

BUILDING A FRAMEWORK FOR HEALTHY HOUSING

2008 National Healthy Homes Conference

USDA/Cooperative State Research, Education and Extension Service Outreach Initiatives

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North Carolina Cooperative
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USDA/CSREES?

- **Cooperative State Research, Education and Extension Service (CSREES)**
- **Agency within the U.S. Department of Agriculture (USDA)**
- **One of four USDA agencies in the Research, Education and Economics (REE) area, the others are:**
 - **Agricultural Research Service (ARS)**
 - **Economics Research Service (ERS)**
 - **National Agricultural Statistics Service (NASS)**



USDA/CSREES Mission

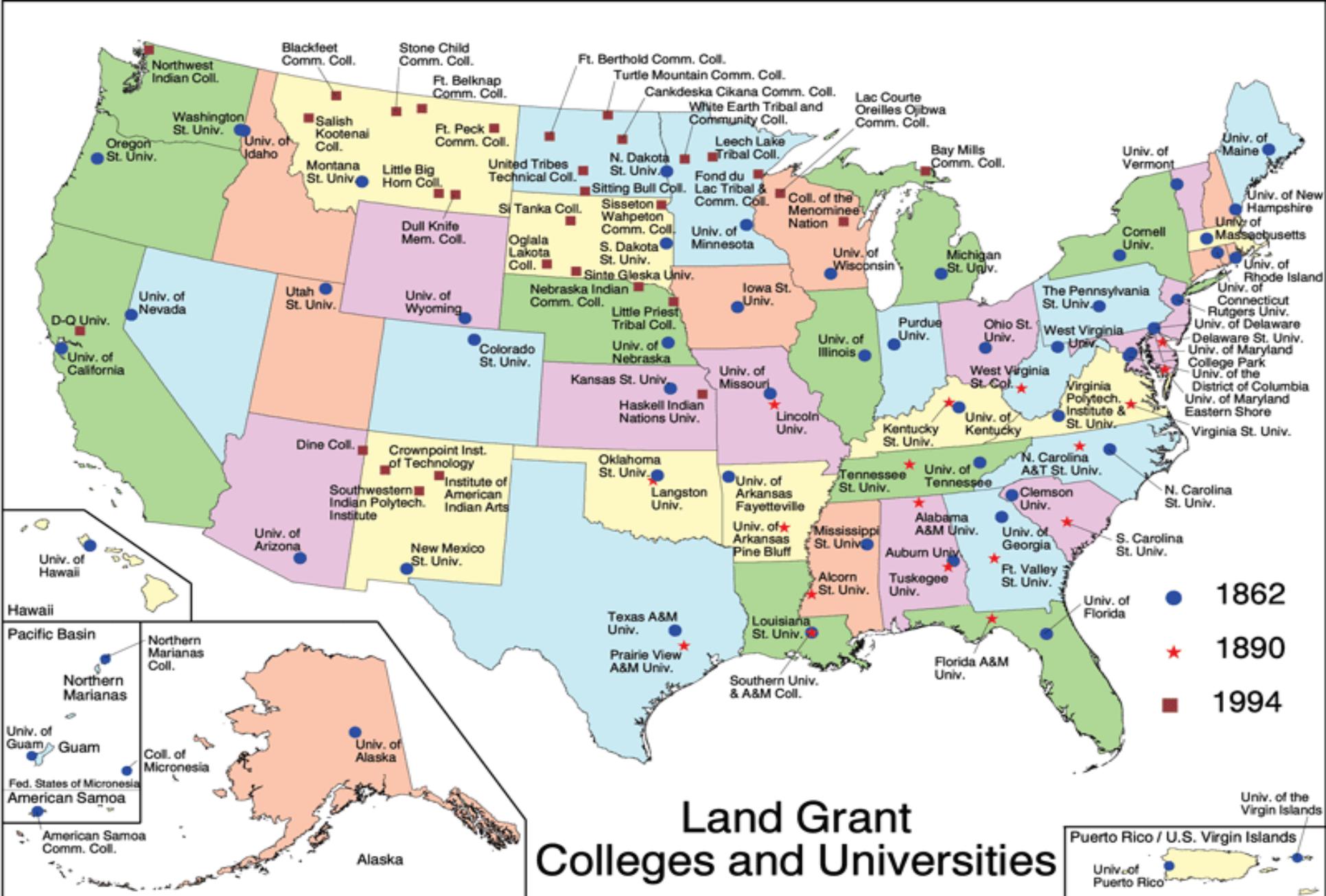
CSREES advances knowledge for agriculture, the environment, human health and well-being, and communities by supporting research, education, and extension programs in the Land-Grant University System and other partner organizations



CSREES & Extension

- **Extension educators**
 - **University professionals: University and County**
 - **105 land-grant universities/colleges**
 - 1862 Colleges - 56**
 - 1890 Colleges - 18**
 - 1994 Colleges – 31**
- **County Extension Service**
 - **9,600 Extension educators in 3,150 counties**





Land Grant Colleges and Universities



Go

Search Help

Browse by Audience

Information for ...

Browse by Subject

- ▶ Agricultural & Food Biosecurity
- ▶ Agricultural Systems
- ▶ Animals & Animal Products
- ▶ Biotechnology & Genomics
- ▶ Economics & Commerce
- ▶ Education
- ▶ Families, Youth, & Communities
- ▶ Food, Nutrition, & Health
- ▶ International
- ▶ Natural Resources & Environment
- ▶ Pest Management
- ▶ Plants & Plant Products
- ▶ Technology & Engineering

About Us

Cooperative Extension System Offices

This section of our Web site will help you find your nearest Cooperative Extension office. The Cooperative Extension System is a nationwide, non-credit educational network. Each U.S. state and territory has a state office at its land-grant university and a network of local or regional offices. These offices are staffed by one or more experts who provide useful, practical, and research-based information to agricultural producers, small business owners, youth, consumers, and others in rural areas and communities of all sizes.

CSREES is the federal partner in the Cooperative Extension System. It provides federal funding to the system and, through program leadership, helps the system identify and address current issues and problems.

- [Text version of map below](#)



What does CSREES DO?

- Program Areas identify, develop, and manage programs to support university-based and other institutional research, education, and extension outreach
- Bring education to the people, based on knowledge generated through research at our land-grant universities
- **Housing & Indoor Environment**
Program Area—Dr. Joseph Wysocki,
National Program Leader, USDA/CSREES



USDA/CSREES Housing and Indoor Environment Programs

Program areas related to healthy homes:

- **Healthy Homes Partnership (USDA/HUD)**
- **Healthy Indoor Air for America's Homes (USDA/EPA)**
- **ENERGY STAR (USDA/EPA/DOE)**



Healthy Homes Partnership

- **Interagency agreement: started in 1999, with first grants to states in 2000:**

Emily Williams,

Healthy Homes Division, HUD

Joseph L. Wysocki, Ph.D,

National Program Leader, USDA/CSREES

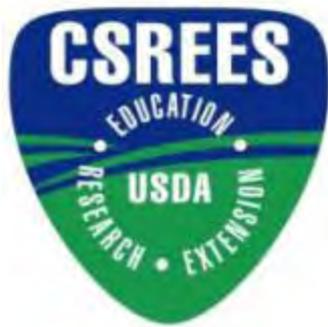
**First coordinated by University of Wisconsin Extension
(2000-2005)**

**Coordinated at Alabama Cooperative Extension System
(2005-present)**



Healthy Homes Partnership

- Links resources of HUD Healthy Homes with: USDA/CSREES
 - Public outreach education program
 - Goal: To address housing-based health and safety risks, particularly in homes with children and low-income audiences

