

4-1-2011

Healthy Homes: A Contemporary Initiative for Extension Education

Elisabeth Fost Maring

University of Maryland, efmaring@umd.edu

Barbara Jones Singer

University of Maryland, bjsinger@umd.edu

Edmond Shenassa

University of Maryland, shenassa@umd.edu



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Recommended Citation

Maring, E. F., Singer, B. J., & Shenassa, E. (2011). Healthy Homes: A Contemporary Initiative for Extension Education. *The Journal of Extension*, 49(2), Article 9. <https://tigerprints.clemson.edu/joe/vol49/iss2/9>

This Feature Article is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact kokeefe@clemson.edu.



April 2011
Volume 49 Number 2
Article Number 2FEA9

[Return to Current Issue](#)

Healthy Homes: A Contemporary Initiative for Extension Education

Elisabeth Fost Maring
Family Life Specialist
efmaring@umd.edu

Barbara Jones Singer
Research Assistant
bj singer@umd.edu

Edmond Shenassa
Associate Professor &
Director, Maternal and Child Health Program
shenassa@umd.edu

Department of Family Science
School of Public Health
University of Maryland
College Park, Maryland

Abstract: This article connects Extension education and the Healthy Homes Initiative. Background on housing research and education is provided in the context of four issues (toxic materials, dangerous gases, hazards related to asthma, and other residential hazards). The federally funded Healthy Homes Partnership is described, and implications for collaboration with county, state, and federal governments; universities; and community organizations are described. Examples of Extension programming in Healthy Homes across states are presented. Recommendations for research and the development of educational materials are made.

Introduction

Housing is a well-established focus of Extension education. In the early 1980s, housing education within Extension focused on energy costs, raising awareness of the need for energy conservation and behavior change (Williams, Braun, & Lauener, 1981). Extension education also addressed the financial aspects of housing, noting that high interest rates, confusing mortgage alternatives, and high housing prices and rents are important issues for families (Parrott, Krishnaswamy, & Burkett, 1996; Tremblay, Sweaney, & Walls, 1986). Energy and housing affordability continue to be important applications of Extension education and are both featured on eXtension <<http://www.eXtension.org>>, the educational website supported by the United States Department of Agriculture's National Institute of Food and Agriculture (USDA-NIFA).

In the 21st century, there is increasing recognition of research that demonstrates the impact of housing on the health and well-being of children and families (Centers for Disease Control and Prevention [CDC], 2009;

Jacobs, Kelly, & Sobolewski, 2007; Robert Wood Johnson Foundation, 2008). Because adults and children spend 80-90% of their time indoors (Robert Wood Johnson Foundation, 2008; Jacobs, Kelley & Sobolewski, 2007; Breyse et al., 2004), research and practice in making homes healthy are important to our nation's public health. Each year, health issues related to housing place people at risk for injury, disease, and neurological and respiratory problems. For example, childhood lead poisoning is among the most widely known housing-related health concerns, with significant hazards existing in homes across the U.S. (Jones et al., 2009). Also, approximately 40% of diagnosed asthma among children is attributable to residential exposures (Lanphear et al., 2001). The work of creating and maintaining healthy home environments is advanced, therefore, by data indicating that there are housing-related health risks.

While Extension in the majority of states maintains housing-related support for clientele, university-based research on family health and the built environment has largely been driven by the field of public health (Jacobs, Kelly, & Sobolewski, 2007; Robert Wood Johnson Foundation, 2008). This article supports the work of Extension to improve health and, specifically, to increase the number of families prepared to make informed decisions and take positive action related to their health and housing through programming known as Healthy Homes. To that end, article: 1) provides context for Healthy Homes programming for Extension professionals; 2) demonstrates ways in which Extension currently engages in Healthy Homes programming; and 3) suggests opportunities for Extension professionals to develop collaborative relationships to enhance Healthy Homes programming. Four housing issues associated with poor health outcomes are the focus: 1) toxic materials (e.g., lead, asbestos, pesticides, and household products); 2) dangerous gases (e.g., carbon monoxide and radon); 3) hazards that cause and contribute to asthma (e.g., dust allergens, molds, environmental tobacco smoke, and pests); and 4) other safety and health concerns. Finally, implications for Extension to enhance Healthy Homes programming are discussed.

