



## **Healthy Home Environments**

### **2005 Annual Conference Proceedings**

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   Sarah D. Kirby

**October 5 ~ 8, 2005**  
**The Brown Palace Hotel**  
**Denver Colorado USA**

**Celebrating ~ A Decade of Achievement 1995-2005**



*A partnership of:*



US Environmental Protection Agency  
Indoor Environments Division



Housing & Environmental Health Program



US Department of Agriculture  
Cooperative State Research,  
Education, and Extension Service

Hosted by:



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*Our mission is to increase the effectiveness of housing education at all levels, develop expertise in and expand the outreach of educators and researchers by coordinating efforts among professionals in housing, disseminate information on current developments in housing, and promote recruitment of students to advance the study of housing and to increase the quality and quantity of professionals in the field.*

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Housing Education and Research Association  
**2005 Annual Conference: *Healthy Home Environments***  
Denver Colorado    October 5 – 8, 2005

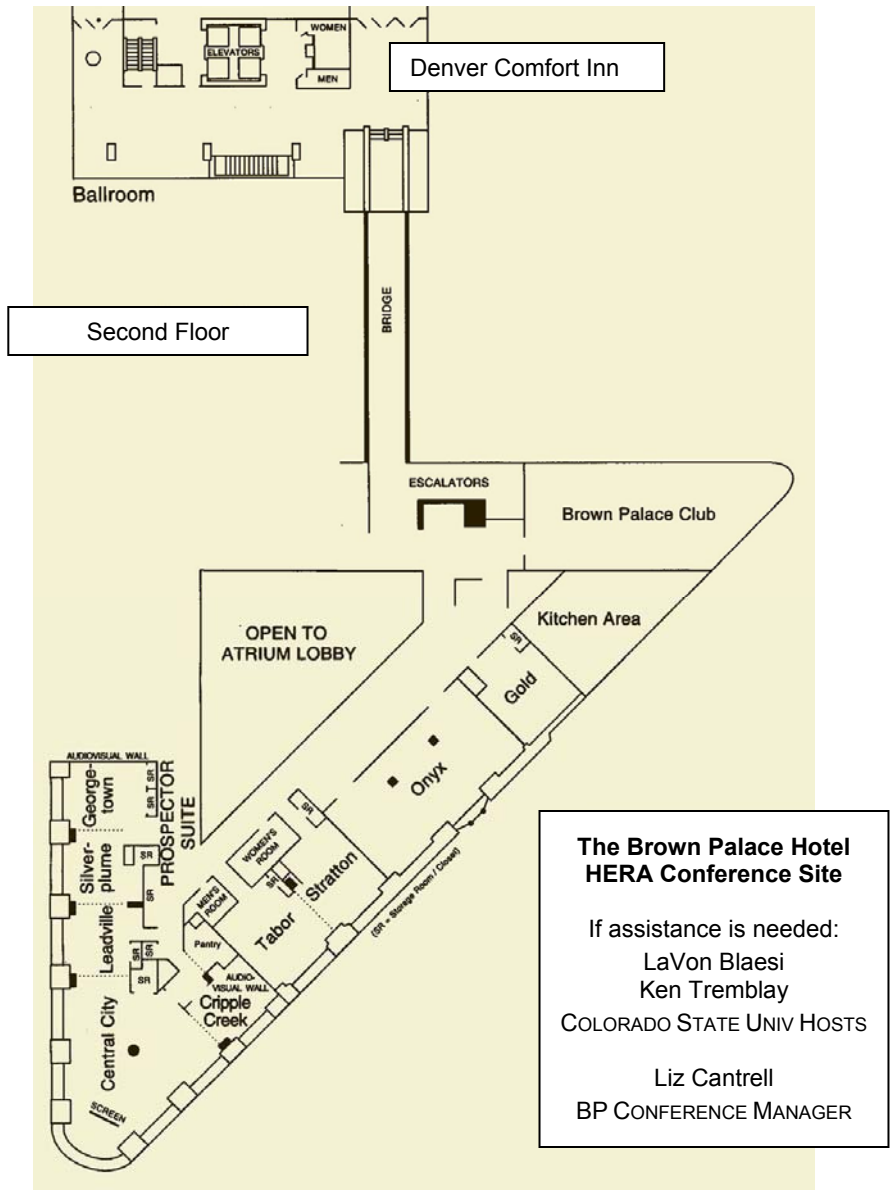
## **Conference Proceedings**

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Welcome to Denver

**The Brown Palace Hotel Meeting Facility**  
321 17<sup>th</sup> Street Denver Colorado



# Conference Program

## 2005 HERA Conference: *Healthy Home Environments* The Brown Palace Hotel ~ second floor meeting rooms

### WED October 5

10:00 – 4:00	Gold	Higher Education Summit National Apartment Association Education Institute
1:00 – 5:00	2 <sup>nd</sup> Floor Alcove	REGISTRATION
1:30	Shuttle in front Comfort Inn	National Renewable Energy Lab, Golden, CO tour optional
2:00 – 4:00	Leadville	HERA Executive Board Meeting
4:00 – 5:00	Central City	Break ~ <i>sponsored by National Apartment Association (NAA)</i> Briefing: Opportunities in Residential Property Management National Apartment Association Education Institute Maureen Lambe, CAE, National Apartment Association
5:00 – 6:00	Brown Palace Club	SETUP Invited HIAAH posters/exhibits
6:00 – 8:30		Reception Healthy Indoor Air for America's Homes (HIAAH) Celebrate ~ A Decade of Achievement 1995-2005 ♦ Welcome by Joseph L. Wysocki ♦ Introduction of special guests, awardees ♦ Indoor Air Quality Invited Displays & Posters  <i>Beverage tickets sponsored by NAA</i>

### THURS October 6 **Healthy Indoor Air for America's Homes** Sponsored by USDA/CSREES ~ EPA

7:30 – 4:00	2 <sup>nd</sup> Floor Alcove	REGISTRATION
7:30 – 6:00	Georgetown	Resource Room: Current Work & Books on Display
8:00 – 5:00	Gold	"Board Room" available for committee meetings
7:30 – 8:30	Silverplume Leadville	Executive Coffee & Pastries View Displays & Resources
8:30 – 8:45	Central City	Welcome to Colorado & 2005 Annual HERA Meeting Ken Tremblay, Colorado State University
8:45 – 9:15	Central City	Welcome & Introduction by Anna-Mae Kobbe Joseph L. Wysocki, National Program Leader, Housing and Indoor Environment, USDA/CSREES <i>Our Successful Partnerships</i>

**THURS October 6**      **Healthy Indoor Air for America's Homes**  
*cont*                              *Sponsored by USDA/CSREES ~ EPA*

9:15 – 10:15	Central City	KEYNOTE: Richard J. Jackson, MD, MPH <i>Healthy Homes &amp; Communities</i> Author of <i>Urban Sprawl and Public Health - Designing, Planning, and Building for Healthy Communities</i> (with Frumkin & Frank)
10:15 – 10:45	Leadville Silverplume	BREAK: Executive coffee Jackson Book signing ♦ Networking
10:45 – 11:15	Central City	Michael P. Vogel, Montana State University Extension Accomplishments of Program Managers
11:15 – 11:45		Joseph Laquatra, Cornell University Research Accomplishments of Program Managers
Lunch 12:00 – 1:15	Onyx	Announcements Invocation, Fr. Benedict Guevin Presenter: David R. Rowson, Director, Center of Asthma and Schools, EPA <i>Celebrating Our Accomplishments and Looking to the Future</i>
1:15 – 2:15	Central City	Panel moderator: David R. Rowson <i>Indoor Air Quality issues, collaborations, resources, and possible grant connections</i> Anna-Mae Kobbe, Director, Family Consumer Sciences and Nutrition, USDA/CSREES <i>Key Collaborations Advancing Housing Research and Education</i> Barry Brooks, Public Health Advisor, National Center for Environmental Health, CDC <i>Achieving Lead Poisoning Elimination by 2010</i>
2:15 – 2:45	Central City	Richard Seifert, University of Alaska <i>World Peak Oil Production? What it Means and Why Should I Care?</i>
2:45 – 3:00		BREAK: Executive Coffee ♦ Networking
3:00 – 4:30	Central City	<u>Concurrent sessions ~ Oral presentations</u> 3:00 <i>Pesticide Residues in Rural Homes</i> Laquatra, Pierce, Hedge, Lemley 3:30 <i>Visual Impact Ratios: A Possible Solution to Regulate the Impact of Development on Important Scenic Views</i> Mansfield 4:00 <i>Integrated Pest Management in Schools: Inclusion of Indoor Air Quality and Environmental Asthma Triggers Modules</i> Niemeyer, C. Ogg, Hygnstrom, B. Ogg

3:00 – 4:30	Stratton	<p><u>Concurrent sessions ~ Oral presentations</u></p> <p>3:00 <i>Addressing Distinct Housing Needs: An Evaluation of Older Adults' Housing in the South Asian Community</i> Mahmood, Kobayashi, Chaudhury</p> <p>3:30 <i>The Role of Technology in Assisting Older People to Age in Place</i> Ahn, Goss</p> <p>4:00 <i>Attitudes Concerning the Role of Technology for Healthy Aging</i> Steggell</p>
4:30		Setup posters
5:00 – 6:00	Silverplume Leadville	<p><u>Poster Session &amp; Reception</u>  <i>Sponsored by Iowa State University and University of Minnesota</i></p> <p><i>The Feasibility of Affordable Housing and Environmental Preservation in a Transferable Development Rights Program</i> Atiles, Dorfman, Roskie, Boring, Nelson, Gavrilles</p> <p><i>Global Housing Classroom Project: Collaborative Learning and Information Literacy</i> Crull, Shonrock</p> <p><i>A Sabbatical in the Housing Industry</i> Earhart</p> <p><i>Design and Build of Affordable Universally Designed Spec House Creates Partnership between University, Contractor, and Community</i> Hartje</p> <p><i>Examining Minority Homeownership in Guilford County, North Carolina</i> Hinnant-Bernard</p> <p><i>Setting Housing Issues on the Policy Agenda: A Review of Literature</i> Johnson, Delgadillo</p> <p><i>Residential Consumer Energy Education Project</i> Kirby, Chilcote</p> <p><i>Second Empire Architecture: The Healthy Home of the 19<sup>th</sup> Century</i> Memken, Raber</p> <p><i>The Old Order Amish House: A Healthy Home?</i> Rasdall, McCallister</p>
6:15 6:30–8:30 pm	Meet in lobby Comfort Inn	<p>LoDo Tour optional ~ Pay at registration table</p> <p>Dinner on your own in LoDo (Lower Downtown Denver)</p>

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**Fri October 7**

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7:30 – 4:00	2 <sup>nd</sup> Floor Alcove	REGISTRATION
7:30 – 6:00	Georgetown	Resource Room: Current Work & Books on Display
8:00 – 5:00	Gold	“Board Room” available for committee meetings
8:00 – 8:45		<u>Section Meetings</u>
	Stratton	Academic
	Leadville	Extension
	Silverplume	Research
9:00 – 10:15	Central City	<u>HERA General Session</u> ◆ Business Meeting ◆ HERA Invite to 06 Conference, Joseph Laquatra ◆ Tessie Agan Award Presentation, Dongwang Liu <i>Housing Satisfaction of Asian and Pacific Islander Households in the United States</i>
10:15 – 10:30		Break <i>Sponsored by NAA</i>
10:30 – 11:50	Central City	<u>Symposium:</u> 10:30 <i>Internships in Residential Property Management</i> Earhart, Campbell, Goss, Jackiw
	Stratton	<u>Concurrent session ~ Oral presentations</u> 10:30 <i>Living Safely with Lead: Reducing the Risk</i> Skipton, Fech, Schneider-Miller, Waldren, Niemeyer, Lowndes, Erickson 11:00 <i>Attacking the Epidemic of Childhood Asthma: Helping Children Learn to Manage their Environment</i> Parrott, McFarren 11:30 <i>Healthy Homes: Indoor Air Quality Training for Professionals</i> Niemeyer, Versch, Bartos
Lunch 12:00 – 1:30	Onyx	HERA Announcements Daniel D. Chiras, <i>Creating Sustainable Shelter</i> Author of <i>The Natural House</i> and <i>The New Ecological House</i>
1:45 – 3:15	Central City	<u>Concurrent sessions ~ Oral presentations</u> 1:45 <i>Interior Design Students’ Attitudes toward Concepts Associated with Aging in Place</i> Miller, Garner, Olson 2:15 <i>Universal Design for Better Living Program</i> Yeans 2:45 <i>Housing and Services for the Aging in Rural Communities</i> Niemeyer, Cook, Crull, White



1:45 – 3:15	Stratton	<u>Concurrent sessions ~ Oral presentations</u> 1:45 <i>Housing Values of Students in Off-Campus Multifamily Housing Communities</i> Lee, Goss, Beamish 2:15 <i>Off-Campus Student Housing: A Measure of Value</i> Erickson, Delgadillo 3:15 <i>The Ecology of Residence Halls: Satisfaction and Retention for All People</i> Steggell, Hansen, Bridges
3:15 – 3:30		Break <i>Sponsored by Colorado State University</i>
3:30 – 5:00		<u>Concurrent sessions ~ Oral presentations</u>
	Central City	3:30 <i>Cultural Issues and Housing Satisfaction of Asian and Pacific Islanders in the United States</i> Liu, Crull 4:00 <i>Frequent Relocation and Family Attachment</i> Lloyd, Parrott 4:30 <i>The Complexity of Housing Satisfaction for Rural Families in Iowa</i> Auh, Crull, Cook, Shelley
	Stratton	3:30 <i>An Analysis of Homeownership and Type of Dwelling by Household Composition</i> Sweaney, Venderford, Mimura, Carswell 4:00 <i>Demographics of Borrowers and Causes of Default of Residential Mortgages in Northern Utah</i> Pedersen, Nye, Delgadillo 4:30 <i>Mapping the Concentration of Mortgage Default in Weber County, Utah</i> Green, Delgadillo
6:00	Meet in lobby Comfort Inn	<i>Pizza with The Pres!</i> for students and recent graduates Sue Crull, HERA President, hosting a chat & eat for free

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**Sat October 8**

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	2 <sup>nd</sup> Floor Alcove	Registration Table
8:00 – 2:00	Georgetown	Resource Room: Current Work & Books on Display
8:00 – 2:00	Gold	“Board Room” available for committee meetings
8:00 – 8:45		<u>Committee Meetings</u>
	Georgetown	A. Nominations
	Leadville	B. Publications
	Silverplume	C. Awards
	Stratton	D. Membership
		E. Public Affairs
9:00 – 10:00		<u>Concurrent sessions ~ Oral presentations</u>
	Central City	9:00 <i>The Role of Extension Housing Specialists in a Culturally Diverse Georgia Community</i> Hwang
		9:30 <i>Service-Learning Approach to the Study of Children’s Environment</i> Bunker-Hellmich, Bruin
	Stratton	9:00 <i>Source of Income Discrimination within the Multifamily Industry</i> Mitchell
		9:30 <i>California Dreamin’: A Century of Healthy Homes</i> Feinberg, Dercle
10:00 – 10:30		Break <i>Sponsored by NAA</i>
10:30 – 11:45		<u>Symposiums:</u>
	Central City	<i>Developing a Research Agenda for Residential Property Management Programs</i> Goss, Carswell, Campbell, Jackiw, Lambe, Mitchell, Phillips
	Stratton	<i>Universal Kitchen Design for a Family of Cooks</i> Hines, Null, Potthoff, Sullivan <i>Sponsored by National Kitchen and Bath Association</i>
Lunch 12:00 – 1:30	Onyx	HERA New Officers Cynthia Leibrock, <i>Designing for the Future: Universal Design</i> Author of <i>Beautiful Universal Design</i> and <i>Design Details for Health</i>
1:30 – 2:00	Central City	HERA Past & New Board Meeting
2:30 – 8:30	Meet in lobby Comfort Inn	Tour Historic Central City optional Dinner on your own in Central City

*Have a safe journey home. Thank you for attending the 2005 HERA Conference.*

*See you in Cornell ~ October 8 – 11, 2006*

## 2005 HERA

### Biographies for Conference Speakers

#### Healthy Home Environments

**Barry Brooks, MS**, is a Public Health Advisor for the Lead Poisoning Prevention Branch, National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, Georgia. Since joining CDC in August 2003, Barry is the Project Manager for seven Childhood Lead Poisoning Prevention Programs in Region 3: Washington, DC, Pennsylvania, West Virginia, Delaware, Virginia, Maryland, and Philadelphia. Prior to joining CDC, Barry was the Director of the Kansas Lead Program.

**Daniel D. Chiras, Ph.D.**, is Founder and President of Sustainable Systems Design, Evergreen, CO. Previously he was Professor at the University of Colorado Health Sciences Center in Denver. He is a noted speaker and writer on sustainable design practices in housing. Dan has published a number of widely respected books including *The Solar House*, *The Natural House*, and *The New Ecological House*. He may be reached via his web site at [www.danchiras.com](http://www.danchiras.com).

**Richard J. Jackson, MD, MPH**, is an Adjunct Professor, School of Public Health, University of California, Berkeley. He was previously the State Public Health Officer, California Department of Health Services, and Director, National Center for Environmental Health, Centers for Disease Control and Prevention. Dick is a recognized leader in public health and is co-author of *Urban Sprawl and Public Health*.

**Anna-Mae Kobbe, Ph.D.**, is the Director for Family Consumer Sciences and Nutrition, USDA/CSREES. Anna-Mae provides leadership and supervision for programs and staff in housing and indoor environments, health, family life and human development, and nutrition research, education, and Extension programs. Prior to joining CSREES, Anna-Mae was an Associate Professor and section leader for the Tennessee Extension Service, Family Life and Human Development Program. Her early career experience was as a county home economist and area human development specialist with the Missouri Extension Service.

**Joseph Laquatra, Ph.D.**, holds an endowed chair as the Hazel E. Reed Human Ecology Extension Professor in Family Policy, Cornell University. Joe has been a member of the HIAAH development team since 1995. His research focuses on housing sustainability, especially as it relates to indoor air quality, energy efficiency, and residential sprawl. He has conducted educational programs for home builders in partnership with the National Association of Home Builders and is primary author of two textbooks for NAHB's Certified Graduate Builder programs. Joe is currently Chair of the National Consortium of Housing Research Centers.

**Cynthia Leibrock, MA, ASID, Hon. IIDA**, is the Founder of Easy Access to Health, a Fort Collins, CO, healthcare consulting firm devoted to improving the lives of older and disabled people through design. She is a Faculty Affiliate at Colorado State University and teaches an annual course on universal design at Harvard University. Cindy lectures internationally and is the co-author of *Beautiful Universal Design* and *Design Details for Health*. Refer to [www.AgingBeautifully.org](http://www.AgingBeautifully.org).

**David Rowson, MS**, is the Director of the Center for Asthma and Schools in EPA's Office of Radiation and Indoor Air. He currently leads EPA's Asthma and Schools programs, as well as the International Partnership for Clean Indoor Air programs in the Indoor Environments Division. He also previously directed EPA's Radon Program. He has a master's degree in Environmental Sciences and Meteorology from the University of Virginia. For the past decade of his 20-year environmental career, Dave has worked to educate and encourage the public about actions they should take to reduce indoor environmental health risks such as radon and asthma triggers.

**Michael P. Vogel, Ph.D.**, is Professor of Housing and Environmental Health at Montana State University Extension. He is an original member and the National Coordinator for HIAAH. Mike's many projects center on homes and environmental health. Two programs of particular note are the Montana Extension Disaster Education Network and his Low-Income Weatherization Assistance Program. He is also Executive Director of the Housing Education and Research Association.

**Joseph L. Wysocki, Ph.D.**, is the National Program Leader for Housing and Indoor Environment, Unit of Families, 4-H, and Nutrition, USDA/CSREES. Joe provides national leadership for research, education, and Extension programs in sustainable housing and indoor air quality, and the Extension Disaster Education Network, where he is a founding member with current focus on Hurricane Katrina. He is an original member of the HIAAH planning team and has been instrumental in guiding and funding housing Extension projects around the U.S. Joe was the first recipient of the HERA Distinguished Service Award.



**Healthy Indoor Air for America's Homes  
A Decade of Achievement 1995-2005**

Winner of the 2005 Jeanne M. Priester Award

*Dedicated to John J. Guevin*

On behalf of the United States Department of Agriculture, Cooperative State Research, Education, and Extension Service, I am pleased to welcome you to the Housing Education and Research Association annual conference with its theme of "Healthy Home Environments."

I am especially pleased that you are opening the meeting with a celebration of 10 years of successful outreach education of the Healthy Indoor Air for America's Homes national program.

I would also like to recognize and thank the U.S. Department of Housing and Urban Development and the U.S. Environmental Protection Agency for their continuing support.

**Joseph L. Wysocki, National Program Leader**  
Housing and Indoor Environment Programs, USDA/CSREES

## **Indoor Air Quality Scholarship Awardees**

Congratulations! Healthy Indoor Air for America's Homes and Housing Education and Research Association members welcome you to our annual conference.

*In recognition for your commitment to furthering Home Indoor Air Quality.*

Mira Ahn, Recent Graduate, Virginia Tech  
Laura Au-Yeung, Extension, Colorado State University  
Seongyeon Auh, Recent Graduate, Iowa State University  
Lora Kathleen Brown, Extension, University of Illinois  
Marilou Cheple, Graduate Student, University of Minnesota  
Luke Erickson, Graduate Student, Utah State University  
Kendra Freeman, Extension, Purdue University  
Leslie Green, Graduate Student, Utah State University  
Bert Henderson, Extension, University of Florida  
Hyun-Jeong Lee, Graduate Student, Virginia Tech  
Megan Lee, Graduate Student, Oregon State University  
Kimberly Mitchell, Graduate Student, Virginia Tech  
Gina Peek, Graduate Student, University of Georgia  
Elisa Shackelton, Extension, Colorado State University  
Dale Walker, Undergraduate, Iowa State University  
Toshiko Yamamoto, Graduate Student, Oregon State University

FUNDED BY USDA/CSREES

## **Invited Exhibits, Posters, & Educational Materials**

A 10 Year Reflection of Successful IAQ Outreach  
Healthy Indoor Air for America's Homes  
Program Managers' Posters, Team Members Michael Vogel and Barbara Allen  
Mold 101, Sandy Wiggins and Sarah Kirby, North Carolina State University  
Protect Your Family: Test Your Home for Radon, Healthy Colorado Homes  
Healthy House, Heshmat Aglan, Tuskegee University  
Centers for Disease Control and Prevention, Lead Branch, Barry Brooks  
The Healthy Homes Partnership  
Kathy Davey, University of Wisconsin Extension Laura Booth, Auburn University  
Energy Star, Kenneth R. Tremblay, Jr, Colorado State University  
Undergraduate Tessie Agan Award, Poster, Dale Walker, Iowa State University

## Healthy Indoor Air for America's Homes Project Team Members

*In recognition for past and present dedication to the  
Healthy Indoor Air for America's Homes National Project ~ 1995-2005*

*A decade of dedication so Americans can breath easier.*

State	Current Team Members Organization/Agency Location	Past Team Members
Alabama	<b>Laura Booth</b> Alabama - CES Auburn University	
Alaska	<b>Richard Seifert</b> University of Alaska, Fairbanks - CES Fairbanks	
Kansas		<b>Marilyn Bode</b> (formerly: Kansas State University - CES) Iowa State University - CES
Montana	<b>Michael Vogel</b> Montana State University - CES Bozeman  Barbara Allen Montana State University - CES Bozeman	
New Jersey	<b>Joseph Ponessa</b> Rutgers CES New Brunswick	
New York	<b>Joseph Laquatra</b> Cornell University - CES Ithaca	
North Dakota	<b>Ken Hellevang</b> ND State University - CES Fargo	
Virginia		<b>Kathleen Parrott</b> Virginia Tech Blacksburg
Washington, D.C.	<b>Joseph Wysocki</b> USDA/CSREES Washington, D.C.  <b>Dennis Hellberg</b> US EPA - Indoor Environments Division Washington, D.C.	<b>John Guevin</b> (deceased) US EPA - Indoor Environments Division Washington, D.C.  <i>John's brother Fr. Benedict Guevin</i>

## **Tessie Agan** **(1897-1988)**



Anna Tessie Agan was born in Silver City, Iowa, on Oct. 19, 1897. She received a Bachelor of Science degree from the University of Nebraska in 1927 and Master of Science degree in Food Economics and Nutrition from Kansas State Agricultural College in 1930. Her thesis was entitled: "A Study of the Vitamin A and D Contents of Canned Cherry with Special Reference to Season and Variety." She joined the staff at K.S.U. and taught Home Economics, 1930-1968, writing a textbook on housing design, *The House*, in 1939. She was recognized as Distinguished Older Citizen of Kansas in 1968, and received the State Achievement Award for significant service to Delta Kappa Gamma in 1969. Agan participated in the White House Conference on Aging in 1971, the same year she was recognized by Mu chapter of Theta Sigma Phi for Outstanding Contributions to Civic Welfare. She was State Director for the American Association of Retired Persons in 1973. K.S.U. presented her with an honorary Ph.D. in 1986. Agan died on May 11, 1988.



<http://proton.lib.ksu.edu/departs/spec/women/agan-tessie.html>

### ***Congratulations to the 2005 Tessie Agan Paper Competition Winners***

**Dongwong Liu**, Tessie Agan Graduate Award  
Human Development and Family Studies, Iowa State University

**Dale Walker**, Tessie Agan Undergraduate Award  
Human Development and Family Studies, Iowa State University



## HOUSING SATISFACTION OF ASIAN AND PACIFIC ISLANDER HOUSEHOLDS IN THE UNITED STATES

*Tessie Agan Graduate Student Award*

Dongwang Liu, Graduate Student, Iowa State University  
Sue R. Crull, Major Professor, Iowa State University

According to the U. S. Census Bureau, there were 12.5 million Asian and Pacific Islanders living in the United States in March of 2002 accounting for 4.4 percent of America's total population. This study looked into the housing satisfaction of Asian and Pacific Islander compared to non-Hispanic White households.