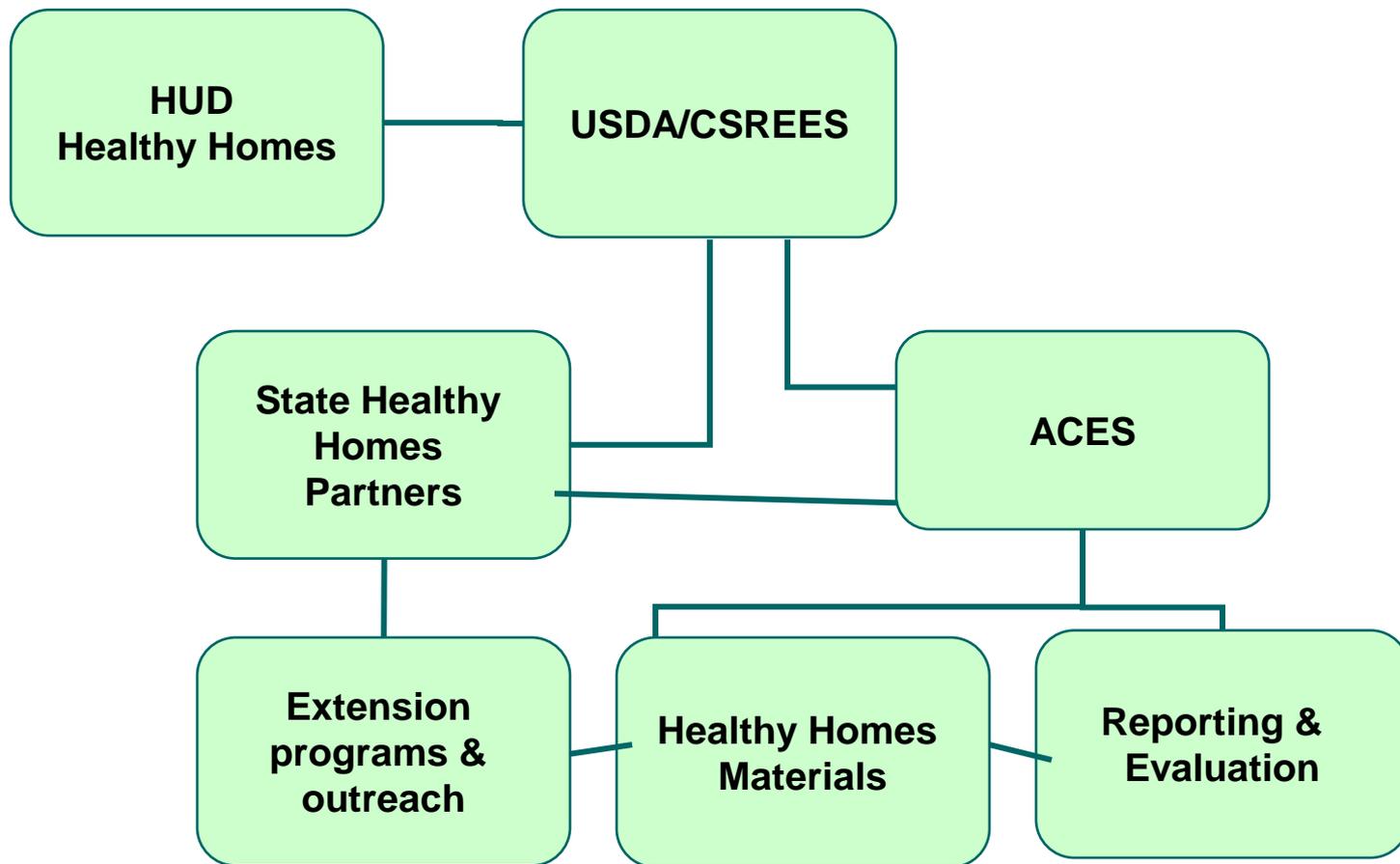


HUD & USDA/CSREES

- Partnership since 1999
- Product of HUD Healthy Homes Initiative
- Part of Initiative:
Provide education and outreach programs
- Link HUD with extensive network of USDA/CSREES



Healthy Homes Partnership Structure



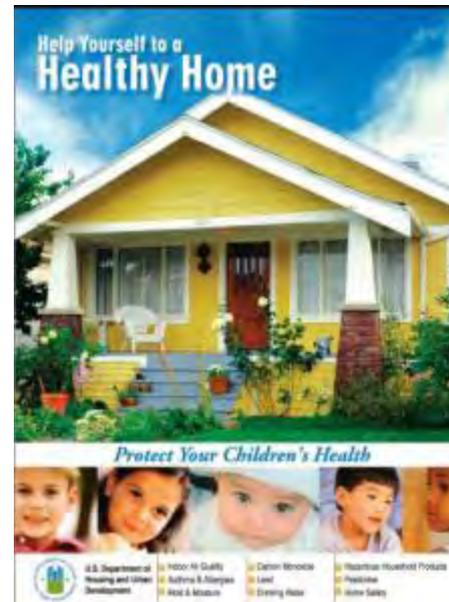
“Help Yourself to a Healthy Home: Protect Your Children’s Health”

- Developed from Home*A*Syst (Wisconsin):

- English
- Spanish
- Hmong
- Vietnamese
- Bosnian

Next:

- Arabic
- Native American



Healthy Homes Subject Areas

- Indoor Air Quality
- Asthma & Allergies
- Mold & Moisture
- Carbon Monoxide
- Lead
- Drinking Water
- Hazardous Household Products
- Pesticides
- Home Safety
- Each chapter in book written by Extension Specialist
- Low-literacy level



“Help Yourself to a Healthy Home” Exhibit

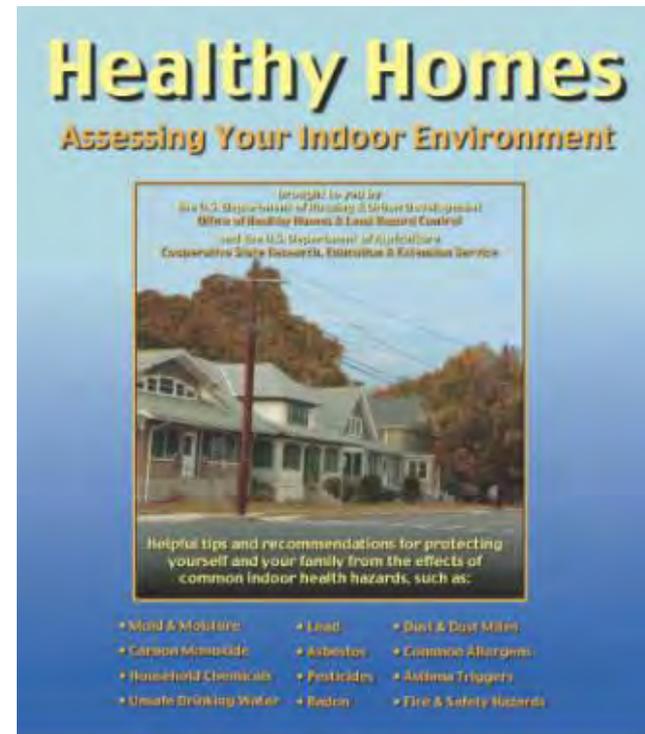
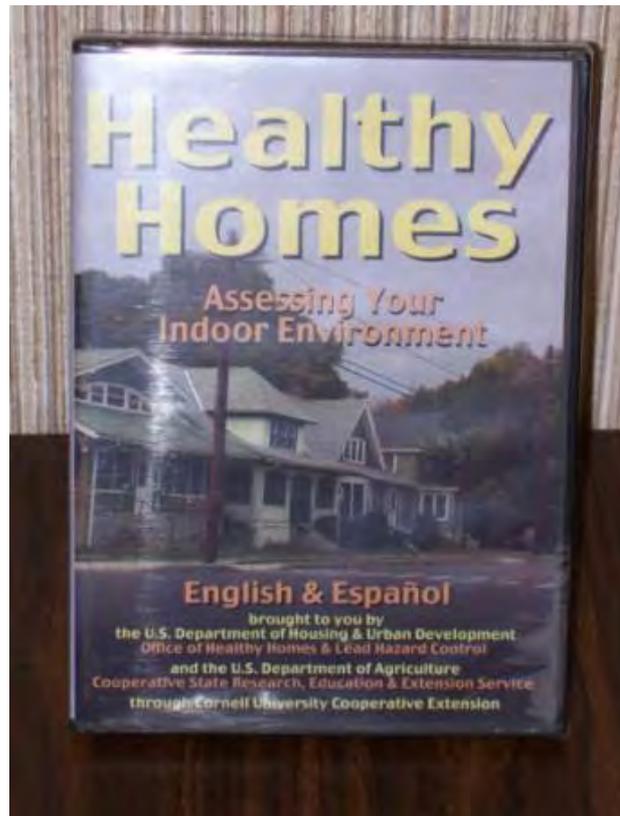


Tuskegee Healthy House

- **Guidance on building healthy, energy efficient, & affordable**
- **Healthy interior design strategies, worked with Auburn University Interior Design students**



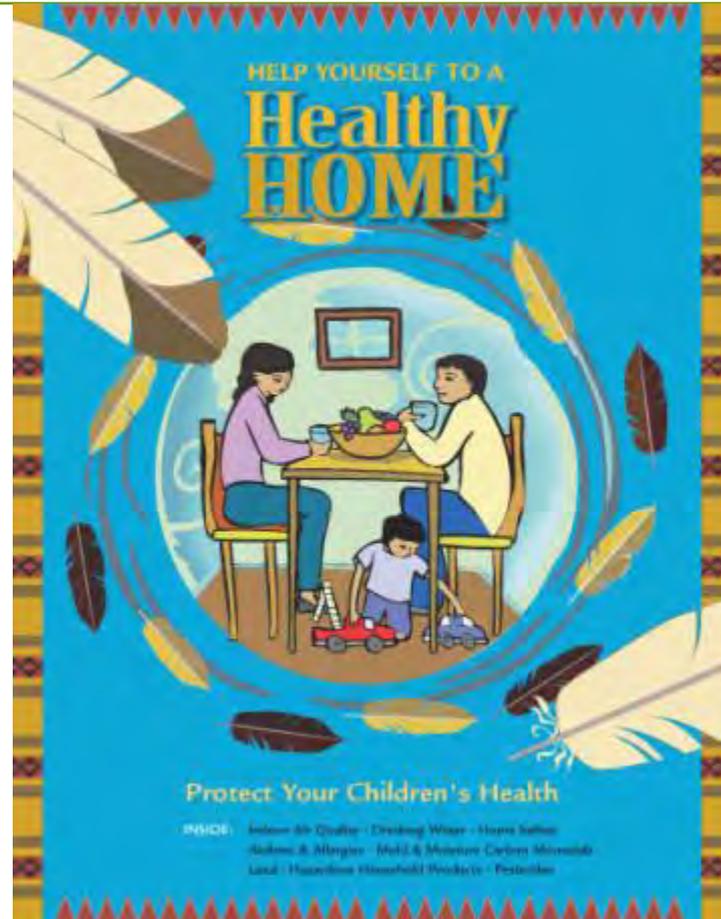
Cornell University Extension: DVD and Workbook: English and Spanish