Context for the Healthy Homes Initiative

From the public health literature, we can glean historical context of the linkages between substandard housing, poor indoor environmental quality, and health dating back to the 19th century, when crowded housing, poor sanitation, and inadequate ventilation led to deadly diseases such as tuberculosis and cholera (Jacobs, Kelly, & Sobolewski, 2007; Robert Wood Johnson Foundation, 2008). Housing problems associated with deteriorating lead-based paint, pests, moisture, and ventilation are known to contribute to childhood illness, such as lead poisoning, asthma, cancer, and developmental diseases (Jones et al., 2009; Robert Wood Johnson Foundation, 2008; Breyse et al., 2004; Jacobs, Kelly, & Sobolewski, 2007). Motivated by such widespread housing-related health concerns, public health practitioners began to focus on interventions that reduce exposure to toxic materials, decrease risk of injury and disease, and eliminate asthma triggers in the home. The decline in childhood lead poisoning is a present-day public health success that has been attributed to a number of factors, including effective efforts to educate families living in substandard housing (Healthy People 2010, 2000).

Building upon the success of childhood lead poisoning work, a comprehensive and holistic approach was adopted to prevent disease and injury associated with housing-related hazards. In 1999, Congress established the Healthy Homes Initiative as a political measure within the Housing and Urban Development (HUD) Lead Hazard Reduction program (Alliance for Healthy Homes, n.d.). The initiative supports research on housing, interventions, and tenant education in high-risk housing areas (Robert Wood Johnson Foundation, 2008).

Four Housing Issues Addressed Through Healthy Homes Research and Education

Toxic Materials

Exposure to toxic materials such as lead, pesticides, and other household products puts children and adults at risk for poor health outcomes. Lead paint dust is the primary source of lead exposure in homes (Jones et al., 2009; Lanphear et al., 1995; Jacobs, 1995; Lanphear & Roghmann, 1997). Lead toxicity affects the brain and neurodevelopmental processes, and its effects are irreversible (Breysse et al., 2004). Although use of lead paint within homes was outlawed in 1978, lead poisoning of children persists today (President's Task Force, 2000). Interventions to reduce lead poisonings have focused primarily on screening children for lead exposure as well as identification and removal of lead hazards from homes (President's Task Force, 2000.).

With regard to pesticides, there is a growing body of evidence suggesting that exposure to substances used for pest management is a health concern (Whyatt et al., 2002). Toxic exposure to some pesticides can be frequent and at high levels in low-income urban home environments due to cockroach and rodent problems (Breysse et al., 2004). Integrated Pest Management (IPM) educational programs provide materials primarily for outdoor pests in agricultural contexts, but also for indoor pests using strategies that safeguard human health and the environment (USDA-NIFA, 2009c).

Dangerous Gases

Carbon monoxide and radon are odorless, colorless, and toxic gases (Environmental Protection Agency [EPA], 2009). Carbon monoxide exposure in homes typically results from unvented or ill-maintained kerosene and gas space heaters, gas stoves, generators and other gasoline-powered equipment, automobile exhaust from attached garages, and tobacco smoke (EPA, 2009). Carbon monoxide poisoning can cause headaches and dizziness, and at higher concentrations, death. Installation and proper use of detectors within homes is critical to reduce the incidence of carbon monoxide poisoning.

Similarly, radon gas, elevated in one of every 15 U.S. homes, is toxic and a cause of thousands of deaths per year (EPA, 2009). It occurs through a natural breakdown of uranium, primarily in soil, that then enters the home and builds up over time (EPA, 2009). Radon gas detection kits are available for residential use. To test, the household member hangs the test kit in basement or lowest level that can be used as living space for specified time period, and then sends it to a laboratory for professional analysis. Intervention to reduce health problems related to dangerous gas exposure includes education and distribution of detectors and test kits.

