student sustainability committee
university of illinois at urbana-champaign

APPLICATION INFORMATION

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Addressing Pest Management Issues Impacting Students and University Housing

Background

A widely accepted definition of sustainability is to "...**meet the needs of the present without compromising the ability of future generations to meet their own needs**" (Brundtland Commission, 1987). The health of our future generations and the environment are key to the sustainability of our planet. Programs involving Integrated Pest Management (IPM) promote environmental stewardship and enhance human health and safety while considering associated economic impacts. IPM is the core to sustainable pest management in both structural and landscape pest management plans by ensuring the judicious use of inputs (pesticides and lawn chemicals), increased sanitation and conservation of resources. Structural IPM specifically considers human health and safety, environmental impacts, social acceptability and economics when addressing pest issues. Through the use of pest monitoring, pest exclusion and increased sanitation it is possible to manage pests and reduce the use of pesticides in structural settings. This approach provides economic savings as well as reducing pesticide exposure. Implementation of an enhanced IPM plan to assist University Housing with pest management needs will further reduce pest management costs, as well as reducing students' exposure to pests and pesticides.

We propose a pilot Integrated Pest Management (IPM) project on the Urbana campus to support the efforts of Drs. Hogan and Easter in cooperation with Governor Quinn as outlined in the recently signed Illinois Sustainable University Compact. In addition, this project will support Dr. Hogan's desire to reduce pesticide usage on our campus. This project would be funded from the student sustainability fee assessment. We currently have a $30,000 USDA-NIFA grant for school IPM programming and we request $30,000 in matching funds from your program.

In light of many new concerns regarding pesticide exposure as well as problematic pests such as bed bugs, it is important to develop a enhanced IPM plan for our campus. Implementation of this plan should be able to duplicate results demonstrated in previous programs with an average pesticide reduction of 71%. Through the adoption of verifiable IPM practices, the University can reduce energy use through pest exclusion practices, reduce pest management costs and reduce pesticide usage. Use of existing personnel in many aspects of this process is critical to the success of the program and its long-term sustainability. Intensive training of personnel and pest monitoring are key to the success of an IPM program. In addition, sanitation will be improved as a result of implementing IPM. By approaching pest management through educational efforts and behavioral change, the program is self-sustaining and will maintain itself indefinitely.

Project Goals:

1. Collaborate on a pilot IPM plan with University Dining Services and Terminix to evaluate IPM practices and identify possible ways to reduce pesticide applications in the dormitories food service areas.

We have worked with Terminix for several years with our Westville School District's IPM Program and have expanded our collaborations with them to include the Catlin School District and the Vermillion Area Special Education (VASE) School as part of our K-12 School IPM Project. Terminix services University of Illinois Dinning Services and they have agreed to participate in this project. We would implement an IPM model that has been demonstrated to be successful in the school environment because IPM tactics such as cultural and mechanical pest control strategies can be incorporated into existing custodial and maintenance activities. There are benefits of this strategy that extend beyond pest control such as improved sanitation, energy conservation, enhanced building security and more efficient infrastructure maintenance. Students and dining services personnel share the responsibility for recognizing potential problem areas and for acting early to prevent infestations. This approach has been implemented for more than twelve years, and has demonstrated significant reductions in pesticide use, and pests/complaints--without significantly increasing staff workload or expense in more than ten states and three Indian Reservations.

The successful extension of the model will initiate a proven pesticide reduction program. It will provide education through training, demonstration of technological and program planning innovations, development and disseminate of outreach materials, audits of pesticide use/cost/exposure and outline tangible progress for the mitigation of risk to the Urbana campus student community. We will initiate changes in the servicing of the Dining Services areas by Terminix and support staff. Currently, Terminix personnel make visit after staffing has left the facilities. We will work with Terminix and staff to coordinate pest inspection of monitoring stations during business hours to facilitate exchange of information and interactions between these two key groups. We will work with building staff to identify potential entry points for pests so steps can be taken to exclude pests from dining areas. Monitoring stations will be used to assess pest populations and we will work with Terminix and Dining Services staff to determine if management steps are needed. If it is necessary to use chemical tools for the management of pests, the choice will be the least risky alternatives, such as gel baits or boric acid. We will initially provide IPM assessments for two dining halls. Based on the needs and progress attained at these two sites, we may be able to expand this portion of the project to more dining halls.