Since the majority of Asian and Pacific Islanders in the U. S. are foreign-born, it is expected that their housing perceptions will be influenced by their experience with housing in their home countries. The study sought to evaluate the role of cultural norms in the formation of housing conditions and perceptions of Asian and Pacific Islander households in comparison with non-Hispanic White households. According to Morris and Winter (1975), who developed the housing adjustment theory, families evaluate their housing in terms of both cultural and family norms. The study also investigated the effect of several demographic variables, housing deficits, and neighborhood satisfaction on housing satisfaction. It sought to test how well the theory explains housing satisfaction of Asian and Pacific Islanders living in the United States.

### Procedures

The 2002 American Housing Survey Metropolitan Public Use Sample (AHS-MS) was used in this study (<http://www.huduser.org/datasets/ahs.html>). The 2002 AHS-MS included 13 metropolitan areas that were part of the American Housing Survey (AHS), which was conducted by the U. S. Census Bureau for the Department of Housing and Urban Development (HUD, 2003). The 2002 AHS-MS data were gathered between March and November of 2002 by personal interviews and telephone interviews. The 2002 AHS-MS is a panel survey that covers a national probability sample of housing units. Households in the sample of units are interviewed whether or not they resided in the unit in the previous survey. The original dataset had 65,516 observations and 34,507 were non-Hispanic White and 1,878 were non-Hispanic Asian and Pacific Islander households. Since this study focused on comparisons between non-Hispanic White and Asian and Pacific Islander households, a sub-sample of 1,878 non-Hispanic White households was selected using a simple random sampling method with the SAS English 9.0 program. The dataset for this study contained 3,756 cases with two sub-samples of equal size.

Twelve variables were used in this study to test part of Morris and Winter's housing adjustment model. The dependent variable, housing satisfaction, was a 10-point scale of the reference person's evaluation of the household's dwelling. They were asked to rate their dwelling as a place to live on a scale from 1-10. The score of one represents the least satisfied and ten represents the most satisfied. The average for housing satisfaction was 7.94 in the sample of 3,684 (two percent of the cases were missing a housing satisfaction score). The endogenous variables include renter status, multi-family dwelling, housing inadequacy, crowding, housing cost burden, and neighborhood satisfaction. The exogenous variables included Asian/White as the race variable, household income, education, newcomer, and extended family.

Descriptive statistics were used to compare the Asians with the White majority. Two multiple regressions on housing satisfaction were used.

- ◆ Housing Satisfaction = f (Demographics, Deficits, Neighborhood Satisfaction) for Asian
  - ◆ Housing Satisfaction = f (Demographics, Deficits, Neighborhood Satisfaction) for Whites.
- Relationships with P-values less than 0.05 were considered to be statistically significant.

### **Test of Hypotheses**

The housing deficit variables and neighborhood satisfaction are mediating variables between the demographic variables and housing satisfaction. The main hypothesis is that the model explains housing satisfaction similarly for Asian households and for White households. A goal of this study was to determine whether the model, which has been tested successfully on housing satisfaction for the general population, is similarly successful for Asian households.

Preliminary results of a multiple regression of the total sample containing both racial groups indicated that the Asian/White variable was a significant but minor direct indicator of housing satisfaction. This result supported the appropriateness of conducting regressions for each racial group. To test the hypothesis, multiple regressions were performed with the sub-samples for Asian and White households.

Based on the two regressions, there is a similar pattern in terms of the contribution of various variables to the explained variance in housing satisfaction. Although the explained variance is quite small, household income contributed significantly for both groups in the first block. Length of residence (being a newcomer) was significantly and negatively related to housing satisfaction for the Asians and not significant for the Whites. Educational attainment contributed significantly to housing satisfaction for Asians and was not significant for Whites in the first regression block.

When the deficit variables were added in the second block, the R-squares increased slightly and all of the household characteristics became statistically insignificant for the Asians while household income still remained statistically significant for the Whites. Renter status and housing inadequacy were statistically significant deficits contributing to housing satisfaction in a negative way for both of the two groups. Crowding was statistically significant for the Whites indicating they are less tolerant in terms of housing satisfaction to crowding than the Asians.

When neighborhood satisfaction was added to the model, explained variance for housing satisfaction increased greatly for both groups. With neighborhood satisfaction in the regressions, both renter status and housing inadequacy remained strong negative factors contributing to housing satisfaction. In the third block, only one household characteristic, income, remained significant and that was only for the White group.

The explained variances in housing satisfaction contributed by the household characteristic variables were similar for the models of the two sub-samples. The R-squares were also similar for the two groups when housing deficits and neighborhood satisfaction were entered in the next two blocks. The difference in explained variance between the two regressions of 0.02 in block 2 when the deficits were added and 0.06 in block 3 when neighborhood satisfaction was added are so small that it is safe to conclude that the main hypothesis was supported.

There was no support for the two sub-hypotheses related to the cultural issues under investigation; length of residence in the U.S. and living in extended families. Although newcomer was significant in the first block of the regression of Asians, it became insignificant when the deficits were added in the second block. The extended family variable was not significant in either regression.

### **Conclusions**

The purpose of this study was to look into the factors affecting housing satisfaction of Asian and Pacific Islander householders in sampled metropolitan areas. Guided by the housing adjustment theory developed by Morris and Winter, a model for housing satisfaction was formulated to examine the factors affecting housing satisfaction for Asian and Pacific Islanders compared to non-Hispanic Whites. This study sought to expand the housing adjustment model to the understanding of the Asian and Pacific Islander group that has two-thirds of its population as foreign-born. It was assumed that their experience with housing in their native counties would influence their assessment of housing satisfaction in the United States. By including length of residence in the U.S. and extended family, the study explored the effect of two cultural variables of particular importance in studying the Asian and Pacific Islander group.

Based on separate tests of the model for the Asian and Pacific Islanders and non-Hispanic Whites, the housing adjustment model explained housing satisfaction similarly for the two groups. This

indicated that housing adjustment theory applies to both groups. Also, similar housing deficits (renter and inadequacy) and neighborhood satisfaction were strong indicators of housing satisfaction for both groups.

The two cultural variables for Asian and Pacific Islanders did not contribute significantly to housing satisfaction. Those who had resided in the U. S. for less than eight years were found to be no different in their housing satisfaction than those who resided in the U. S. for eight years or more. Extended family living arrangements were not significant indicators of housing satisfaction.

Housing deficits and neighborhood satisfaction are important mediating variables between housing satisfaction and household characteristic variables for Asian and Pacific Islanders as well as for non-Hispanic Whites. Whatever background households may have, housing conditions and neighborhood satisfaction contribute significantly to their housing satisfaction. It appears that Asian and Pacific Islander householders assimilate quickly into the American culture in terms of housing. Although Asian and Pacific Islanders have different cultural referents in terms of past housing experience and importance of extended family living arrangements, these factors do not play a significant role in predicting housing satisfaction. Based on this study, there is little difference in the explanation of housing satisfaction for Asian and Pacific Islanders and non-Hispanic Whites.

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## **INTERNSHIPS IN RESIDENTIAL PROPERTY MANAGEMENT**

Carla Earhart, Ball State University  
Howard Campbell, Ball State University  
Rosemary Carucci Goss, Virginia Tech  
Alexandra Jackiw, Buckingham Management Co. AMO

### **Introduction**

An internship is a form of experiential education which integrates the student's academic preparation with a supervised work experience that is related to the student's career goals. It is also an opportunity for the student to hone job-search skills, network in the industry, and build a resume. The internship provides the student the chance to assess whether or not this career field is right for him or her.

An internship in the field of Residential Property Management (RPM) provides students the opportunity to work under the supervision of a property management professional to gain experience at an apartment community or other housing-related setting. Knowledge and skills learned in the classroom through courses in housing, interior design, construction, real estate, marketing, finance and others can be applied in a real work environment.

### **Purpose**

This symposium draws upon the academic and professional experiences of three RPM faculty members from two universities and an industry professional who has worked with interns from both programs. The presentation will respond to these issues from a variety of perspectives:

- Internship options and requirements
- Orientation to the internship experience
- Selection of the internship site
- Role of the faculty supervisor
- Role of the internship site supervisor
- Results and benefits of the internship experience

### **Virginia Tech RPM Internship**

Interns from Virginia Tech spend 240 hours working for a residential property management company. Each intern is required to keep a daily log, write four assessments of skills they have exhibited in a variety of situations, write a report on the company, and submit a personal evaluation. The employer also submits an evaluation. Since most students participate in the internship program in the summer, the student receives an "X" grade at the end of summer. The student is then required to give a PowerPoint presentation to a group of interns and the instructor early in fall semester. After the report is given and the written material submitted and graded, the student receives his or her final grade.

Most Virginia Tech students secure their internships through the career fair held each spring. Over 30 students participated in internships for credit in Summer 2005. Each year students report that their most difficult challenge is getting up early for work every day!

### **Ball State University RPM Internship**

Undergraduate interns in the Ball State University RPM Program have the option of completing a short-term internship of 200 hours (primarily leasing apartments) or 12 weeks of full-time experience in all phases of on-site residential property management. Graduate students must combine on-site residential property management experiences with corporate-level experiences for a total of 12 weeks.

Each intern is required to submit a weekly log; prepare a series of assignments related to their goals, the business practices of their internship site, and a reflection on the internship experience. The internship site supervisor submits an evaluation of the student; if the faculty member is able to visit the student at the internship site, an evaluation by the faculty member is also submitted as part of the grade.

In Summer 2004, a pilot project was initiated to determine the value of an interactive website (created through Blackboard Course Management System) for the RPM internship. The website continued to be used in Summer 2005 because of its value in allowing the 20+ interns to share their experiences with other interns.

### **Conclusion**

While each academic setting and each work environment will have its own unique needs and requirements, the symposium will provide opportunities for discussion among the panelists and the audience on how to make the best use of internships in residential property management and other housing-related fields.



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## **DEVELOPING A RESEARCH AGENDA FOR RESIDENTIAL PROPERTY MANAGEMENT PROGRAMS**

**Co-Moderators:** Rosemary Carucci Goss, Virginia Tech  
Andrew T. Carswell, University of Georgia

**Participants/Affiliations:** Howard Campbell, Ball State University  
Alexandra Jackiw, CPM, Buckingham Companies, Indianapolis, IN  
Maureen Lambe, National Apartment Association, Alexandria, VA  
Kimberly Mitchell, CPM, Ph.D. Student, Virginia Tech  
Debbie Phillips, CPM, Georgia Apartment Industry  
Education Foundation, Atlanta, GA

The purpose of this symposium is to create a research agenda for the nascent field of residential property management currently existing at a growing number of colleges and universities throughout the country. Since the inception of a multifamily housing industry-sponsored Residential Property Management (RPM) program at Virginia Tech in 1986, there now exist at least six university programs devoted to the education of young professionals interested in entering the multifamily management field. To date, however, the faculty members within the RPM programs are limited by the lack of an established line of academic research within this burgeoning field. This symposium will be the first attempt to coordinate academics and industry professionals within the RPM field in an attempt to: (a) identify key areas of research within the field; (b) share data resources and publishing experiences that might prove helpful to those academics still new to the field; and (c) explore collaborative ideas on joint research projects for the future. Industry responders will be asked to identify possible ways in which the academic community can best aid the multifamily sector.

A synopsis of the results from a February 3, 2005, Georgia multifamily industry focus group will also be presented during this symposium to help generate discussion during the session. During the February focus group session, the industry focus group provided rich insight on the types of personnel and staffing concerns that can best be addressed through the implementation of an RPM program, while also relaying helpful information on the types of courses that should be covered in what the industry would consider to be a viable RPM program. Most importantly for the academic community, however, the focus group portrayed an industry currently in a state of transition covering such issues as personnel recruitment, technology shifts, and multiculturalism, among other things. It has also become clear that the multifamily industry is turning increasingly to the academic community to help address some of these concerns, and that the academic community could help in providing meaningful research that can prove helpful to the industry while promoting a new branch of housing scholarship in the process.

Among the broad scope of questions that will be asked during this symposium include:

- What is the current state of the RPM industry? What is the current state of the RPM academic programs throughout the country?
- What are the research niches identified within this academic sector?
- What is the status of availability of data within the multifamily sector?
- Are there specific avenues open which will allow for collaboration among the symposium members?
- Are there specific avenues open which will allow for collaboration among other academics, including those not necessarily within the housing field already?
- What is the industry's role in developing a research agenda?
- What sources of funding are available for research to take place in this field?

- Outside of HERA, at which academic conferences are the symposium members most likely to attend and present papers?
- What publishing opportunities exist for academics within the RPM field? Is there any specific research journal that has sought out contributions from academics in this field?
- Are RPM academic programs producing enough Ph.D.s to help perpetuate the research agenda five or ten years into the future?



## UNIVERSAL KITCHEN DESIGN FOR A FAMILY OF COOKS

Arlena Hines, Lansing Community College  
Roberta Null, Common Place Design, Whittier, CA  
Joy Potthoff, Bowling Green State University  
Sylvia Sullivan, Universal Design/Development Inc., Thousand Oaks, CA

In this symposium presentation, the authors will focus on the kitchen design approach to encourage more individuals and families to cook and eat at home. We will describe kitchen design criteria that will contribute to the creation of a supportive environment for a “family of cooks.” The proposed kitchen design will support all family members sharing responsibility for the family’s food preparation and enjoyment of family meals. Through these collaborative activities, children learn to appreciate the teamwork contributions of older family members and their parents in addition to learning skills that are related to food preparation.

Using the data collected in a 2003 research study, Dr. Joy Potthoff developed a set of universal design guidelines for kitchens that were supportive of an aging population. She will describe the universal design guidelines as they relate to the kitchen plan. In addition to presenting the plan for a universally design kitchen for a family of cooks, Dr. Roberta Null will describe special features that accommodate the needs of children, parents, and older family members using the kitchen. Sylvia Sullivan will then show the plan for the universally designed kitchen she created which accommodates many working together in the kitchen. These features are categorized by their work center location and National Kitchen and Bath Association (NKBA) guidelines. Arlena Hines, who teaches kitchen design classes in an NKBA Endorsed College Program at Lansing Community College in Michigan, will relate the kitchen design to the NKBA guidelines.

1. **Lunch/Snack Prep Center.** Ideal for children and teens for entertaining their friends and serving healthy drinks (smoothies). This versatile addition to the kitchen can be used as an informal eating area for the family, or a buffet serving area, and the bar/counter would be part of an additional food preparation center for the kitchen and would have barstools for seating of those eating or preparing food.
2. **Cooking/Food Prep Center.** The major food preparation/clean-up center would require multiple cooking surfaces:
  - Whirlpool’s *Polara* Refrigerated Range – ideal for a busy family, new technology that moves from a refrigerator to a cooking mode
  - Multiple microwave ovens placed at different heights and locations in the kitchen
  - Cooking appliances (grills, etc) can be included in the lunch/snack prep center
  - Trash receptacles located in all centers
3. **Clean-up/Prep Work Center.** The major food preparation/clean-up center would include:
  - Dishwasher drawers in several food prep centers and a full sized dishwasher in the main food prep center
  - Instant hot water dispenser
  - Multiple clean up stations including sinks
4. **Refrigerator/Baking Center.** This center would include:
  - Storage for spices, baking pans, and serving dishes
  - Pull-down and narrow pull-out storage units, so that all items can be stored at the point of first use
  - Bottom freezer refrigerator or side by side for easy access from all heights

5. **Storage/Serving Center.** The major center for serving would include:
  - A serving cart on wheels and storage for dishes, glasses, attractive placemats, and napkins
  - Filtered cold water dispenser at sink and on refrigerator door
  - Dishwasher
  - Adjacent to dining area for easy serving and clean-up
6. **Planning Center.** The planning center desk needs to be large enough to accommodate multiple users (several chairs, two computers and printer, a bulletin board, storage for cook books, file information on special diets, grocery ordering, and other research activities).

Safety is a major factor to consider in a kitchen with multiple cooks. An outstanding resource on safety and universal design is “Universal Design in Housing” prepared by the Center for Universal Design in Raleigh, NC ([www.design.NCSU.edu/cud](http://www.design.NCSU.edu/cud)). It features detailed design criteria and product characteristics to ensure kitchen safety.

The overriding principles of a user friendly kitchen design help families provide a kitchen that supports shared activities, that supports all members in food preparation and planning strategies, and enables team decision making and delegation of duties. Family food preparation activities related to the guidelines from the NKBA are:

- Selection
- Preparation
- Serving
- Clean-up

The work centers designed for the kitchen to accommodate a family of cooks provide for these activities.



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National Kitchen & Bath Association (NKBA) is an international association of kitchen and bathroom dealers, design firms, distributors, and other individuals and companies serving the interests of the kitchen and bathroom industry.

Its mission is to enhance member success and excellence by promoting professionalism and ethical business practices, and providing leadership and direction for the kitchen and bathroom industry.

The Endorsed College Program was established to provide quality training at accredited institutions to prospective kitchen/bathroom professionals. The industry expressed a need to provide consistent, quality education for students who desire to become professionals in the kitchen and bath industry.

# THE ROLE OF TECHNOLOGY IN ASSISTING OLDER PEOPLE TO AGE IN PLACE

Mira Ahn and Rosemary Carucci Goss, Virginia Tech

## Introduction

Technology has had a tremendous impact on our daily lives. Recently, technology and its impact on aging has become an expanding field of inquiry (Wylde, 1995). A major reason for this interest is that the use of technology can help older people who experience deteriorating health to live independently (Chappell, 1988). A recent survey by the AARP, conducted in 2000, indicates that 89% of Americans age 55 and older prefer to live in their current homes as long as possible (Bayer & Harper, 2000). This report cites various adaptive behaviors of older people that allow them to cope with their environment as they grow older. Some use personal help, some use technical aids, and others modify their homes. The growing number of older people, together with the increasing social costs of public healthcare and assistance, may lead to the need for housing that is accessible and equipped with technology and specific kinds of support for helping elderly people live in their homes while maintaining a high quality of life (Morini & Biocca, 2001). The purpose of this study was to investigate the relationships between the desire to age in place and older people's attitudes toward adopting technology as it relates to their homes.

## Review of Literature

Numerous theoretical frameworks have been used to explain and understand the aging-in-place phenomenon. The reasons why older adults prefer to grow old in their homes include: economics (Cutler & Gregg, 1991; Mutschler, 1992); familiarity, comfort, and meaning associated with their homes (Herzog & House, 1991; Rowles, 1993; Rubinstein, 1989); independence and control (Wagnild, 2001); and benefits associated with remaining in a familiar neighborhood and community (Antonucci & Akiyama, 1991). To investigate older people's attitudes toward residential technology<sup>1</sup>, two theoretical backgrounds were employed in this research: the Person-Environment interaction model (Lawton & Nahemow, 1973) and the diffusion of innovations theory (Rogers, 1995; Rogers & Shoemaker, 1971).

Despite the recent dramatic trends in the diffusion of information technology, such as the Internet, the significance of these developments is still not clear. Furthermore, little research exists regarding the relationship between technology and older people, although the importance of this research has been recognized in other countries.

## Research Methodology

Various factors influence older people's attitudes toward adopting residential technology. They include demographic characteristics, social factors, previous experiences, innovative attributes, and so forth. In this study, it was assumed that an older person's adoption of residential technologies would be greatly motivated by the desire to age in place.

The sample for this study consisted of all alumni who were age 55 years and older with e-mail addresses available to the alumni association at a major university. The potential sample for this study was 9,789. A web-based survey, conducted over the Internet, was employed in this research. Data were collected by a web-based questionnaire that was delivered via e-mail addresses. On-line questionnaires were distributed on February 3, 2004, and respondents were asked to submit their response by February 27, 2004. The response rate was 15.8% with 1,546 eligible returned responses. Chi-square, ANOVA, Pearson's correlation, and path analysis were used to analyze the data.

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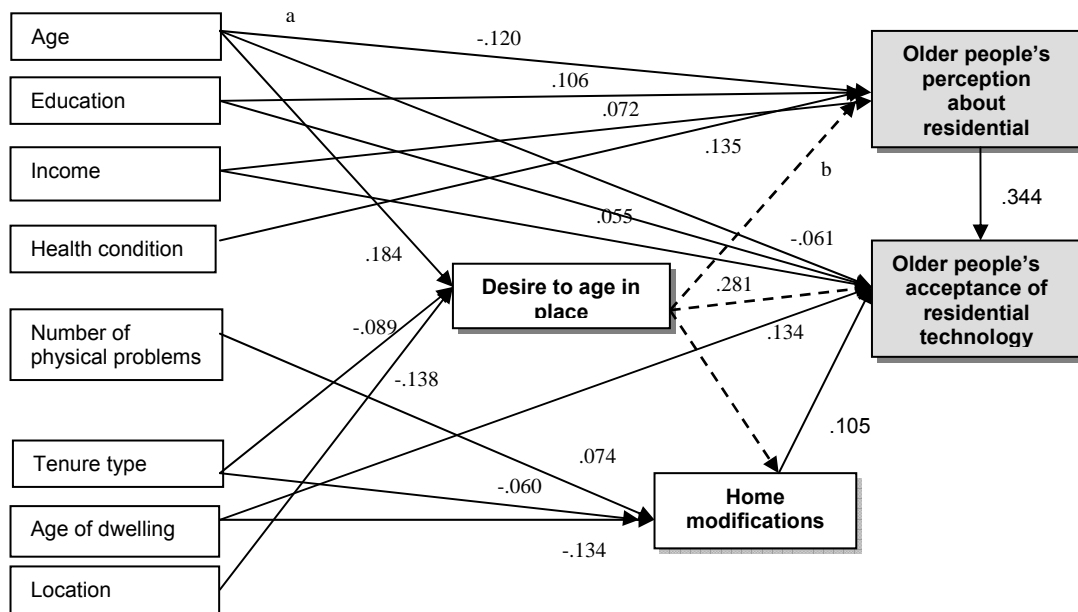
<sup>1</sup> Based on existing research, residential technology was defined in this research as a system of Information and Communication Technology (ICT) components in housing that enhances and promotes convenience, safety, security, communication, and comfort. Residential technology can be divided into five categories according to the technology's main usage: (1) safety and security; (2) comfort; (3) entertainment; (4) home management; and (5) communication. Residential technology can also be put into the categories of survival technology, basic technology (low technology), and high technology, according to the degree of functions of the technology and the degree of the current adoption rate.

### Major Findings

Respondents can be described as Caucasian (97.8%) married (90%) men (91.7%), age 55 to 74 years of age (89.9%), with excellent or good health (94.9%), and a post-bachelor degree (60.6%). Although the demographic profile of the respondents was homogeneous, attitudes toward aging in place differed by variables: age, number of household members, employment status, income, tenure type, length in current dwelling, and location. Thirty-three percent of the respondents stated that the most influential factor in their decision to age in place was community/ neighborhood quality, and a majority (73%) foresaw no particular problems related to their neighborhood as they age in place. Respondents indicated that an inconvenient house design (24%) might be a barrier to aging in place. When asked what they would do when they faced difficulties in their current dwellings, they answered by saying they would move to a different house (24%), move where they were able to receive assistance (21%), or continue to live in their homes without any changes (4%).

A majority of the respondents had purchased microwave ovens (98%), CD players (96%), VHS players (93%), cellular phones (88%), DVD players (74%), and remote garage door openers (70%). Many respondents showed their interest in high-technology products. *Ease of use* was the most important factor for all age groups when they purchased new technology products.

Health conditions and income greatly influenced the perception and acceptance of residential technology, respectively. Although many significant relationships were supported by the path analysis, not all relationships were strong enough to warrant the definite conclusion that there is a direct effect of the desire to age in place on attitudes toward residential technology (Figure 1).



<sup>a</sup>Solid line: notes significant relationship under  $p < .05$   
<sup>b</sup>Dotted line: notes non-significant relationship under  $p < .05$

**Figure 1. Significant Paths from Regression Analysis**

## Conclusions and Implications

According to statistical results from this study, influence of the desire to age in place on attitudes toward residential technology was not clear as a direct effect. Although studies of early adopters cannot always provide useful information for understanding majorities, studies about early adopters have significance in terms of an initial step to understand and predict future trends for majorities. According to a recent survey about older people and the Internet (Fox, 2004), 22% of Americans 65 and older used the Internet. Considering this figure, the sample for this study would be considered early adopters of computers and the Internet.

This study is significant in this way. Findings from this study have significant implications for product designers, marketers, and gerontologists in advancing their understanding of older adults' attitudes toward adopting technology. One of the most important implications from this study is that the older population should not be considered as one homogeneous group. Another implication is that the older population needs more attentions as both beneficiaries and consumers in residential technology markets and research fields, because old adults' high interests in adopting residential technology imply that successfully implemented residential technology could be accepted as one of the successful aging-in-place strategies by the older population in near future.

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# THE COMPLEXITY OF HOUSING SATISFACTION FOR RURAL FAMILIES IN IOWA

Seongyeon Auh, Sue R. Crull, Christine C. Cook, and Mack C. Shelley, II, Iowa State University

## Introduction

The purpose of this research was to explore the complexity of household-level perceived housing satisfaction. A structural equation model was developed to test the effects of housing variables and household and community background characteristics on housing satisfaction. Data were collected from a mail survey sent to a randomly selected rural sample of 974 households in Iowa. The response rate was 63 percent. Direct and indirect effects on the subjective measure of housing satisfaction were examined in the model.