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Montana State



State Program Outputs

- **Alabama Cooperative Extension coordinates project with National Program Leader**
- **Each state receives limited amount of funding each year**
- **States deliver programs, create materials depending on expertise of state program leader and state concerns**



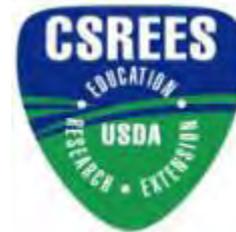
State Program Outputs

- 30 State partners
- 2,091,231 million consumers reached
- 1,934 professionals trained
- Over 200,000 *Help Yourself to a Healthy Home* books distributed by ACES since 2000
- Quarterly reports summarize methods used, consumers reached, partnerships created, materials created, evaluation impacts
- Resources and state partners on Web site: www.healthyhomespartnership.net



Healthy Indoor Air for America's Homes

- Collaborative interagency project to increase knowledge of indoor air quality issues by the general public
- National Indoor Air Quality program training manual
- Web site: www.healthyindoorair.org



Healthy Indoor Air for America's Homes Training Manual

IAQ Health Effects

IAQ Building Science

Home IAQ

Bugs, Mold and Rot

Lead

Formaldehyde

Radon

Combustion Pollutants

Carbon Monoxide

Environmental Hazards
for the Home
Remodeler

Household Products

Secondhand Smoke

Asthma

IAQ Tools for Schools



Healthy Indoor Air for America's Homes Program Impacts

- **40,980** families stopped exposing children to secondhand smoke
- **55,108** families tested their homes for radon and **9,044** families mitigated their homes for radon
- **84,304** families took action against carbon monoxide and hazardous combustion gases
- **31,351** families dealt with problems associated with household sources of lead
- **54,274** families reported reducing sources of moisture and biological hazards
- **24,966** families selected and used household products (cleaning, hobby, auto) more wisely
- **38,479** families selected and used home pesticides more wisely to avoid IAQ-related health problems





THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

- Radon Education Program
 - EPA Clean Air Excellence Award for Education/Outreach (2008)
 - 22,000 radon test kits distributed and over 145,000 consumers reached
- National Center for Healthy Housing Training Partner
 - 4 Essentials for Healthy Homes Practitioners trainings
 - 2 Lead Safe Work Practices workshops
- Integrated Pest Management programs & resources
- Childhood Environmental Education reaching thousands



New York and Louisiana



Mold

Hiring a Mold Remediation Contractor

Joseph Lagarias, Hans E. Smit, and Hanna Brody
Ecology Department, Cornell University
Tulane, Cornell University
Graduate Student, Ecologist
Louisiana State University AgCenter

This publication was funded by a generous donation from Carol Z. Bell, in memory of her parents, Jim and Jo.



Hurricanes Katrina and Rita and the resulting floods and extended evacuations caused unprecedented mold damage to homes in 2005—and created a cleanup crisis. Yet, anyone with a flood-damaged home faces similar challenges because mold infestation must be remediated (or removed) before repairs can begin. This process can be hazardous because of potential health threats posed by mold, bacteria, other contaminants, and structural damage.

Although there is no such thing as “harmless mold,” some molds are toxic, that is, they can produce and contain toxins. People react differently to the presence of mold—some may have no adverse health reaction to airborne mold spores, while others may experience severe illness from low-level exposure.



Cornell University
College of
Human Ecology



LSU
AgCenter
Research & Extension



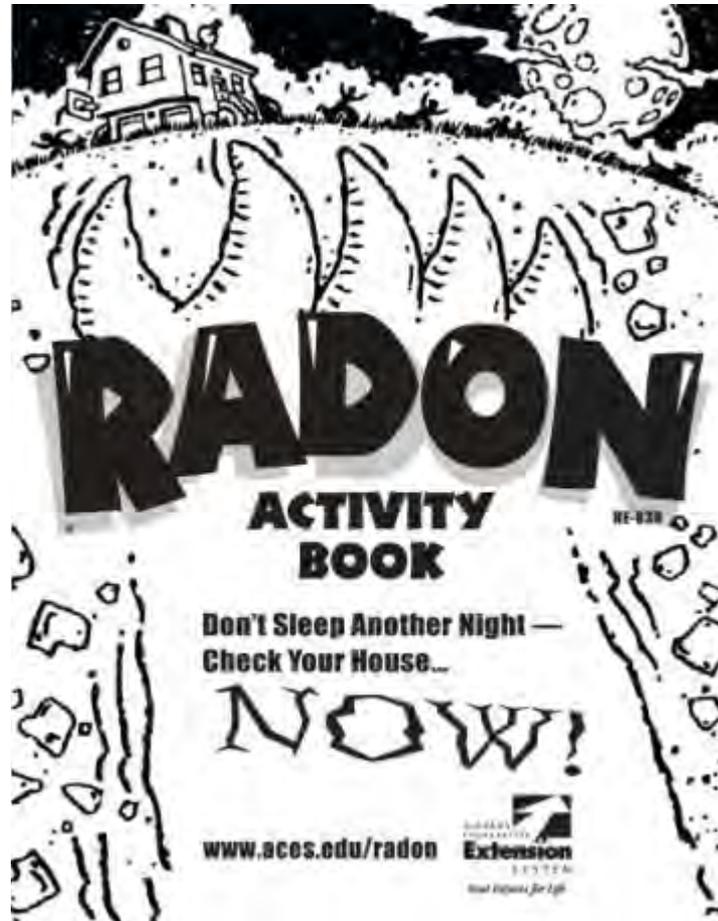
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Alabama: Radon Mitigation System Model



Alabama—Radon Activity Book



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Texas A&M: Put it Outside (secondhand smoke and children)



Tennessee: Smart Growth, Lead, Home*A*Syst and Radon



Kentucky: Mercury at Home



- Mercury may be found in . . .

- Wiring devices & switches
- Thermostats & thermometers
- Fluorescent lights
- Batteries
- Old paint



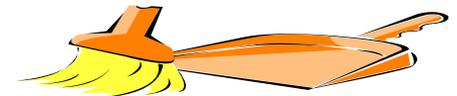
- Safety tips at home . . .

- Use digital thermometers
- Look for batteries that do not contain mercury



- If mercury spills . . .

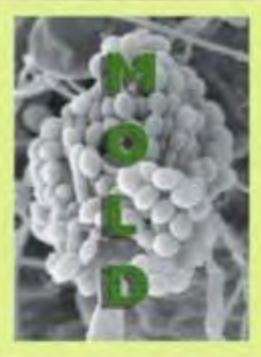
- Do not sweep or vacuum
- Safely clean small spills (amount from a thermometer)
- Call authorities for larger spills



North Carolina: Mold 101



North Carolina Mold Exhibit



Safety Tips

- Handle cleaning products with care
- Work in well-ventilated areas
- Do not eat, drink or smoke while cleaning
- Never mix cleaning products



Symptoms of Exposure

- Headache, fatigue, shortness of breath
- Sinus congestion, coughing and sneezing
- Eye, nose, throat and skin irritation
- Dizziness and nausea



Individuals at Greatest Risk

- Allergy and asthma sufferers
- People with respiratory disease
- People with compromised immune systems
- Contact lens wearers

Moisture Control is Key

- Find the source of excess moisture and control or eliminate it
- Keep indoor humidity levels below 60%, ideally 30%- 50%
- Act quickly on water-damaged areas
- Fix plumbing and roof leaks promptly
- Maintain gutters
- Correct drainage around your home's foundation
- Vent clothes dryers, stoves, and combustion appliances to the outdoors
- Use air conditioners and dehumidifiers if needed
- Use exhaust fans when showering or cooking

Mold Cleanup

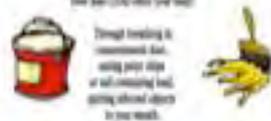
- Limit exposure to mold and mold spores
- Wear protective equipment when cleaning up - goggles, gloves, protective clothing, and N-95 respirator
- Remove mold by scrubbing hard surfaces with detergent and water, dry surfaces completely, and disinfect if needed.
- Paint and caulk only when surfaces are completely clean and dry.



