6. Project Description

(a) Problem, Background and Justification

Residential pesticide use is prevalent

Three-fourths of U.S. households—about 78 million—use pesticides to counter hundreds of different insects, diseases, and weeds in and around the home. According to the Environmental Protection Agency, 90 million pounds of conventional-pesticide active ingredients were applied to homes and gardens in the United States in 2001-2002, up 10 million pounds from 1998-1999. When agricultural pesticides, wood preservatives, chlorine, and hypochlorites are considered, nearly 5 billion pounds of active ingredients are used in the country each year (EPA 2004).

Consumers can choose from thousands of different pesticides and formulations. In New York State alone, 12,540 products are registered for residential use, including 804 for the home garden, 1,223 for household use, 720 for turf areas, and 292 for structures (PMEP 2004). A recent survey of urban apartment dwellers by the New York State Attorney General's Office found that, statewide, 69% of respondents applied pesticides in their own homes and 33% did so at least once a week (Surgan et al., 2002).

About 75% of American households have a yard or garden. Nationwide, 47% of home gardeners polled recently said they would use chemical products or a combination of chemical and organic products to address insect problems (GWA 2004).

Last year, the University of California Davis Statewide IPM Program (Flint, 2003) surveyed 2,600 residents about their attitudes towards pesticides and their practices. More than half of respondents said that outdoor areas surrounding their homes had been treated in the most recent six months; 60% of the products were applied to hard surfaces such as sidewalks and home exteriors or foundations. More than half of the respondents in northern California areas were aware that pesticides affected water quality in local creeks, yet 5-15% admitted to pouring mixed pesticides into drains or the street gutter.

Some residents use pesticides because they are concerned about diseases caused by pests, such as the increased risk of asthma from cockroaches or the possibility of West Nile Virus from certain mosquitoes. Others are simply unaware of alternatives. Indeed, there is a high need for educating the public about pests, IPM, and the link between pesticide use and environmental quality.

Pesticides affect human health and the environment

Adverse health effects of pesticides on humans are still being discovered. The Natural Resources Defense Council claims that at least 107 different active ingredients in pesticides have been found to cause cancer in animals or humans (Curtis & Profeta 1993). The repeated use of pesticides is known to cause pesticide resistance in weeds, insects, and diseases. According to Stapleton (2000), at least 535 insects have demonstrated resistance to insecticides.

Water sources contaminated by pesticides are well documented. According to the United States Geological Survey (1999), "decades of pesticide use have resulted in their widespread occurrence in streams and ground water." Results from a combination of scientific studies in the past 30 years show that more than 50 percent of stream samples contained 5 or more pesticides. At least 1 pesticide was found in almost every water and fish sample collected from streams.

According to the USGS, "Results indicate a high potential for problems in many streams, particularly in urban areas, where concentrations of more than one pesticide often approached or exceeded established water-quality guidelines." Volk (2003) writes that "non-point source pollution is currently the dominant threat to water quality, contributing up to 65% of the pollution in impaired streams in the northeastern United States."

Residential neighborhoods can be a major source of non-point source pollution (Connecticut River Joint Commission, 1998) when pesticides and fertilizers are washed from parks, lawns, driveways, and roads into waterways, and research has shown that widely-used pesticides migrate in trace amounts to many bodies of water (WRI, 2002).

Communities need IPM resources

Some citizens *do* think about pesticides, become aware of alternatives, and say they are willing to learn more. Pool (1997) found that 89% of consumers surveyed in New York were likely to buy IPM-grown food and 72% were willing to pay more for it. According to a homeowner survey in Montana (Lajeunesse et al., 1997), 43% of those surveyed were "very interested" and another 38% "somewhat interested" in learning more about least-toxic methods of pest management. They considered the most effective methods for learning to be printed materials, hands-on participation, educational videos, and demonstrations by specialists.

Extension surveys in several Northeastern states have documented how consumers prefer to obtain information; personal interactions rank high. Of a list of places consumers turn, garden center personnel top the list, followed (not too closely) by Extension personnel. If *IPM in and around the home* could be put in the hands of garden center personnel, pest management advisers, educators, and other service providers, the effect could be enormous.