## Background

Housing satisfaction is a central feature of perceptions of the quality of life. The bottom-up, spill-over theory explains that an individual's feelings about his/her own well-being is influenced by the satisfaction with specific life domains such as housing, family relationships, and community features (Campbell et al., 1976; Sirgy & Cornwell, 2002). In previous research, housing satisfaction or residential satisfaction was predicted by length of residence, tenure status, the physical characteristics of the house and neighborhood, and socio-demographic characteristics of residents (Crull, 1994; Vrbka & Combs, 1993). Based on this theoretical structure and previous research, the present study addressed two research questions: (1) Do physical (perceived condition of the current dwelling), psychological (emotional attachment to the dwelling), and socioeconomic (tenure status with the dwelling) factors associated with the dwelling predict the perceived housing satisfaction of the individual representing the household? (2) Are the influences from individual/household and community contexts on housing satisfaction mediated by the three factors associated with the dwelling?

Investment theory posits that the longer a person resides in a place, the more the individual feels a strong sense of both emotional rootedness to and satisfaction with the place (Auh, 2005; Corcoran, 2002; Vrbka & Combs, 1993). The physical or economic factors in housing have been major focuses in housing research. Physically inadequate housing conditions, overcrowding, and housing cost burdens were reported as common problems in housing (Freeman, 2002; Housing Assistant Council, 1997). Inadequate housing conditions (Auh, 2005) and non-tenure status negatively predicted housing satisfaction (Crull, 1994), whereas the tenure shift from renter to owner increased levels of housing satisfaction (Barcus, 2004; Rohe & Stegman, 1994). Inadequate housing conditions, such as leaking plumbing and crowded housing, were predicted by lower income, less affordability in housing, and lower value of housing property (Beamish, 1994).

Neighborhood characteristics or community features influenced housing satisfaction. Perceived community satisfaction was a strong predictor of housing satisfaction (Crull, 1994), and neighborhood safety significantly predicted residential satisfaction (Cook, 1988). More recently, community attachment was a strong predictor of housing satisfaction and community satisfaction (Auh, 2005). Local government housing regulation was a strong predictor of old housing stock in communities (Beamish, 1994), and the old housing stock in rural areas was a pervasive problem for housing adequacy (Crull & Cook, 2000). For this research, it is hypothesized that housing satisfaction is determined by mediating variables; dwelling physical conditions, emotional attachment to the dwelling, and tenure status of the dwelling. It is also hypothesized that the dwelling factors are determined by measures of the individual/household and community contexts, such as education level, household income, length of residency, quality of local government services, and housing capital stock within the community, and that the dwelling factors indirectly determine housing satisfaction.

## Analysis and Results

A path model was estimated using LISREL 8.5 statistical software. In the model, the endogenous (dependent) housing variables were:

- Homeownership, a dichotomous variable measuring homeownership (1 = Yes and 0 = no);
- Physical condition of dwelling, an ordinal 5-point scale regarding description on the current condition of residence (1 = poor, 5 = excellent);
- Emotional attachment to dwelling, a Likert-type measure regarding the degree of emotional attachment to the current dwelling (1 = not at all, 9 = completely);
- Housing satisfaction, a Likert-type measure regarding how satisfied the respondent is with current residence (1 = dissatisfied, 9 = satisfied).

The exogenous (predictor) variables included:

- Housing capital stock, Likert-type items regarding whether the community is characterized by poor, dilapidated, vacant, abandoned, or old housing (low score = agree, high score = disagree);
- Quality of government services, Likert-type items regarding the ratings on the quality of police protection, condition of streets, water service, fire protection, condition of parks, garbage collection, and emergency response services (low score = poor, high score = good);
- Length of residency, a continuous variable totaling years lived in the current community;
- Householder's educational level, an ordinal measure regarding respondent's educational achievement (1 = less than 9<sup>th</sup> grade, 7 = graduate or professional degree);
- Household income, an ordinal measure regarding respondent's household income in 1999 (1 = less than \$15,000, 7 = \$150,000 or more).

Significant direct effects among the endogenous variables were found:

1. for homeownership on emotional attachment to dwelling, physical condition of dwelling, and housing satisfaction
2. for physical condition of dwelling on emotional attachment to dwelling and housing satisfaction
3. for emotional attachment to the dwelling on housing satisfaction.

In addition, significant direct effects from the exogenous variable were found:

- for housing capital stock on housing satisfaction
- for quality of government service on physical condition of dwelling, emotional attachment to dwelling, and housing satisfaction
- for length of residency on homeownership and emotional attachment to dwelling
- for educational level on homeownership and emotional attachment to dwelling
- for household income on homeownership and physical condition of dwelling.

Some indirect effects were strong, indicating the strong mediating effects of homeownership, physical condition of dwelling and emotional attachment to dwelling in the prediction of housing satisfaction. The squared multiple correlation for housing satisfaction was .30. The validity test for the model showed an excellent fit, confirming that the model fits well with the representative data.

## Conclusions and Implications

The first hypothesis was supported. Homeownership status, the physical condition of the dwelling, and attachment to the dwelling directly and positively predicted housing satisfaction, mediating the effect of several of the exogenous variables. However, two exogenous variables—adequate housing stock in the community and quality of the local government services—also directly and positively predicted housing satisfaction. The second hypothesis was supported by four of the five exogenous variables—quality of local government services, length of residency, householder's education level, and household income—that indirectly affected housing satisfaction via homeownership, physical condition

of dwelling, and emotional attachment to dwelling. Therefore, the housing factors served fairly well as mediating variables between housing satisfaction and individual/household and community contexts. This study implies that community and residential environments are crucial to family well being. By focusing on community resources and housing, we can enhance our knowledge of quality of life among rural families.

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## SERVICE-LEARNING APPROACH TO THE STUDY OF CHILDREN'S ENVIRONMENTS

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The goal of service learning is to integrate community-based experiential learning with more traditional classroom experiences. If it is successful, service learning can facilitate the application of theory and research to real world settings. This paper reports on the experience of using service-learning as a means of teaching non-design students about theory, research, and evaluation of children's environments from an environment-behavior perspective.

An Upper Division Honors Seminar on Children's Environments was offered in the College of Liberal Arts at the University of Minnesota during Spring Semester, 2004. The goal of the seminar was to provide an in-depth exploration into the interactions between children (birth through adolescence) and the built environment.

A major component of the course was a Service-Learning Project in which students worked in groups of 1, 2, or 3 students providing a valuable service to a community organization. The purpose of the project was to apply the knowledge, theory, skills learned about children's environments and engage with professionals in community. Students worked at a variety of approved non-profit organizations. A problem-based service-learning model was utilized. Students assumed the role of consultant. Instructors provided feedback and support; class discussions provided opportunities for problem-solving between classmates.

Service learning placements were coordinated by the Community Involvement/Service Learning Center at the University of Minnesota. Located in the Twin Cities, there were many community service learning opportunities. The instructors visited six sites and invited a representative from each organization to meet with the class. Students selected from the options. Service learning sites included an alternative high school for students at risk for or recovering from chemical abuse, a large homeless shelter for families, a supportive housing development for single mothers, and an art mentorship program at a residential facility for abused and neglected children.

A commitment of 30 hours of community service was expected during the semester requiring students to spend 1-2 hours per week working directly with children. Activities included tutoring, assisting teachers in the classroom, as well as developing and directing activities. These experiences allowed students to observe how children and the adults working with them experienced the space as well as become users themselves. Because all the community partners were small non-profit organizations students were asked to make recommendations that were small-scale and affordable.

Written summaries of the service project were assigned in parts, submitted over the course of the semester, and returned with feedback from the instructors. The project was broken down into several parts including a plan for post-occupancy assessment and data collection, a description of user groups and their special needs, a description of the physical space, and a set of recommendations for improving the physical space to better meet the needs of the user groups. Students were expected to develop recommendations that balanced the physical and social needs of the children *and* adults in the space who worked with the children.

Drawing from environment-behavior literature, students presented research-based recommendations for changes to the physical environment that would better meet the needs of children and adults using the space. Because the community partners were small non-profit organizations students were asked to make recommendations that were small-scale and affordable. Students also reviewed the mission of the non-profit organizations to ensure that their recommendations supported the organizational mission.

Students successfully applied environment-behavior theory and research to their service work. Each team developed a methodology to collect data that helped them identify problems. After reviewing the findings, class readings, and discussion they developed adjustments that supported the mission and purpose of the programs. For example students identified and addressed problems such as traffic patterns between play spaces in a preschool room that were disruptive to children trying to read. A suggestion to

redirect traffic by moving the entrance to one of the spaces was made to better facilitate reading in a quiet area. Another student observed that a large multi-purpose room was ill-suited for one-on-one tutoring with shelter residents. To reduce noise and increase privacy, the student recommended creating small, comfortable spaces for tutoring using partitions and furniture placement. A general lack of organization was observed in two other settings. Student recommendations in these cases included ideas for efficient storage and organization of educational materials, as well as recommendations to accommodate student's personal possessions to create more usable space for teaching and learning.

Representatives from the nonprofit organizations rejoined the class during the last meeting. Students gave Power Point presentations summarizing their findings and recommendations. The format provided an opportunity for students to give a professional presentation of their recommendations and facilitated discussion with their community partners. The group presentations also allowed students to identify issues and solutions that were common across settings.

## OFF-CAMPUS STUDENT HOUSING: A MEASURE OF VALUE

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### Introduction

Off-campus student housing is a seriously neglected area of study. Attempts to address student housing issues are often reduced to anecdotes (Watts, 2004; Williams, 1998). While quality literature on student housing is not plentiful, a few areas of student sensitivity are still identifiable. Nelson (2004) reports that students prefer housing which is close to campus, bus stops, and downtown. Schmeltzer (2005) discusses how good roommates, opportunities to socialize nearby, and an environment conducive to studying, enhance student satisfaction. In addition, Loftus (2002) points out the importance of an apartment fitting within a student's budget.

One notable exception to the anecdotal evidence is a study by Cleave (1996). The author used statistical techniques to describe factors that were correlated with the likelihood of a student choosing to reapply for an on-campus residence. The findings of this study indicated that proximity to classes/libraries, provision for meals and a good place to study, were among the significant factors in whether or not a student chose to reapply. By the same token, students chose not to reapply if the quality of food was poor, the size of the room was small, and the noise level was too high (Cleave, 1996). However, because this study was limited to on-campus housing, relatively little is yet known about student off-campus housing issues.

The purpose of this study is to determine statistical relationships between student satisfaction and off-campus housing attributes including landlords, environment, parking, and location. In this study, "value" serves as a proxy variable for overall student satisfaction because it is assumed that if students feel the apartment is a good value, they will be satisfied with it. The research question asks: What factors are significant determinants in whether a student considers his/her off-campus rented-housing a good value (as determined by the formula:  $\text{value} = \text{overall-quality/price}$ )?

### Methods

The survey used in this study was designed by the student government association at Utah State University in response to the need of creating a fairer off-campus housing market for students (A-Station, 2005). Due to legal issues and lack of student response, results from an online version of the survey were not representative. Instead, the idea of a paper survey was pursued, which was passed out in a general-education breadth class with an enrollment of 485, and a consumer science housing class of 45 students. An advantage of the study was that all class ranks were represented equally, with the exception of freshmen, who were underrepresented. This was beneficial as many freshmen live on-campus, and thus, would have skewed the results had they been represented equally. A weakness of the sample, however, was that classes had an overrepresentation of females. The response rate was approximately 47%, though much of this can be explained by the lack of on-campus and non-renting students who did not participate. The final sample included 180 students

The survey consisted of 21 closed-ended questions describing a student's apartment complex, and one open-ended question at the end. The questions could be answered using a 10 point Likert-type scale where 1 = poor, 5 = Neutral, and 10 = Excellent. For ease of analysis, questions were grouped into one of the four following domains: 1) Landlords (.8985); 2) Environment (.6138); 3) Location (.539); and 4) Parking (.8067). Cronbach alphas were run within each domain to measure internal reliability

### Results

Regression equations were run between each domain and the dependent variable. It was found that variables representing maturity of the students at the complex, cleanliness of the apartment, and the ability to study, captured the essence of the environment domain. The Landlord domain appeared to be best represented by how much of the deposit was returned, and whether or not the student would recommend that landlord to others. Because the location of the apartment to downtown was the only

location variable significantly correlated with the dependent variable, it was the only one qualified to represent the location domain. And finally, because the parking-enforcement variable was highly correlated with the other significant parking variables, it was considered adequately representative of all parking variables and thus represents the parking domain.

**Table 1. Regression between Domains and the Dependent Variable, Value (N=180)**

Domain/Variable	B	Beta	Significance
Landlord domain-			
deposit	.240	.252	.001**
recommend	.505	.578	.000**
Environment domain-			
mature	.212	.204	.018*
clean	.242	.278	.000***
study	.298	.325	.000***
Location domain-			
Location town	.431	.368	.000***
Parking domain			
enforcement	.324	.374	.000***

Note.  $R^2 = .517$  for landlord domain;  $R^2 = .361$  for environment domain;  $R^2 = .142$  for location domain;  $R^2 = .176$  for parking domain  
 \*  $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

Using the statistically significant variables from the domain regressions, a final regression model was assessed producing an R-Square of .536 ( $p < .001$ ). Thus this regression can be assumed to explain approximately half of the variation in student satisfaction. The statistically significant variables included the recommendation, deposit, and clean variables. A conclusion is that the variables in the landlord domain were indirectly significant; that is, a responsive landlord who is fair, friendly, makes timely repairs, and who is fair at returning deposits is likely to have satisfied student tenants. Because the environment variable, clean, was only slightly correlated with other environment variables, the authors conclude that the apartment environment was important as far as it was clean. Still, this was the only conclusion that could be made about the environment.

**Table 2. Results of the Final Regression Analysis (N=180)**

Variables	B	Beta	Significance
Location town	.115	.101	.122
mature	.046	.044	.534
clean	.151	.172	.008**
enforcement	.107	.122	.064
deposit	.178	.187	.010*
recommend	.262	.301	.000***
study	.104	.111	.138

Note:  $R^2 = .536$   
 \*  $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

### **Discussion and Limitations**

The results indicate that the landlord makes the biggest difference in whether or not a student will be satisfied with his or her off-campus apartment. Cleanliness of the apartment upon arrival of the student is also important, though this is likely to also reflect the abilities of the landlord because he/she is the one ultimately responsible for this. Owners of apartment complexes, managers, and future student tenants would do well to implement these findings and understand that student satisfaction is basically in the hands of the landlord.

It is important to recognize that while these findings are significant and intuitively logical, they are far from comprehensive. Due to the limited sample frame and sample size, at best the results can only be generalized to students attending Utah State University. Also, because there were one-third more females than males, this study may also possess a slight gender bias. It would be beneficial to conduct a more comprehensive survey with a larger target population to see if these findings hold true across the state or nation.

### **Acknowledgements**

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## CALIFORNIA DREAMIN': A CENTURY OF HEALTHY HOMES

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In *Inventing the Dream, California through the Progressive Era*, historian Kevin Starr claims that by 1880, a “consolidated myth” had emerged of Southern California, its two most important elements being “health and romantic nostalgia.” This presentation, *California Dreamin': A Century of Healthy Homes*, visually documents healthy homes and living in California over the twentieth century. Early immigrants who entered the country through Ellis Island faced harsh winters and living conditions in industrial cities. By the turn of the 19<sup>th</sup> century, the railroads, federal government, and boosterist chambers of commerce began promoted both real estate interests and westward expansion. Southern California became the destination of choice for many because of its relatively dry, temperate climate and its promise of the good life. In *Los Angeles, The End of the Rainbow*, historian Merry Ovnick states early on, the Los Angeles Chamber of Commerce declared Los Angeles to be “The Healthiest City in the World.” A blossoming citrus industry supported an Arcadian vision of the West Coast through idyllic illustrations on crate labels and in magazine advertisements. While fertile soil and a long growing season had attracted Mid-western farmers to develop colonies, others sought the freedom to live communally. European architects came with modern ideas. All capitalized on the abundance of space and sunshine.

*California Dreamin': A Century of Healthy Homes* focuses on several periods in the development of housing in California and their representative architects and collaborative clients that espoused the idea of the *healthy home*. It covers a span from the Arts and Crafts period to the Modern Movement and the post-modern era of sustainability and New Urbanism. As early as 1872, early California visionary Charles Nordhoff, in his book *California for Health, Pleasure and Residence, A Book for Travelers and Settlers*, wrote about the benefits of California living, a place where one could “work in shirtsleeves” every day of the year. During the Arts and Crafts period prior to World War I, California homebuilders began to blur the boundaries between inside and outside. Architect Bernard Maybeck and his client Charles Keeler, author of *The Simple House* (1906), for example, designed and built a home that was innovative in its simplicity and connection to nature, emphasizing the importance of home gardens. In Pasadena, California, an early resort town for winter-weary Easterners, young architects Charles and Henry Sumner Greene followed their health-conscious parents out from Massachusetts. They later designed the Gamble House (1907-1908), now an Arts and Crafts icon, with their client, David Gamble, the wealthy soap king of Proctor & Gamble fame. The home emphasized indoor-outdoor living and provided each occupant with a sleeping porch adjacent to the bedrooms that overlooked the sumptuous gardens and outdoor terraces used for entertaining.

Between the two World Wars, the *plein aire* design ethic continued to flourish and by the Depression, the California home would also become a model and symbol for thrifty living and independence. During World War I, architect Irving Gill, in his design for the Dodge House (1914-1916) in Los Angeles, improved upon the Greene’s philosophy towards healthy homes by incorporating modern devices such as a garbage disposal and a vacuum cleaning system that carried dust to the furnace. A decade later, Viennese ex-patriots architects Rudolph Schindler and Richard Neutra, who led Frank Lloyd Wright’s LA office, married the healthy home’s structure to modern materials and methods of production. Neutra and Dr. Phillip Lovell, a naturopath and writer of a column on “Care of the Body,” created the Lovell Health House (1927). The design encouraged physical health and well being through outdoor exercise and included a swimming pool and ball courts. At about the same time, Charles Weeks, in LA’s San Fernando Valley, developed and promoted a system to enable families to live self-sufficiently on one acre of land. Each acre accommodated a modest bungalow and a poultry house with 2,500 hens, and adequate room to grow crops to feed the chickens and the family.

From 1948 to 1966, *Art and Architecture* magazine commissioned thirty-six model homes, called The Case Study Houses, to boost post-World War II recovery of the housing industry, provide homes for returning GI’s, and introduce new construction materials. Leading architects such as Richard Neutra, Eero Saarinen, John Lautner, Craig Ellwood, and Charles and Ray Eames, submitted plans for

inexpensive and efficient experimental homes. While not all were built, these featured functional, comfortable living space suitable to the California climate and healthy lifestyle. Rising concern for the environment resulted in residential designs with energy conserving features during the 1960s and 70s. These included higher R-values for insulation and inoperable windows, which may have inadvertently contributed to production of “sick buildings,” responsible for a number of ailments. As a result, designers and manufacturers began reexamining construction techniques and materials that might produce allergens or be otherwise unhealthy. Eventually, a new German movement, “Bau-Biologie,” or “how buildings impact life,” began to influence *green* homebuilding practices in California. Finally, by the end of the twentieth century, sustainable, green buildings coupled with the planning principles of New Urbanism would influence residential design and development.

Unlike the beginning of the twentieth century, today the concept of *healthy homes* includes consideration of environmental protection, historic preservation, the provision of adequate open space, pedestrian orientation/reduced reliance on the automobile, and community building. The nostalgic romance of a simpler time and lifestyle is once again appealing, evident in the renewed popularity of the Arts and Crafts style. However, designers must now work *smarter* to fulfill the California Dream, to improve the quality of life for more and more inhabitants for whom affordability is a challenge in a land of sunshine essentially built out.

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# MAPPING THE CONCENTRATION OF MORTGAGE DEFAULT IN WEBER COUNTY, UTAH

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## Introduction

In August 2004, Utah held the second highest rate of foreclosed homes (2.05%) insured by HUD's FHA program. During FY2003 the foreclosure rate in Utah was 3.2% (Mitchell, 2004). This study examines housing defaults that occurred per community during 2003 - 2004 in Weber County, Utah. Communities are defined as equivalent to census tracts. This study used correlation and mapping analysis to examine the patterns of default in Weber County. Mapping analysis has been used by housing scholars in real estate market studies (Blesky, E., Can, A., & Megboylugbe, I., 1998; Hillier, A., 2003; Thrall, G., 1998).

## Literature Review

Van Order and Zorn (2000) found that default was higher for low-income households than median-income households. Lowe (2004) reports in the nation's 25 largest cities, minority households are spending at least half of their income on housing. Appraisal quality, particularly over appraising, is also related to default risk (Lacour-Little & Malpizzi, 2003). It has been argued that loans given to neighborhoods with older properties, lower property values, higher rental housing, and multiple uses of properties are more likely to receive a lower appraisal (MacDonald, 1996). Concerning borrower attributes, Hakim and Haddad (1999) found the risk of default in conventional loans was positively correlated for small mortgages with high loan to value ratios, and low-income borrowers with a large number of dependents.

## Methodology

*Data collection:* The data set for this study included the 2003 - 2004 properties of defaulted homes (n= 3,464) obtained from Weber County. The defaulted properties were separated into census tracts by geo-coding through the FFIEC data 2003 and 2004 (FFIEC, 2003, 2004). There are 42 census tracts in Weber County.

*Research question and hypotheses:* This study focuses on one general research question and four hypotheses. To answer the research question and hypotheses, this study used descriptive statistics, bivariate correlations, and mapping analysis.

Are there geographic clusters of default properties in Weber County?

1. Foreclosure rates in Weber County will be unevenly spread across census tracts.
2. The higher the number of occupied units with second mortgages in a census tract, the higher the likelihood of residential default (Mitchell, 2003).
3. Neighborhood income is negatively correlated with default rates (Van Order & Zorn, 2000).
4. Racial composition of the neighborhood is positively correlated with default rates (Anderson, R., & VanderHoff, J., 1999).

## Results

It was hypothesized that default rates in Weber County would be unevenly spread across the census tracts. The mapping analysis shows that 16 out of 42 census tracts have high rates of mortgage default. Seven of the census tracts were adjacent to each other and were located in the central district of Weber County (consisting of mostly older run down homes and a high number of minorities). The census tract with the most defaults (2011.00) had a large number of homes built before 1939 and almost 50% of the population was minority. The analysis indicated that six census tracts had foreclosures one standard deviation above the mean [Mean = 5.75 + 2.78 (SD)] (see Table 1).

The correlation analysis (see Tables 2 and 3) supported hypotheses #2, #3, and #4. Hypothesis #2 found only support in census tracts with less than 50% minority. The results for hypothesis #3 show



that census tracts with high foreclosure rates occurred in communities with low/moderate incomes. Weber County income indicators are based on area median income of \$54,470. Low income is defined as < 50% of the area median income. Moderate income is defined as between 50 and 79% of the area median income (HUD, 2000). Census tracts with a high percent of minorities, particularly Hispanics, are more likely to be low-income (see Table 1).

**Table 1. Characteristics of Census Tracts with High Rate and Medium Rate of Default**

Census Tract	Family Income by Census Tract (\$)	Income Indication	Minority Percentage	Severe Foreclosure Rate (X + 1SD)	Medium Rate of Foreclosure
2002.01	40,678	Moderate	20	9.35	-
2003	33,676	Moderate	23	-	7.25
2004	31,612	Moderate	43	-	8.31
2005	40,822	Moderate	21	-	7.59
2008	34,634	Moderate	42	8.60	-
2011	24,500	Low	46	15.49	-
2012	19,904	Low	74	10.77	-
2013	30,797	Moderate	54	-	7.99
2015	61,993	Middle	10	-	6.88
2017	33,092	Moderate	44	-	7.80
2018	27,828	Moderate	69	10.28	-
2019	24,130	Low	55	8.81	-
2103.02	47,191	Middle	9	-	7.35
2105.06	53,202	Middle	11	-	6.12
2105.07	58,500	Middle	12	-	7.87
2107.03	55,773	Middle	14	-	6.55

To further analysis concerning hypotheses #4, racial composition of the census tracts was broken down into Hispanics and non-Hispanic whites because Hispanics were found to be the largest minority group within the census tracts. Other races or ethnic groups compose less than 1% (U.S. Census, 2000). The percentage of races in Utah is as follows: white (89), Hispanic (9), Asian (1.7), American Indian (1.3), African American (.8) (U.S. Census, 2000). Hispanic households are less likely to reside in newer homes (built after 1960), be self-employed, and less likely to have home equity lines of credit (Table 2).

### Discussion and Limitations

Understanding the characteristics that describe households in default is vital to improving the wellbeing of communities. The findings of this study have highlighted some indicators of defaulting households in Weber County. The type of homes in default, and the characteristics of the communities in which the properties are located, appear to be centralized in census tracts with a higher number of minorities. This leads to the presumption that default may be directly related to the characteristics of this specific population, such as low wages, information asymmetries, and predatory lending. Research has shown that minorities, low income households, and the elderly are more likely to be victims of predatory lending. Thus race may act as an intervening variable. Characteristics of census tracts with severe rate of default include low income households, being less likely to reside in newer homes (built after 1960) and less likely to be self-employed (see Table 2). Census tracts with less than 40% minority population had a strong correlation with homes built in 1990-94, home equity lines, and moderate or middle income. Census tracts with more than 40% minority population had a strong correlation with homes built before 1949 and low income.

**Table 2. Correlation between Hispanic, Houses, and Household Characteristics**

<b>Variable</b>	<b>Pearson's (r)</b>
Hispanic Population	
Houses built before 1939	.854**
Houses built between 1940-49	.493**
Houses built between 1950-59	.015
Houses built between 1960-69	.023
Houses built between 1970-79	-.216
Houses built between 1980-89	-.238
Houses built between 1990-94	-.382*
Houses built between 1995-98	-.233
Houses built between 1999-00	-.121
Households with self employment income	-.325*
Households with home equity	-.424**

\*p<.05 \*\*p<.01

On the other hand, non-Hispanic Whites are more likely to live in newer homes, be self-employed, and have home equity lines of credit (see Table 3).