North Carolina Lead Pre-renovation Education Rule Exhibits: English

ATTENTION CONSTRUCTION WORKERS

DANGERS & HEALTH
(See Appendix A for more info!)



Threat breathing in, swallowing lead, getting paint chips or self-contaminated lead, getting splashed objects in your mouth.

PROTECT YOURSELF
 Do NOT breathe in or eat or drink lead.

AT WORK

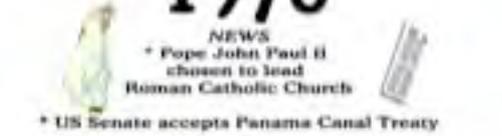
Wear MASK, GLOVES, and eye protection. NEVER eat, drink, or smoke. Wash hands frequently.



1978

NEWS

- * Pope John Paul II chosen to lead Roman Catholic Church
- * US Senate accepts Panama Canal Treaty



LEAD PRE RULE

WHAT IS IT?

#1 National law affecting repairs and renovations in houses built BEFORE 1978

Who does the Lead PRE rule apply to?

Home Improvement Contractors
 Landlords
 Property Managers
 Apartment Maintenance Staff
 Renovators
 Remediators
 Electricians
 Plumbers
 Painters
 Carpenters

ANYONE whose work disturbs paint



DANGERS TO YOU

Reproductive problems
 Digestive problems
 Nervous disorders
 Memory problems
 High blood pressure
 Bleeding in joint pain



AT HOME

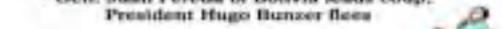
IMMEDIATELY AFTER WORK:

Take a shower
 Wash your hair
 Wash clothes separately



POLITICS

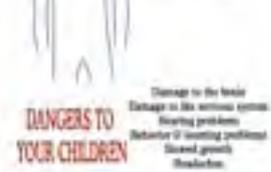
- * Pedro Joaquin Chamorro, editor of La Prensa, assassinated in Managua, Nicaragua
- * Julio Turbay Ayuda wins Colombia election
- * Gen. Juan Pereda of Bolivia leads coup. President Hugo Banzer flees



#2 Gives people LIVING in pre 1978 housing information

DANGERS TO YOUR CHILDREN

Damage to the brain
 Damage to the nervous system
 Hearing problems
 Behavior or learning problems
 Slowed growth
 Stunted brain



AT HOME

IMMEDIATELY AFTER WORK:

Take a shower
 Wash your hair
 Wash clothes separately

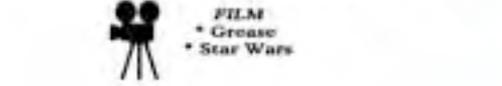


SPORTS

- * Argentina beats Netherlands 3-1 to win World Cup
- * Hugo Sanchez becomes top-scorer in Mexican league The "Golden Boy" of football

FILM

- * Grease
- * Star Wars



RENOVATIONS

Lead PRE applies to repairs/renovations made to houses BEFORE 1978 which are done for pay.

WHAT IS NOT COVERED?

- * Houses built in 1978 or later
- * Houses for the elderly
- * Houses with no bedrooms
- * Houses declared lead free
- * Emergency repairs
- * Minor repairs smaller than 2 square feet of paint



Please see handouts for more information!!



North Carolina Lead Pre-renovation Education Rule Exhibit: Spanish

PELIGROS Y SALUD

Una gota de PLOMO es lo suficientemente tóxica para dañar a los niños.

Si un niño se pone en contacto con pintura de plomo o tierra que contiene plomo, puede sufrir efectos dañinos a la salud.



PELIGRO PARA USTED

Problemas de reproducción
Problemas de aprendizaje
Problemas de desarrollo
Problemas con el sistema nervioso (debido a la toxicidad de la exposición)



PELIGRO PARA SUS NIÑOS

Daño al cerebro
Daño al sistema nervioso
Problemas de aprendizaje
Problemas con el comportamiento y el desarrollo
Daño al sistema nervioso (debido a la toxicidad de la exposición)



NC

OJO! ATENCION OBREROS/TRABAJADORES DE CONSTRUCCION

LA PINTURA CON PLOMO ES PROHIBIDA!!

NOTICIAS

- El Papa Juan Pablo II es elegido para dirigir la Iglesia Católica Romana
- El Senado de los EEUU acepta el Tratado del Canal de Panamá

POLITICA

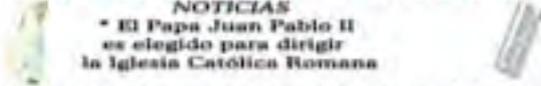
- Pedro Joaquin Chamorro, editor de La Prensa, asesinado en Managua, Nicaragua
- Julio Turbay Ayala gana las elecciones en Colombia
- El Gen. Juan Pereda de Bolivia encabeza el golpe de estado, el Presidente Hugo Bunzer huye

DEPORTES

- La Argentina gana a Holanda 3-1 en la Copa Mundial
- Hugo Sanchez llega a ser el mayor maracador de goles en la liga Mexicana, el "Muchacho de Oro" del futbol

PELICULAS

- Grasa (Grease)
- La Guerra de las Estrellas (Star Wars)





LA PRE REGULA DEL PLOMO

QUE ESTÁ EN LA LEY NACIONAL

#1 Ley Nacional afecta los reparos y renovaciones de casas construidas ANTES de 1978

#2 Provee información a las personas

HABITANDO viviendas previas a 1978

RENOVACIONES

La regla PRE del Plomo se aplica a los reparos y renovaciones ejecutados en viviendas ANTES de 1978 que son hechas

Por favor vea los folletos para más información!





PROTEJASE A SI MISMO

Si usted usa pintura de plomo, asegúrese de usar equipo de protección personal.

EN EL TRABAJO

USE LA BATA PROTECTORA El respirador certificado NIOSH Evite la Lanza de seguridad





EN LA CASA

REMOVIENDO PINTURA DE PLOMO: Todos los tipos de pintura de plomo pueden ser removidos de la casa.





North Carolina Lead Pre-renovation Education Rule DVD and Booklet for Workers



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University of Connecticut

House Smart: Solutions for Managing Clutter

House Smart is an educational program designed to teach chronically disorganized individuals and families how to develop household management skills to achieve and sustain a healthy home.

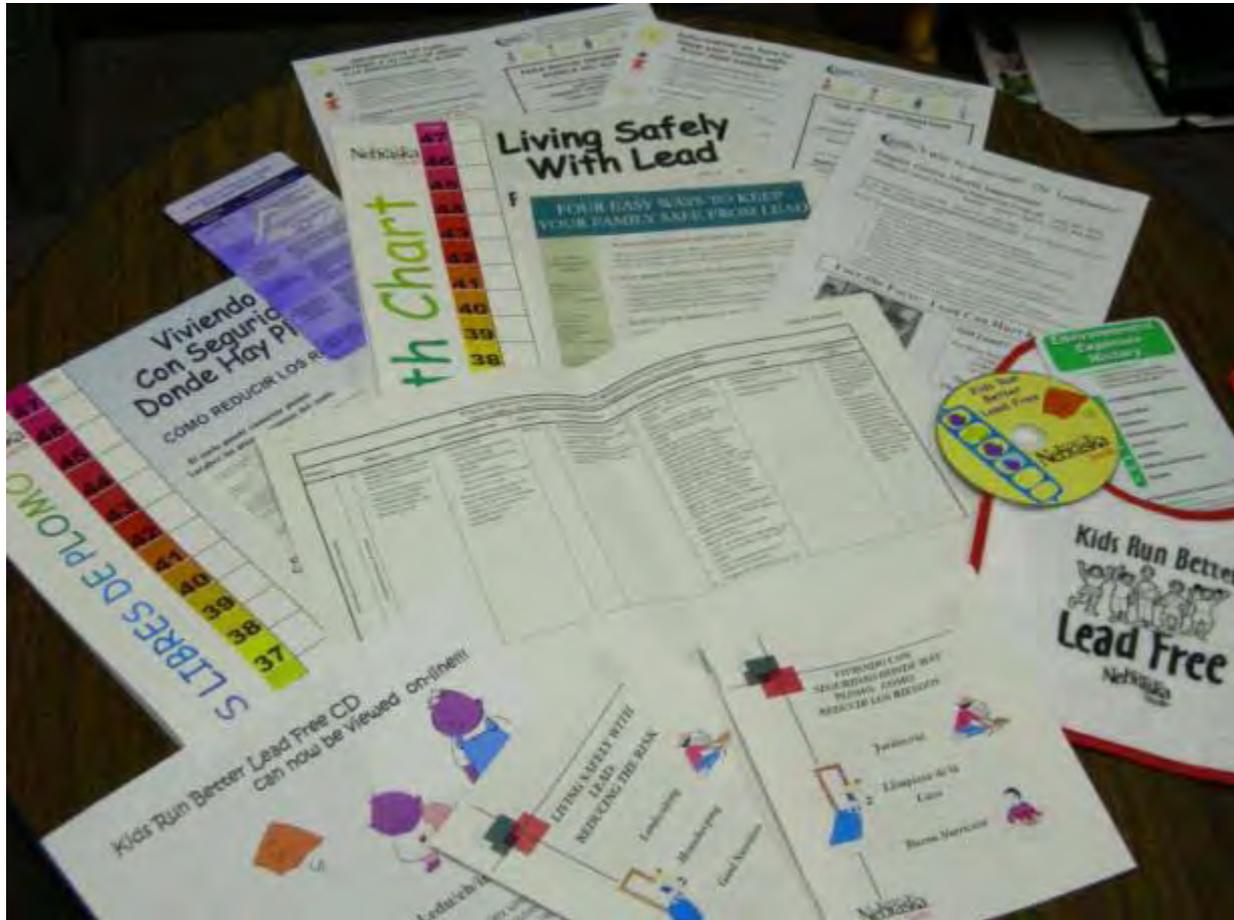


Positive impacts for individuals and families:

