health_safety/IPM_Program/index.html">http://www.facilities.pps.k12.or.us/www.pps.k12.or.us/depts/fam/health_safety/IPM_Program/index.html</a>	Prioritized pest control protocol; responsibilities of various school staff; pesticide application records, procedures, notification, and storage.
<b>Utah</b>	Asthma Program	Utah Department of Health	<a href="http://www.health.utah.gov/asthma/schools/">http://www.health.utah.gov/asthma/schools/</a>	Air quality guidance for schools including an asthma resource and training manual, asthma action plan, fact sheets, and other guidance tools.

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	District Facilities Website	Salt Lake City School District	<a href="http://www.slc.k12.ut.us/depts/facilities/">http://www.slc.k12.ut.us/depts/facilities/</a>	Pest Press newsletters, includes introductory information on IPM, indoor air quality, and pest sighting logs.
	Information for Pesticide Applicators	Utah Department of Agriculture and Food	<a href="http://ag.utah.gov/">http://ag.utah.gov/</a>	Comprehensive information on pesticide handling and certification. Complete National Pesticide Applicator Certification Core Manual also available.
	Utah Pests	Utah State University Extension	<a href="http://utahpests.usu.edu/">http://utahpests.usu.edu/</a>	Primarily landscape and horticultural information on Utah pests.
<b>Washington</b>	Urban IPM Website	Urban Pesticide Education Strategy Team	<a href="http://www.ecy.wa.gov/programs/swfa/upest/">http://www.ecy.wa.gov/programs/swfa/upest/</a>	A website designed to help Washington state citizens adopt IPM for indoor and landscape pests.
	Urban IPM and Pesticide Safety Education Website	Washington State University	<a href="http://pep.wsu.edu/education/ipmworkshops.html">http://pep.wsu.edu/education/ipmworkshops.html</a>	IPM hands-on workshops for landscape professionals including school employees and fact sheets for four pest groups (food and fabric, nuisance, stinging and biting, and wood-destroying).
	Structural Pest IPM Website and Workshops	Washington State University	<a href="http://structuralpest.wsu.edu">http://structuralpest.wsu.edu</a>	Quarterly workshops for structural pest inspectors and pest management professionals; involves hands-on training with emphasis on conducting proper inspections, structural pest identification and IPM. Also pre-certification training for WSDA exam preparation.
	Horticultural IPM Website	Washington State University	<a href="http://pep.wsu.edu/hortsense">http://pep.wsu.edu/hortsense</a>	Plant problem diagnosis and IPM options.

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	Indoor Pest IPM Website	Washington State University	<a href="http://pep.wsu.edu/pestsense">http://pep.wsu.edu/pestsense</a>	Pest fact sheets and IPM information.
	Pesticide Compliance Website	Washington State Department of Agriculture	<a href="http://agr.wa.gov/PestFert/Pesticides/complianceActivities.htm">http://agr.wa.gov/PestFert/Pesticides/complianceActivities.htm</a>	Compliance information for the use of Pesticides at Public Schools and Licensed Day Care Centers.
	Pesticide Recordkeeping Database	Washington State Department of Agriculture	<a href="http://agr.wa.gov/PestFert/Pesticides/Schools.htm">http://agr.wa.gov/PestFert/Pesticides/Schools.htm</a>	For Public Schools (K-12) and Licensed Daycare Centers
<b>Wyoming</b>	Cooperative Extension Service Entomology website	University of Wyoming	<a href="http://ces.uwyo.edu/Entomology.asp">http://ces.uwyo.edu/Entomology.asp</a>	“Insects in the home” offers pictures and basic ID on common household and garden insects in Wyoming; insect ID key (PowerPoint document)

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#### Appendix 4. School IPM – Change Agent Agenda

School Integrated Pest Management

Agency

Change Agent's Practicum

October 15-17, 2008.

Environmental Protection

Region VIII Headquarters

1595 Wynkoop Street

Denver, CO 80202

### Agenda

Wednesday, Oct 15

Travel to Denver

6:30-8:00pm Instructors Briefing at Ebert Elementary, covering presentations and inspection protocol (pests, pest conducive conditions, pest vulnerable areas, pesticide use and current pest management practices at the facility).

Thursday, Oct 16 – Rocky Mountain & Sagebrush rooms (2<sup>nd</sup> floor conf. center)

Classroom Instruction/Discussion

8:00-8:30am Welcome and introductions (Jaslyn Dobrahner, EPA Region VIII)

8:30-9:30 Why school districts need IPM - The Salt Lake City Experience (Gregg Smith, and Ricardo Zubiate, Facility Services, Salt Lake City School District).

9:30-10:30 Pest encounters (Dawn H. Gouge and Marc L. Lame)

10:30-9:45 Break

9:45-11:00 IPM and conducive conditions. (Marc L. Lame)

11:00-11:45 Introduction to the Pest Management Strategic Plan for schools. (Dawn H. Gouge)

11:45-1:00 Lunch on your own

1:00-4:30pm Practicum at Ebert Elementary <http://polarisprogram.dpsk12.org/>

Instructors will lead small groups on an inspection, and discuss appropriate pest monitoring, pest management options, etc. Bring digital camera, and inspection tools (flashlight, hand lens, knee pads, collection vials, etc.).

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Western Regional School IPM Working Group members will guide experiential learning groups.

4:30 Dinner on your own

Evening It would be very beneficial if participants could download digital images on a CD or flash drive before the session begins the next day. Also, familiarize yourself with the national school IPM PMSP [http://www.ipminstitute.org/school\\_ipm\\_pmsp.htm](http://www.ipminstitute.org/school_ipm_pmsp.htm)

Friday, Oct 17 – Rocky Mountain & Sagebrush rooms (2<sup>nd</sup> floor conf. center)

8:00-9:45am Classroom Presentation Development  
Groups meet with instructors who will facilitate the creation of a PowerPoint presentation demonstrating inspection findings, and recommendations using digital pictures taken during the day and the PMSP  
[http://www.ipminstitute.org/school\\_ipm\\_pmsp.htm](http://www.ipminstitute.org/school_ipm_pmsp.htm)

9:45- 10:00 Break

10:00-12:00 Groups will present a PowerPoint report on school-site findings. Room discussion will follow each report (Group rep.).

12:00-1:00pm Lunch on your own

1:00-2:15pm Planning Session.  
Tools used to implement IPM (Marc L. Lame)  
Strategic planning session for community groups (Small Groups)  
Pesticide Environmental Stewardship Program <http://www.epa.gov/peesp/>  
(Sherry Glick, EPA)

2:15-2:30pm Complete practicum evaluation before departing.

Adjourn at 2:30 pm.

***Children are the most vulnerable  
members of society,  
they are the future.  
We are the custodians of their world***