Hazards Related to Asthma

There are many known hazards that contribute to asthma, a leading chronic disease among children, with a prevalence of approximately 9% (America's Children in Brief, 2008). Chronic exposure to allergens in the indoor environment from mold, pets, mice and rats, cockroaches, and dust mites is associated with asthma onset and asthma attacks. Indoor moisture sustains mold, pests, dust mites, and bacteria (Breysse et al., 2004) and is also associated with low birthweight, preterm birth, and, according to some studies, impaired cognitive functioning (Rauh et al., 2004). Interventions aimed at reducing asthma include distribution of mattress and pillow covers, trash receptacles, cleaning supplies, and pest management devices. Also, locating and managing problem areas where moisture accumulates inside and outside of the home helps prevent mold growth and other asthma triggers (Healthy Homes Partnership, 2006). Last, education for families on housing-related asthma triggers ensures families are aware of the connection between housing and asthma.

Other Residential Hazards

Homes are the site of most unintentional injuries, such as falls and poisonings. Home fires and non-fire burns

raise additional residential concern. These hazards disproportionately impact children and older adults. The focus of intervention efforts to prevent injury has been installation of safety devices such as grab bars, gates, window guards, cabinet locks, and lighting. Interventions have also focused on fixing dangerous structural defects. Additionally, fire departments commonly distribute, install, and check the operation of smoke detectors, because approximately half of home fire deaths occur in homes without smoke alarms (CDC, 2008).

Current Engagement of Extension in Healthy Homes

The intent of the Healthy Homes Initiative and the mission of Extension are compatible. The USDA, through its National Institute of Food and Agriculture (NIFA), supports Extension educational programs within the nation's more than 100 land-grant colleges and universities (USDA, 2009a). An Extension program is located within the land-grant university in each state, in 19 historically Black institutions and 31 tribal colleges, in the District of Columbia, and in six territories (Goddard & Olsen, 2004). Extension professionals address issues with local and statewide significance as they deliver workshops and train-the-trainer programs, create newsletters and media exhibits, make individual contacts, and engage in other activities (Sasser, 2006). Extension professionals provide research-based education for community members with the goal of promoting informed decision-making (Brandt & Raab, 2008). State housing specialists at the university level provide leadership for Extension housing education programs, developing resources based on specific problems and needs. Healthy Homes is one of these program efforts, and the Healthy Homes Partnership supports participating state Extension programs.

The Healthy Homes Partnership

The Healthy Homes Partnership has existed within Extension for 11 years. It was created as an interagency agreement between HUD Office of Healthy Homes and Lead Hazard Reduction Program and USDA in FY1999 to work together on outreach education related to Healthy Homes. The interagency agreement helped to address outreach education, which was part of the Healthy Homes Initiative using Cooperative Extension's network of outreach educators (L. Booth, personal communication, July 5, 2010). Currently, there are 37 state coordinators implementing Healthy Homes programs in the Healthy Homes Partnership. The Healthy Homes Partnership is funded by the HUD through an interagency agreement with USDA-NIFA. Auburn University, as coordinator, facilitates a network of federal agencies, state specialists, and educators to mobilize individual actions to improve health and safety risks in housing throughout the country. Through its network of state coordinators, the Partnership provides individuals and families with information on home health hazards and the steps that can be taken to prevent injury or illness associated with them (USDA, 2009b).

The Healthy Homes Partnership website <www.healthyhomespartnership.net> provides links for currently funded state Extension Healthy Homes programs. University-based Extension programs listed on the Healthy Homes Partnership website were reviewed for this article. While many Extension programs are providing Healthy Homes education, 29 states have websites with identifiable Healthy Homes content. The review revealed varied levels of involvement with Healthy Homes efforts. Extension websites provide information on Healthy Homes topics, targeting both professional and consumer audiences. We found that Extension education in Healthy Homes is often provided through health education in the form of fact sheets, newsletters, Web articles, and website links to outside resources. Some programs categorize this information as Healthy Homes, while most place the information under the categories of Home, Housing, or Environment.