- Safe indoor and outdoor environments
- Create & sustain healthy homes – remove clutter and safety hazards, reduce pests, mold, dirt & dust; sustain a clean home, organize belongings
- Children learn and apply organizational skills
- Increased space and comfort
- Improved family atmosphere
- Individual and family successes
- Family autonomy from agency/court interventions



Nebraska: Lead Poisoning Prevention



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Alabama Lead Exhibit



Alabama Sun Safety Exhibit



Alabama: Asthma exhibit



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North Carolina: Water Quality

(NC A&TSU – 1890 University)



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Rhode Island: Water Quality DVD

Private Drinking Water Well Testing and Protection

- Distributed to libraries and town halls in state where residents rely on private wells for their drinking water.
- Shown on educational cable TV 3 – 4 times/year since January 2007.
- Available on internet:
<http://www.uri.edu/ce/wq/has/Private%20Wells/PRIVATE.HTM>



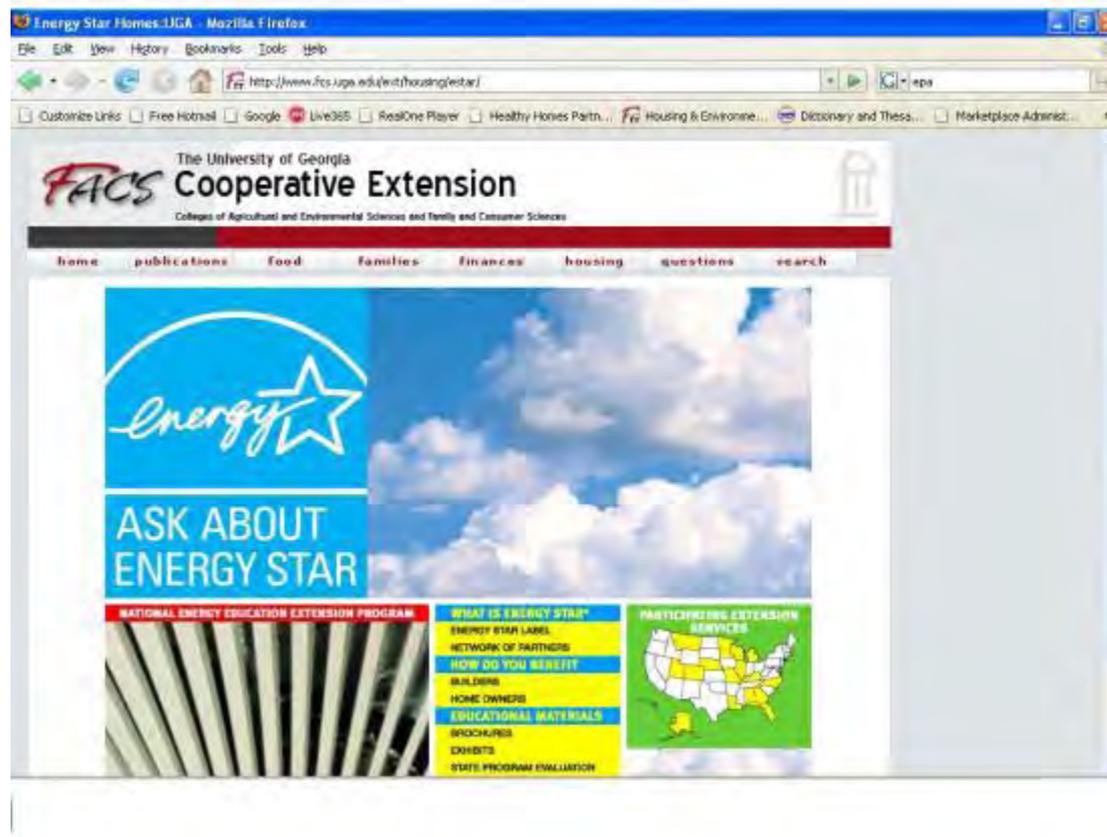
Louisiana State U : LaHouse



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ENERGY STAR



Reaching Educators & Consumers

- **Georgia: Spanish language materials**
- **Wisconsin: Developed Home*A*Syst and started Healthy Homes Partnership**
- **Maryland: Healthy Homes Web site:**
<http://extension.umd.edu/family/HealthyHomes/index.cfm>
- **Missouri: www.missourifamilies.org contains FAQs about housing**
- **Alaska: Energy efficiency in the home**



Reaching Educators & Consumers (continued)

- **New Mexico: Carbon Monoxide education**
- **Montana: NativeAir (childhood asthma) and Native American Healthy Homes book**
- **Nebraska: DVDs on mold (Professionals and Consumers) and lead poisoning prevention**
- **North Carolina: created CD with powerpoint presentations on each chapter of the Healthy Home book**
- **Connecticut: House Smart (cleaning clutter)**



Reaching Educators & Consumers (continued)

- **Rhode Island: Water Quality education**
- **Tennessee: Children's Environmental Health**
- **Indiana: Mold and floods/disaster education resources**
- **Mississippi: interactive video conferencing to teach in all MS counties**
- **Louisiana: Has "La House" a demonstration healthy home, many resources on mold and flooding**



Reaching Educators & Consumers (continued)

- **Several state Extension educators: partnering with National Center for Healthy Housing:**
 - **Teaching the Essentials for Healthy Homes Practitioners course**
 - **Teaching Lead Safe Work Practices course**
- **and many more...check each state's Web site to download resources and www.healthyhomespartnership.net**

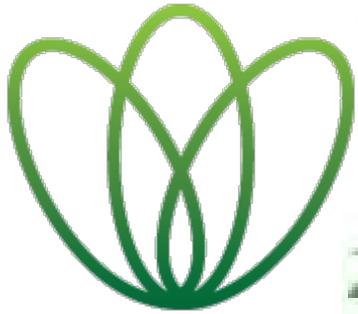


Contact

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Building Healthy Houses & People: Healthy Homes Education for Professionals & Consumers Using Electronic Delivery

Shirley Niemeyer, Ph.D.

**Extension Specialist, Housing/Environment
University of Nebraska - Lincoln**

Healthy Homes Education for Professionals & Consumers Using Electronic Delivery

Available at fingertips for those who have Internet access.



UNIVERSITY OF
Nebraska
Lincoln[®] EXTENSION



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Why IAQ

- **Damp indoor spaces & related biologicals (i.e. mold) associated with:**
 - Upper respiratory tract symptoms
 - Cough, wheeze
 - Asthma symptoms in sensitized persons
- **Asthma**
 - **Second most prevalent chronic condition among children** CDC, 2007
 - **Resulting in about 14 million days of missed school each year.** CDC, 2007
 - **Estimated US asthma cost - 13.8 to 16 billion dollars** (Weiss, et al, 2000; EPA, 2006)



Why IAQ

- **Asthma:** Exposure to dust mites, molds, cockroaches, pet dander, ozone, particle pollution & secondhand smoke can trigger asthma attacks in persons sensitized (EPA Children's Environmental Health: 2006 Report)
- **Lead:** Damages brain & nervous system. Can cause learning disabilities, lowered IQ, reduced attention span, slowed growth & development, hearing problems, & behavior problems



Purpose

- Expand our extension programs to meet the needs of professionals & consumers
- How could extension collaborate across states to further develop the programs for use in a broader area of the U.S.



Why?

