

IPM Extension Grant

2006

- I. **Project Title:** Children's Environmental Health Program
- II. **Project Leader:** Dr. Dawn H. Gouge
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III. **Project Team Members:**

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Paul Rasmussen, ADEQ
Gregg Smith, Physical Engineer, Salt Lake City School District
Jennifer L. Snyder, Research Specialist, University of Arizona
Roy Swearngine, Salt River Pima-Maricopa Indian Community

- IV. **Location:** State of Arizona and Southeast border region with Sonora, MX.

V. **Critical Issue/Situation to be Addressed:**

Salary funding for support staff is needed to strengthen and expand the IPM in Schools program and IPM research. The Arizona IPM in Schools program affects over a quarter of a million school children in public and tribal lands through voluntary program adoption. The program now involves a critical mass of districts in the Phoenix metropolitan area, with additional sites located in Tucson, on the Salt River Pima-Maricopa Indian Community, and Hopi lands. These participating school districts, along with pest management industry, state agencies, public health officials, and medical practitioners, serve as stakeholders in the Arizona Children's

Environmental Health Coalition. The Coalition is organized to further facilitate program expansion and IPM adoption, and helps to identify information and program implementation needs associated with school IPM adoption. The program currently operates on an annual budget of ten thousand dollars through a partnership with ADEQ; funds from this state agency are specifically ear-marked for state-wide outreach measures leading to the recruitment of new school districts in the program.

To maintain the IPM in Schools program's expansion efforts, the program plans to:

1. **Provide salary support for UA staff Jennifer L. Snyder, Research Specialist and State IPM Coordinator.** The reduction of hard money for technical lines has resulted in the need to raise twenty percent of technical position salaries for the 2006-2007 year.

VI. **Expected Outcomes:**

Short-term results from the proposed budget spending include:

1. UA Urban Entomology website renovation. Many IPM implementation tools and informational documents which have already been created and put into use will be added to the website.
2. Continued monthly (or bi-monthly) publication of the "Pest Press". This publication is circulated state-wide and nationally, and features practical information useful for the implementation and practice of IPM by the entire school community. Resource information and program updates are included in each issue.
3. Continued research, which is driven in part by stakeholder input. Results are currently shared in monthly program updates, coalition meetings, workshops, and the Pest Press.

Medium-term results from the proposed budget spending include:

1. Annual school IPM workshop. This hands-on practicum provides school IPM implementers with innovations in preventive maintenance, inspection, insect identification, and practical pest remediation.
2. Coordination of Coalition meetings (offered twice annually). Stakeholders learn the latest in public health issues, results of applied research (by Gouge and Snyder), school IPM program status, and networking opportunities.

Long-term/output results from the proposed budget spending include:

1. Volunteer school districts will gain the tools necessary to implement a sustainable IPM program that provides long-term management of pest problems with minimum impact on human health, the environment and non-target organisms; training and education in the selection of reduced-risk pesticides; a network of peers from which to draw.
2. Online availability of school IPM program tools and information will facilitate technology transfer and increased knowledge of school IPM implementers; this also has the secondary benefit of professionalizing individuals in their positions, making them more valuable and recognized members of their school district.

VII. **Plan for Evaluation:**

The IPM/IAQ in Schools program will evaluate desired outcomes for grant funding through:

- Arizona Coalition Meetings, which convene twice annually and encourage the group's self-assessment.
- Evaluation forms, which are requested at each meeting and workshop.
- The STAR Certification, awarded to school districts by the IPM Institute of North America for achieving strict, specific IPM standards.
- Continued US EPA Children's Environmental Health Awards (which in 2005 were given to Mesa Public, Washington Elementary, and Kyrene school districts).
- State agency and NGO recognition awards (eg. U of A received a 2005 Merit Award from Valley Forward).

VIII. Outputs – Team Budget

Funding for the 2005-2006 implementation period is as follows:

Salary Support for 2006-2007

	Base salary	\$34,601	
	ERE (37.8%)	\$13,079	
	Base salary	+ \$34,601	
		\$47,680	
	\$47,680 x 20%		\$9,536
	Total Amount Requested		\$9,536

Outcomes for 2005-2006 Grant Proposal:

Funding was requested for 2005-2006 for:

1. 10% salary for Jennifer L. Snyder (\$4,412)
2. IPM Tool Kit printing costs (\$5,000)

Funding was approved for salary only.

Outcomes for approved salary funding:

Awards:

2005 Merit Award from Valley Forward

EPA Award for Urban IPM 2005 accomplishments

Research and publications:

Gouge, D. H., and J. L. Snyder. (2005). Parasitism of bark scorpions *Centruroides exilicauda* (Scorpiones: Buthidae) by entomopathogenic nematodes (Rhabditida: Steinernematidae; Heterorhabditidae). *Journal of Economic Entomology* 98: 1486-1493.

Gouge, D. H., and J. L. Snyder. (2006). Temporal Association of Entomopathogenic Nematodes (Rhabditida: Steinernematidae and Heterorhabditidae) and Bacteria. *Journal of Invertebrate Pathology* 91:147-157.

D. I., Shapiro-Ilan, Gouge, D. H., Piggott, S. J. and Patterson Fife, J. (2006) Application Technology. *Biological Control*. (In Press)

Yu, H., D. H. Gouge, and P. Baker. (2006) Parasitism of subterranean termites (Isoptera: Rhinotermitidae; Termitidae) by entomopathogenic nematodes (Rhabditida: Steinernematidae; Heterorhabditidae). *Journal of Economic Entomology*. (In Press)

D. H. Gouge, M. L. Lame, and J. L. Snyder. (2006). Use of an Implementation Model and Diffusion Process for Establishing Integrated Pest Management in Arizona Schools. *American Entomologist*. (In Press)

T. A. Green, D. H. Gouge, L. A. Braband, C. R. Foss and L. C. Graham. (2006). IPM STAR Certification for School Systems: Rewarding Pest Management Excellence in Schools and Childcare Facilities. *American Entomologist*. (In Press)

Gouge, D. H. (2005) Social Insects. In: *Nematodes as Biological Control Agents*. Eds. Parwinder S. Grewal, Ralf-Udo Ehlers, David I. Shapiro-Ilan. CABI Publishing

Workshops (4): Flagstaff (1); Tempe (1); Second Mesa, Hopi Reservation (2)

IPM Tools:

Pest Press (6 issues created in 2005)

Coordinated Pest Press posting on UA Urban IPM Website

Monthly updates (12) to stakeholder group (Children's Environmental Health Coalition)

Comprehensive IPM Fact Sheets (8)

IPM Coalition meetings (6): Phoenix metro (4); Sonora, MX (2)

IPM Toolbox Kit:

14 tools have been produced for an IPM Toolbox Kit, but not printed due to lack of funds. University of Florida received national funding for posting these materials on their website.