**Table 3. Correlation between Non-Hispanic White, Houses, and Household Characteristics**

<b>Variable</b>	<b>Pearson's (r)</b>
Non-Hispanic White	
Houses built before 1939	-.309*
Houses built between 1940-49	-.295
Houses built between 1950-59	.028
Houses built between 1960-69	.523**
Houses built between 1970-79	.722**
Houses built between 1980-89	.810**
Houses built between 1990-94	.739**
Houses built between 1995-98	.800**
Houses built between 1999-00	.574**
Households with self employment income	.885**
Units with home equity	.899**

\*p<.05 \*\*p<.01

Spatial disparities do exist among mortgage use (MacDonald, 1996). The difference in the findings among the census tracts reaffirms the assumption that housing markets are local. One implication from this inference is that communities need to be treated individually for housing problems since it can be assumed that different household characteristics define the population experiencing default in various communities.

Limitations to this study can be found in the analysis used because it may include the possibility of spuriousness and intervening variables. To correct for this, the second stage of analysis of this paper will include a path analysis model which provides a method for formulating hypothesis in explicit multicausal frameworks and allows an opportunity to control for spurious covariation.

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# THE ROLE OF EXTENSION HOUSING SPECIALISTS IN A CULTURALLY DIVERSE GEORGIA COMMUNITY

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## The Asian Immigrants in Georgia

In recent years, the state of Georgia has experienced the huge influx of Asian immigrants. According to the 2000 census, Georgia had one of the largest percent increases with an Asian net migration gain of 123.8% between 1990 and 2000, next to Nevada (323.1%) and North Carolina (159.3%) (US Bureau of Census, 2000)

One of unique things about Asian immigrants' settlement in the state of Georgia is that they have gathered to the suburban area of Atlanta. Generally many newcomers have found the centers of big cities as their initial homes. Chinatowns and Koreatowns are located in the central part of major cities. Surprisingly in Georgia, many Asian immigrants are settling in the suburban area of Atlanta.

The local county governments, Gwinnett and DeKalb, have attempted to bring immigrants to reverse the area's slow economic decline. International companies (i.e., SKC and Hyundai Automobile, and Coca-Cola) are attracted by the low taxes, low cost real estate, and good school systems in suburban counties of metropolitan Atlanta, and this has also brought many new immigrants for entry-level service workers, cheap labor workers, and white-collar workers. Responding this net migration, community organizations have been interested in developing housing and service programs for the new comers in Georgia. However, none of these attempted to address Asian immigrants' needs.

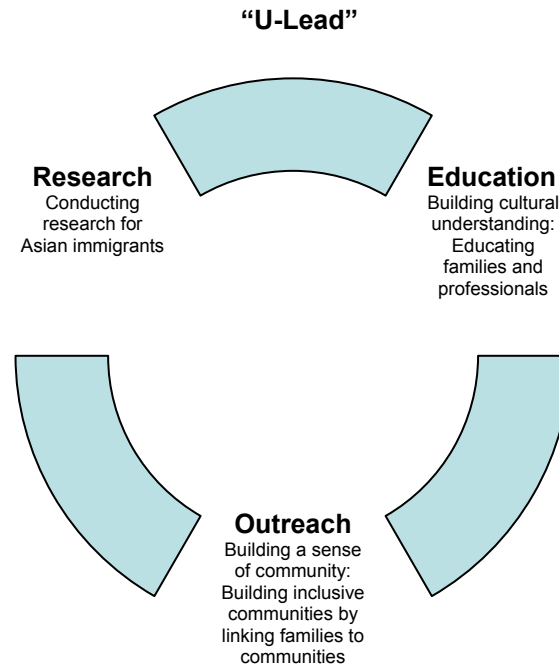
## The Challenges to Work with Asian Immigrants

In spite of the positive effects of economic opportunities for the local communities in Georgia, Asian immigrants' needs have still been ignored. As we work with Asian immigrants, we are more likely to face with the following challenges:

1. **Language barriers:** Subgroups of Asian immigrants speak different languages. In the 2000 Census, "Asian" refers to people having origins in any of the original people of the "Far East, Southeast Asia, or the Indian subcontinent." This category is not limited to nationalities but also includes ethnic terms such as Hmong. There are so many ethnic and national backgrounds using all different languages.
2. **Immigration histories:** Immigration histories among the subgroups of Asian immigrants are very different. Chinese and Japanese, for instance, have a long history of immigration in the past century. In contrast, Vietnamese, Koreans, Asian Indians, and Cambodians came to the US after the immigration law was changed in 1965, as either immigrants or refugees (Scharlach, Fuller-Thomson, & Kramer, 1998). Their immigration histories are relatively recent. These diverse backgrounds are likely to have direct and indirect impacts on developing different housing, income, health, and social service programs.
3. **Cultural gaps:** Traditional Asian cultures emphasize the collective family-centered idea. Cultural norms make many Asian immigrants feel shameful to reveal family issues. As a result, there is a strong moderate-income segment of the Asian communities who do not view themselves as "low-income" or needing "social services" from a nonprofit agency, yet they are eligible for many education, counseling, and financial services. This reluctance to accept services makes it difficult for agencies to establish many programs.
4. **Lack of fiscal resources:** While the society has become more culturally diverse, in many states, financial resources are shrinking and the demands of traditional audience are strong. It is not easy to move into a new direction to work with culturally varied audiences with limited financial supports.

## The Role of Extension Housing Specialists Reaching out in a Diverse Community

Extension educators develop leadership and build relationships between land-grant universities and communities through their service providers who organize public work (Peters, 2002). In recent years, two-way partnerships between land-grant institutions and communities have called new directions in engaging diverse communities. Not as facilitators of knowledge exchange, extension educators and communities interact and identify community issues and solutions together. In doing so, land grant institutions are able to set the tone for higher education to foster better relations. As a segment of land-granted universities, the housing extension program should provide a vision under the idea of “U-Lead.”



### ***Research: Research for Asian Immigrants***

The diversity issue is understudied. There is no reliable baseline data for subgroups of Asian immigrants. Especially for the recent newcomers in Georgia (i.e., Asian Indian, Vietnamese, and Korean), research needs to be conducted. Basic demographic and housing characteristics need to be summarized at the county level. For this objective, the idea of community asset mapping is very useful to work with county extension agents. Settlement issues, such as school and social service systems, could be discussed. In addition, although it remains a question whether the success of the suburban counties of Atlanta can be repeated elsewhere, the contribution of foreign investment and the effect of local economics should be analyzed.

### ***Education: Building Cultural Understanding***

Building cultural understanding for both service providers and Asian immigrants is important. For successful adaptation for Asian immigrant families, they need to learn about community resources. Extension housing specialists should support the development of multidisciplinary networks between scholars in ethnic studies, sociology, and history, and promote exchange of views on successful adaptation for ethnic minorities. One way of looking at the uniqueness of culture is analyzing one’s own values related to home. Home means more than physical structure. It is life-long memories with family, a symbol of independence, and a source of community involvement (Altman & Low, 1992). The cultural

uniqueness related to home and to successful adaptation to the new country is highlighted. To understand the cultural adaptation, it is required to have the context from both the original cultural values and their adaptation in the new country.

### ***Outreach: Building a Sense of Community***

Building a sense of community is important for Asian immigrants regarding their family-centered values. Very often, they interpret the community as an extended family, and seek to feel they are at “home.” To link them to community resources, developing leadership in community-led projects to empower community organizations has to be considered. Extension housing specialists should encourage civic engagements to build the relationship with the ethnic service centers and partnerships with community leaders. One day workshops and network meetings can be organized to increase communication and understanding.

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## PESTICIDE RESIDUES IN RURAL HOMES

Joseph Laquatra, Mark Pierce, Alan Hedge, and Ann Lemley, Cornell University

### Introduction

Exposure to pesticides poses health risks to humans, especially infants and children (Fenske, Black, Elkner, Lee, Methner, & Soto 1990). Simcox, Fenske, Wolz, Lee, & Kalman (1995) reported that these risks include acute poisoning and childhood leukemia. Because of crawling and hand-to-mouth behaviors, children can ingest large amounts of pesticide residues, not only inside the home but also in yards. The purpose of this study was to examine the extent to which commonly used agricultural pesticides accumulate as residues in rural homes.

Studies of pesticide residues in homes have documented entry routes that include tracking with shoes, bare feet, clothing, or animal fur; airborne entry; and soil gas entry (Lemley, Hedge, Obendorf, Hong, Kim, Muss, & Varner, 2002; Nishioka, Burkholder, Brinkman, Gordon, & Lewis, 1996). Adjacency and proximity to agricultural operations have also been cited as factors responsible for residential pesticide residues because of spray drift and volatility (Nishioka, Lewis, Brinkman, Burkholder, Hines, & Menkedick, 2001). Lawn-applied pesticides can follow these same transport routes (Nishioka, Burkholder, Brinkman, Gordon, & Lewis, 1996). Once inside a home, pesticide residues accumulate in dust and degrade at a lower rate than they do outdoors because they are shielded from the effects of rain, sun, and soil microbial activity (Simcox, Fenske, Wolz, Lee, & Kalman, 1995).

### Methods

To examine the extent of indoor pesticide pollution in rural homes, pesticide sampling and analyses were conducted as part of a larger effort that studied pollutants in homes and childcare facilities (Laquatra, Maxwell, & Pierce, 2005). Fifteen pesticides with a likelihood of accumulation in the interiors of rural homes were selected for this study.

A two-stage random sampling procedure was used to obtain a representative sample of households in all non-metropolitan counties in New York State. A hierarchical cluster analysis using average linkage methods (Johnson and Wichern, 2002) was performed on the twenty-four non-metropolitan counties in the state. The analysis was conducted in order to determine similar groupings of counties to be used as categories in a stratified sampling design. The counties were grouped based on their similarity to specified housing characteristics, and the procedure yielded six clusters. One county was randomly sampled from each cluster.

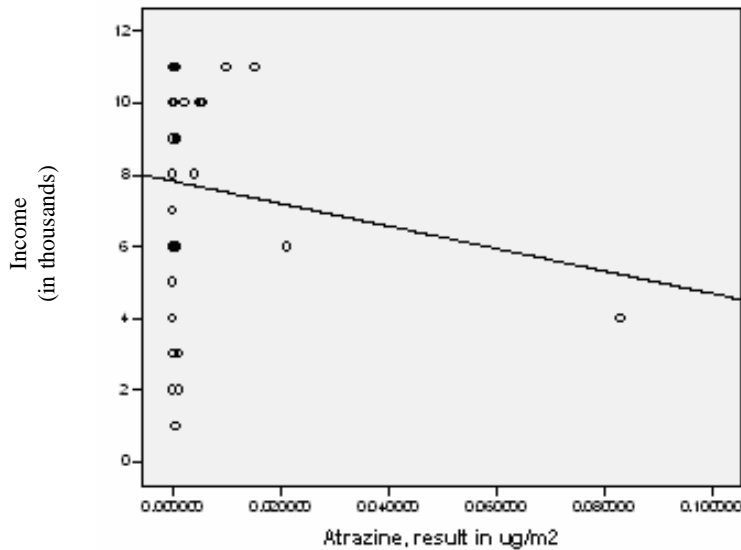
To arrive at a total sample of approximately 350, weighted random sampling based on population was conducted in each county. The final sample size was  $n=328$ . Telephone surveys of the 328 were conducted with an adult head of household to determine demographic and housing characteristics. Each household was given the opportunity to have pollutant tests conducted; and 132 households agreed to this.

A technician visited the 132 houses during the heating season of 2000-2001 to conduct these tests, and two wipe samples were collected from each participant home. One sample was taken from a carpeted floor area and one from a non-carpeted ("smooth-floor") area. For example, hard wood flooring, sheet vinyl, ceramic tile, etc. When possible sample areas were selected from main living/traffic areas of the home (living, dining, family room, main entrance hall). In some homes where much of the house floor was covered with wall to wall carpeting, the "smooth floor" sample had to be taken from a bathroom or kitchen as those were the only non-carpeted floors in the home. This abstract reports on results from the non-carpeted areas, which are presented in Table 1.

**Table 1. Pesticide Residues from Non-carpeted Areas**

Pesticide	N		Mean	Minimum	Maximum
	Valid	Missing			
Chlorpyrifos	132	0	.00641565	.000027	.035563
Methamidophos	132	0	.01534285	.000022	.091044
Malathion	132	0	.02316181	.000019	.595709
Picloram Acid	132	0	.02505954	.000522	.983467
Methylparathion	132	0	.00119004	.000026	.044459
Atrazine	132	0	.00081807	.000029	.040208
Diazinon	132	0	.00715122	.000020	.077364
Carbaryl	132	0	.00305338	.000030	.185368
Prowl	132	0	.01606887	.000026	.147364
Resmethrin	132	0	.00056852	.000025	.019740
Tetramethrin	132	0	.01515323	.000029	.086751
Alachlor	132	0	.00798413	.000003	.049125
Trifluralin	132	0	.00209427	.000017	.043156
Metolachlor	132	0	.01935394	.000028	.136299
2,4D-acid	132	0	.00853624	.000350	.226174

Results show that residues of every pesticide tested were found in the homes in the sample. Preliminary data analyses were conducted to test the structure of a regression model. The SPSS curve estimation procedure showed negative relationships between household income and pesticide levels for eight pesticides (Chlorpyrifos, Methamidophos, Atrazine, Diazinon, Carbaryl, Tetramethrin, Alachlor, and Trifluralin). An example of such a curve estimate is shown in Figure 1. The remaining relationships were flat, except for the case of 2,4D-acid, which showed concentrations increasing with income. Future analyses will examine these relationships in depth.



**Figure 1. Curve Estimate for Atrazine**



### Discussion

The fact that pesticide residues were found in every house tested indicates the ubiquitous nature of these chemicals in the rural environment. This result also suggests that educators involved in pesticide education programs may want to include program elements that include home maintenance guidelines for prevention of and safe eradication of accumulated pesticide residues of which consumers may not be aware.

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# HOUSING VALUES OF STUDENTS IN OFF-CAMPUS MULTIFAMILY HOUSING COMMUNITIES

Hyun-Jeong Lee, Rosemary Carucci Goss, and Julia O. Beamish, Virginia Tech

## Introduction

From the early stages of housing research, housing values have been used as an important concept to explain the preferences and choices of people selecting housing of different types and with different features. The purpose of this study was to identify housing values of students at a major university living in off-campus multifamily housing communities. There were two research objectives:

1. to explore gender differences in housing values among the students, and
2. to explore age differences in housing values among the students.

## Literature Review

Adapted from Montgomery (1966), housing values can be defined as a set of internalized standards that guides decision making related to housing behavior. Values are formed based on many factors including an individual's ideals, motives, attitudes, and tastes, and these factors are usually determined by one's cultural background, education, habits, and experiences (Beyer, et al., 1955).

Cutler (1947) developed a paired-comparison statement survey instrument of ten values to measure family housing values. The ten values included in the study are beauty, comfort, convenience, location, health, personal interests, privacy, safety, friendship activities, and economy. Based on Cutler's work, Beyer, et al. (1955) developed nine housing values: economy, family centrism, physical health, aesthetics, leisure, equality, freedom, mental health, and social prestige. These nine values were grouped into four main values in their study: economy, family, personal, and social. The housing values of specific groups have been examined in past studies: low-income urban and rural families (McCray & Day, 1977) and rural households (Beamish, et al., 1989; Ha & Weber, 1992). More recent studies of housing values were not found in major journals and studies that examine the housing values of college students have not been reported recently. This study on housing values focuses on the student population and offers insight into housing features that could enhance the housing planned for this group.

## Methodology

This study was designed as a quantitative study using a questionnaire survey. The questionnaire was developed based on both Cutler's and Beyer's housing values and other lifestyle studies. Because most of these studies were from the 1950s and 1970s, technology and environment values were added to reflect the possible changes in housing values over time. Housing faculty and practitioners reviewed the list of values to assure their content validity. The questionnaire included 40 Likert type housing value statements describing 14 housing values (family centrism, physical health, mental health, freedom, economy, aesthetics, safety/security, leisure, maintenance, location, neighborhood/community, social prestige, technology, and environment).

The survey was administered to undergraduate students enrolled in three classes and graduate students in one class and in a student organization at Virginia Tech. All were living in off-campus multifamily housing communities. In this study, multifamily housing is defined as a building that contains five or more housing units (Simmons, 1997) to distinguish it from single-family detached housing, duplexes, triplexes, quadruplexes, and row houses. Between November 30 and December 7, 2004, a total of 109 useable responses were collected. Fourteen composite variables (mean scores of statements included in the 14 housing value categories) were created and used for further data analyses. A series of independent sample t-tests and discriminant analyses were used to explore gender and age differences in housing values.

## Findings

Among the 109 responses, 72 responses were from undergraduate students and 37 were from graduate students. Sixty-four students were male and 45 were female, and 81 students were between 18 and 24 years of age and 28 students were age 25 or older. As for the household composition, 23 students lived alone, 11 students lived with family, and 73 students lived with 1, 2, 3, or 4 roommates. Among the 14 housing values, safety/security, environment, and freedom were the strongest housing values and economy, social prestige, and neighborhood/community were the weakest housing values. The findings that addressed the gender and age differences in housing values were as follows:

1. Female students showed significantly stronger housing values related to aesthetics, mental health, safety/security, maintenance, neighborhood/community, and environment, and male students showed significantly stronger housing values related to leisure (Table 1).
2. Among the 14 housing values, a linear combination of maintenance, leisure, and safety/security was found to explain 38% of variance in group difference between male and female students (Table 2).
3. Students whose ages were between 18 and 24 showed significantly stronger housing values related to social prestige and technology than students whose ages were 25 or older (Table 3).
4. Among the 14 housing values, a linear combination of technology and environment was found to explain 16% of variance in group differences between students whose ages were between 18 and 24 and those whose ages were 25 or older (Table 4).

## Conclusion

From the results of this study, it was found that students had different housing values according to their gender and age. Considering that about 90% of the respondents were assumed single (since they lived alone or with roommates), further study can be conducted to see the changes in housing values among married couples and to explore how they blend their values to make housing decisions.

It was also found that safety/security and environment were the strongest housing values. Thus, the recommendations for future multifamily housing developments that target university students are:

1. to consider community features related to safety/security such as adequate lightings in parking lots, observable open space design, and peep-holes and dead-bolt locks on doors, and
2. to encourage environment-friendly behaviors such as recycling.

Generalization of this study is limited because this study used a small-size student sample from a unique campus town. To obtain a better understanding of housing values and their relationships to housing preferences and choices, the instrument developed for this study can be used with more diverse groups of people in different settings, and to explore the influence of housing values on preferences of specific housing features.

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**Table 1. Independent Sample t-Test: Gender Differences in Housing Values**

Values	N	Mean	SD	t	DF	p
Aesthetics						
Male	64	4.583	.859	-2.154	107	.033
Female	45	4.948	.888			
Mental Health	64					
Male	64	4.521	.859	-2.597	107	.011
Female	45	4.859	.888			
Safety/Security						
Male	64	5.047	.582	-3.537	107	.001
Female	45	5.422	.488			
Maintenance						
Male	64	4.037	.760	-5.777	107	.000
Female	45	4.852	.673			
Neighborhood/Community						
Male	64	3.800	.891	-2.034	107	.044
Female	45	4.130	.746			
Environment						
Male	64	4.740	.762	-2.394	107	.018
Female	45	5.074	.651			
Leisure						
Male	64	4.208	.738	3.031	107	.003
Female	45	3.789	.672			

Note. Variables with significant *ts* are presented ( $p = .05$ ).

**Table 2. Discriminant Analysis: Gender**

	Discriminant Function Coefficients		R <sup>2</sup>	Wilk's Lambda		Box's M	
	Unstandardized	Standardized		Lambda	p	F	p
Maintenance	-.841	-.598	.379	.621	.000	.452	.844
Leisure	.872	.475					
Safety/Security	1.096	.795					
(Constant)	-5.933						

Note. Dependent variable is gender. Stepwise method is used and variables in the last step are presented.

\* R<sup>2</sup> = (Canonical Correlation)<sup>2</sup>

**Table 3. Independent Sample t-Test: Age Differences in Housing Values**

Values	N	Mean	SD	t	DF	p
Social Prestige						
18 – 24	81	3.953	.911	2.194	107	.030
25 or older	28	3.500	1.024			
Technology						
18 – 24	81	4.864	.775	3.061	107	.003
25 or older	28	4.304	.994			

Note. Variables with significant *ts* are presented ( $p = .05$ ).

**Table 4. Discriminant Analysis: Age**

	Discriminant Function Coefficients		R <sup>2*</sup>	Wilk's Lambda		Box's M	
	Unstandardized	Standardized		Lambda	p	F	p
Technology	1.179	.985	.157	.843	.000	2.007	.111
Environment	-1.084	-.787					
(Constant)	-.277						

Note. Dependent variable is age. Stepwise method is used and variables in the last step are presented.

\* R<sup>2</sup> = (Canonical Correlation)<sup>2</sup>

# **CULTURAL ISSUES AND HOUSING SATISFACTION OF ASIAN AND PACIFIC ISLANDERS IN THE UNITED STATES**

Dongwang Liu, University of Iowa  
Sue R. Crull, Iowa State University

## **Introduction**

There were 12.5 million Asian/Pacific Islanders in the United States in March, 2002 accounting for 4.4 percent of America's total population (U. S. Census Bureau, 2002). Since over two-thirds of the Asian/Pacific Islander population in the U. S. is foreign-born (U.S. Census Bureau, 2000), it is expected that their housing perception will be influenced by their experiences with housing in their home countries. Using the housing adjustment theory developed by Morris and Winter (1975), this study looked into two cultural issues in relation to the perception of housing satisfaction in the United States. Specifically, the study assessed the influence of the length of residence in the U.S. and the extended family living arrangement common among Asian and Pacific Islander householders. Asian/Pacific Islander householders were compared with non-Hispanic white householders.

## **Cultural Issues**

Length of residence has been considered one of the key determinants of cultural assimilation to the majority. Based on the traditional assimilation theory (Park and Burgess, 1967), the longer immigrants reside in the host country, the more contacts they will have with the majority and they will better understand the cultural norms and practices in the host society. It was hypothesized that Asian/Pacific Islander householders who had resided in the U.S. for eight years or shorter were more satisfied with their housing than Asian and Pacific Islander householders who resided in the U.S. longer than eight years. Eight-year is used as a cut-off year in that it normally takes around 8 years for immigrants to get settled in U.S. in terms of socioeconomic status of which housing is a good indicator. Learning the English language, acquiring professional skills through education and training, and obtaining permanent resident status can be lengthy process. Given their housing experience in their home country and their priorities in life, new Asian immigrants are expected to have higher level of housing satisfaction in U.S. than those who have lived in U.S. longer and who are more established. Asian/Pacific Islanders might not be too much concerned about their housing as they struggle to meet daily needs of survival in their initial years as immigrants.

Extended families consist of sub-families or individuals sharing a common residence. In modern industrial societies, the nuclear family is predominant in a residential dwelling while the extended family is predominant more agrarian societies. Since 1910, the percentage of extended family households in U.S. decreased drastically until the end of 1980s when massive immigration waves during the period changed the trend (Glick et al. 1997). Immigration from Asian and Pacific countries contributed to the growth of extended family households from 1980-1990. The traditional Asian family, under ideal conditions, included members of a single extended multi-generational family. Brought up in societies where extended family living arrangements were common and readily acceptable, Asians/Pacific Islanders are expected to be more tolerant of such living arrangements than their non-Hispanic white counterparts. It was hypothesized that Asian/Pacific Islanders who lived in extended families were more satisfied with their housing than their non-Hispanic White counterparts living in extended families.

## **Procedures**

The data used for the study were from the 2002 American Housing Survey Metropolitan Sample (AHS-MS) collected from a sample of 13 metropolitan areas by U.S. Census Bureau for the Department of Housing and Urban Development. The original dataset had 65,516 cases including 1,878 Asian/Pacific Islander households. A sub-sample of 1,878 non-Hispanic White households was randomly selected from the 34,507 non-Hispanic White households to provide two samples of equal size to form a dataset of 3,756 cases containing the two racial groups.

**Asian and Pacific Islander Independent Variable:** The race of the household was calculated from the race of the householder respondent variable. Asian/Pacific Islander was coded as 1 and non-Hispanic White was coded as 0.

**Newcomer Independent Variable:** The length of residence was calculated using the year when the householder respondent came to U.S. The variable was dichotomized into newcomers who resided in the U.S. for less than 8 years (coded 1) and old timers who have lived in U.S. for 8 years or more (coded 0).

**Housing Satisfaction Dependent Variable:** The housing satisfaction variable was measured by a 10 point scale of the respondent's evaluation of his/her dwelling (1=less satisfaction and 10=more satisfaction). Two percent of the cases (n=72) were missing a housing satisfaction score.

Simple regressions were used to test the hypotheses. Also, the two cultural sensitive variables were included in a full housing adjustment model including family characteristics, deficits, neighborhood satisfaction and housing satisfaction.

### **Analysis and Results**

Simple regression was used to test the effect of being a newcomer on housing satisfaction in a sub-sample of only Asian and Pacific Islander households (n=1,848). Newcomer had a significant unstandardized coefficient of - 0.19 but an adjusted r-square of only .0036. According to the result, being a newcomer was negatively related to the housing satisfaction at a significant level, but, the explained variance was minimal and close to zero. Based on the results, being a newcomer or an older timer did not make much difference in terms of housing satisfaction.

Simple regression was also used to test the effect of being an extended family household on housing satisfaction in a sub-sample of householders from both Asian/Pacific Islanders and non-Hispanic Whites who lived in extended family arrangements (n=429). The race variable was not a significant predictor of housing satisfaction and the adjusted r-square was -.0022. There is no significant difference in housing satisfaction between Asian/Pacific Islander and non-Hispanic White householders who lived in extended families.