- **Many states have regulations**
 - Requiring continuing education credits
 - Childcare providers
 - Real estate professionals
 - Health workers
- **Issues:**
 - Professionals in rural areas obtaining their required credits.
 - Busy providers often cannot take off a full day to obtain their needed hours during business hours
 - Costs of transportation



Professionals & Consumers

On-line education

- **Audience:**

- Householders with Internet access
- Professionals seeking continuing education credits to maintain licenses
 - Childcare provider professionals
 - Real estate professionals
 - Healthcare professionals



Curriculum: Moisture & Mold

From Mold & Moisture to Healthy Homes

DVD Format

- **Audience:**

- Professionals DVD250
Housing, Real Estate, Health, Other
- Consumers DVD249

- **Video – 28 minutes**

- I. Introduction

- II. Inspect Home's for Moisture & Mold

- III. Inspect Home's Exterior

- IV. Inspect Home's Interior

- V. Decisions in Cleaning up Mold & Moisture



Curriculum: Moisture & Mold

From Mold & Moisture to Healthy Homes

PDF Teaching Guides/Resources

- Pre - & Post Evaluation
- Activities
- Teaching Tips
- EPA Publications on Mold
- Frequently Asked Questions
- Teaching Outline with supplies /visuals suggested

www.ianrpubs.unl.edu/epublic/pages/index.jsp
\$9.00 each +handling



Curriculum

- **Two extensively developed web-based interactive educational programs focus on Indoor air quality**
 - Health impacts
 - Identification of air pollutants
 - Reducing pollutants at source
 - Remediation/Mitigation
 - Imbedded evaluation, activities, interaction



Curriculum – Web-based

Indoor Air Quality on-line program includes 10 modules, activities, & evaluation.

Radon program includes a similar format.

Potential problems?

Low & high graphics

Connections

Access for questions



Indoor Air Quality programs

1. Indoor Air Quality Modules:

Lead

Asthma

Biologicals

Asbestos

Formaldehyde

Chemicals/VOCs

Building systems

Radon

Combustion

Second hand smoke

2. Radon:

Source

Health impact

Testing & mitigation



Involvement

- **Interactive**
 - Flash program
 - Interactive rooms
 - Involve learner
 - Evaluation



Indoor Air Quality

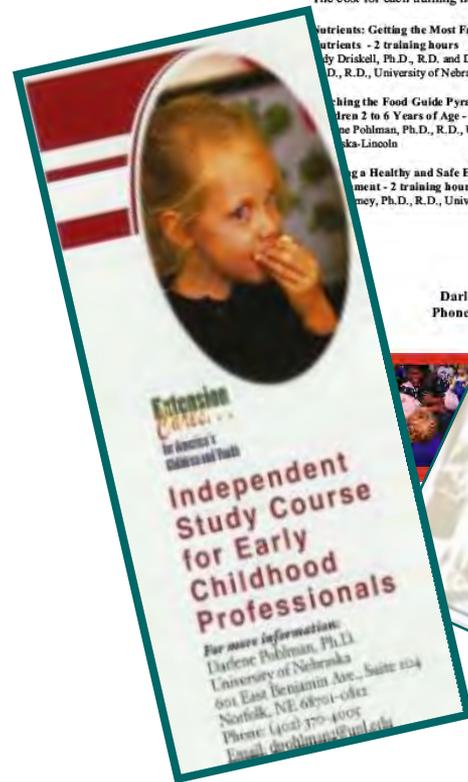
- Interactive format
- On-line assessments focus
- Ten modules.



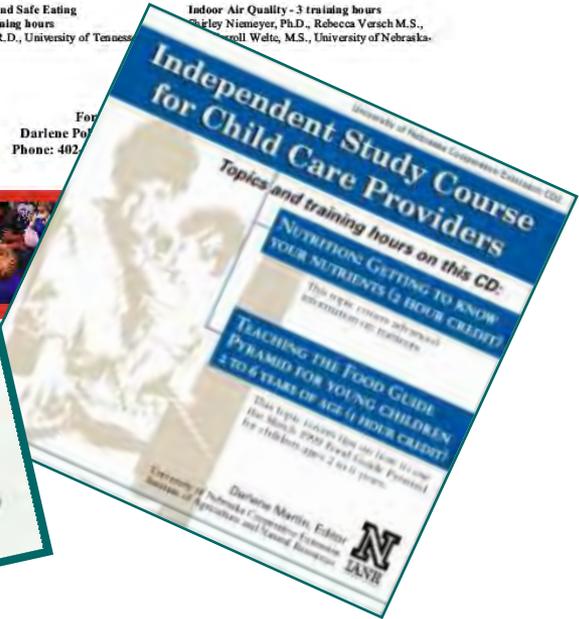
The *Independent Study Course for Early Childhood Professionals* is available by internet. The target audience for the course is early childhood professionals in home and day care settings.

The course topics meet the prerequisites for The Council for Professional Recognition of the Child Development Associate National Credential Program (CDA), Continuing Education Units CEUs, and most local requirements for training. The course is created for an environment that provides "on demand" access for educational and training needs of early childhood professionals. The cost for each training hour is \$5.00. The currently available topics are:

- | | |
|---|--|
| <p>Nutrients: Getting the Most From Your Diet - 2 training hours
 Darlene Pohlman, Ph.D., R.D., University of Nebraska-Lincoln</p> | <p>Food Safety in the Childcare Setting - 1 training hour
 Kim Asche, M.S. and Mary Hedin, M.P.H., R.D., University of Minnesota</p> |
| <p>Teaching the Food Guide Pyramid to Young Children 2 to 6 Years of Age - 1 training hour
 Darlene Pohlman, Ph.D., R.D., University of Nebraska-Lincoln</p> | <p>Fighting Foodborne Illness in the Childcare Setting - 1 training hour
 Naomi Fruechte, M.S. and Joan Hegerfeld M.S., University of Minnesota</p> |
| <p>Creating a Healthy and Safe Eating Environment - 2 training hours
 Darlene Pohlman, Ph.D., R.D., University of Nebraska-Lincoln</p> | <p>Indoor Air Quality - 3 training hours
 Darlene Pohlman, Ph.D., Rebecca Verach M.S., and Darlene Martin, M.S., University of Nebraska-Lincoln</p> |



For more information:
 Darlene Pohlman, Ph.D.
 Phone: 402-475-4007



Site

- **Indoor Air Quality for Childcare Professionals**

- **URL**

<http://nerec.unl.edu/nutrition/studentcourses/hgraphicindoorairquality/pollutants.html>



Indoor Air Quality: Radon

URL:

<http://elkhorn.unl.edu/radon/pages/index.jsp?what=rootMenuD&rootMenuId=1>

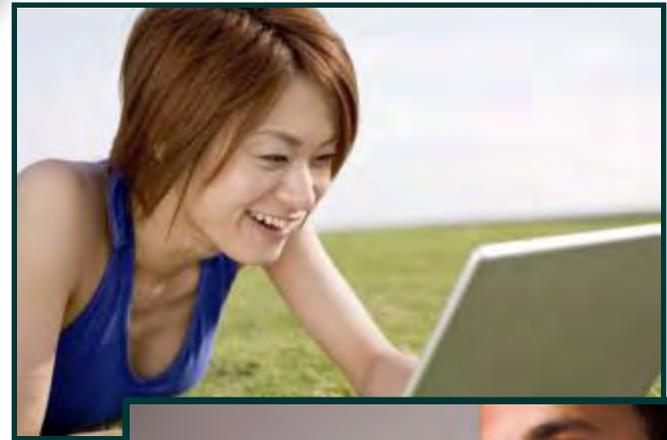
- **Modules:**

- Guide for real estate brokers/salespersons
- What is radon?
- How does radon enter the home?
- How can homes be tested for radon?
- What are the health risks related to radon?
- How can radon levels be reduced in homes?
- Where can I find more information on radon?
- Radon Issues Quiz for credits

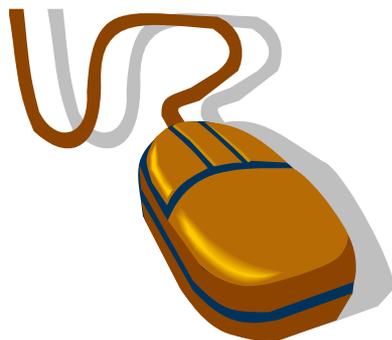




- **Ways to use programs within your educational programs?**
- **Ways extend programs throughout U.S.**



Healthy Homes Educational Opportunities for Electronic Delivery



Shirley Niemeyer, Ph.D.
Extension Specialist Housing/Environment
University of Nebraska Lincoln Extension
sniemeyer2@unl.edu Ph: 402-472-6319



Program Design & Delivery Varies



**Individual & small
groups**



**Collaborations
Agency partnerships**



**Nutrition Ed.
Program, WIC,
Building NE
Families**



Other Healthy Homes Programs

- *Wildfires: Smoke & Ash in the Home*
- *Kids Run Better Lead Free*
- *IPM in Schools*
- *From Mold & Moisture to Healthy Homes*



Impacts

- Knowledge of harmful effects & best mgt. practices to reduce risk increased
- Identified 2 to 3 changes intended to make
- Follow-up – 70% had implemented changes in lifestyle or how they managed their home & landscape.
- Increased calcium & iron in children's diet
- Covered or stabilized bare soil
- Raised garden beds
- Reduced exposure in play areas
- Adopted wet cleaning
- Filtered vacuuming to manage dust
- Eliminated sources of lead contaminated items
- Used prevention strategies to keep soil out of homes



Impacts?