We developed a matrix to categorize the types of Healthy Homes programs found at each of the Extension

websites. Programs were included if they addressed any or all of the four housing issues: (toxic materials, dangerous gases, hazards that cause and contribute to asthma, other safety and health concerns). A selection of programs representing examples from each of the four housing issues is presented in Table 1.

Table 1.
Select Extension Programs Addressing Housing-Related Risk Factors

| Housing-Related Risk Factors | Brief Description | Extension Examples Addressing Housing-Related Risk Factors | |
|-------------------------------------|---|---|--|
| Toxic materials | Includes lead, asbestos, pesticides and household products. | <i>University of Illinois Extension</i> developed a retail store pesticide education program to train store employees on topics such as pest identification, integrated pest management (IPM), pesticide safety and toxicity, and emergency spill response (Czapar, Cloyd, Kalnay, & Curry, 2004). | <i>Michigan State University Extension</i> (n.d.) developed Home Safe Kids, a curriculum to educate parents about household environmental hazards. Existing programs targeted child care center and school personnel, not parents. The educators anticipate that children in participating families will be exposed to fewer hazards in the home, particularly lead. |
| Dangerous gases | Includes odorless, colorless and toxic gases carbon monoxide and radon. | <i>University of Nevada Cooperative Extension</i> (n.d) distributes Educational literature and radon test kits to community residents and real estate professionals through county Extension offices. They use their website and the national web-based eXtension.org (2008) network to urge residents to test their homes for radon gas. | <i>University of New Mexico Extension</i> , in collaboration with New Mexico State University's Southern Area Health Education Center (SoAHEC) developed a Carbon Monoxide Safety program. Promotoras (volunteer lay community health workers) educate and distribute carbon monoxide alarms and materials in English and Spanish in low income subdivisions along the US-Mexico |

| | | | |
|------------------------------|---|--|---|
| | | | border (<i>Healthy Homes Partnership</i> , n.d.). |
| Asthma-related hazards | Chronic exposure to indoor pollutants such as moisture, allergens, mold, pets and pests, tobacco smoke, and bacteria are associated with asthma onset and asthma attacks. | <i>Louisiana State University Extension</i> developed a model home called LaHouse, with an online training center to assist builders with best practices specific to hurricanes and floods, and other educational programs for contractors with built-in CEU credits on lead and mold prevention (<i>Louisiana State University Agriculture Center</i> , n.d.). | <i>Alabama Cooperative Extension (2002)</i> developed an Asthma Education Initiative in partnership with Auburn University's Harrison School of Pharmacy. The collaboration resulted in four public service announcements for radio and television, power point presentations, and a kickoff event, "Alabama Asthma Day". |
| Other safety/health concerns | Other concerns include residential hazards such as fire, burns, and unintentional injuries such as falls or poisonings. | <i>University of Tennessee Extension</i> (n.d) partners with regional poison centers to deliver <i>Be Poison Safe Tennessee</i> , targeting hard-to-reach geographic areas. Extension incorporates poison-related questions in program impact surveys. In turn, poison centers promote Extension services and provide resources and technical expertise to Extension professionals (J.Darwin, personal communication, January 15, 2009). | <i>University of Wisconsin Extension</i> (2006) developed an online interactive program to assess daily living habits with steps that can be taken to reduce hazards within the home. The Home*A*Syst tool provides families an opportunity to investigate and establish an action plan to address issues such as indoor air, drinking water, and hazardous household products. |

Opportunities for Extension Collaboration

Partnerships and collaborations between Extension and public health entities allow for an expanded audience for Healthy Homes programs. Extension has partnered with federal, state, and county governments; universities; and community organizations. University of Maryland Extension has partnered with the university's Office of Sustainability to use videoconferencing technology, so that Extension field faculty around the state can participate in its speaker series and pass information to their clientele on issues such as home energy conservation, LEED certification, and interdisciplinary approaches to sustainability. Similarly, at Pennsylvania State University and Boston University, Extension professionals partner with Entomology faculty to implement urban IPM programs in schools and community housing.