There are an estimated 8,800 master gardeners from Pennsylvania to Maine (Charlie Mazza, personal communication and letter of support, 11/1/04). New York's 2,200 master gardeners are required to own pest management guidelines so they can properly advise consumers about solutions. In Connecticut, the Home and Garden Center personnel make 10,000 contacts annually with residents, and the director says there is a need to offer better information to them (Rob Durgy, personal communication, 11/1/04) .

Mary Kay Malinoski, who directs Maryland's Home and Garden Information Center (personal communication and fax, 10/24/03), reports that in the past three years the center has responded to nearly 7,000 email inquiries from all 50 states and the District of Columbia about pest control, pesticide safety, lawns, gardens, wildlife, and other related topics.

Consumers in the Northeast need concise information about home pest management. The document we plan to update, integrate, and make available to residents in the Northeast is a currently a set: *Part I: Pest management around the home: cultural methods* and *Part II: Pest management around the home: pesticide guidelines.* Both volumes were prepared by Carolyn Klass and Karen Snover-Clift with input from 20 Cornell faculty members in 7 departments. The set is described by the webmaster of the Cornell Gardening Site (Craig Cramer, personal communication, 10/28/04), as "the only comprehensive source of printed information for home gardeners. Nowhere else do we list all the cultural controls and pesticides available to them." Rachel Maccini (UNH Cooperative Extension) also relies on the current guidelines.

By creating *IPM in and around the home: Northeast guidelines* and posting it on the web, we would be meeting the needs of Northeast stakeholders for specific information on weed-, insect-, disease-, and wildlife management, as detailed below.

Needs identified by stakeholders in the Northeast Region

This proposal addresses six of the 10 priorities identified by the Community IPM Working Group on the NE Center website (http://northeastipm.org/work_commpriority.cfm):

2) Develop outreach to homeowners, retailers of homeowner pest management products, and 'multipliers' (e.g., libraries, teachers).
3) Address priorities identified by the Turf IPM Work Group (notably, user-friendly ways to implement latest research; comprehensive WWW treatment of turf IPM; and timely IPM updates via a variety of media).
4) Research, develop, and outreach methods for low-input landscape and turf maintenance strategies, including development and distribution of a pocket field guide for the pest management of landscapes and turf.
6) Catalog general use pesticides available to the public.
7) Develop new IPM definitions (as elements, guidelines) that fill existing gaps.
8) Research and outreach on wildlife pest management, including landscaping "Do's and don'ts."

Needs identified by USDA—CSREES

Of the five national priorities set by USDA–CSREES, objective 5.2 is "To increase the capacity of communities, families, and individuals to improve their own quality of life." By providing community members with opportunities to learn about pests and integrated pest management, we are increasing their capacity to improve their personal health, the health of their yards and neighborhoods, and, ultimately, their quality of life.

The USDA has begun to acknowledge Community IPM, which encompasses pest management for homes, as evidenced by its acceptance of the *Community IPM White Paper*, now available at www.nysipm.cornell.edu. The tremendous needs for consumer information, identified in this white paper, could be addressed in large part by our proposed comprehensive guidelines.

Previous resources funded by NE IPM

In 1998, Malinoski, Traunfeld, and Clement were funded by the NE IPM Regional Grants Program for *A Diagnostic, Problem-Solving Web Site for Plants, Pests, and Landscapes,* from which the Home and Garden Information Center was more fully developed. Two years prior, Maynard, Casagrande, Gold, Gordon, and Lagerquist received funding for "Selling the nursery industry on sustainable trees and shrubs." *IPM in and around the home: Northeast guidelines* would complement the information developed in both of these projects, both geographically and conceptually.

In both 1997 and 1998, the NE IPM Regional Grants Program funded Reiners, Petzoldt, and Hoffmann to develop the *Integrated crop and pest management guidelines for commercial vegetable production: a Cornell Cooperative Extension publication* (the 2004 edition was released this year). These authors pioneered ways to present information clearly in printed and web-based formats that are compatible. We would learn from their experience and link to portions of their website, which provides current, well-organized information for commercial vegetable growers. These guidelines are not, however, oriented towards homeowners. They do not cover pests of turf, landscapes, or structures, and they provide only nominal information on wildlife. Furthermore, their pesticide recommendations are germane to New York State.

In 2004, NE IPM funded Curtis, Hygnstrom, Schmidt, and Yarrow to increase public awareness about wildlife IPM and access to agencies, organizations, consultants, and vendors that provide information. One goal was to increase communication among resource professionals associated with IPM and wildlife damage management on the web. As this resource is developed in the future, it will be an important electronic source of information.