In multiple regressions of the full housing adjustment model with the combined sample (n=3,684) and with each race sample (N= 1,849 and 1,835), neither the newcomer nor the extended family household variable was a significant indicator of housing satisfaction.

### **Conclusions**

Neither hypothesis based on the cultural issues was supported. It appears that the cultural factors related to Asian/Pacific Islander households in the United States were not important determinates of housing satisfaction. Newer immigrants appear to be as concerned about their housing, as are natives or old timers who have settled in the U.S. for over eight years. Among the newer immigrants, higher expectations for housing in the U.S. rather than housing experiences in their native communities may influence their housing satisfaction.

The study also suggests that living in extended families, a cultural tradition for Asian/Pacific Islanders, did not make them feel more satisfied towards housing than their non-Hispanic White counterparts living in extended families. Indications are that Asian/Pacific Islander householders readily adopted U.S. housing and cultural norms. Cultural heritage did not seem to play an important role as expected in their housing satisfaction perceptions.

In general, the study suggests that cultural variables on householders might not be strong factors affecting housing satisfaction among Asian and Pacific Islanders in the U.S.

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## FREQUENT RELOCATION AND FAMILY ATTACHMENT

Jessica Ann Lloyd and Kathleen Parrott, Virginia Tech

As the last of the boxes were loaded on the truck, the Smith family embarked on a new life... again. This move, like the one last year, meant a new job for Mr. Smith, new schools for the children, and a much larger home for them all. The Smiths, like many American families, relocate frequently. In fact, approximately 17% of Americans relocate annually (Medway, 1995), giving the US a relocation rate double that of Great Britain and Germany (Wood, Halfon, Scarlata, Newacheck, & Nessim, 1993). Does frequent relocation lead children to feel less satisfied with their homes, and less attached to their families and communities as young adults? This study explores the possible association between frequent childhood mobility and family attachment among a group of college freshmen.

### Background

Among children, frequent school changes have been linked to educational and social problems, including high drop out rates (Paik & Phillips, 2002), low involvement in extra curricular activities (Norford & Medway, 2002), poor test scores (Mehana & Reynolds, 2004), and increased behavioral problems (Gilman, Kawachi, Fitzmaurice & Buka, 2003; Humke & Shaffer, 1995; Norford & Medway, 2002; Pettit, 2004; Wood, et al., 1993). Paik and Phillips (2002) quote startling statistics: according to the US Government Accounting Office (1994), children who change schools more than three times before 8<sup>th</sup> grade are at least four times more likely to drop out of school. Paik and Phillips also referenced Kerbow, who found that students who move more than three times in a six year period can fall one full academic year behind. Yet an estimated six million elementary school children change schools each year (Florida Division of Teaching and Learning, 2002).

In addition, Wood, et al. (1993) concluded that children who moved frequently were 35% more likely to have failed a grade and 77% more likely to be reported as having behavioral problems. Mehana and Reynolds (2004) demonstrated the existence of a three to four month lag in reading and math performance among mobile elementary school children.

In a similar study, Rumberger, Larson, Ream, and Palardy (1999) found that mobile students were less likely to be involved in extracurricular activities, less likely to graduate from high school, and more likely to act out or get in trouble at school. Gilman, et al. (2003) linked frequent relocation to an increased risk of depression before the age of 14.

In contrast, Norford and Medway (2002) found no negative effects of high mobility on adolescent depression, perceived social support, or participation in extracurricular activities. Humke and Schaefer (1995) demonstrated that negative parental attitudes towards relocation further impair a child's adjustment after a move.

Clearly much research has been done on relocation in terms of its effect on a child's behavior or school performance, yet no studies were found to examine the effects of relocation on parent-child communication. This study was designed to explore that void.

### Method, Data Collection and Procedure

#### *Participants*

The participants for this quantitative exploratory study were selected from a convenience sample of undergraduate students. This sample provided 34 students, age 18-22, with 18 male students and 16 female students.

#### *Instrument*

Family attachment was evaluated by a self-reported survey. The eight-question survey obtained information about the students' relocation history, including the number of moves prior to the age of 18, and the number of school changes experienced as a result of these moves, military association, and marital status of their parents. The remaining questions focused on the student's family attachment and



include information on how often they were in contact with their families during their freshman year of college, who primarily initiated this contact, and in what form (email, standard phone, cell phone, etc).

### **Data Analysis and Results**

Participants were divided into three groups: mild relocators (0-2 moves prior to the age of 18): 21 participants, moderate relocators (3-5 moves): 9 participants, and frequent relocators (6 or more moves): 4 participants.

How often are freshman students in contact with their families? Which relocation category practiced the most communication? Much to the surprise of the researchers, 75% of frequent relocators were in contact with their families on a daily basis, while only 19% of mild relocators and 22% of moderate relocators communicated daily. In the mild relocation category, students initiated the communication 24% of the time. Students in the moderate relocation category initiated 22%. Among frequent relocators, students initiated 33% of the communication.

The final category of behavior to be examined was the mode of contact used by students and parents in each relocation category. Not surprisingly, cell phones were listed as the primary source of communication for both mild (45%) and frequent (85%) relocators. Moderate relocators however, seemed to rely more heavily on the standard phone, utilizing it 42% of the time.

### **Discussion**

A surprising 75% percent of frequent movers were in contact with their parents on a daily basis. Conversely, the mild relocators communicated with their parents on a daily basis in only 19% of the cases.

Clearly there are numerous limitations in this study; however, it raises many valid questions. More research is needed to examine the relationship between frequent relocation, housing satisfaction, and family attachment; however, this work can provide valuable insight into the direction such research should take. The distinction between moderate and frequent relocation could be examined and further clarified in future works. Perhaps, moderate relocation is, in fact, detrimental to students as cited by past literature, but what if frequent relocations benefits in parent-child communication? New findings in these areas could offer tremendous insight and valuable information across many fields of study.

In the meantime, American families, like the Smiths, will continue to pack up their belongings and move on to the next great adventure. Their children will start over in new schools. But perhaps, as a surprise to all of us, their children will still be close to family and call home everyday - at least 75% of the time.

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## **ADDRESSING DISTINCT HOUSING NEEDS: AN EVALUATION OF OLDER ADULTS' HOUSING IN THE SOUTH ASIAN COMMUNITY**

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Over the last three decades, research and popular literature has examined and forecasted the consequences of an aging population in North America. Housing options for older adults has been an important topic within this discussion. In particular, many researchers have examined the housing needs, conditions, adaptation and satisfaction, and neighborhood amenities of older adult populations. Despite the emergence of this literature, however, the housing situation of ethnic minority older adults has received little attention within this research agenda.

Ethnic minority older adults, many of whom are foreign-born, bring with them a unique set of residential experiences shaped in large part by the intersection of ethnicity, immigrant status, age, class, and gender. For example, research indicates that ethnic immigrant populations have: (1) unique approaches to the usage of “home” and “community” space (e.g., Amor, 2004; Dearborn, 2001; Kumar, 2005); and (2) differing patterns of access to and utilization of housing and community services (e.g., Dunn & Dyck, 1998; Hulchanski, 1993; Ray & Moore, 1991). These differences are notable, however, few studies have sought to examine the housing and health service needs of ethnic minority older adults in Canada and United States.

This paper presents findings from an exploratory study designed to address the research gap on ethnic minority older adults' housing. Specifically, the study explores the suitability and efficacy of South Asian older adults' current housing and support service options using a socio-spatial research design to evaluate a recently developed seniors' independent housing project *Guru Nanak Niwas* (GNN) in the Greater Vancouver area. *Guru Nanak Niwas Senior's Housing* complex developed by the Progressive Intercultural Community Services Society (PICS) and funded by BC Housing is the first seniors housing project designed for the South Asian community in Canada. The opening of this project provided an excellent opportunity to examine the suitability and effectiveness of a distinct housing development for South Asian older adults. A majority of the older adult tenants of this housing project (70%) are of South Asian decent. The project is managed by a community non-profit organization that caters to the support service needs of the South Asian community in the Greater Vancouver area. Data are collected from 28 older adult residents and then compared with the residential and support service experiences of 30 community dwelling South Asian older adults living in the same geographic area.

The primary research question asks, “What are the distinct socio-cultural aspects of South Asian lifestyles and social networks that have implications for housing and community planning and design?” The research design, although mainly quantitative in nature, also includes the collection of data via semi-structured questionnaires from both groups of older adults. The surveys consist of questions regarding housing satisfaction, housing condition, related service needs and availability of services, barriers to access to housing and services, culture specific needs in housing and services, socio-demographic characteristics and health status.

The findings as they relate to socio-cultural issues and housing are as follows:

### South Asian older adults' ability to maintain own cultural practices in their housing

The results indicate that all study participants (i.e., community-living older adults and residents of *Guru Nanak Niwas*) feel that their housing allows them to maintain aspects of their culture regardless of their national identity, maintenance of traditions, and their ethnicity. This finding is especially important for the *Guru Nanak Niwas* organization as it demonstrates that its purpose-built facility targeting South Asian older adults fosters an important sense of cultural belonging for its residents.

### Locational features of importance and neighbourhood characteristics

Residents of Guru Nanak Niwas (GNN) and community-living seniors (CL) both indicate that easy access to public transportation (GNN 20.7 %, CL 13.7 %) and proximity to their own ethnic community (GNN 19.8%, CL 14.3%) are important locational features to consider when choosing a residence. These factors are slightly more important to GNN residents. Findings indicate that of the 100% of GNN participants who note that there is a bus stop near the complex, 71% use the bus service. For CL participants however, of the 90% who have a bus stop near their residence, only 47% use the service. We speculate that more GNN participants may be using public transportation because: (1) they are less dependent on their adult children/family for their day-to-day requirements; and/or (2) they have less access to informal family support for transportation needs compared to community living older adults.

More participants in the community cited safety and security issues in discussing neighbourhood features compared to participants in GNN. It is important to note here that the residents in the community are living in different neighbourhoods in the Lower Mainland area and that this may impact their perceptions of safety and security. On the other hand, residents in the GNN facility believe that the complex is located in a safe area (100% of the residents felt very safe within GNN housing complex and 92.9% felt very safe on the streets of their neighbourhood) and thus do not feel that safety and security are salient issues.

### Proximity to family and friends from own ethnic background

In terms of family and friends, the older adults from both groups state that it is important to have friends from the same cultural background (GNN 79%, CL 97%). However, a greater number of community living participants indicate that it is important to have family and friends nearby (97%) compared to Guru Nanak Niwas residents (61%). Older adults in GNN have already moved away from family and friends and are residing in an independent living facility, thus, their dependence on family/friends in the community may be weaker than their community-dwelling counterparts.

### Future housing needs of South Asian seniors

When asked about supportive housing for their future needs, a majority of participants (89% of GNN residents and 76% of community living older adults) state that it is important to have assisted living facilities that provide culturally responsive services. In response to open-ended questions, the older adults stress the importance of access to South Asian meals and staff members speaking their language in assisted living facilities. These findings, which support results from previous studies, highlight the need for facilities designed to provide ethno-specific support services (e.g., food, cultural and religious activities, linguistically-sensitive staff, etc.) in geographic areas where there is a high concentration of ethnic older adults.

## **Conclusion**

Information regarding the housing needs of an increasingly ethnoculturally diverse North American population, particularly the needs of older adults belonging to ethnic minority groups, is useful and important to housing designers and developers, as well as to government and non-government housing and support service providers. At the community level, service providers may utilize this information to provide housing and related services that foster independent living and *aging in place* for ethnic older adults.

## **Acknowledgement**

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# VISUAL IMPACT RATIOS: A POSSIBLE SOLUTION TO REGULATE THE IMPACT OF DEVELOPMENT ON IMPORTANT SCENIC VIEWS

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## Introduction

In our nation the concept of freedom of choice is a simple one; the application, however, is far more complex. To prevent one individual's choices from negatively impacting other individuals, our society has developed laws and ordinances. Zoning was created to protect the health, safety, and welfare of society. Since zoning's first implementation, the definitions of "health, safety, and welfare" have continued to evolve. Many communities have realized the importance that scenic beauty plays on economic welfare (Foote, 1999). Much discussion has ensued concerning the important relationship between scenic beauty and mental health (Roszak, 1995). This paper examines what is being done to preserve scenic views and the possibility of implementing a new method to regulate the impact that development has on them.

## History

Zoning was first implemented in 1885 in Modesto, California, in an attempt to separate housing and laundries - activities deemed incompatible ("Types of Zoning," 2003). In 1916, the Equitable Building was completed in New York City. This forty-story building deprived neighbors of sunlight by casting a 7-acre shadow and blocking air movement. Responding to the public outrage, NYC implemented an ordinance that introduced the "zoning envelope" designed to protect citizens and control growth. This ordinance became a model used around the country (Krumholz, 2003). In 1922 in *Village of Euclid, Ohio vs. Ambler Realty Co.*, the United States Supreme Court upheld the zoning, provided it reasonably related to the public health, safety, and welfare (Krumholz, 2003).

In the past, zoning laws were considered radical. Many courts sided with developers unless it could be proven that direct harm had occurred to the neighbor. Over time, the concept of zoning has expanded to control aesthetic issues such as the size and locations of billboards (Krumholz, 2003). Recently, a New Jersey judge upheld a lawsuit that prevented Hartz Mountain, a developer, from building office buildings on the shores of the Hudson River. The construction would have eliminated the view of the New York City skyline to people approaching the Lincoln Tunnel. The judge found that the construction was not "visually compatible" with scenic resources. The judge held that New Jersey law was intended to protect these "marvelous viewing opportunities" (Lieberman, 1999, p. 2). This is not an isolated situation; the Pennsylvania Constitution legitimizes the right of the people to "clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment" (Pennsylvania Constitution, p. 4).

## Current Methods to Protect Visual Resources

Current methods include the voluntary commitments of the land owners, the acquisition of scenically valuable land by municipalities or conservation groups, and regulations – primarily zoning and restrictive covenants.

Voluntary methods include educating the community about the need to preserve important scenic views and using public opinion to persuade developers to protect scenic areas ("Identify and Protect," 2003). Unfortunately, these types of commitments are not binding. Owners who are supportive eventually will die or could sell their land to less sympathetic developers.

Federal, state, and local governments have been involved in the acquisition of scenic areas. National parks are the extreme example. Most states and cities also set aside open spaces for their citizens. Nonetheless, it is unfeasible for governments to purchase every scenically important site. Many municipalities try to make the acquisition of these areas economically feasible by transforming them into money generating operations such as golf courses. Although these can be beautiful, natural beauty that is relatively maintenance free is traded for man-made beauty that is high maintenance, expensive, and unnatural.

A step below government acquisition is the concept of conservation easements, legally binding agreements between a landowner and a qualified conservation agency. Under the agreements the landowner continues to own and manage the land. The conservation agency is in effect purchasing the development rights of the property. This system financially rewards the land owner for not selling his property to developers (Nature Saskatchewan, 2000). These conservation agencies should be commended for their efforts to preserve views; unfortunately, it is unreasonable to expect these organizations to financially protect every view worth protecting.

Zoning is the primary method being used to protect visual resources. Zoning accomplishes this by controlling variables such as: height, bulk, use, coverage, signage, and landscaping (New Hampshire Office of Energy, 1993). Although zoning was not originally created to protect views, it might, with enhancements, be the best mechanism for preservation.

### **Proposed Method to Protect Visual Resources**

It is proposed that Visual Impact Ratios (VIR) be incorporated into zoning as a method to protect important views. VIRs are similar to Floor Area Ratios (FAR). FARs have been used widely as a zoning tool. FARs are defined as the gross floor area permitted on a site divided by the net area of the site, expressed in decimals (Pollack, 2003). FARs limit the intensity of land use to lessen the environmental consequences of development or to control the size of development (Pollack, 2003). VIRs would work with FARs to control the visibility of a structure compared to its size in the designated view area. For example, structures built in VIR zone 0 would need to be virtually invisible from the view area. Structures could be hidden from view using landscaping, berms, or by building totally or partially underground.

The process would require the designation of protected view areas based on the visual beauty or the historic significance of the location and assign the appropriate VIR – in the same way communities currently assign zoning. Subcategories designating approved screening could be designated. For example, it would be foolish to protect a view of prairie by allowing a developer to plant a forest to conceal new development.

Developers seeking approval would be required to provide before development photographs and proposed renderings showing impact on designated view areas. These images would be reviewed by Architectural Review Boards or Planning Commissions for compliance prior to issuing the building permit.

Visual Impact Ratios could be an important new tool to preserve valuable scenic resources ensure quality of life and allow for responsible development.

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## **INTERIOR DESIGN STUDENTS' ATTITUDE TOWARD CONCEPTS ASSOCIATED WITH AGING IN PLACE**

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The purpose of this study was to examine interior design students' level of familiarity with concept terms associated with aging in place and their attitude toward the concept terms. The relationship between the number of interior design course credit hours completed by the students and their familiarity and attitudes toward the terms was also examined. The results of this research may help design and housing educators communicate the concepts associated with aging-in-place more effectively to their students.

The literature review that was conducted indicated a number of reasons why people do not readily incorporate these concepts into their home designs unless they absolutely need them. Many people believe that the concepts associated with aging in place are only for people with serious disabilities brought on by accidents and illness. Other reasons include the lack of awareness about the various products available and not knowing where to purchase them (Null, 2003, p.115). The fear of added cost to construction also keeps people from investigating and implementing some of these ideas (Beitz, Brewer & Kirby, 1993).

This research investigated the possibility that the resistance of incorporating these products and design features was due to confusion and misuse of the various terms associated with these concepts. Confusion and misuse of the terms are apparent in professional journal articles, college textbooks, (Pile, 1995, 2003; Nielson & Taylor, 2002; Allen, Jones & Stimpson, 2004; Nissen, Faulkner & Faulkner, 1994) as well as magazines and newspaper articles and promotional literature by product manufactures. The concept terms universal design, accessible design, aging in place, designing for special needs, designing for special populations, and designing for the elderly all tend to be used interchangeably. My feeling was that people tended to associate all universal design features with accessibility and ADA compliant design features found in commercial building and structures for people with serious illnesses, disabilities or advanced age.

A survey, modeled after one used by Deardorff and Birdsong (2003) was sent electronically to 14 interior design instructors from the South region of the Interior Design Educators Council (IDEC) to be distributed to their students. The convenience sample included 344 students ranging in age from 18-45 years, with 0 to over 30 interior design class credit hours. Using Likert-type scales, the students indicated their familiarity with and attitudes toward six concept terms used to describe designing for aging-in-place. Those terms were transgenerational design, universal design, accessible design, inclusive design, lifespan/lifecycle design and aging in place design. Also, included in the survey were 10 close-ended questions which required the students to complete sentences using the six concept terms.

Findings revealed that the concept term universal design was identified most frequently as the term with which the students were very familiar. Universal design was also the term the students identified most frequently as very positive.

Statistical evaluation, using cross-tabulations and Chi-square tests, indicated a significant positive relationship ( $p < .05$ ) between the number of credit hours completed by the students and their familiarity with the concept terms universal design, accessible design, and aging in place. Statistical evaluation also indicated a significant relationship ( $p < .05$ ) between the number of class credit-hours completed by the students and a very positive attitude toward the concept term universal design. A positive correlation between familiarity and attitude was identified.

Inclusive design was the design concept term most frequently selected as the one used when designing a home for people ages 19-45. Accessible design was the concept term selected most frequently when identifying the term used when designing a home to include people with various disabilities and of advanced age. Universal design was the term most frequently selected as the term having the most positive connotation and the one most frequently selected as the term used to market a product or service to people of all ages and all abilities. Accessible design was the term identified least

frequently as having a positive connotation. It was also the design concept term least frequently selected as the one to use for marketing a product or service to people of all ages and all abilities.

### **Conclusion**

Educators in the field of housing and interior design are responsible for engaging students in such a way that they will readily incorporate universal design features into their projects in school and later into solutions for their clients. Identifying the concept terms that the students express a more positive attitude toward will assist educators in their task. Teaching residential interior design concepts using terminology that the students indicate a more positive attitude toward and one that they perceive as having a more positive connotation is more likely to be effective than using terminology that the students cannot relate to or perceive as having very negative connotations.

The information shared by the 344 students—the professional interior designers, consumers, educators and housing professionals of the future may also have significant implications for product designers, manufactures and distributors of products. If the term universal design was used instead of terms such as accessible design, aging in place or transgenerational design, in product and service promotions and advertisements, the result may be a greater understanding and clarification of the design concepts associated with designing for all people of all ages and all abilities. This clarification may lead to greater understanding and wider acceptance of the term universal design which would improve the image of the products and services associated with it, therefore, increasing interest and demand by the public.

Once students can begin to relate to the design terms, they are more likely to incorporate the concepts into their school projects. Once they begin working with clients, these concepts will become a standard of good design which will be incorporated in every client's home. This standard of good design will allow designers to continue their mission which includes enhancing the quality of life through excellence in interior design by creating environments that meet the needs of their clients in ways that are safe, efficient, and psychologically and visually pleasing.

## SOURCE OF INCOME DISCRIMINATION WITHIN THE MULTIFAMILY INDUSTRY

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### Introduction

Many public housing authorities report unused Section 8 Housing Choice Vouchers, yet these same locales cite lack of affordable housing options. The Department of Housing and Urban Development (HUD) decentralized the subsidized housing by implementing the Section 8 Housing Choice Voucher. Use of the voucher provides a renter with more location, quality and housing type options. However, many multifamily owners and management companies prohibit acceptance of vouchers as a source of income; thereby creating a concentration of vouchers within communities that accept them. This concentration defeats the purpose of housing choice vouchers to actively disperse voucher holders throughout a city versus an income-depressed area (i.e. project-based Section 8). Increased rents and reduced vacancy rates have created an environment where a property owner/manager can create more stringent rental qualifications. As a result, several jurisdictions have implemented laws against discriminating against source of income when qualifying to prevent management companies from banning vouchers from their properties.

### Review of Literature

Section 8, created in 1974, is the foremost form of federal housing assistance. Federal funds, disseminated through 2,600 State, regional and local public housing agencies, assist two million low-income families to pay for housing. These funds, given as a voucher, provide the differential between 30% of low-income families' income and an economic rent. Economic rent, which cannot outpace Fair Market Rent (FMR), is calculated by HUD based upon operating expenses, property age and amenities. FMR is calculated by HUD utilizing the rents of comparable units in the specific market (Hays, 1995, pp. 149 -150).

Vouchers are utilized by low-income families with children, the elderly, and the disabled. Program eligibility is based on income at or below 80 percent of median income. The vouchers are portable and can be used anywhere in the United States that has public housing authority (PHA) to disburse the voucher (Center on Budget Policy and Priorities, 2003).

“Voucher Utilization is the measure of how successful a PHA has been in using the resources provided by Housing and Urban Development (HUD)” (Finkel, Khadduri, Main, Pistilli, Solari, Winkel & Wood, 2003, p. vi). The proportion of voucher holders who are able to use their vouchers, known as the ‘success rate’, fell from 81% in the early 1990s to 69% in 2000 (Center on Budget Policy and Priorities, 2003). This decline indicates increased demand or tighter markets in 2000, which results in reduced utilization of vouchers.

According to Sard (2001), the main barrier to families using vouchers is not the insufficient number of affordable rental housing units, but an insufficient number of affordable units accepting tenants with vouchers. The Census Bureau's 2000 survey of multifamily properties and their acceptance of Section 8 vouchers discovered that 53% of the over two million multifamily units will not accept vouchers.

Management of the PHA is critical to the performance of the voucher program. According to Finkel, *et al.* (2003), PHAs with quality leadership and effective management have higher utilization rates. In addition, well-managed PHAs have better relationships with owners and management companies, thereby increasing awareness and participation. “PHAs may discourage owners from participating in the program by taking weeks to inspect units, applying housing quality standards in an overly stringent manner, or delaying subsidy payments. PHAs may fail to take affirmative steps to bring new owners into the program” (Sard, p. 95). Often the decision for an owner or management company to maintain participation in the Voucher Program is predicated upon the quality of management and administration of the PHA.

### Purpose and Methods

The purpose of this research was to examine the social impact of a policy prohibiting rental qualification discrimination based upon source of income. An analysis of four similar locales within the Metropolitan Washington, D.C. area is provided. Two of the locales prohibit source of income discrimination and the other two locales do not possess any income discrimination policies. The data were obtained through a random telephone survey of thirty-two Metropolitan D.C. conventional rental properties in November 2004. This research will identify the voucher utilization rate within jurisdictions possessing source of income legislation and help determine if the legislation in fact improves the voucher program’s effectiveness.

### Findings and Implications

Results from the study indicate that if a property is not required to accept vouchers, more than likely, it will not (See Exhibit 1). Only 25% of the total surveyed rental properties collectively in City of Alexandria, Virginia and Fairfax County, Virginia accept vouchers. In contrast, 94% of the total rental properties surveyed in the Maryland counties, Howard and Montgomery, accept vouchers. Both Maryland counties have provisions banning the source of income discrimination.