Extension programs, with their decades of expertise in outreach and education, have a vital role to play in promoting Healthy Homes with their clientele. While Healthy Homes topic areas addressed by Extension programs vary by state, many state Extension programs have taken a broad approach to Healthy Homes programming, becoming training partners with the nonprofit organization National Center for Healthy Housing, whose training center works to build the capacity of public health and housing practitioners to identify housing-related health hazards and promote practical and cost-effective methods for making homes healthier (National Center for Healthy Housing, n.d.).

In addition, Extension professionals have access to *Help Yourself to a Healthy Home*, a 56-page self-help guide providing families information on safe and healthy homes developed out of the USDA-NIFA/HUD partnership for distribution to clientele (Healthy Homes Partnership, 2006). This booklet is available in seven languages (soon to be eight) as well as in a version targeting the American Indian population. A DVD with accompanying guidebook developed by USDA-NIFA/HUD and Cornell University, *Healthy Homes: Assessing Your Indoor Environment*, also provides helpful tips and recommendations for Extension professionals to teach families to protect themselves from indoor health hazards (Laquatra & Julian, 2007). As budgets permit, some Extension programs are able to provide supplies to their audiences to aid in implementation of prevention and remediation strategies.

Many local and state health departments are making a transition from childhood lead poisoning prevention programs to comprehensive offices of Healthy Homes. The Baltimore City, New York City, Houston, and Indianapolis Health Departments are among several jurisdictions successfully making this transition. The educational component of a Healthy Homes inspection and home visit are noted by staff and clientele to be essential for successful remediation of problems in the home (Maring, Singer, & Shenassa, 2010). In addition, Healthy Homes initiatives may be provided by the state departments of housing, health, environment, energy, or emergency services. These may be areas of exploration for Extension programs interested in reaching more families with Healthy Homes messages.

Implications

The Healthy Homes Initiative has multidisciplinary significance within the Extension System and to universities with schools of public health, urban planning, architecture, and programs related to sustainability. This article provides context for Healthy Homes for Extension professionals, to demonstrate current Healthy Homes initiatives within Extension, and to suggest opportunities for collaboration. Decreasing exposure to toxic material, dangerous gases, asthma triggers, and other residential hazards should have measurable outcomes at the individual, family, and community levels.

Currently, data from the Healthy Homes Partnership have been difficult to capture. Extension programs can apply for the funds to meet diverse needs, and it is therefore challenging to aggregate evaluation data that

adequately represents the impacts of Healthy Homes programs (L. Booth, personal communication, July 5, 2010). We suggest that researchers continue exploring the relationship between poor health outcomes and academic and behavior problems in children, lost work and school days, emergency room and doctor visits, and family stress. Further, we recommend that both qualitative and quantitative research methods be employed to answer these critical questions. Education through Extension and its collaborators should innovate curricula, training, and educational material that respond to the need for Healthy Homes. The four housing-related risk factors delineated in this article can be used to develop, adapt, and evaluate Healthy Homes initiatives in each state.

Healthy People 2020, the nation's health agenda, proposes objectives in areas associated with Healthy Homes (Healthy People 2020, 2009). While housing continues to impact community health, Healthy Homes is an initiative that will complement other housing foci within Extension, enable partnerships across many disciplines, and increase the relevance of Extension education to address 21st century problems for families.

Acknowledgements

The authors wish to acknowledge Dr. Bonnie Braun, Dr. Joseph Wysocki, Dr. Stephanie Grutzmacher, and Ms. Laura Booth for their time and expertise in reviewing drafts of this article. We would also like to thank Dr. Bobbi Clarke and Ms. Josephine Darwin for reviewing the Be Poison Safe Tennessee paragraph.