ProNewEngland—Pest Resources Online—(http://www.pronewengland.org/), funded by the Northeast Center, points web users to information in six New England states about plants, pests, and pest management. It is not available in printed form and does not cover New York, New Jersey, and Pennsylvania.

Other printed resources

Common-sense pest control. Olkowski, W., S. Daar, and H. Olkowski, 1991. Taunton Press. This superb 736-page reference **is out of print** and the publisher does not plan to reprint it. Although it provided excellent information about pests in and around the home, it was bulky and expensive for homeowner use.

The Gardener's Guide to Common-Sense Pest Control, W. Olkowski, S. Daar, and H. Olkowski, 1996, 320 pp. Could be a companion book for our proposed guidelines because it provides excellent IPM information but is not specific to the Northeast, nor is it a source of current information about legal use of pesticides in the Northeast.

A number of other resources, such as **Before you use pesticides** (Maine), **New England recommendation guide for insects, diseases, and weeds of shade trees and woody ornamentals** (UMass—commercial orientation) by R. Childs, **Recommended urban trees: site assessment and tree selection for stress tolerance** by N. Bassuk (2003), **Turfgrass picture clues** (Cornell Turfgrass Team), **Beasts Begone** (NYS IPM Program), and various fact sheets and brochures would be helpful resources.

Other web resources

Plant/Pest Handbook, Connecticut Agricultural Experiment Station. Written by Sharon Douglas and Richard Cowles, the handbook provides information on pests and can be found at http://www.caes.state.ct.us/PlantPestHandbookFiles/pphIntroductory/pphfront.htm. The site is based on a document that was originally oriented for farmers and makes no pesticide recommendations, but the information is applicable to much of the Northeast.

Cornell's Home Gardening site. (www.gardening.cornell.edu and its subsite: http://www.explore.cornell.edu/scene.cfm?scene=home%20gardening)
Functions as a clearing house for many resources related to home gardening. Its sub-site, through ExploreCornell, provides extensive information on vegetables and flowers grown in New York State, with a brief feature on turf. Includes some pest management information but nothing searchable by pest, no structural pests, and no illustrations or photographs of pests. Might be a good companion site to web-based guidelines.

Inadequacies of existing guidelines

The existing documents, *Pest management around the home: cultural methods* and *Pest management around the home: pesticide guidelines,* although popular, have several deficiencies:

• **Divided into two parts.** *Pest management around the home* is divided into two separate volumes: *Part I: Cultural Controls* and *Part II: Pesticide Guidelines.* Part I is updated as

resources allow. Part II is updated every two years. Neither document has been restructured to integrate new IPM methodologies for many years, and there is minimal integration between the two volumes. Some educators and consumers purchase only the pesticide volume (which is published more frequently than *Cultural Methods*) and base their recommendations on it.

• **Incomplete.** The first volume, *Cultural Methods,* focuses on such topics as cleaning up plant debris, rogueing, avoiding crowding, improving drainage, hand-picking, and other cultural methods. It lacks information on thresholds, resistant varieties, natural enemies, crop rotation, site selection, and many postharvest practices. Current restraints of time and funding preclude a major restructuring of the documents, which is needed.

• **Emphasis on pesticides.** Many educators use only the second volume—pesticide guidelines—when responding to a request from a homeowner and recommending controls for pests. In this scenario, vital information about alternatives that could be conveyed to end-users is lost, and worse, homeowners are pointed in the direction of chemical pesticides.

• **Not designed to be marketable.** We could reach more people and have greater impact if *Pest management around the home* had an ISBN number and UPC (universal price code) label, making it easier for book sellers to carry it. The existing publication looks like an academic manual and would benefit from a user-friendly color cover and a more compact format.

Strengths of proposed guidelines

IPM in and around the home: Northeast guidelines would be available in printed and web formats and would cover IPM methods (including nonpesticidal tactics and safe use of pesticides) as these relate to pests of structures, houseplants, trees, shrubs, small fruits, vegetables, turfgrass, annuals, perennials, and wildlife. Strengths of the guidelines would be:

Free internet accessibility

A vital component of this project is to post the new guidelines on the web as an integral part of the project. The guidelines would be aesthetically appealing, comprehensive, and easy to use; they would also be generated from a database of information that would serve both printed and electronic formats. This database technology allows web pages to be created on-demand and updated rapidly, in contrast with older technology that required individual page revisions wherever information was repeated. The New York State IPM Program has used this methodology successfully in reconstructing its website and as part of the upgrading of three guidelines (for an example, see www.fieldcrops.org).