	Voucher Acceptance	Reasons for Not Accepting Vouchers		Voucher Acceptance	Reasons for Not Accepting Vouchers
<b>City of Alexandria, Virginia</b>			<b>Montgomery County, Maryland**</b>		
Alexandria A	NO	Company policy	Montgomery A	YES	
Alexandria B	YES		Montgomery B	YES	
Alexandria C	NO		Montgomery C	YES	
Alexandria D	NO		Montgomery D	YES	
Alexandria E	NO	Certain properties within Management company do accept them.	Montgomery E	YES	
Alexandria F	NO		Montgomery F	YES	"Same deal because either way they would get a check from us or government."
Alexandria G	NO	Company policy	Montgomery G	NO	"Participate in Montgomery County Section 8 Program"
Alexandria H	NO		Montgomery H	YES	
<b>% of Voucher Acceptance</b>	<b>13%</b>		<b>% of Voucher Acceptance</b>	<b>88%</b>	
			<b>Adjusted Voucher Acceptance</b>	<b>100%</b>	Included Montgomery G
<b>Fairfax County, Virginia</b>			<b>Howard County, Maryland**</b>		
Fairfax A	NO	Company policy	Howard A	YES	
Fairfax B	NO		Howard B	YES	
Fairfax C	NO		Howard C	YES	
Fairfax D	YES		Howard D	NO	Management had yet to complete process for accepting Vouchers.
Fairfax E	NO		Howard E	YES	
Fairfax F	NO	Company policy	Howard F	NO	"Participate in Howard County Section 8 Program"
Fairfax G	YES	"As long as the vouchers are issued through Fairfax County"	Howard G	YES	"As long as voucher is Howard County"
Fairfax H	YES		Howard H	YES	
<b>% of Voucher Acceptance</b>	<b>38%</b>		<b>% of Voucher Acceptance</b>	<b>75%</b>	
			<b>Adjusted Voucher Acceptance</b>	<b>88%</b>	Included Howard F

\*\* = Possess Legislation Banning Income Discrimination

Exhibit 1 – Results from Survey of 32 Rental Properties

An alarming fact from the survey is that 60% of the properties accepting vouchers possess market rents exceeding the FMR set by the PHA. The voucher covers only the difference between FMR and 30% of the tenant’s monthly income. Any excess is paid by the tenant. Therefore, market rents in excess of FMR increase the tenant’s rent responsibility. In addition, as the supply of the older stock of housing is converted to market-rate units or razed, the affordable housing stock diminishes. Not only is access to properties that accept vouchers questionable, but the supply of affordable housing is at risk. The utilization of the Voucher program is impacted primarily by the inadequate number of owners and management companies accepting vouchers. Increasing demand for affordable housing, coupled with its diminishing supply, is a serious concern for affordable housing advocates. “HUD and Congress may

even join together to prod the industry to remove restrictions that stand in the way of the voucher policy...” (Riddle & Harris, 2000, p. 24).

Vouchers provide a renter with more location, quality and housing type options. The effectiveness of vouchers relies upon the marketability of the program and the ability to increase non-participating owners’ acceptance of vouchers. In conclusion, legislation banning income discrimination will contribute to improve the implementation of the Voucher program and ultimately, to preserving multifamily options for tenants receiving vouchers.

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# HOUSING AND SERVICES FOR THE AGING IN RURAL COMMUNITIES

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## Introduction

In nonmetropolitan areas, the growth in and visibility of the older population has resulted in increased awareness of their special needs among community leaders (Rogers, 1999). The purpose of this research was to identify factors associated with local housing and service decisions that support aging adults in rural communities. These decisions represent de facto strategies to meet the needs of older adults, maintain their quality of life and promote aging in place in their homes and in their communities. Our analysis examined factors associated with the availability of housing and services provided in 134 communities in nine Midwestern states.

## Background

Social scientists have long asked questions about variations in patterns of rural economic development and communities' responses to the housing and service needs of existing residents as well as newcomers. Recent literature suggests that there is no agreement among leaders and housing professionals about the social and economic effects of large numbers of older people on community economic vitality. "Nonmetropolitan areas traditionally have discounted retirement as a poor strategy for economic development; concentrating instead on trying to attract industry" (Green & Schneider, 1998, p.1). In some communities, however, a larger elderly presence has been linked to a locality's overall quality of life, well-being, and economic vitality. Promotional strategies are employed to attract retirees or to champion the community as one that provides the availability of services older adults (Golant, 1992). To complement this literature we investigated factors that may impinge on the availability of selected housing and services that support the needs of older residents in rural communities, e.g. presence of nursing homes, assisted living, retirement housing and a doctor, hospital, dentist, senior center, meals on wheels, and transportation for seniors.

## Methodology

This investigation is part of a larger study supported by a National Research Initiative Grant from the U.S. Dept. of Agriculture to analyze the effects of local housing decisions and activities on the vitality of rural communities and to identify planning strategies that were used to mobilize resources for housing and community development. In the analysis presented here, a model was developed and tested that examined the relationship of selected variables on the availability of housing and services in 134 Midwestern towns ranging in population from 100 to 10,000. Forty percent of the sampled communities had populations under 500 residents and profiles of very small and larger rural communities were compared.

A regression model was tested in which the dependent variable was an index of nine housing and service items [nursing homes, assisted living, retirement housing and a doctor, hospital, dentist, senior center, meals on wheels, transportation for seniors]. Scores ranged from zero to nine and the coefficient alpha for the nine items was .88. The independent variables included:

- **Total population**
- **Proportion of population 65+**
- **Percent owner occupied units**
- **Housing Decision Aid (range 0-3)** an index of housing decision aids including organized assessment of local housing needs, housing committee/task force, and existence of a city planning/housing department
- **Proportion of new housing built** in the last 10 years

- **Social Capital** an index of responses; e.g. leaders use resources wisely, people work together to make things happen in community, leaders have helped community meet changing needs
- **County Vitality** (0=low/1=high) based on three indicators: per capita earnings in all industries; per capita money income; and proportion of persons living above poverty
- **County Adjacency** based on census data definition of a nonmetropolitan county's relationship to a metropolitan county
- **Retirement community** based on informants answer to "Would you say that this is a retirement community?"

### Results

The findings are illustrated in Table 1. Three independent variables *positively* affected the availability of housing and services: the total population of the community; proportion of the population over 65 years; and housing decision aids. Not surprisingly, larger towns had more housing and service options for the aging adult. The proportion of residents 65+ affected the number of housing and services regardless of other community characteristics including community or county vitality. Communities that employed housing decision aids such as having conducted a local housing needs assessment, a housing committee or task force, and a city planning or housing department were more likely to have housing and services to meet the needs of aging adults. The proportion of newly built housing and the number of owner occupied units were *negatively* associated with available housing and services suggesting that the focus in some communities may be development for those populations not requiring the selected housing and services. Unlike previous studies, social capital, community vitality and adjacency did not affect available housing and service. Reasons for these findings will be discussed in greater detail at the HERA conference.

**Table 1. Predictors of Housing and Services for Aging Adults in 134 Rural Communities**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.228	2.175		2.863	.005
Total Population 2000	.001	.000	.478	7.951	.000
Percent population 65+	.146	.028	.301	5.271	.000
Percent owners	-8.876	1.926	-.283	-4.607	.000
Housing Decision Aids	.405	.136	.167	2.970	.004
% new housing last 10 yrs.	-5.181	2.363	-.117	-2.193	.030
Social Capital Index	.101	.118	.043	.859	.392
County Vitality	-.103	.297	-.018	-.348	.728
County Adjacency	.351	.340	.049	1.030	.305
Retirement community	-.367	.325	-.061	-1.128	.261

R<sup>2</sup> .732; Adj. R<sup>2</sup> .712 F=37.697; p<.000 df 9/124

### **Discussion and Conclusions**

Initial findings indicate that community context does influence the availability of housing and services for aging adults; community population size and proportion of residents 65 years and over. For example, the availability of nursing homes and assisted living units varied by town size. No town below 500 residents had a nursing home or assisted living units. Also, no town in the smallest size category had retirement housing. Furthermore, communities that have made decisions that promoted more homebuilding in the last 10 years and provided homeownership opportunities appeared to do so at the expense of providing housing and services for aging adults. Future analyses are warranted that examine additional correlates of housing options apart from service options in small communities.

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# **INTEGRATED PEST MANAGEMENT (IPM) IN SCHOOLS: INCLUSION OF INDOOR AIR QUALITY AND ENVIRONMENTAL ASTHMA TRIGGERS MODULES**

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## **Background**

Nebraska (NE) has a high asthma death rate per capita creating a need for educating the public about asthma. Children with respiratory problems spend a considerable time in school environments where potential asthma triggers may exist - nearly 1,600 hours per student per year. Asthma is a leading cause of school absenteeism due to chronic illness. To create awareness of high asthma rates in Nebraska (NE) and address indoor air quality issues, we have developed an Extension program that includes modules on environmental asthma triggers, mold and moisture and volatile organic compounds as a part of the IPM in Schools Program. Pests known to trigger allergies and asthma include cockroaches and dust mites, but mold can also trigger asthma. School IPM programs in most states address pest and related pesticide issues, but usually overlook mold (a biological pest) as an issue.

## **Objectives**

The targeted audience was NE's 716 school districts (350,000 students, 1,491 school buildings), particularly administrators who make decisions about pest control, and the maintenance personnel who are often responsible for managing pests and using pesticides. Objectives of this program were to: 1) increase the use of pest monitoring, 2) decrease the routine use of pesticides by using nontoxic pest control methods, thereby reducing the amount of pesticide use in schools, and 3) identify conducive conditions, especially moisture, that promote pests and mold, and then mitigate those conditions. The expected result is improved indoor air quality with reduced VOC's released and improved pest control.

## **Methods**

An IPM in Schools team was formed, which included university faculty, state and local agencies and school personnel (41 persons). An initial survey was mailed to all NE school administrators to assess the current pest management practices with 200 or 26% responding. A team of specialists wrote a 212-page "IPM in Schools: A How-to Guide Book," written for Nebraska. This guidebook included a chapter on IPM for Indoor Air Quality: Molds and Other Asthma Triggers. Workshops and on-site school assessments were delivered in various NE locations, and included education about asthma triggers and conducive conditions that promote mold. This on-going program includes:

- Continual development of a website (<http://schoolipm.unl.edu>) for use by schools, featuring the guidebook, power point presentations, administrators' information, and links to 40 websites.
- In-depth on-site school assessments of six Nebraska pilot schools, including more intensive training for school custodians
- Continued assistance for school officials to solve pest problems with effective low-toxic solutions whenever possible
- Communication of successful strategies to school officials on thoughtful and innovative pest control strategies.

## **Results**

The administrators surveyed indicated that there was a lack of understanding about IPM. They indicated that only 28% of schools have an IPM plan, and 27% of personnel controlling pests are properly certified. Sixty-one percent indicated that unnecessary, routine pesticide applications were conducted.

The IPM in Schools Team gave the guide book to 400 extension faculty, pest management professionals, school nurses and custodians, maintenance workers and supervisors, food service workers, and other school officials at ten conferences and workshops during 2003-04. Nearly 100% of the participants in the inservice training sessions ranked the workshop segments on turf and landscape, health-related pests, pests of moisture prone areas, mold and indoor air quality, IPM concepts and assessment as superior, excellent or good. Eighty-three percent of the participants said the information learned from the workshop would save their school district money, and 77 percent would improve their ability to work with pest management professionals. Inservice participants indicated they would always identify and eliminate conditions conducive to pests (89%), use less hazardous control tactics (77%) and reduce their overall pesticides use (66%). In summary, the majority of participants indicated they had gained new information and intended to apply IPM strategies in their schools.

### **Conclusions**

The interdisciplinary and interagency team developed a comprehensive IPM program that encourages and assists schools in implementing IPM plans, and to reduce potential asthma triggers and air quality problems in schools, improve environmental quality, and promote the IPM concepts use in schools. The project includes multiple stakeholders and representatives of the targeted audiences. The project links IPM to indoor air quality issues and to reducing potential asthma triggers in schools. Few IPM state programs include indoor air quality issues such as asthma triggers, mold, and other biologicals in their IPM in Schools programs.

Conducting needs assessments prior to program development, using collaborative interagency and interdisciplinary teams, and incorporating multiple program methods and media are recommended to increase adoption of integrated pest management, reduce reliance on pesticides, and to reduce potential biological asthma triggers found in schools. Evaluation data indicate the outcomes of the program, strengths and potential barriers involved in incorporating this IPM program in schools.

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## **HEALTHY HOMES: INDOOR AIR QUALITY TRAINING FOR PROFESSIONALS**

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### **Background**

Extension is in an era of increasing accountability. More stakeholder involvement is needed (Shearon & Richardson, 2002), along with reaching a more diverse clientele. Extension's role in educating professionals in business, industries and in public and private agencies is important to address needs. This paper illustrates programs that address the needs of professionals and target additional stakeholders.

### **Program Needs**

Housing programs for professionals must address critical issues, and respond to changes in the industry. For example, relocation companies and lenders are requiring testing and mitigation of homes during real estate transactions. Some real estate professionals are not knowledgeable about radon and air quality issues and are unsure of procedures to address radon and other air quality issues. Housing inspectors, contractors, remodelers, health professionals and others may lack the knowledge to adequately perform their roles.

The Environmental Protection Agency (EPA) estimates that 21,000 deaths per year are attributed to radon. More than 55% of single family detached homes in Nebraska may have indoor radon levels greater than the recommended action level (Nebraska Health & Human Service System, 2002). Nebraska has the second highest asthma death rate per capita in the U.S. Potential environmental asthma triggers include cockroaches, dust mites, rodents, pollen, mold, and other biologicals. Providing education regarding asthma triggers, mold and moisture and other indoor pollutants to real estate professionals and other housing professionals will result in more knowledgeable professionals who better serve their clientele and multiple the impacts by educating consumers.

### **Methodology**

Programs targeting housing and other professionals have utilized methods including licensing credits, web-based licensing renewal, symposiums, invited presentations at trade groups' meetings, media, and programs for childcare providers.

1. Credit classes were initiated for licensing real estate professionals across the state. "Radon, Biologicals and Mold in Homes" has reached 90 real estate and other professionals since 2000.
2. Web-based classes for child-care provider professionals focus on indoor air quality. To date, 23 have completed the three-hour credit course for licensing. Tests and evaluations are conducted on-line following the course. Results indicate changes in knowledge. Application questions indicate understanding of the air pollutants, sources, and best practices for reduction.
3. Extension coordinated two regional conferences on mold and moisture targeting housing and service professionals.
4. In 2004, 10 invited mold and moisture presentations were targeted for housing related professionals. Programs reached plumbers, HVAC contractors, city officials, inspectors, and health professionals among others. Audiences included the Nebraska Association of Plumbers, Steam Fitters and Boilermakers as well as school janitorial and maintenance professionals.

### **Outcomes and Impact**

Using a pre-and post-test methodology, real estate class participants were surveyed to determine knowledge change. Paired t-tests indicated the post-test data scores were significantly higher than pre-test scores ( $p < .05$ ). Pre- and post- knowledge scores for the mold modules indicate similar results. Limitations of the t-test include violation of the assumptions that scores form an interval or ratio scale of measurement, scores in the population under study are normally distributed, and that score variances for

the populations are equal. However, t-tests “provide accurate estimates of statistical significance even under conditions of substantial violation of assumptions” (Bandeau, 1960).

**Table 1. Real Estate Professionals’ Knowledge Change**

<b>t - Test: Paired Two Sample for Means (Radon module)</b>		
<b>N=73 df 72</b>	<b>Pre-knowledge test</b>	<b>Post-knowledge test</b>
Mean	54.93	91.23
Variance	433.68	108.2
p(T<=t) one-tail	7.75319E-27*	
p(T<=t) two-tail	1.55064E-26*	

\*significant at p< .05

The 2005 Midwest Mold, Moisture and Ventilation Symposium drew 243 housing related professionals and 20 vendors. The program resulted from the collaboration of Extension, USDA/CSREES Healthy Homes program, EPA Region VII, NE Health and Human Service System, Douglas County Health Department, ALA and three businesses. The result is even more collaboration, and additional program opportunities.

The diverse audience included professionals from Offutt Air Base, schools, health departments, State agencies, builders and remodelers, inspectors, HVAC and real estate professionals, nurses, and others. One participant summed up their comments with "I have been to conferences for 40 years and this is the best I have ever been to." "This was a great value and the speakers were excellent.”

Evaluation comments were extremely positive. Vendors reported they were very pleased with the results and questions asked by participants. The 130 pre- and post-knowledge evaluations returned with 82 matched pairs were analyzed using paired t-tests. Results indicate a significant difference in two of the five questions indicating knowledge increased.

**Table 2. Mold Symposium Knowledge Change**

<b>t-Test Paired Sample (Mold Symposium)</b>			
<b>N=82 df 81</b>	<b>Pre-knowledge test</b>	<b>Post-knowledge test</b>	<b>p-value</b>
Mean Q2	1.263	0.988	0.005*
Mean Q3	1.309	1.494	0.024*

\*significant at p< .05

### **Conclusions**

Multiple methods (web-based delivery, conferences, licensing credits, etc.) are needed to educate professionals who are lacking reliable research-based and best practice information, and who sometimes lack the time to participate in traditional programs.

Real estate professionals have gained and applied new knowledge about radon and mold: the course is now being adapted to a web-based delivery as well. Over 383 housing, services and agency professionals including builders, remodelers, real estate professionals, and others have gained knowledge

about moisture, mold and health implications. Follow-up evaluations indicate changed behavior and practices, and sharing the information with others through their work. Pre- and post- knowledge scores indicate significant differences in knowledge.

Focusing on housing professionals takes advantage of the multiplier effect and educates stakeholders in business, industry, government and public and private agencies.

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## **ATTACKING THE EPIDEMIC OF CHILDHOOD ASTHMA: HELPING CHILDREN LEARN TO MANAGE THEIR ENVIRONMENT**

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In *Healthy Buildings, Healthy People: A Vision for the 21<sup>st</sup> Century*, the Environmental Protection Agency (EPA) focused on indoor environmental risks and health, identifying children as especially vulnerable (Office of Air and Radiation, 2001). Two goals from the report are particularly relevant to housing education:

1. Achieve major health gains by addressing indoor environmental risks and improving professional education about them.
2. Promote health-conscious individual behavior and consumer awareness (p. 13).

Any discussion of indoor environmental risks and health must consider asthma, a chronic lung disease. Environmental irritants and exposure to allergens trigger asthma attacks, leading to inflammation and constriction of airways. Asthma cannot be cured. However, asthma is treatable by medication and environmental and lifestyle changes to reduce exposure to triggers. Poorly controlled asthma undermines overall health and quality of life, but the risk and severity of the disease is reduced through careful environmental management, especially in children (Skoner, 2001).

Asthma has reached epidemic proportions, and it disproportionately affects children. The National Center for Health Statistics reports 30.8 million diagnosed cases of asthma, a rate of 111 per 1000 people. However, there are 8.9 million asthmatic children under 18, a rate of 122 per 1000 (Dey, Schiller & Tai, 2004; National Center for Health Statistics [NCHS], 2002). Further, 4.2 million children experience at least one asthma attack a year, representing poorly controlled asthma (Dey et al., 2004; NCHS, 2002). Yearly, asthma accounts for 5 million doctor or hospital outpatient visits, 727,000 emergency room visits, 196,000 hospitalizations, and 14.7 million days of school missed for children under 18 (NCHS, 2002).

### **Asthma Education Program**

Two national housing education programs address issues of indoor environmental risks and health, and can encompass asthma education. "Healthy Homes," a joint program of Cooperative Extension (U.S. Department of Agriculture-Cooperative State Research, Education and Extension Service or USDA-CSREES) and the U.S. Department of Housing and Urban Development focuses on healthy homes for children and their families. "Healthy Indoor Air for America's Homes," a joint program of USDA-CSREES and EPA, focuses on a broad range of topics related residential air quality. "*Attacking the Epidemic of Childhood Asthma: Helping Children Learn to Manage Their Environment*," the focus of this abstract, was developed under the auspices of both national programs. This asthma program is unique in two aspects: 1) it targeted childcare providers and the childcare environment, particularly home-based childcare; and 2) the goal was to help the asthmatic children themselves learn to manage their environment and thus, their disease.

This educational program used the sociological-based interactional-transactional perspective, which theorizes that an individual creates her or his own environment while at the same time being shaped by that environment (Ambert, 2001; Lerner, 1995; Maccoby & Jacklin, 1983). This perspective, in the context of the asthma education program, encourages children to manage – or shape – their environment by raising awareness of and limiting negative asthma triggers. Thus children, in a healthier and less obstructive relationship with their environment, are open to a more positive environmental interaction to facilitate growth and development.

Childcare professionals were targeted because of the amount of time many children spend in a childcare environment, and thus the need for the caregivers to be familiar with asthma and how to manage their facilities to reduce asthma triggers. A childcare environment that is healthier for asthmatic children is healthier for all children and their caregivers. In addition, increasing the knowledge of childcare professionals increases their value as a source for parent education.

The core content of the program was organized around the recommendations of the National Academy of Sciences to reduce exposure to five key environmental pollutants/triggers: secondhand smoke; dust mites; pet allergens; molds; and cockroaches and other pests (Indoor Environments Division, 2004). The program content integrated issues about asthma in children, the key environmental triggers and their control, characteristics of young children, and developmentally appropriate ways to teach young children about asthma. The program was a collaboration of housing and child development specialists.

The core of the program was a workshop using active learning techniques. Childcare provider participants tried out different activities and demonstrations that could be used with their children. Activities, targeted to the 2- to 5-year old age group included: “icky bug” collages; growing mold; songs; movement games; and stuffed animal “swim.” Handouts provided resources for further information, as well as materials that could be used with parents.

### **Evaluation and Conclusions**

This asthma education program has been used to train childcare providers, as well as those who educate childcare professionals. It has been used in parent education. Some of the content has also been adapted to written educational materials and audiovisual media. A teaching notebook about the program is available. A summary evaluation of program impact is difficult, given the mixed audiences, and the variety of media and methodologies used in program delivery. However, key trends gleaned from program evaluations are noteworthy.

Most participants in the program were aware of asthma, but surprisingly uninformed about the role of environmental triggers in asthma management. Few had considered the importance of teaching children to understand the need to manage their own environment. A surprising result was the lack of knowledge in many of the daycare providers about the developmental stages of children. Thus, workshop content that related learning activities about asthma triggers to children’s developmental stages was particularly valuable and gave participants a framework for implementing what they learned. Post-workshop evaluations highlighted the gain of knowledge about asthma and making the environment healthier for all children, as well as the value of activities that could immediately be used with children in the daycare setting. Reducing environmental triggers reduces the likelihood of asthma attacks and increases the potential for control of childhood asthma. An inclusive education program that involves children and their caregivers in reaching this goal reduces environmental risks for all users of the environment while promoting life-long health conscious behavior.

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# DEMOGRAPHICS OF BORROWERS AND CAUSES OF DEFAULT OF RESIDENTIAL MORTGAGES IN NORTHERN UTAH

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## Introduction

The nation's homeownership rate has reached an all-time high of 68% (Bush, 2002). Of all the homeowners in 2002 with mortgages, 4.81% nationally were in default (Mortgage Bankers Association). Utah surpassed this percentage with 5.29% in default. The high numbers of homeowners in Utah facing default and foreclosure points out a need to better understand the factors and circumstances of this situation.

The purpose of this study is to explore the demographics of borrowers with default mortgages. Trigger events leading up to the mortgage default will be noted. The hypotheses are based on two theories of foreclosures and default: the ability to pay theory, and the home equity theory. The ability to pay theory suggests that circumstances in the borrower's life may change and create a resource constraint causing a mortgage to go into default (Elmer & Seelig, 1998). Contributing to the Delinquency of Borrowers (2003) by Darryl Getter, used the 1998 Data from the Survey of Consumer Finances. The results of the research provide evidence that mortgage default problems arise from negative events in the life of the borrower. Similar to home equity, this study will examine the amount of savings one has. The article, Living On The Edge: Characteristics and Practices of Overextended Homeowners' (O'Neill, Lytton, & Parrott, 1995) found that many overextended homeowners had little to no savings. This article also points out that the average number of years remaining on a mortgage was 24, suggesting that homeowners have lived in their house for less than six years. In this study data was collected for number of years lived in the home rather than time remaining on mortgage. The home equity theory suggests that a person who has accumulated a large amount of home equity would not default on their mortgage (Clauret & Sirmans, 2003).

## Data Collection, Hypothesis, and Procedures

### *Data collection*

The data was collected from 209 mortgage default files from the Family Life Center at Utah State University. The Family Life Center gives housing and financial counseling free of charge to the community. The researchers collecting data were trained in the procedures at the Family Life Center and have counseled many clients with mortgage default or foreclosure concerns. The sample of files was taken from 1993 to the present, excluding active files of clients presently being counseled. The variables studied were coded for each mortgage default file, and the information was analyzed in a statistical computer program.

### *Research questions and hypothesis*

The purpose of the paper is to address the following topics:

- Profile clients experiencing mortgage default from Cache Valley, Utah, to give a better picture of those more likely of experiencing default.
- Look at savings and debt of clients as well as balance of loan amount compared to original loan amount.
- Examine trigger events leading up to mortgage default.

Based on the theories outlined previously, the following hypotheses will be studied:

1. Borrowers experiencing mortgage default will have lived in their home for less than six years (O'Neill, Lytton, & Parrot, 1995).
2. Borrowers experiencing mortgage default will have little or no savings (O'Neill, Lytton, & Parrot, 1995).
3. Borrowers experiencing mortgage default will have experienced a negative trigger event before the default (Getter, 1998).



## Results

The mortgage default files examined give a financial portrait of borrowers in Northern Utah experiencing mortgage default. Table 1 illustrates the demographics of borrowers.