References

Alabama Cooperative Extension System (2002). Retrieved from <http://www.aces.edu/department/family/asthma//pubs.php>

Alliance for Healthy Homes. (n.d.) Retrieved from http://www.afhh.org/aa/aa_hh_policy_federal_funding_hhi_campaign.htm

America's Children in Brief (2008). Key National Indicators of Well-Being. Retrieved from <http://www.childstats.gov/americaschildren/health.asp>

Brandt, J. D., & Raab, C. (2008). See the future: Extension's role in vision education for older adults in the community. *The Forum for Family and Consumer Issues*, 13(2). Retrieved from <http://ncsu.edu/ffci/publications/2008/v13-n2-2008-summer-fall/index-v13-n2-summer-2008.php>

Breyse, P., Farr, N., Galke, W., Lanphear, B., Morley, R., & Bergofsky, L. (2004). The relationship between housing and health: Children at risk. *Environmental Health Perspectives*, 112 (15), 1583-1588.

Center for Disease Control and Prevention (2009). *Healthy homes*. Retrieved from <http://www.cdc.gov/healthyhomes/>

Center for Disease Control and Prevention (2008). *Fire death and injuries*: Fact sheet. Retrieved from <http://www.cdc.gov/ncipc/factsheets/fire.htm>

Czapar, G. F., Cloyd, R. A., Kalnay, P. A., & Curry, M. P. (2004). Development of educational programs for retail stores that sell pesticides. *Journal of Extension* [On-line], 42(4) Article 4IAW6. Available at: <http://www.joe.org/joe/2004august/iw6.php>

eXtension.org (2008). *Begin 2009 by testing your home for radon*. Retrieved from https://www.extension.org/pages/Begin_2009_by_Testing_Your_Home_for_Radon

Environmental Protection Agency. (2009). *A citizen's guide to radon*. Retrieved from <http://www.epa.gov/radon/pubs/citguide.html#overview>

Goddard, H. W., & Olsen, C. S. (2004). Cooperative Extension initiatives in marriage and couples education. *Family Relations*, 53, 433-439.

Healthy Homes Partnership. (2006). *Help yourself to a healthy Home*. Retrieved from <http://www.healthyhomespartnership.net/resources.html>

Healthy Homes Partnership (n.d.). Retrieved from <http://www.healthyhomespartnership.net/hhpickact.cfm?state=NM>

Healthy People 2010. (2000). *Environmental health*. Retrieved from <http://www.healthypeople.gov/document/html/volume1/08environmental.htm>

Healthy People 2020. (2009). Proposed Healthy People 2020 objectives â List for public comment. Retrieved from <http://www.healthypeople.gov/hp2020/objectives/topicareas.aspx>

Jacobs D. E. (1995). Lead paint as a major source of childhood lead poisoning: A review of the evidence. In M.E. Beard & S.D. Allen Iske (Eds.) *Lead in paint, soil and dust: Health risks, exposure studies, control measures and quality assurance*. Philadelphia: American Society for Testing and Materials.

Jacobs, D. E., Kelly, T., & Sobolewski, J. (2007). Linking public health, housing, and indoor environmental policy: successes and challenges at local and federal agencies in the United States. *Environmental Health Perspectives*, 115(6), 976-982.

Jones, R. L., Homa, D. M., Meyer, P. A., Brody, D. J., Caldwell, K. L., Pirkle, J. L., et al. (2009). Trends in blood lead levels and blood lead testing among US children aged 1 to 5 years, 1988-2004. *Pediatrics*, 123(3), e376-e385.

Lanphear, B. P., Emond, M., Jacobs, D. E., Weitzman, M., Tanner, M., Winter, N., et al. (1995). A side by side comparison of dust collection methods for sampling lead-contaminated house dust. *Environmental Research*, 68, 114-123.

Lanphear, B. P., & Roghmann, K.J. (1997). Pathways of lead exposure in urban children. *Environmental Research*, 74(1), 67-73.