The guidelines website would be highly interactive, allowing viewers to learn more about specific topics by clicking on images, text, and links that connect to additional IPM knowledge. Visitors to the site would also be able to print sections of the guidelines as needed, or possibly request sections from a quick-print service provider.

Multistate involvement

The proposed guidelines will be created with input from nine Northeastern states. IPM programs, state network projects, governmental entities, Extension programs, and private establishments would be involved in the planning and outcome. We expect to connect participants via telephone calls, conference calls, web-based technology (such as SharePoint, which enables individuals to view, comment on, and edit common documents); and meetings (e.g., alongside the NE IPM Conference in March). Pennsylvania hopes to gather Northeast practitioners with an urban IPM

focus (Ed Rajotte, personal communication, 11/1/04) and we may be able to connect with that effort if their funding is successful.

Non-pesticidal tactics
The new guidelines would provide readers with clear, current, and reliable information on pests and pest management. Information on a continuum, shown in tables, would begin with nonpesticidal tactics. Where applicable, we would detail scouting tips, identification, fertility practices, resistant varieties, natural enemies, site selection, thresholds, rotation, and other successful alternatives to pesticides.

Environmental stewardship and risk management
The new guidelines would convey information about assessing risks of pest management alternatives and would empower citizens to make informed decisions for themselves, their families, and their communities to reduce unreasonable adverse environmental and human health effects. For example, when recommending pesticides, we would build on the philosophy of the existing guidelines to include least-toxic choices: insecticidal soaps, horticultural oils, biopesticides, and some botanical and mineral pesticides. Of the synthetic chemical pesticides, our recommendations would focus on those labeled CAUTION (slightly toxic to relatively nontoxic). Only when necessary would we include pesticides labeled WARNING (moderately toxic), and we would *not* include highly toxic pesticides (DANGER label) or restricted pesticides. The information in final guidelines would help consumers to understand and consider the wide range of methods for dealing with pests they might encounter every day.

Likely implementation
Every state in the Northeast has a system in place for disseminating information, with people who help consumers. We plan to work with these systems, encouraging participation early in the project so the outcome is agreeable to all.

Applicability of project to other states

Every state in the country will be able to benefit from the information in *IPM in and around the home: Northeast guidelines,* but the focus will be the north-central portion of the Northeast Region—Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Rhode Island, New Hampshire, Vermont, and Maine. None of these states offers a comprehensive, integrated set of guidelines for pest management around the home in both printed and web-based format (Ron Gardner, personal communication, 10/27/04). For example, Ann Hazelrigg in Vermont (UVM) sees the Northeast guidelines as a "wonderful idea," is willing to help, and thinks the effort would be "well worth it."

Some states have already confirmed that they would use the proposed comprehensive guidelines, which would include legal pesticide use *in each state* (e.g., Rachel Maccini, UNH Extension, personal communication 10/29/04, MA, and NJ). Approximately 54 million people live in these nine Northeastern states (Pearson Education, 2002-2004), and most of them encounter pests in and around their dwellings on a regular basis, creating an enormous potential audience for guidelines on pests and their management. (See letters of support.)

The southerly states in the region—Maryland, Delaware, and West Virginia have pest complexes that differ from the north-central part of the Northeast because of geographic and climatic differences. These southern pest complexes will not be included in the document. The guidelines might be useful to Southern states, but would be incomplete.

(b)Objectives

Our goals for the new document are to

- provide readers with clear, current, and reliable information on pests and pest management on a continuum from nonpesticidal tactics to conventional (nonrestricted) pesticides.
- build consumers' ability to make informed choices confidently and to find additional information;
- increase broad use of IPM methods among NE consumers; and
- decrease the negative environmental impacts of conventional pest management.