**Table 1. Demographics of Borrowers**

	Mean	SD	Median	Minimum	Maximum
Age of Client	38.19	9.985	36	20	63
Number of Dependents	2.17	1.747	2	0	7
Years in Home	4.78	5.30	3	.11	28
Total Savings (\$)	261.55	696.21	15.00	-188.00	5000.00
Total Debt* (\$)	14488.07	17101.36	9000.00	0	75000

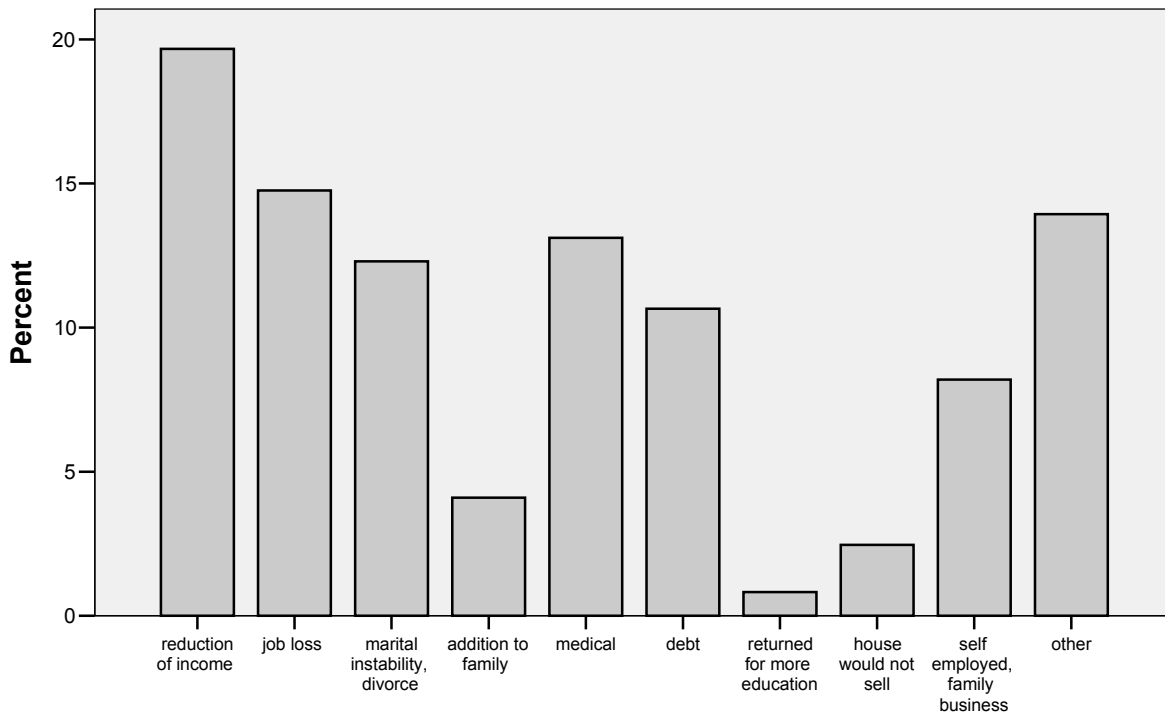
\* with outliers of \$165,000 and \$400,000 not included in analysis.

The first two research questions are addressed by the variables, number of years in home and total savings. The median number of years in home is three years. This supports previous research by O'Neill, Lytton, and Parrot (1995) suggesting that mortgage default will have lived in their homes for less than six years. The second research question is answered by the total savings variable. While some noted that their savings accounts were withdrawn, with the most being -\$500, few others noted that they did have some savings. The same article noted above suggested that mortgage default clients would have little to no savings. This study found that the majority of the clients had \$0 savings reported.

To address the third research question, the trigger events from the files were noted. These trigger events were taken directly from a statement written by the client, or from notes taken by the counselor following the session. The following bar chart represents the possible trigger events and the percentage reported from the files.

Although this study used a sample from Northern Utah, the results support statements from previous research. The emphasis on homeownership from the nation's capital suggests that it is important to understand the demographics of mortgage defaults. With the information gathered from this study, counselors at the same housing and financial counseling center, The Family Life Center will be better prepared to share with first time homebuyers the common trigger events forcing people into mortgage defaults. This study also points out the importance of emergency savings, reducing debt loads, and building equity to prevent foreclosure or default. Another factor important to foreclosure or default is the number of years in the home. Previous studies as well as this study show that the majority of homes facing foreclosure are in the home less than six years. This information is particularly useful for the education of Counselors at the Family Life Center. Common trigger events for the specific region are identified and the knowledge can be passed down to clients

## Trigger Events



## Trigger Events

**Figure 1. Trigger Events**

### Discussion and Limitations

A limitation to this study is that the data used is based on the completeness of the client files. Many questions on the client paperwork from the files were left blank, therefore leaving out important information pertaining to their financial situation. This study is cross-sectional by nature, only allowing an examination one point in time. A future study could expand on this study by following the clients through their counseling experience to determine the outcomes of their default or foreclosures, also to help examine the usefulness of the counseling process.

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## LIVING SAFELY WITH LEAD: REDUCING THE RISK

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This paper illustrates an educational program, *Living Safely With Lead*, that uses multiple strategies to impact a large metro targeted area of households composed of different racial, cultural, ethnic and economic backgrounds. The program's successes resulted from the use of focus groups, a multi-practitioner educational team, strong communications through an interagency/government lead coalition, multiplier effects, creative use of technology, and education at point of interest.

### Background

Nearly 100 percent of homes in east Omaha NE were built prior to 1978. Tests conducted revealed high levels of lead in soils due in part to Interstate traffic and industry. Twenty square miles of east Omaha were designated an EPA Superfund Site. An even larger area of east Omaha, with more than 22,000 youth, was identified as high risk for childhood lead poisoning. An alarming percentage of children in Omaha tested positive for lead poisoning (42% tested positive from 1992 to 1998 in one northeast Omaha neighborhood). A majority of persons living in the area are African American, Hispanic, Asian, or Sudanese with lower incomes.

### Objective

Parents of children under the age of six living in the high risk area will increase their knowledge about lead poisoning risks and apply best practices in maintenance to reduce lead dust in their home and to nutrition and hygiene to reduce lead absorption, and will landscape to cover and stabilize lead-contaminated soil. Lead poisoning will be reduced in children in the high risk area of east Omaha.

### Procedures

Focus groups identified a pressing need for lead programming. The multi-disciplinary team used multiple methods to address housing, landscaping, and nutrition lead poisoning prevention best management practices, and to target programs to specific audiences. The programs were developed with English and Spanish curriculum pieces. A *Living Safely with Lead: Reducing the Risk and Maintenance of Older Homes* self-study interactive CD ROM was developed to increase knowledge and adoption of best management practices. Visuals are not gender, racial or culturally specific. *Kids Run Better Lead Free* bibs and toddler t-shirts with attached risk-reduction-tips hang tags, and educational growth charts were developed to provide information on lead poisoning prevention management practices, and to serve as a constant behavior prompt. Educational brochures were developed. Visuals represent the racial and cultural diversity in the high-risk area.

The components include:

1. *Living Safely with Lead Reducing the Risk* classes target parents of children under six, and focus on managing lead to reduce risks through landscaping, housekeeping, diet and hygiene. Classes were taught in English and Spanish; 75 families participated.
2. *Living Safely With Lead: Maintenance of Older Homes* classes target home improvement do-it-yourselfers with children under the age of six. Information focuses on lead-safe work practices to prevent lead poisoning. Thirty families were involved.
3. *Kids Run Better Lead Free* campaign targets parents of newborns delivering education through collaborations with local hospitals. Parents are given information on managing lead to reduce risks. Meetings with the head obstetrics staff of Alegent, Creighton, and University Hospitals in Omaha resulted in their use of Living Safely With Lead educational materials to disseminate information to parents in the high-risk area. They are incorporating lead education in newborn care classes.

4. *Living Safely With Lead Child Care Provider Training*, train-the-trainer workshops empowers child care providers to disseminate information to parents of children in their care. Training resulted in their use of brochures and *Kids Run Better Lead Free* bibs and t-shirts with educational hangtags to disseminate information to parents.
5. *Living Safely with Lead Demonstration Landscapes* includes best practices to cover and stabilize lead-contaminated soil and are demonstrated in homeowner yards through landscape renovation and installation. Neighborhood tours and signage deliver the educational message. Volunteer families and their yards represent the racial, cultural, and geographic diversity of the high risk area.

### **Results**

Participants in *Reducing the Risk* programs indicated their knowledge of harmful effects of lead exposure and best management practices increased. A follow-up survey indicated that 70% had implemented changes in their lifestyle, home and landscape management.

*Maintenance of Older Homes* participants (94%) indicated their knowledge regarding risk associated with repairs and maintenance of homes with lead-based paint increased, and 97% reported they would change behavior to reduce risks. A follow-up survey indicated changes were being made.

Participating child care providers in the *Living Safely With Lead: Child Care Provider Training* indicated their knowledge of lead exposure effects and best management practices to reduce risk increased, and agreed to send information home with children in their care including a *Kids Run Better Lead Free* bib or t-shirt with educational information attached. A follow-up survey of one workshop indicated information had been disseminated to parents, achieving the desired multiplier effect. Collaborative efforts in outreach were important in addressing the Spanish speaking community. A *Living Safely with Lead* article was published in Omaha's Spanish newspaper, *Nuestro Mundo* (circulation 15,000). A Spanish-speaking grocery store pharmacist has helped promote the program to Omaha's Spanish-speaking community. Spanish-speaking program participants made positive changes.

### **Implications**

The program has applicability nationwide to communities addressing lead problems; particularly in large metro areas with mixed cultures, races and ethnic groups. Using multidisciplinary approaches encourages behavioral changes that are more likely to address lead risk from multiple sources. While barriers exist in any community, using an interagency and multidisciplinary approach and needs- based programming results in outcomes and impact.

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# ATTITUDES CONCERNING THE ROLE OF TECHNOLOGY FOR HEALTHY AGING

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## Introduction

Latest Census figures project that the number of people in the 65-and-over population will grow from 35 million to 72 million in the next quarter century. Increased life expectancy means that a larger segment of this population is over age 85. Further, the vast majority of older adults choose to “age in place” (AARP, 2000) and about 30% of those live alone, the majority of whom are women (U.S. Bureau of the Census, 2004). Eldercare needs are growing so rapidly that eldercare will surpass childcare in level of importance to American families this year (CAST, 2003). Technological advancements in both the home environment and in aging services settings have great potential to extend the time elders can remain in their own homes, enhance quality of life, and alleviate the pressures of caregivers. Many of the technologies that are needed already exist and many more are on the horizon. However, there have been few empirical studies that have examined the technology needs and preferences of elders and their caregivers.

Industry recognition of the importance of users’ perceptions and preferences is strong. Barriers to acceptance of technology from the perspective of the aging population could affect potential users’ motivation or willingness to try or use a technology, their ability to use it effectively, and to be satisfied with the results. Nine key issues for the acceptance of technologies were identified in a recent workshop entitled *Technology for Adaptive Aging* conducted by the National Research Council under the sponsorship of the National Institute on Aging (NIA). The issues include (1) control, autonomy, agency, dignity; (2) customization; (3) culture and language; (4) expectations and stereotyping; (5) privacy; (6) safety; (7) training; (8) trust; and (9) usability (Pew & Van Hemel, 2003). Workshop participants stressed the crucial need for behavioral and social scientists to work hand-in-hand with technology developers. However, research in this arena is in its infancy.

In American culture, it is both socially valuable and cost-effective to support the independence of the aging population in as many aspects of their lives as possible. It is clear that technological opportunities abound. We have a responsibility to ensure that the most valuable, accessible, cost-effective, and user-centered alternatives are developed. The welfare and happiness of the aging population depend on it. The purpose of this study was to explore attitudes, opinions, and preferences of elders and their caregivers concerning the use of technology to support and extend aging in place.

## Research Method

The study utilized a series of focus groups representing people age 75 or older. Because the study was exploratory, participants in a wide variety of living situations were included. Convenience sampling was used to assemble focus groups representing institutional residents and snowball techniques were used to generate a sample of aging in place seniors. Cognitively intact participants representing the senior population were recruited from three living situations: (1) residents of an assisted living community in which many high-tech devices are already in place; (2) residents of conventional independent living centers; and (3) people living in their own homes. Forty-three seniors participated in seven focus groups.

Demographic and self-reported health status data were collected individually from each participant, as well as familiarity with personal computers (Ahn, 2004). The focus groups followed a semi-structured format, including open-ended questions and guided discussion (Morgan, 1997; Seale, McCreadie, Turner-Smith, & Tinker, 2002). Three scenarios were presented as discussion stimuli to help participants understand the potential for the role of sophisticated technologies in the areas of *assistive technologies*, *monitor and response technologies*, and *communication technologies* (Dishman, 2003; Dishman, Matthews, & Dunbar-Jacob, 2003). Discussion was guided by the following general questions:

- What do you need in order to live the way you want to live?
- How does this scenario fit with the way you want to live?

- What problems can you see with this kind of technology?
- What other things should technology be made to do?
- What things do you want technology *not* to do?

Focus group sessions were video taped, transcribed, and subjected to qualitative analysis using MAXqdt2<sup>®</sup> software.

### **Results and Discussion**

Analysis of the data is in progress. Preliminary findings suggest that elders' perceptions of the potential for technology to improve their lives is related to education level and familiarity with personal computers. Privacy issues are of great concern, but some elders were willing to trade some privacy for the ability to remain in their homes for a longer period of time. Overall, participants wanted to maintain social contacts, family interaction, and individual independence and were interested in learning more about technologies that could help.

Differences in perceptions and willingness to use technology was widely varied among individuals. This is consistent with earlier studies. For example, Czaja, Sharit, Charness, Fisk, and Rogers (2003) noted that individual differences in existing knowledge and skill provide a background that strongly influences adaptation to new technologies. Trends in the development of technology encompass individuals who are more or less knowledgeable, more or less skilled, more or less avoidant of learning how to engage technological innovation, and more or less accepting of new approaches to living. Normative and non-normative changes that accompany aging create a situation in which individuals must adapt to new technologies while simultaneously coping with changing physical, social, and cognitive resources. Therefore, it was not unexpected that individuals had widely divergent views.

This study was conducted among primarily white, metropolitan seniors. An important theme resulting from this study is the crucial need for more investigation into the attitudes and perceptions of people from rural areas and from different cultural and ethnic backgrounds. Cultural norms, language barriers, and physical isolation are some of the issues that must be addressed (Angel & Angel, 1997). Successful implementation of technologies that may extend and enhance aging in place is dependent upon a solid foundation of understanding of the social context and key issues of the users (Charness & Schaie, 2003).

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# **THE ECOLOGY OF RESIDENCE HALLS: SATISFACTION AND RETENTION FOR ALL PEOPLE**

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## **Introduction**

Universities with a dominant race or ethnicity generally attract, satisfy, and retain individuals who share traits in common with the dominant group (Strange & Banning, 2001). For students not of the dominant group, a sense of incongruence may contribute to dissatisfaction and ultimate withdrawal from the university setting.

In Oregon, as in much of the west, the dominant racial group is “White, Non-Hispanic.” Enrollment in Oregon State University reflects that dominance, with 75.8% White, Non-Hispanic students. For members of other racial/ethnic groups, finding a comfortable fit within the university environment may be problematic and may lead to leaving the residence hall setting. Conversely, a high degree of person-environment congruence has been shown to result in higher satisfaction, a desire to persist, and greater retention (Smart, Feldman, & Ethington, 2000). This study explores factors that contribute to non-White students’ satisfaction with, and retention in, university housing.

## **Background**

Student development within university residence halls takes place through programmatic, thematic, and academic activities; all of which are designed upon the results of considerable social and psychological research. Much has been written about student development, but little has been written about the effect residence hall environments have on student’s psychological health, satisfaction, and school success. Even less is known about residence hall environments for students of color and their sense of place within the residence halls.

## **Methodology**

Understanding the human environment requires an analysis of four key elements “(1) the physical features of the setting, (2) the collective characteristics of the people within, (3) the organized structures associated with the goals of the setting, (4) the subjective perceptions and interpretations of the participants” (Strange, 1993). This exploratory study examines the subjective perceptions and interpretations of non-White students with the physical and social environment of the university residence hall.

In the Spring of 2003, Oregon State University operated eleven old, renovated, and new residence halls housing 2,723 students. An invitation to participate in the web-based study and enter a drawing for a DVD player (\$170 value) was e-mailed to all residents. The self-selected sample included 480 respondents, resulting in 362 (75.4%) useable questionnaires. Race/ethnicity of the sample closely matched the population of the residence halls and the university population as a whole (see Table 1).

The questionnaire consisted of questions concerning students’ ideas about students’ ideal school living environment, the residence hall community, and their own personal living space. Data concerning satisfaction with the environment, demographics, and re-contracting for another year of residence hall living were also collected. Data were analyzed using Chi Square, t-tests, ANOVA, and regression techniques.

## **Findings**

Participants were asked the importance of 21 physical aspects of the school living environment. When results were compared for responses by each race/ethnicity, significant differences were found for 12 of the 21 aspects ( $p \leq .05$ ): internet connection, visual privacy, walls where items can be attached, control over the main door, control over room door, ability to personalize living space, ability to personalize room door, a place for quiet study, good lighting in the hallways, ability to bring personal

furniture into the room, availability of bandwidth for a computer, and level of services provided by the university housing department. Level of satisfaction for each of the physical aspects above were also recorded. When rating aspects of an “ideal living environment,” the majority in all groups rated an internet connection, a place for quiet study, and the ability to personalize their own space among the top five. People of color rated also level of services and visual privacy in the top five aspects of an “ideal environment” while White non-Hispanics rated control over leaving their doors open or closed and computer bandwidth in the top five aspects. The small sample size of the minority groups made it impossible to generalize findings to specific ethnicities.

Questions also addressed participants’ ideas concerning social aspects of the school community. Again, measures of importance and satisfaction suggested significant differences ( $p \leq .05$ ) among race/ethnicity groups. Differences were found among all 21 measures, which included aspects of respect, safety and security, privacy, support, and having friends and caring staff in the residence hall. In general, people of color were more concerned about “living in a just community” than White non-Hispanics. The small sample size made it impossible to differentiate among specific ethnic groups.

Personalization of the living environment and the display of personal items evidence a person’s emotional investment in the environment and feelings of belonging and security. Analysis of personalization and display variables also revealed significant differences among race/ethnic groups.

The ability to predict recontract decisions for a subsequent year of university residential life is of great interest to university housing administrators. Logistic regression revealed that significant predictors ( $p \leq .05$ ) for the recontracting decision were satisfaction with the community, satisfaction with the physical environment, and influences of friends and family. Findings suggest that persons of diverse races and ethnicities have differing perceptions of the university living environment. Findings of this study may be used to make a “healthy home” for people of all races by increasing satisfaction and retention in university housing.

**Table 1. Comparison of Race/Ethnicity**

	<b>Study Sample</b>		<b>Residence Hall Population</b>		<b>University Population</b>	
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
White, European American, Non-Hispanic	288	79.6	2074	75.8	12,795	75.9
American Indian, Alaskan Native	4	1.1	30	1.1	182	1.1
Black, African American, Non-Hispanic	4	1.1	51	1.9	216	1.3
Hispanic	9	2.5	100	3.7	531	3.2
Middle Eastern/North African			10	0.3	51	0.3
Asian American	28	7.7	280	10.2	1172	6.9
Pacific Islander	2	0.6	29	1.1	141	0.8
International Student	8	2.2	52	1.9	1076	6.4
Multiple Ethnicities and Others			22	0.8	160	0.9
Declined/No Response	19	5.2	86	3.1	538	3.2

*\*may not sum to 100% due to rounding*

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## **AN ANALYSIS OF HOMEOWNERSHIP AND TYPE OF DWELLING BY HOUSEHOLD COMPOSITION**

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### **Introduction**

Families and households are becoming increasingly complex in the U.S. Gone are the days when the typical nuclear family of the 1950s (mother, father, two children, and a dog) is the norm. Today we see blended, merged, multigenerational, and step-families, as well as friends living in the same household. This study assessed the relation of household composition and characteristics with each of two variables—tenure status and structural type of residence. Past research related to tenure status has considered household composition and characteristics only in a limited manner, and very little empirical work has addressed the relations of those variables with structure type. This study extended past research by considering more complicated household structures, as well as by utilizing characteristics not just of the householder.

Past research has largely ignored many complexities of household composition. In particular, there has been little empirical evidence to support the common assumption that household composition helps determine housing tenure. Mutchler (1998) found that poor children living with a grandparent or other elderly individual were more likely to live in an owned home than were other poor children, regardless of whether or not they also lived with their parent(s). More research is needed regarding tenure status and household composition.

Studies have found evidence that tenure status is related to various characteristics of the householder, but few researchers have considered characteristics of other household members. For example, U.S. householders who do not own their own homes are disproportionately Black and Hispanic; homeownership rates among non-Hispanic Whites, non-Hispanic Blacks, and Hispanics are 69.1%, 44.1%, and 42.8%, respectively (U.S. Census Bureau, 2002). The difference in homeownership rates between Whites and Blacks persists, even when income or other variables are controlled (Hamilton & Cogswell, 1997; Ratner, 1996). Additionally, householders who own their homes have higher average levels of education than those renting homes (Grabmeier, 2003). Other householder characteristics that have been found to relate to tenure status are immigrant status and employment type (Flippen, 2001; Painter, Yang, & Yu, 2003). Only a few household characteristics not directly related to the householder, such as the number of people in the household and the presence of children in the household, have been included in past research. However, such variables seem likely to be related to tenure status and dwelling type.

### **Methods**

Data for this research came from the 2003 American Housing Survey, a national random sample of over 50,000 homes and their residents that the U.S. Bureau of Census conducts on a regular basis for the U.S. Department of Housing and Urban Development (U.S. Department of Commerce and U.S. Department of Housing and Urban Development, 2004). All households with complete data on the variables included in the models were included in our sample.

Household composition was represented in the analysis by three variables. The first classified the primary family unit in each household into one of six categories—a man with no children, a woman with no children, a couple with no children, a couple with children, a man with children, and a woman with children. The other two variables indicated whether extended family members and unrelated individuals were present in the household, respectively. Explanatory variables included in the analysis were household income, age and education level of the householder of the primary family (given by the older age and the higher education level, respectively, when there were two adults), and the primary family's race and ethnicity (White, Black, Hispanic, Mixed/Other) and citizenship status. Control variables were MSA status and region of the country.

The focus of the research was to assess how well household composition and characteristics can explain 1) whether a home is owned or rented and 2) whether a home is single-family site-built, multifamily site-built, or manufactured. Logistic regression as a function of the independent variables described earlier was used for each analysis. The first model predicted homeownership status (owned or rented), and the second model was a multinomial logistic regression that predicted dwelling type (single-family site-built, multifamily site-built, or manufactured). In this study, “manufactured housing” included both HUD-code homes built after 1976 and older mobile homes.

### **Discussion**

Preliminary results indicate that household composition and characteristics are significantly related to both tenure status and structure type. Results about household composition are discussed here. Compared to families headed by single men without children, four of the other five family types had higher odds of living in owned housing. Additionally, households including extended family members and those including unrelated individuals both had higher odds of living in owned housing than did households without such members.

Separate models were used to explain structure type according to MSA classification. For instance, the results for the central city model indicate that, compared to families headed by single men or women without children, all other types of families had lower odds of living in both manufactured homes and multifamily site-built homes, as opposed to single-family site-built homes. Having a relative in the household also was associated with reduced odds of living in these two housing types. The rural model presents slightly different results. There was no difference in the odds of living in manufactured homes or multifamily site-built homes, compared to single-family site-built homes, between families headed by single men or women without children and families headed by single men with children. The presence of relatives in a household increased the odds of that household living in a manufactured home or a multifamily site-built home, as opposed to a single-family site-built home.

The findings suggest the association between household composition and tenure is significant, while that between household composition and housing type varies across metropolitan areas. Available housing types have a major impact on the home selection process. Due to zoning, manufactured homes are unavailable in many metropolitan areas. At the same time, rental units are unavailable in many rural areas. This study is especially relevant as communities are trying to find ways to house their workforce and are realizing the significance of a continuum of housing types from which consumers may choose.

### **Acknowledgement**

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## UNIVERSAL DESIGN FOR BETTER LIVING PROGRAM

Mary H. Yearns, Iowa State University

### Introduction

Many studies have shown that older adults want to stay in their own homes as long as possible, “aging in place,” yet few live in homes that were designed to accommodate their changing needs. The problem is especially challenging in rural counties where many homes were built before indoor plumbing was available.

Once rural electrification came to Iowa in the late 1940s and early 1950s, bathrooms could be installed. They were often tucked away under a stairs to the second floor, on an enclosed back porch, or in a converted pantry—spaces too small for easy access. Because of the aging housing stock in rural areas of the state, few homes have no-step entrances. Steps are a nuisance when carrying groceries or moving furniture and a barrier for people with mobility limitations. Disabled individuals can become prisoners in their own homes when steps prevent them from going outside to enjoy the yard or to take a trip to visit a friend.

### Program Description

Recognizing the challenge of helping older Iowans age in place, the Universal Design for Better Living (UDBL) program was created to show how the concept of *universal design* could be incorporated into products and features for the home environment that can facilitate aging in place. It is important to understand that *universal design* is not just another name for design for people with disabilities.

*Universal design* has “invisible” features that make homes appealing and convenient for all users—and also for people with disabilities. The overall objectives for the project were to help older Iowans who participate in universal design activities and programs to be better able to:

- understand the benefits of universal design features and equipment for their homes that would allow them to more easily “age in place,”
- identify ways to modify their homes to incorporate universal design features, such as usable bathrooms and more convenient kitchens, and
- select equipment and assistive devices with universal design features that make everyday tasks easier.