Lanphear, B. P., Kahn, R. S., Berger, O., Auinger, P., Bortnick, S. M., & Nahhas, R. W. (2001). Contributions of residential exposures to asthma in U.S. children and adolescents. *Journal of Pediatrics*, 107(6), e98.

Laquatra, J. L., & Julian, C. (2007). *Healthy Homes: Assessing Your Indoor Environment*. Retrieved from <https://sites.aces.edu/group/healthyhomes/resources/default.aspx>

Louisiana State University Agricultural Center, (n.d.). Retrieved from http://www.lsuagcenter.com/en/family_home/home/la_house

Maring, E. F., Singer, B. J., & Shenassa, E. (2010). Making the transition from lead poisoning prevention to healthy homes: A qualitative study. *Journal of Public Health Management and Practice*, 16(5) (Suppl), S53-S60.

Michigan State University Extension (n.d.). *Home safe kids*. Retrieved from <http://www.fcs.msue.msu.edu/homesafekids/>

National Center for Healthy Housing (n.d.). About the National Healthy Homes Training Center and Network. Retrieved from http://www.healthyhomestraining.org/About_HHTC.htm

Parrott, K., Krishnaswamy, A., Burkett, S. (1996). Securing your future: Housing education for low-income audiences. *Journal of Extension* [On-line], 34 (5). Available at: <http://www.joe.org/joe/1996october/a2.html>

President's Task Force on Environmental Health Risks and Safety Risks to Children. (2000). *Eliminating childhood lead poisoning: A Federal strategy targeting lead paint hazards*. Retrieved from: <http://www.cdc.gov/nceh/lead/about/fedstrategy2000.pdf>

Rauh, V. A., et al. (2004). Developmental effects of exposure to environmental tobacco smoke and material hardship among inner-city children. *Neurotoxicology and Teratology*, 26, 373-385.

Robert Wood Johnson Foundation (2008). Where we live matters for our health: The links between housing and health. *Issue Brief 2: Housing and Health*. Retrieved from <http://www.rwjf.org/files/research/commissionhousing102008.pdf>

Sasser, D. D. (2006). The Cooperative Extension Service System: Response and educational resource in the field of stress and families. *Stress, Trauma, and Crisis*, 9, 247-262.

Tremblay, K. R., Sweaney, A. L., & Walls, E. (1986). Targeting housing information programs. *Journal of Extension* [On-line], 24(1). Available at: <http://www.joe.org/joe/1986spring/iw2.php>

University of Nevada Extension (n.d.). Nevada radon education program. Retrieved from <http://www.unce.unr.edu/radon/>

United States Department of Agriculture. (2009a). *National Institute of Food and Agriculture, About us*. Retrieved from <http://www.nifa.usda.gov/about/background.html>

United States Department of Agriculture. (2009b). *Healthy Homes Initiative*. Retrieved from http://www.nifa.usda.gov/nea/family/in_focus/housing_if_healthyhomes.html

United States Department of Agriculture. (2009c). *National Institute of Food and Agriculture Integrated Pest Management Implementation*. Retrieved from <http://www.nifa.usda.gov/integratedpestmanagement.cfm>

University of Tennessee Extension, (n.d). *Be poison safe Tennessee*. Retrieved from <http://fcs.tennessee.edu/healthsafety/poisonSafe.htm>

University of Wisconsin Extension. (2006). *Help yourself to a healthy home*. Retrieved from <http://www.uwex.edu/healthyhome/tool/>

Whyatt, R. M. et al. (2002). Residential pesticide use during pregnancy among a cohort of urban minority women. *Environmental Health Perspectives*, 110, 507â514.

Williams, S., Braun, B., & Lauener, N. L. (1981). *Energy education for limited income families: The Choctaw project*. Stillwater, OK: Cooperative Extension Service, Oklahoma State University.

Copyright © by *Extension Journal, Inc.* ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the Journal Editorial Office, joe-ed@joe.org.

If you have difficulties viewing or printing this page, please contact JOE Technical Support.