- **Improved knowledge of Extension in Douglas County**
- **New audiences**
- **Stronger collaborations & improved communications among agencies, organizations & government involved in addressing the issues**
- **Strengthened relationships with minority population**



Other Healthy Homes Programs & Resources



- *Midwest Regional Healthy Homes Symposiums*
- *Inservice trainings: educators & other housing & health professional*
 - *Healthy Homes Kits*
 - *Nutrition Education Programs*
 - *Building Strong Families- low income*
- *Real Estate Professionals – 3 hour credit course:*
 - *Radon, Moisture & Mold in Homes*



Looking for Mold in on the Right Places

- **Programs:**
 - **Refrigeration Service Engineers Society**
Omaha & other chapters
 - **NE State Convention:**
Fitters & Boiler Makers
 - **Rural Health Conference**
 - **NE Community Action State Conference**
 - **City of McCook**
 - **Etc.**
- **Impact documented**



Displays



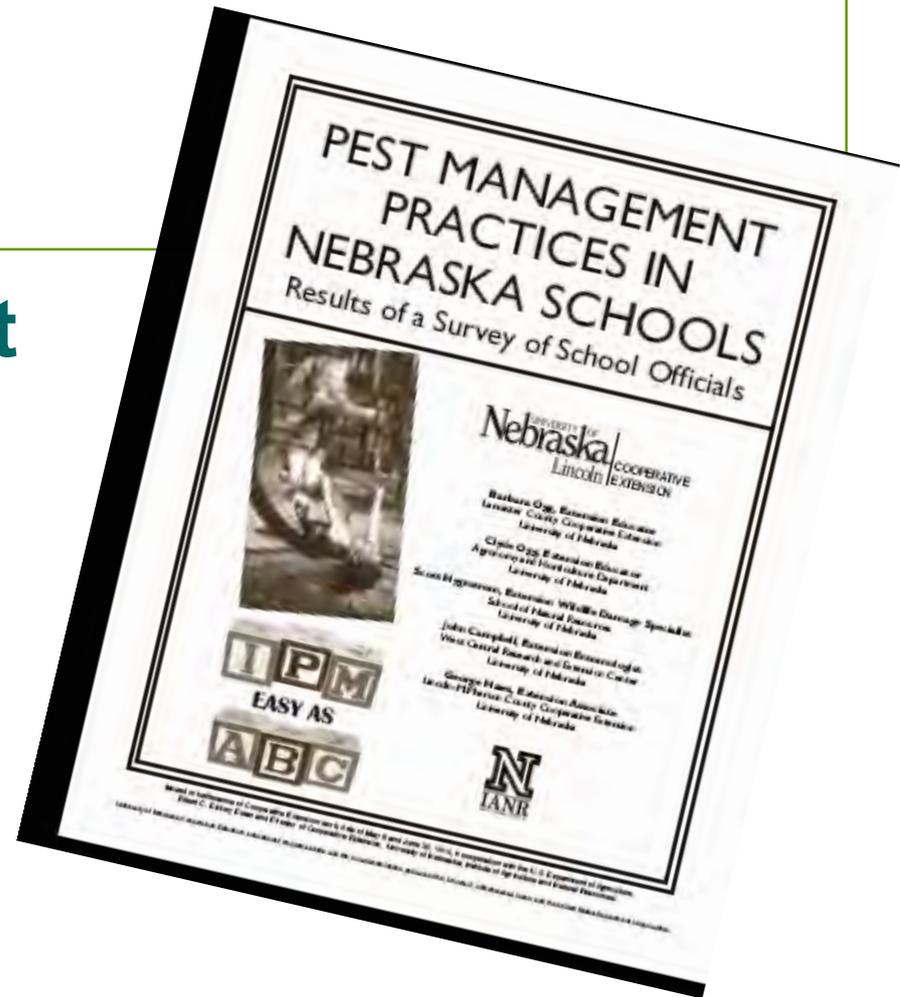
Healthy Homes Programs

- ***Healthy Homes Presentations*** focused on asthma, lead, moisture & mold & other topics for multiple audiences:
 - Plumbers/HVAC professionals
 - Midwest Floor Association
 - ALA conferences
 - Etc.
- ***Healthy Homes Displays at health fairs, fairs etc.***
 - *Large model house* Plumbers/HVAC professionals
 - Attention getter - Find the M & Ms & Dust Bunnies – children
- ***Publications & Mailings***
 - *Lead publications mailed to all NE primary care physicians / GPs*



Phase I

- Identify existing pest management practices & problems
- Actions:
 - Conduct survey. Survey mailed to all NE school administrators (N=716)
 - Survey used to plan needs-based program



Survey Results



Survey outcomes

- **Administrators indicated . . .**
 - **74 % of schools have no IPM written plan & 25% don't know.**
 - **27% of personnel controlling pests are properly certified**
 - **61% indicated unnecessary, routine pesticide applications were conducted**



Survey Outcomes

- Notification of students & parents prior to application of pesticides in schools or on grounds -

Yes - 15% No – 79% DK - 9%

- Persons who apply pesticides INDOORS in schools (n=200)

Don't Know	Supt.	Principal	Teacher	Custodian/ Maintenance	Volun- teer	Pest Control Co.	Lawn Care Co	Some- one else
5%	6%	7%	11%	38%	10%	75%	17%	6%



Phase I

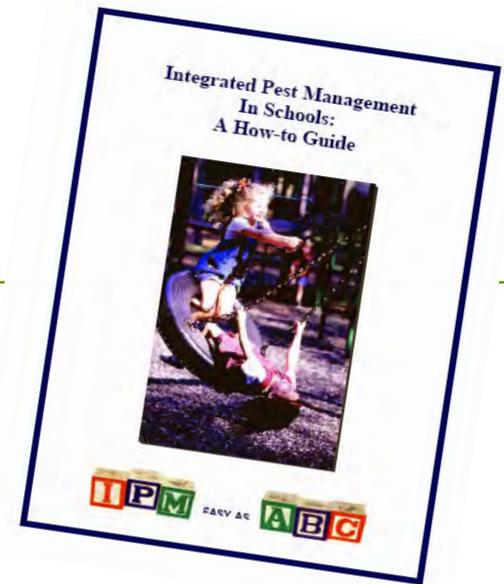
- **Increase awareness & knowledge of IPM program in schools**
- **Actions:**
 - **Develop brochure, guidebook & website**
 - **Develop guidelines for creating IPM plans in schools**
 - **Distribute guidelines**
 - **Information mailed to 716 school administrators explaining IPM & the program**
 - **Guidebook & survey results distributed to school board presidents, educational service units, & principals of all K-12 schools in NE, & all Extension Offices**



212 page *IPM in Schools:* *A How-to Guide* developed

Includes:

- Indoor Air Quality: Molds & Other Asthma Triggers
- Prevention Strategies for Managing Biological Pollutants Inspection Checklist
- Inspection Checklist for Detecting Structural Damage
- Other modules address: VOC's, mice, cockroaches, dustmites, moisture & mold and other biologicals, and structure & environment/habitat control



Phase II

Objectives:

- **Increase in-depth knowledge of IPM practices among school personnel responsible for administration, maintenance & pesticide applications**
- **Reduce pollutants & specific environmental asthma triggers**



Phase II

- **Actions:**

- **Learning modules created, for workshops, workshops conducted**
- **Guidebooks distributed at workshops & other training programs**



Phase II

- **Training & guidebook provided for 400 at 10 conferences & all day workshops**
 - extension faculty
 - pest management professionals
 - school nurses
 - custodians, maintenance workers & supervisors,
 - food service workers
 - school officials



Phase II Outcomes

- **Evaluations indicated:**
 - **93 – 100% ranked the workshop segments on healthy related pests, pests of moisture prone areas, mold & indoor air quality, IPM concepts & assessment & turf & landscape as superior, excellent or good**
 - **83% said information learned would save their school district money**
 - **77% said information would improve their ability to work with pest management professionals**



Phase II Outcomes

- **Participants said learned new information about**
 - **IPM (93%)**
 - **Preventing/excluding pests (89%)**
 - **Inspecting & monitoring for pest activity (82%)**
- **Participants indicate would always. . .**
 - **Identify & eliminate conditions conducive to pests (89%)**
 - **Use less hazardous control tactics (77%)**
 - **Reduce their overall pesticide use (66%)**



Phase II Outcomes

- **Most important thing learned**
 - **Identify type of pest before treating problem**
 - **IPM must become every day activity**
 - **Asthma triggers**
 - **Rodent control**
 - **Regular scheduled spraying for pests isn't the answer**



Outcomes



- **IPM in schools website**
 - **<http://schoolipm.unl.edu>**
 - Guidebook
 - Power points
 - Information for school administrators
 - Links to 40 websites



Phase III Pilot

Objectives

- Encourage adoption of IPM in schools
- Serve as model for other schools
 - 7 pilot schools involved in in-depth on-site assessments & education
 - Detailed recommendations
 - Advanced inservice opportunities
 - On-going assistance
 - Follow-up evaluations – now being returned
 - Successful strategies will be communicated to school officials



Conclusions

To increase adoption of IPM programs in schools . . .