To reach these goals, we plan to connect with experts in the Northeast Region who understand IPM, pest-specific tactics, communication methodology, and ways to integrate all three. We will focus on our audiences to provide printed and internet products that meet their needs; market the document actively, and bring about positive change in homeowners' behavior. Our specific objectives are as follows:

Year One

1. With participation from nine Northeastern states, integrate two separate volumes of information about pest management around the home into one comprehensive document.
2. Plan an interactive website based on *IPM in and around the home: Northeast guidelines* that is aesthetically appealing, comprehensive, and easy to use.

Year Two

1. Produce, market, and distribute the printed version of *IPM in and around the home: Northeast guidelines* to Northeast audiences.
2. Create, post, and advertise a web-based version of *IPM in and around the home: Northeast guidelines* that users can access for free.
3. Assess the effectiveness of the project and help to ensure its sustainability in the Northeast.

(c) Approach and Procedures

Reaching the objectives

Detailed procedures, specific tasks, and completion dates are in the time table below.

Approach and Timetable for Year One Objectives

Objective	Procedures	Specific Tasks	Complete by
1. With participation from nine Northeastern states, integrate two separate	Form a Northeast team. Speak with and meet with team members.	Likely team members: Ed Rajotte (PA); Robert Childs, Pat Vittum/Natalia Clifton (MA); Jim Dill, Kelly Bourdeau, or Kathy	3/05

volumes of information about pest management around the home into one comprehensive document.	Establish a project coordinator with strong writing and organizational skills	Murray (ME), Rachel Maccini (NH), Ann Hazelrigg, Margaret Skinner (VT), Steve Alm (RI), Candace Bartholemew (CT), and George Hamilton (NJ). Hold a preliminary meeting in conjunction with the March 2005 Northeast IPM Conference.	
	Assess the existing volumes, finalize scope of the new document, and establish a work plan with an outcome-based approach.	Work with different members of the team via conference calls and by traveling to states that couldn't attend the NE Conf. meeting. Establish multistate subject matter experts and editors.	5/05
2. Plan an interactive website based on *IPM in and around the home: Northeast guidelines* that is aesthetically appealing, comprehensive, and easy to use.	Engage a webmaster with solid experience in web design to work with the NE team and subject matter experts for 2 weeks, to plan.	Ensure that the guidelines and website will dovetail with one another in content and format. Set the stage for the creation of the website.	5/05
	Draft the new guidelines.	Provide readers with clear, current, and reliable information on pests and pest management on a continuum from organic to conventional. Add new nonpesticidal tactics. Expand the wildlife section and consider including a wildlife chart.	11/05
	(Concurrently, with above steps) Verify pesticide information.	Use NPIRS (National Pesticide Information Retrieval System) through Cornell's PSUR (Pesticide Sales and Use Reporting) Database to validate states' registration of pesticides.	11/05
	Send out for review.	Team and others review document; senior editor and project coordinator finalize edits.	1/06
	Design a reply card that will indicate impact and effectiveness.	Contact an entity like the Survey Research Institute, http://www.sri.cornell.edu/, for guidance; create reply cards that users would complete and return (provide an incentive, as 15% off the next guideline).	4/06
	Create a marketing plan.	Work with the team, Cornell Resource Center, and other state entities to identify outlets; establish	2/06

		pricing.	
	Design the guidelines.	Use layout software as necessary to create a reader-friendly, pleasing design, keeping the eventual posting to the web in mind.	3/06

Approach and Timetable for Year Two Objectives

Objective	Procedures	Specific Tasks	Complete by
1. Produce, market, and distribute the printed version of *IPM in and around the home: Northeast guidelines* to Northeast audiences.	Print the guidelines.	Identify printer; create final copy; insert reply card; print.	6/06
	Follow marketing plan.	Market with the goal of decreasing negative environmental impacts of conventional pest management, decreasing risks to human health, and increasing broad use of IPM methods among NE consumers.	7/06 (and on-going)
	Convene the webmaster, team, and subject matter experts		4/06
2. Create, post, and advertise a web-based version of *IPM in and around the home: Northeast guidelines* that users can access for free.	Plan the site	Work with different members of the team and others to assess the existing guidelines, finalize the scope of the website, map the site, and establish a work plan.	5/06
	Create, test, and troubleshoot the site		9/06
	Post the site		10/06
3. Assess the effectiveness of the project and help to assure its sustainability in the Northeast.	Analyze and summarize results of printed reply cards. Analyze numbers of downloaded pages from the web guidelines (numbers of "hits").		2/07
	Post a time-limited on-line survey that web users would complete before accessing the site.	Contact an entity like the Survey Research Institute, http://www.sri.cornell.edu/, for guidance.	2/07
	Work with states to ensure continuation of updates (provide web access; teach them how). They would use proceeds from sales of guidelines.		3/07

	Analyze sales data from the distribution center(s) and compare with previous three years of data to assess effectiveness of marketing plan		3/07
	Summarize results in a final report and make recommendations for future guidelines.		3/07

(d) Cooperation and Institutional Units Involved

State Involvement

Please refer to CVs and/or letters of support from many of these individuals.