2. Develop educational materials for students, parents and others regarding pest management and notifications of any pest related issues (some materials will be used for University-owned apartment residents and others for dormitories) in collaboration with University Housing.

We will work with University Housing to develop educational materials to inform students of methods to reduce pest infestations, especially bed bugs in dormitories and University-owned apartments. Bed bugs are a growing problem in the U.S. and understanding their biology and lifecycle will reduce the possibility that students' activities would result in infestations. Bed bug infestations are costly to eradicate and usually require multiple treatments and disposal of both furniture and personal belongs. In addition, the presence of bed bugs in the U.S. is not socially acceptable and many individuals who are bitten by bed bugs develop allergic reactions. Bed bugs can survive for months without a blood meal, so used and discarded furniture infested with bed bugs is a frequent way they are introduced in to new environments. Individuals living in areas with bed bug infestations transport bed bug "hitchhikers" to other locations creating new infestations. We will prepare materials that would be sent to students and parents prior to campus move-in to reduce the likelihood that items brought to campus are harboring bed bugs. We will have additional materials for these same audiences that would notify them of bed bug infestations in dormitories to reduce the possibility that bed bugs are transported home with students when they leave campus during breaks. The best management of bed bugs is prevention. Once infestations occur, it is very costly and difficult to eradicate bed bugs. This program could provide significant savings for the University, students and their parents. Treatment for a single infestation could cost $20,000 per unit or living space.

3. Develop a plan for a holistic community education effort to educate campus administrators, faculty, students, parents and merchants (Goodwill, Salvation Army, Dump and Run) regarding pest issues, primarily bed bugs, and how to avoid pest infestations.

As we mentioned above, prevention is the key to good pest management. With bed bugs in particular, developing a plan to not introduce them in to new environments is key. Used furniture, clothing and household items can harbor bed begs. Individuals can also be exposed to bed bugs in hotels, public transportation, movie theaters and other areas where the general public have access. We will contact businesses and organizations involved in the resale of used furniture and clothing to determine if they have protocols in place to eliminate bed bugs from merchandise. In addition, we will provide training sessions for local apartment management companies, University facilities staff, students and parents that will assist them in preventing infestations and effectively managing infestations if they occur.

Coordination with Campus Units

After discussing this project with Steve Sonka, Vice Chancellor for Pubic Engagement (Interim), I met with several members of Facilities and Services (Ken Buenting, Assistant Superintendent – Building Maintenance; Tony Kelley, Foreman – Water Station; and Carl Wegel, Director of Maintenance – Facilities and Services) to discuss pest management issues and current efforts to address these issues. During the discussion, it was agreed that collaborating with University Housing would have the greatest positive impact for students. Discussions with Vonne Ortiz, Assistant Director of Housing and Dawn Aubrey, Senior Assistant Director of Dining Services identified two key areas that would provide direct benefits to both the University of Illinois Urbana-Champaign campus and our students. The two project areas are: 1) develop pilot projects in dining

halls to evaluate pest issues and identify the most economically and environmentally sustainable approaches to reduce or eliminate pests in dining service areas and 2) educate students and parents about pest issues in University owned housing and methods to reduce pest problems in these buildings.

Fundraising

University Housing will provide staff time in support of the project (Vonne Ortiz and Dawn Aubrey). University Housing's Marketing Division will contribute resources to produce (graphic design and printing) and disseminate (mailing and posting) of pest management educational materials directed primarily to parents and students, and secondarily to other campus personnel and the community including merchants of recycled furniture, bedding and clothing.