- **Recommend**

- Needs assessments prior to program development
- Collaborative interagency & interdisciplinary teams
- Multiple program methods & media
- Including indoor air quality & asthma triggers as part of state IPM educational programs



Healthy Homes Education

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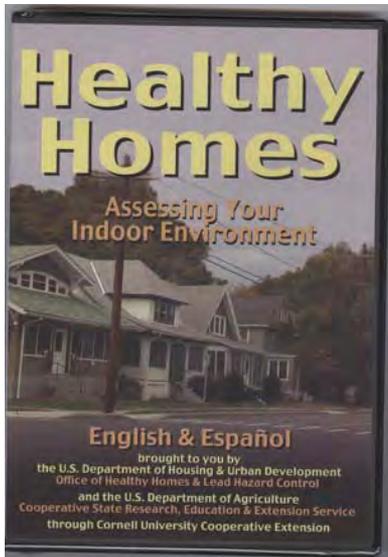


**BUILDING A FRAMEWORK
FOR HEALTHY HOUSING**

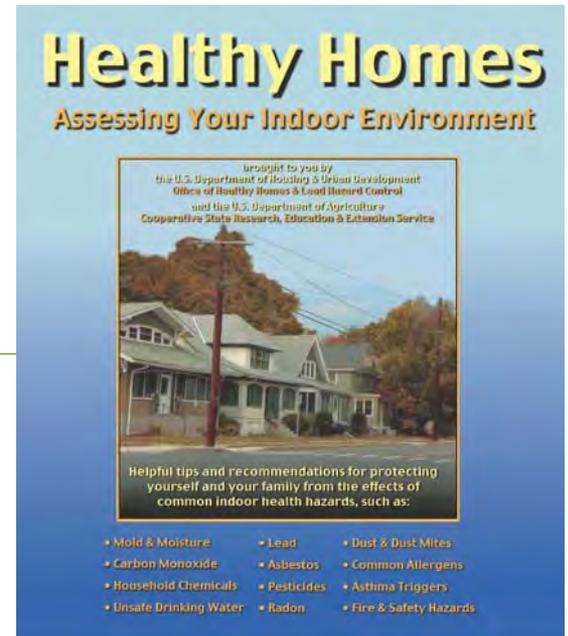
2008 National Healthy Homes Conference



BUILDING A FRAMEWORK FOR HEALTHY HOUSING



Healthy Homes DVD and Manual



Joe Laquatra
Cornell University



DVD produced first

- Found local videographer
- Produced script

Reviewed by HUD and CDC

- Decisions regarding what topics to include, what recommendations to make
 - IEQ, household hazardous chemicals, pesticides, fire safety, falling hazards
- 14 revisions; year-long process



Difficult Choices

- Running cold water to flush pipes
 - How long?
 - 2 minutes – realistic?
 - Until water is as cold as it gets
- Washing hands
 - How long?
 - Still a question



Local Actors



Christopher Julian



Various Sites for Shooting



Script Interpretation



Children on the Set



Distribution of DVDs

- 2006
 - CSREES
 - HUD
 - Extension Educators
 - Notices on Listservs
 - Filled requests
 - Priester Extension Health Conference



Uses

- Healthy Homes Trainings
- College Classes
- Public Access Cable TV
- HUD's *Healthy Homes for Healthy Kids* Campaign

Healthy
Homes
for Healthy
Kids



**Healthy
Homes
for Healthy
Kids**



**BUILDING A FRAMEWORK
FOR HEALTHY HOUSING**

Impacts

- Some anecdotal evidence
 - Natasha Tall stopped on street re: radon
“I tested my house for radon because of you.”
 - Emily Williams’ experience after using the DVD in a field office training
“You may have saved my life.”



DVD available online

- Can download from the Healthy Homes Partnership web site:
 - www.healthyhomespartnership.net



The Manual English and Spanish

Healthy Homes Assessing Your Indoor Environment

brought to you by
the U.S. Department of Housing & Urban Development
Office of Healthy Homes & Lead Hazard Control
and the U.S. Department of Agriculture
Cooperative State Research, Education & Extension Service



Helpful tips and recommendations for protecting yourself and your family from the effects of common indoor health hazards, such as:

- Mold & Moisture
- Carbon Monoxide
- Household Chemicals
- Unsafe Drinking Water
- Lead
- Asbestos
- Pesticides
- Radon
- Dust & Dust Mites
- Common Allergens
- Asthma Triggers
- Fire & Safety Hazards



Cornell University
Cooperative Extension

Hogares Sanos Como Evaluar Su Medio Ambiente Interior

presentado por el
Departamento de Viviendas & Desarrollo Urbano
Oficina de Casas Saludables y Control del Peligro del Plomo
y el Departamento de Agricultura de Estados Unidos
Servicio de Pesquisas Estatales, Educación & Extensión



Consejos útiles y recomendaciones para la protección de Ud. Y su familia contra los efectos de peligros para la salud, como:

- Moho & Humedad
- Monóxido de Carbono
- Productos químicos domésticos
- Agua potable que no es sana
- Plomo
- Asbesto
- Pesticidas
- Radón
- Polvo & Ácaros
- Alérgenos comunes
- Provocadores de reacciones asmáticas
- Peligros de fuego y seguridad



Cornell University
Cooperative Extension



BUILDING A FRAMEWORK
FOR HEALTHY HOUSING

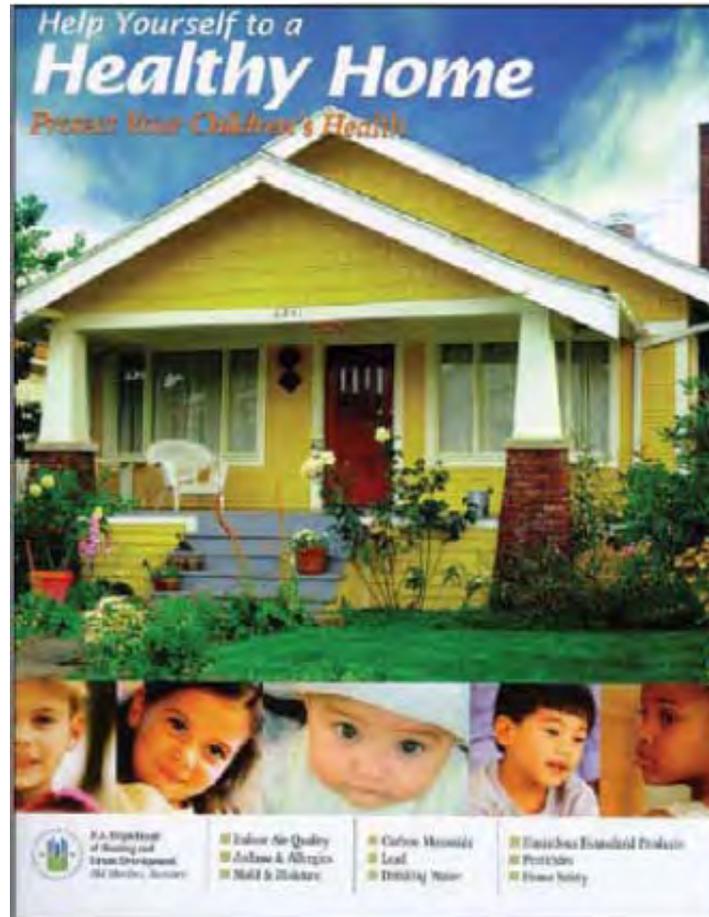
The Manual

- DVD User's Manual
- Training Manual
 - For Healthy Homes programs and other efforts

In NYS, used in conjunction with DOH
Healthy Neighborhoods Program



Wanted to Complement HYHH



**BUILDING A FRAMEWORK
FOR HEALTHY HOUSING**

Visual Alerts

“View the DVD” symbol



Visual Alerts

“CHILD ALERT” symbol



Contents



Scene 18: Dust and Dust Mites

Scene-by-Scene Guide



Contents

- Biological Pollutants and Other Allergens
- Chemical Contaminants in the Home
- Safety Hazards and Concerns
- Index
- Other Resources



Consistent Layout

Radon

Identifying the Problem:

What Can it Do?

Where is Radon?

Taking Action Against Radon

Other Resources

Scenes
7, 13, 21



Images from the DVD



... more than outdoors, and these places will have higher concentrations of mites.

... ly, since we spend a quarter to a third of our lives asleep, dust mites are found in largest numbers in our beds. This includes our sheets, blankets, mattresses, pillows and pillowcases.



Dust mites also thrive on floors, rugs and carpets, as well as in furniture, books and toy blocks.



To Date

- 5,200 copies distributed
- More printings planned
- Hoping for more translations
 - Possibly Russian



PDFs

- English and Spanish manuals
 - JL27@cornell.edu