The following academic professionals have agreed to collaborate, serving as team members, subject matter experts, and editors, as necessary:

University of Massachusetts—Amherst, Robert Childs. Bob is eager to see guidelines that are appropriate for Massachusetts homeowners, as the state has no such document.

Penn State University—Ed Rajotte

Cornell University—(Lead state). Faculty member Paul Curtis. Academic staff Karen Snover-Clift and Lynn Braband. Cornell Cooperative Extension educators are excited about the prospect of new guidelines and have pledged their support (see letters from Sally Cunningham, Charlie Mazza, Renee Schloupt, and Russ Welser). Other professionals are also in favor of the project, as shown by the letter of support from Carol Bradford, garden columnist for the Syracuse Post-Standard.

Rutgers University in New Jersey (George Hamilton) and the University of New Hampshire (Rachel Maccini) have pledged their support of the project and their willingness to participate.

States very interested in the outcome and possibly in participating are
Maine—Jim Dill (Colin Stewart), Kelly Bourdeau
Connecticut—Rob Durgy (UConn); Leanne Pundt

Other potential collaborators are:
Ann Hazelrigg, Margaret Skinner (VT)
Steve Alm (RI)
Candace Bartholemew or Tina Smith (CT)
Kathy Murray (ME)

Multidisciplinary coordination

The academic scope of the proposed guidelines is broad, demanding input from the disciplines of plant pathology, entomology, weed science, natural resources, and fruit and vegetable science, and covering pests of landscapes, turf, home gardens, and structures. We have chosen collaborators with expertise in these areas, and we also intend to continue previous collaborative arrangements with 20 experts at Cornell who contribute to the guidelines as part of their professional work. Many of these individuals have long-standing, cordial ties to the project director who will be the senior editor; cooperation has never been a major barrier to revisions and we anticipate the same will be true for the *Northeast guidelines*.

The technical scope of the guidelines is also broad, and we will tap the expertise of webmasters at Penn State University, Cornell Cooperative Extension (which currently posts

interactive guidelines), the NYS IPM Program, and other entities, public and private, throughout the region.

(e) Implementation and Evaluation Plans

Ensuring sustainability of the project

Engaging individuals in Northeastern states in the ownership of these guidelines will be important to the success of this project. For states to use and promote the guidelines, they need to view them as *theirs.* Thus, the project coordinator will speak with pesticide safety coordinators, faculty, and staff from each state to engage cooperation and help to form a collective vision. Early in the first year, the coordinator will meet in person with as many of these individuals as possible to determine their needs and goals.

As the guidelines progress, the coordinator will help to ensure their sustainability beyond the time span of this project by

1) developing an active marketing plan and following through with it. This valuable resource could become known to 54 million people throughout the Northeast via state entities, book stores, garden centers, pest control operators, and many other multipliers.

2) pricing the guidelines in a way that brings proceeds back to the individual states. Current sales of the two *Pest management around the home* volumes are healthy. From 2000 to 2004, a total of 7,205 copies were sold. Sales of Part I averaged more than 1200 copies each year from 2000 to 2003. If each state were to sell even 200 copies at a profit of $10 per book, $2,000 could be generated per state to defray the cost of a staff person's time for future revisions. This scenario is likely, given that the guidelines will cost $5-10 to print, depending on the final specifications, and could be sold for $17-22, including shipping. George Hamilton of the IPM Program in New Jersey, who supports the concept of the Northeast guidelines and says he would use them, likens the pricing idea to the applicator training manuals, which are sold by individual states. Any revenues stay with those states.

3) teaching states how to update the content on their portions of the website. Timely updates will ensure that web users are getting accurate information.