The lead PI, Susan Ratcliffe, has a grant from USDA National Institute for Food and Agriculture to promote school integrated pest management in Illinois. From this grant, the PI will provide $30,000 in match to the funding request of this application to the Student Sustainability Committee. Susan Ratcliffe, will provide oversight of this project. She is 100% grant funded and her time will be compensated with funds from the USDA-NIFA grant. University Housing will collaborate on the project and devote time to develop effective strategies to reduce pest issues and develop proactive programming to reduce the likelihood of future pest infestations.

Budget

Assessments of 2 Dining Hall sites $2,750 each includes crawl-through by 3 experts in structural IPM and a summary document with recommendations.
$5,500

Dining Services Follow-up visits $1,000 for both sites per visit. Total of 12 visits over 2-year period.
$12,000

Develop content for educational materials. Two months support for graduate student with IPM expertise with oversight by lead PI at a rate of $2,155 per month
$4,310

Dining Services Staff Trainings
$2,500

Informational sessions for students and parents including light refreshments. $500 each
$3,500

Informational sessions and training for businesses, organizations and apartment management companies including handouts $500 each
$1,000

Printing of educational materials for use with non-University housing audiences.
$1,190

Total requested: $30,000

Matching funds in the amount of $30,000 will be used to compensate lead PI for time committed to this project.

Timeline

This project is a long-term project that funding from the Student Sustainability Committee would initiate and we would seek additional funding from alternative sources to maintain the program. We would request a two year time period for this grant to allow us time to develop the necessary educational materials, disseminate materials to the appropriate audiences and conduct training sessions.

Summer 2011:
Begin development of content for educational materials for students, parents and staff
Perform IPM assessments in dining halls
Provide information to local businesses and the general public about pest issues.

Fall 2011:
Coordinate production of educational materials with Housing
Provide training for dining services staff about pest management
Begin dissemination of educational materials to students and parents using University housing

Winter 2012:
Continue dissemination of educational materials to students and parents using University housing
Evaluate the effectiveness of IPM in dining services

Spring 2012:
Coordinate local meetings and trainings for businesses, organizations and apartment staff
Disseminate additional educational materials to students and parents about pest issues and transportation of unwanted pests during move-out.

Summer 2012:
Provide additional information to local businesses and the general public about pest issues.
Modify educational materials as needed

Fall 2012:
Conduct informational sessions for students about pest issues and tips for prevention
Additional training for dining services staff

Winter 2012:
Evaluate the effectiveness of this project based on pest issues in dining services and reported pest infestations in University housing

Spring 2012:
Coordinate a meeting with project participants to gather feedback on the effectiveness of the project and modifications needed as the project continues using alternative funding sources

Energy, Environmental, Social and Economic Impact

This project will provide energy savings as a result of pest exclusion activities in dining service areas. During the site assessments, we will identify locations that allow pests to enter the building. If pests can enter, heating and cooling efficiencies are being reduced. Through better building maintenance to exclude pests, energy savings are realized as well. Environmental benefits are gained through reduced pesticide usage. Resource conservation occurs through the elimination of leaking pipes and faucets and energy savings. The reduction is pesticide usage and energy savings translates in to economic benefits. Increased sanitation and the reduction in pests have a positive social impact. In

addition, our plan focuses on team building resulting in increased cooperation and collaboration between the members. Implementing an IPM plan on campus is a win-win-win scenario with direct benefits to the students, parents, staff and the whole campus by reducing energy consumption, pests and pesticides that result in economic savings. The increased sanitation in dining services and training to reduce pest infestations will provide social benefits and protect the health of our campus community and the environment.

Outreach and Education

Our project will be highly visible to students and their parents through direct contact via mailings and from information sessions that will be conducted at University housing locations. Students living in University housing will be part of the IPM team and will play an important role in assisting with the reduction or elimination of pests. We would welcome the opportunity to provide guest lectures on the project and on the concept of IPM as part of classroom instruction. All of our outreach materials that are developed will contain appropriate attribution recognizing funding from the SSC and we will work with local media (TV, radio and print) to publicize the project and its benefits.