In the past, Cornell Cooperative Extension has provided limited financial support for printing pest management guidelines. Costs are recovered through sales and invested in subsequent printings. Extension staff are expected to contribute to the guidelines without additional financial compensation. We anticipate that this arrangement—or perhaps a similar arrangement with an entity like the Natural Resource, Agriculture, and Engineering Service (NRAES)—would continue in the future with the *Northeast guidelines;* individual states would purchase guidelines at cost and be allowed to set a reasonable profit margin. Therefore, no allowances for printing are included in this budget.

To emphasize state ownership of the guidelines, different covers could be printed for different states, or a universal cover with individual state logos on it could be designed.

We plan to consult with trained survey personnel, such as through the Survey Research Institute at the Cornell School of Industrial and Labor Relations (http://www.sri.cornell.edu/), to create reply cards that would be inserted into the printed guidelines. So that customers would return them, we could provide an incentive, such as 15% off the purchase of pest management resources—or even future guidelines. Before the end of the first year of sales, we will analyze the reply cards to determine which pest information is used most frequently, the number of sites or acres impacted, the use of alternatives, the use of pesticides, changes in practices, and likely practices in the future.

Towards the end of the second year of funding, after the guidelines have been posted on the web, we will assess the website for a limited period of time by requiring that users complete an on-line survey before accessing the site. We again expect to engage an entity like Cornell's Survey Research Institute for this step. Customers would complete questions similar to those in the printed reply card. These would be analyzed by the webmaster and all results would be tallied and summarized in a final report.

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A Cornell Cooperative Extension Publication

PART I

PEST MANAGEMENT

Around the Home

Cultural Methods

Miscellaneous Bulletin S74

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CONTENTS

9. Key Personnel

Project Directors:
Carrie Koplinka-Loehr, Communications Coordinator, NYS IPM Program, Cornell University. Either function as **project coordinator/writer** or guarantee that a project coordinator will be assigned or hired who will establish the multistate team; clarify their expectations and create a work plan; write new sections in conjunction with subject matter experts and senior editor; lay out document via desktop publishing; interface with the printer and distribution center; establish pricing; initiate contact with an entity like the Survey Research Institute; ensure that the pesticide research is properly conducted; and market the document via an aggressive marketing campaign to all Northeastern states, a process that includes press releases, complimentary copies, direct mail, email notification, and a presence at national and regional conferences and symposia.

Carolyn Klass, Sr. Extension Associate, Insect Diagnostic Laboratory, Cornell University. Function as **senior editor**, and as such, review and assess all existing material and, with the project coordinator, provide copies to the team for feedback; research new methods, providing papers, web sites, illustrations, and photographs; advise how to integrate chemical recommendations with other IPM techniques. Check all final recommendations, serve as final authority over differences of opinion, and approve the final printed copy. Provide advice for and approve the web version. Help market the product through meetings, workshops, and other venues.

10. Collaborative Arrangements

Robert Childs, University of Massachusetts; expert in woody ornamentals.
Provide information regarding insect pests, weeds, and diseases of New England; make recommendations, and contribute sections pertaining to IPM. Approve printed and web documents from an IPM perspective. Help market the product through meetings, workshops, and other venues.

Edwin Rajotte, Pennsylvania State University; expert in entomological IPM.
Review and assess existing material; help shape the Northeast guidelines document and team; provide information on new methods; Engage cooperation of expertise in PA that can approve the final printed and web guidelines. Help market the product through meetings, workshops, and other venues.

Paul Curtis, Cornell University; expert in wildlife.
Review and assess existing material in the field of wildlife; research new methods, providing papers, web sites, illustrations, and photographs. Approve printed and web documents from a wildlife perspective. Help market the product through meetings, workshops, and other venues.

Lynn Braband, NYS IPM Program at Cornell University; expert in community IPM.
Function as **professional staff;** Review and assess existing material; research new methods, providing papers, web sites, illustrations, and photographs. Approve printed and web documents from an IPM perspective. Help market the product through meetings, workshops, and other venues.

Karen Snover-Clift, Plant Disease Diagnostic Clinic, Cornell University, plant pathologist
Review and assess existing material from a plant pathology standpoint; advise how to integrate chemical recommendations with other IPM techniques. Check all final disease recommendations; provide advice for and approve the web version. Help market the product through meetings, workshops, and other venues.