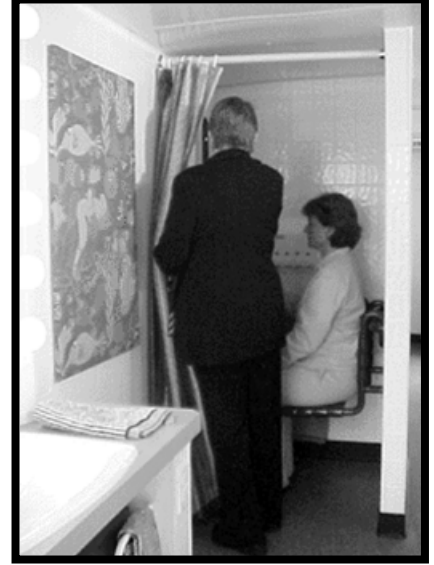
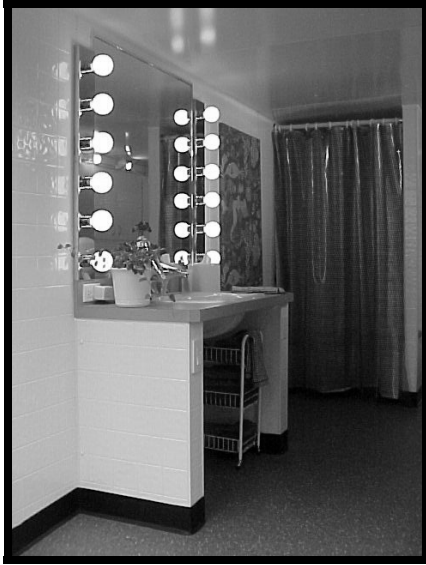
The UDBL project included several components: purchasing and installing universal design exhibits in two display trailers, assembling universal design demonstration kits, and preparing a teaching guide with five lessons and supporting resource materials.

Display Trailers. The two display trailers—one 24 feet long and the other 20 feet long—were transformed from empty shells to home-like environments with the installation of bathroom and kitchen equipment. The back door on each trailer folds down to create an entrance ramp for visitors (Figure 1).



Figure 1. Universal Design for Better Living Display Trailers

Two bathroom displays were installed inside the 24-foot long trailer, including an “essential bathroom” with universal design features that had extra floor space, a lavatory with open knee space underneath (Figure 2), a wall-hung toilet with red grab bars (Figure 3), and a small (3’ x 3’) shower (Figure 4). The second bathroom had accessible features specifically designed for wheelchair users, including a roll-in shower area (Figure 5) and an electronic toilet seat lifter (Figure 6).



**Figure 2. Lavatory with knee access    Figure 3. Wall-hung toilet; grab bars    Figure 4. Small transfer shower**



**Figure 5. Roll-in shower**



**Figure 6. Electronic toilet seat lifter**

The 20-foot display trailer was equipped with modular kitchen cabinets. It serves as a research laboratory to demonstrate prototypes of interchangeable cabinet components with universal design features. Figure 7 shows the cabinet units in a standard arrangement. Within five minutes—and the use of a screwdriver—the cabinets can be adapted to a work space for seated users (see Figure 8).



**Figure 7. Standard kitchen**



**Figure 8. Adapted kitchen**

Both display trailers were featured exhibits at the Governor’s Conference on Aging, May 16-17, 2004, in West Des Moines. Many conference participants toured the exhibits. ISU staff and students demonstrated the universal design features and equipment in the trailers. The trailers are now available for use at conferences and fairs throughout Iowa. Sponsoring groups will need to pay transportation costs to and from Ames. ISU staff will train volunteers to assist with staffing and demonstrating the exhibits. Details for scheduling the trailers for an event are provided at:

[www.extension.iastate.edu/universaldesign/resources/Lesson.5.pdf](http://www.extension.iastate.edu/universaldesign/resources/Lesson.5.pdf)

**Demonstration Kits.** Fifty sets of demonstration kits (“gadget kits”) were assembled. Nearly 60 assistive devices were labeled and packaged into two suitcases. The items are used to compare products with traditional design features with those that have universal design features. One suitcase holds tools that make garden, yard, and shop tasks easier. The second suitcase holds items for the kitchen, bathroom, living/sleeping areas, and home office. One demonstration kit was delivered to each Area Agency on Aging during the Governor’s Conference on Aging, May 2004. The remaining kits were distributed to Extension field offices for use in programming with older Iowans. For a list of the contents of each kit, including photos of each assistive device, see:

[www.extension.iastate.edu/universaldesign/resources/Contents.GadgetKits.pdf](http://www.extension.iastate.edu/universaldesign/resources/Contents.GadgetKits.pdf)

**Teaching Guide.** A teaching guide, “Universal Design for Better Living,” was prepared. The purpose of the guide is to show how the concept of universal design is being incorporated into products and features for the home environment that can facilitate aging in place. The guide provides detailed instructions for teaching five different lessons on various aspects of universal design. The lessons include audience participation activities—using items from the gadget kits—along with PowerPoint presentations, handouts, and evaluation forms for both participants and instructors. The teaching guide is included as a part of each demonstration kit.

During the Governor’s Conference on Aging, I taught a workshop on Universal Design. I used selected parts of several lessons to illustrate the contents of the teaching guide and the gadget kits. My intent was to encourage staff and volunteers from each Area Agency on Aging to teach lessons about universal design throughout their area of the state. Table 1 summarizes the title of each lesson, time-length of lesson, and activities. The entire contents of the lesson guide can be downloaded from the Web at: [www.extension.iastate.edu/universaldesign/research.html](http://www.extension.iastate.edu/universaldesign/research.html)



**Table 1. Lessons at a Glance**

<b>Lesson</b>	<b>Time</b>	<b>Activity</b>
Lesson 1: Universal Design: Better Tools for Everyday Tasks	32-47 minutes	Compare products with traditional features vs. those with universal design features
Lesson 2: The Easy-Visiting Home	37-52 minutes	Could your best friend visit your home?
Lesson 3: The Essential Bathroom	42-45 minutes	What is the minimum amount of space it takes to create a convenient bathroom?
Lesson 4: Update Your Home for a Lifetime of Living	42-52 minutes	What was the most useless birthday gift you ever received?
Lesson 5: Planning an Educational Event on Universal Design in Your Community		Using the bathroom or kitchen display trailers at a community event.

### **Conclusion**

The demonstration trailers, demonstration kits, and teaching guides were well received at the Governor's Conference on Aging. I have already confirmed four requests to schedule the display trailers for upcoming events during the next year and several additional events are pending. Because of the investment of the Iowa Department of Elder Affairs in supporting the development of these resource materials, I anticipate that Extension will have many more opportunities to help older Iowans learn about the benefits of universal design in the years to come.

## **THE FEASIBILITY OF AFFORDABLE HOUSING AND ENVIRONMENTAL PRESERVATION IN A TRANSFERABLE DEVELOPMENT RIGHTS PROGRAM**

Jorge H. Atilas, Jeffrey H. Dorfman, Jamie Baker Roskie, Jeffrey Boring, Nanette Nelson, and Beth Gavrilles, The University of Georgia Alliance for Quality Growth

### **Introduction**

The overall environmental health of a community is affected by urban planning and the distribution of housing developments versus the protection of the natural environment. The outdoor environment is also important to the health of a home and its occupants. Urban planners can utilize tools to achieve this goal, such as a Transferable Development Right (TDR). TDR is a planning technique for controlling development density that allows municipalities to redirect growth from one area of a community to another. TDRs can be used to preserve or conserve a wide range of resources – natural, scenic, agricultural, environmental, historical, and cultural – and promote affordable housing through density redistribution.

For instance, a TDR program can be used to preserve open, natural space and in turn allow a housing developer to increase the density on a track of land that could withstand a higher number of housing units, either single or multifamily. In theory, a TDR program can promote the use of such density bonuses for creating affordable homes by reducing the impact of land costs.

### **What is in a TDR Program?**

The act of transferring development rights requires a community to identify four elements:

1. a *sending area* to be protected such as land that is environmentally sensitive or containing historic properties,
2. a *receiving area* to be developed; potential receiving areas include virtually all undeveloped land zoned as residential, commercial, commercial rural, and employment office,
3. transferable credits that symbolize and quantify the development rights being sold, and
4. a procedure for carrying out the transaction (Pruetz, 1997).

A TDR program severs the right to develop a parcel from the land itself, but it leaves the land owner the other rights that came with the land, such as the right to exclude members of the public from the property. That land is then safeguarded with deed restrictions or conservation easements that secure the undeveloped state of the land in perpetuity. TDR programs operate on a completely voluntary basis; if TDR holders want to sell and developers want to purchase TDRs, the program will succeed. This study, funded by the Georgia Department of Community Affairs, was conducted to investigate the feasibility of preserving open space and creating affordable housing in Athens-Clarke County, Georgia, and understand the value of TDRs.

### **Methods and Findings**

*Value to the Sellers.* To analyze the economic value of undeveloped land in the county three approaches were utilized. First, the county property tax records were examined for land values of undeveloped tracts. This led to an average of \$7,000 per acre, with considerable variation based on location and site characteristics. The second approach involved gathering several developers and site engineers for a focus group discussion which confirmed that \$7,000/acre is a reasonable estimate of bare land values before site preparation and utility installation. Finally, a state-wide survey of land owners suggested that North Georgia land owners are willing to sell their development rights for slightly under \$6,000 per acre so that the land will be permanently protected from development (Lavigno et al., 2004). Together, these approaches confirm that for land owners to voluntarily sell their TDRs and achieve the community's land preservation goals, land owners should be able to negotiate a price in the range of \$6-8,000 per acre of land preserved.

*Value to the Buyers.* Developers purchase TDRs in order to receive a benefit as part of a project they are building in a receiving zone. Local developers interviewed were interested in standard density bonuses of more multifamily or single family units per acre in exchange for purchasing TDRs. They also wanted more flexible rules for residential development as part of mixed use developments (separation of uses, smaller setbacks, increased height limits, etc.). A reasonable guide for multifamily development is that each additional unit is worth approximately \$6,000. Thus, each acre of preserved land represented by a TDR might be worth 1.5-2 additional multifamily units or 0.5 additional single family units to ensure that the value to the developer exceeds the value to the landowner.

### **Conclusions**

A TDR program in Clarke County is feasible and has a reasonable chance of success, in preserving natural areas and creating affordable housing, if it is properly designed. TDRs must be awarded to land owners in the sending areas at a rate high enough to encourage a significant percentage of the land owners to sell the TDRs and preserve the land. Because this is a voluntary program, both land owners and developers must benefit from participating, or the program will fail.

There has been some concern that growth management programs in general can have adverse impacts on housing affordability. This study found that policies such as TDR programs do not generally help or hurt housing affordability. However, the bonuses conferred by the TDRs can also be designed to have an impact on the supply of affordable housing. For example, instead of a TDR being worth one extra multifamily unit per acre, it could be worth two units if the units are “affordable,” according to a standard formula for computing the maximum rental rate for affordable housing. Developers would still be free to use the TDR to build one additional unit without any checks on the eventual rental rates, but might be tempted to build more affordable housing under such a program. Similar ideas could be explored in the actual implementation of the TDR program if affordable housing and natural space preservation are deemed important goals of the TDR program.

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## **GLOBAL HOUSING CLASSROOM PROJECT: COLLABORATIVE LEARNING AND INFORMATION LITERACY**

Sue R. Crull and Diana D. Shonrock, Iowa State University

### **Introduction**

The purpose of this poster presentation is to illustrate a learning activity that used the rubrics of the revised Blooms' taxonomy by Anderson and Krathwohl (2001) and the American Library Association, Association of College and Research Libraries (2004) principles of information literacy. The course instructor and the library bibliographer worked together to develop this group project that integrated information literacy, critical thinking (Brookfield, 1987, 1995) and group collaboration (Matthews, 1996) into a learning experience to compare and contrast housing in the United States with housing in other countries. Viewing housing around the world provides a rich background for understanding U.S. housing. However, the structure and process of the four-week activity provided much more. In twelve 50-minute class periods, the group project provided students with an opportunity to develop interpersonal communication skills in a collaborative environment and to develop the ability to locate, evaluate, and use information effectively.

This project was in an upper level undergraduate housing class of 40 students. About half of the students knew each other but the other half did not know anyone in the class. This project introduced the topic of housing to non-housing majors (the majority of the class) and built a democratic inclusive classroom community.

### **Collaborative Learning**

The students were randomly placed into five groups. Each group randomly selected one of five pre-selected countries. Within each group students decided who would be writers and who would be presenters and what topic they would research for their country. The topics were geography and culture, population and health, housing conditions, and economy and housing finance. By adapting the reverse jigsaw group structure technique (Hedeen, 2003), students gained valuable experience in taking responsibility and sharing information within their groups and across groups. The technique involved three steps:

1. students worked in five county groups of 8 members to gather information on a country with two students (team of a writer and a presenter) within each group responsible for one topic,
2. four members of the group, one for each topic, stayed together and wrote a report on their country while the other four members split off from their group and joined topic specialists from the other groups to develop oral presentations comparing a topic across the countries, and
3. the writers posted a written report of their specific countries on WebCT and the presenters gave power-point comparative presentations in class on topical areas and posted them on WebCT.

By dividing the tasks, students pursued the project with their strengths and avoided anxiety associated with their less preferred genre, either writing or presenting. Project grids for each topic area were provided to guide the research.

### **Information Literacy**

Information literacy refers to a person's ability to recognize when information is needed and have the ability to locate, evaluate, and use information effectively. The popularity of the web plus refinement of web search engines ensure plenty of "hits" on virtually any topic, but students need to know how to select what "best" serves their information needs. This includes not only how to critically evaluate all these materials for reliability, authority, currency, and scholarly credibility, but also how to be aware of and use other information choices available to them in the form of research databases, scholarly print, and electronic materials. The library bibliographer worked directly with the instructor to provide information about research skills needed to build greater understanding of the organization of knowledge and to complete the project.

The Instruction Commons at Iowa State University is an information literacy program designed to integrate electronic resources and library research instruction into all levels of the curricula. The instructor and librarian reviewed various references and the librarian prepared a web site with links to on-line references and a listing of references in print for the project. Information was also included about APA style. The librarian presented the Instruction Commons web site to the students during one class period and responded to several e-mails from the students during the project. She also met with students in the library when needed and attended the in-class presentations. Basically, the instructor and librarian worked as a team to determine the educational goals of the project, to construct the rubrics for intended outcomes, and to assess the resultant written reports and in-class presentations.

### **Keeping on Task**

In order to keep the group on task, encourage group members to take responsibility, and to individualize the group experience, each student kept a mini-journal during class. The mini-journal on a legal size piece of paper was folded in half to represent a booklet. On the front cover the student wrote his/her name, the country and his/her role in the project. Four times during the four weeks, each student wrote on the inside of the booklet answering such questions as: what is your group's timeline and what are you expected to do and what information/data have you found about your topic area? The students were given points for journal entries and the instructor kept the journals. Journaling offered each student an opportunity to think about the process and what he/she had done and needed to do. By reading the journaling, the instructor was able to see learning outcomes and how well each group was working.

### **Evaluations**

The instructor and the librarian evaluated each written report and in-class presentation with established rubrics that were included in the project assignment. Each student also evaluated the experience anonymously. Students answered five questions on a 10-point scale with 1 as negative and 10 as positive. The class averaged 8.12 on satisfaction with studying global housing, 8.49 in understanding U.S. housing by comparing it to other countries, 8.15 for the collaborative learning experience, 8.49 for preparation of the report or presentation, and 8.44 in effectiveness of group processes. Students also added written comments on the evaluation. The instructor and librarian have worked together on this project for several years and plan to continue again next year incorporating minor suggestions from the students.

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Note: Specific items for the project are on Sue Crull's Web page, [www.public.iastate.edu/~suecrull/](http://www.public.iastate.edu/~suecrull/). Click on HDFS Courses and then go to HDFS 341, under Group Project: Housing Around the World.

## A SABBATICAL IN THE HOUSING INDUSTRY

Carla Earhart, Ball State University

### Purpose

The purpose of the sabbatical was to provide an opportunity to spend quality time working in a variety of professional settings in the residential property management industry during a one-semester leave of absence from the university. Knowledge, skills, and resources obtained during the sabbatical could then be used to enhance teaching and program administration. The planning, implementation, and outcomes of the sabbatical experience will be shared in this poster presentation.

### Professional Opportunities

Professional contacts through the Residential Property Management (RPM) Advisory Board were used to generate work sites for the sabbatical experience.

- **Flaherty and Collins Properties**, headquartered in Indianapolis, is a major developer of multi-family properties in Indiana. They also own and manage most of the apartment communities they develop. A period of one week was spent working at one of their mid-sized apartment communities – *Echo Ridge*, a brand new lease-up – located in Southeast Indianapolis near Wanamaker, Indiana. Additional opportunities included attendance at the firm’s presentation to the City of Indianapolis for a proposed development project; attendance at the groundbreaking ceremony of the firm’s new government-funded apartment community, which was conducted by HUD Director Melvin Martinez; and job shadowing at the F&C corporate headquarters with executives in accounting, government compliance, and development.
- **Mark III Management Company**, headquartered in Indianapolis, has a diverse portfolio of residential real estate. One week was spent working at *Elgin Manor*, a mid-sized government-assisted apartment community in Muncie, Indiana. It is fee-managed by Mark III for a redevelopment foundation in Indianapolis. Additional experiences with Mark III included shadowing the regional supervisor who oversees *Elgin Manor* and six other government-assisted apartment communities, as well as shadowing a regional supervisor who oversees some of Mark III’s conventional apartment communities.
- **Associated Estates Realty Corporation**, with headquarters near Cleveland, Ohio, is a Real Estate Investment Trust (REIT), a publicly held company with thousands of investors. A period of one week was spent working at *The Residence at White River*, a mid-sized apartment community with a large student population.
- **Barrett and Stokely, Inc.**, headquartered in Indianapolis, is a small, family-owned property management company. Opportunities included shadowing the property managers at two of their large downtown Indianapolis apartment communities – *Riley Towers* and *Canal Square* – for one day each. Additional opportunities including working with the Director of Downtown Marketing, and participating in a leasing seminar presented by the company.
- **Marquette Management Company** is a Midwest apartment management company headquartered near Chicago. Work experiences included one week at *Grand Reserve at Geist*, a small luxury apartment community in Indianapolis that is fee-managed for a Michigan pension fund.

### Major Work Experiences

These work experiences provided exposure to numerous learning opportunities.

- **Office procedures**, including business hours, staff meetings, dress codes, filing systems, recordkeeping, forms, phone log, conversation log, office arrangement, confidentiality, and chaos;
- **Human resource issues**, including position descriptions, performance appraisals, hiring, supervising, training, motivating, rewarding, reprimanding, and terminating employees;

- **Marketing/leasing**, including corporate outreach, shopping the competition, advertising, telephone technique, model apartments, guest cards, application process, resident screening, leasing techniques, resident retention, customer service, lease renewals, resident referrals, newsletter, corporate apartments, and marketing reports;
- **Government-Assisted Housing**, including resident eligibility, verification, recertification, relationship with law enforcement, Special Claims, TANF, child support, Indiana Quadel, and the HUD Handbook;
- **Resident issues**, including roommates, co-signers, parking, pet policy, move-in, move-out, unit transfers, rent payment, lease violations, suspicious behavior, drug paraphernalia, and vandalism;
- **Maintenance**, including service requests, purchase orders, punching units, turning units, painting, exterior maintenance, snow removal, and grounds keeping;
- **Vendors**, including print rental guides, online rental guides, snow removal contractors, landscaping, furniture rental, construction, maintenance supplies, laundry room, and carpet cleaning/restoration;
- **Construction** including new construction and capital improvements;
- **Risk Management**, including a resident injury;
- **Financial**, including accounting software, accounts payable, banking, monthly reports, and budgets;
- **Management styles**, including delegating, and local apartment community/corporate office relationship.

### Major Outcomes

Reflecting on these work experiences, the following are considered to be the major outcomes.

- **Overall RPM Program** – Curriculum revisions proposed for the coming year are right on target with the needs of the industry, but most new graduates will need more experience at entry-level positions before being ready for the rigors of being a property manager;
- **RPM Internship** – greater connection to the industry for placing interns, greater empathy for what interns experience in their first few days on the job, the need for a more comprehensive site supervisor evaluation, and the need for students to develop greater property knowledge early in the internship experience;
- **FCSMR 235 Intro to RPM and FCSMR 335 RPM Project** – recognition of the need for more involvement from industry and the need for additional course materials actually used in the industry;
- **Non-traditional Students** – recognition of the large number of current industry professionals who desire university-based continuing education, and the need to creatively meet the educational needs of this potential student population;
- **RPM Student Recruitment/Retention** – recognition that student recruitment/retention has similarities to recruiting/retaining apartment residents;
- **Academic Unit** – The Department of Family & Consumer Sciences is the right place for the RPM Program due to the multi-disciplinary holistic nature of both the property management industry and the FCS Department;
- **Collaboration** – potential for collaboration with apartment communities on academic service-learning projects, student organization service projects, other student projects, and paid employment; potential for involvement of other FCS faculty in research related to the property management industry.

### Conclusion

“Those who can, do; those who can’t, teach.” This is one of the most despised phrases in teaching. After spending a semester as a housing professional, there is a new appreciation for the work that is done by those in the property management industry. However, the author’s passion remains in the teaching profession. With the knowledge, skills, and resources obtained during this sabbatical, she has become a much better teacher and program administrator.

# **DESIGN AND BUILD OF AFFORDABLE UNIVERSALLY DESIGNED SPEC HOUSE CREATES PARTNERSHIP BETWEEN UNIVERSITY, CONTRACTOR, AND COMMUNITY**

Sandra C. Hartje, Seattle Pacific University

## **Universal Design Class Project**

The purpose of this poster is to present the documentation of a class project from FCS 3720 Universal Design, a class required during the junior year of the interior design program. The interior design program is within the Department of Family and Consumer Sciences at Seattle Pacific University. FCS 3720 Universal Design is taught by an adjunct faculty member, Susan Duncan, who is a design practitioner in the field of universal and accessible design.

During the winter quarter of 2005, the major class project involved the redesign of an existing residential floor plan that had been previously built by the North West Housing Guild, LLC. A primary objective of the North West Housing Guild, LLC is to increase their understanding of universal design and to incorporate it into their future home construction projects. The original floor plan for this project was a traditional 2000 square foot, three-bedroom, two-story plan. The task was to redesign the entire house using the principles of universal design, in addition to other specific design goals and criteria – focusing on good design for people of all ages, sizes, and abilities to the greatest extent possible. Additional square footage was added to the revised plan, increasing the square footage to 2640. The future homeowners are unknown.

The class was divided into nine design teams of three people each. Each team researched, designed, and documented the solutions to the specific area of the house they were assigned to redesign. The nine areas included: dining room, rear entry and backyard; kitchen; stairs, vertical circulation, and floor plan; master bedroom and bathroom; bedrooms #1 and #2 and laundry; great room, den and garage; bath and media room; and lighting. The project also included the specification of materials, finishes, appliances, etc. Two student project managers served as liaisons between the student groups and the instructor. Each design team presented their final project to the class at the end of the quarter. In attendance at the presentations were the contractor and a representative from the City of Seattle. The presentations were filmed for inclusion in a documentary.

## **Unique Features of the Project**

This project was characterized by several unique features. First, the house will actually be built according to the revised floor plans on a lot in Tukwila, Washington. Students worked closely with the architect and the contractor throughout the design process, which lasted the 10-week quarter, and then involvement with the project continued with three student interns on the project, Susan Duncan as the coordinator of the project, and Sandra C. Hartje as the official contact at Seattle Pacific University. Second, the completion date of the house is scheduled for early July, 2005, in order that the house is shown as part of a “home tour” for the N4A (National Association of Area Agencies on Aging) national conference:

***BOOMERS IN TRANSITION***  
***Coming of Age in 2006***  
**n4a's 30th Annual Conference**  
**Bellevue, Washington • July 9-13, 2005**

Third, the contractor required that the price of the house be affordable for the community, which was below \$300,000. Following the conference, the house will be available for sale. Fourth, the Area Plan for Aging and Disability Services (ADS), Human Services Department, City of Seattle, has identified universally designed housing as one of their goals. This will be the first known universally designed spec house built in the greater Seattle area and promoted by ADS. A documentary of the project will be filmed under the auspice of the City of Seattle's SeaTV station. The documentary, featuring the students and project from the universal design course, will be used for education and outreach to promote universal design in new residential construction in the Seattle area and in the state of Washington.



## **EXAMINING MINORITY HOMEOWNERSHIP IN GUILFORD COUNTY, NORTH CAROLINA**

Thessalenuere Hinnant-Bernard, North Carolina A&T State University

### **Introduction**

Housing is inextricably linked to everything we do. It plays a significant role in economic and societal welfare. Owning one's home has long been considered a part of the American Dream. Homeownership signifies the stability and prosperity of a homeowner's life. Studies have shown that increased homeownership within a community stabilizes and revitalizes that community (New York City, 2004). Therefore, homeownership is a vehicle for increasing a given area's economic diversity as well as its marketability. The presence of long-term investors builds optimism and hope, and most of all investment in a community (NEWPA, n.d.).

The United States homeownership rate reached a record of 69.2% in 2004, identifying more than 73 million homeowners. For the first time, the majority of minority-Americans own their home (Homeownership, n.d.). President Bush set a goal to increase the number of minority homeowners by 5.5 million families by the end of the decade. Minority homeowners constituted more than 40% of the net increase in homeowners between 1990 and 2000 (Simmons, 2001).

As a nation, we can be proud of these extraordinary accomplishments. Still, there is much work to be done toward offering equal opportunity for all Americans to achieve the dream of owning a home. For some, the American dream is a myth. There is a substantial gap in achieving homeownership across racial groups. Homeownership rates of Whites still lead those of African Americans (African American and Black are used interchangeably) and Hispanics by more than 25 percentage points (Gorelick, 1999).

In 1989 large disparities on mortgage lending between minority and non-minority neighborhoods refocused attention on possible racial discrimination in the home loan market (Schill & Wachter, 1993). Munnell, Tootell, Browne, and McEneaney (1996) found that Blacks and Hispanics were 60% more likely than Whites of identical characteristics to be refused a mortgage loan after controlling for all variables that underwriters take into account in approving or denying a loan.

Despite boasts by President Bush that Black homeownership rose to an all time high during his first term, many Black households are losing ground because of a growing wealth gap (Dawkins, 2004). Home equity is an important component of wealth or one's net worth. It is the single largest asset for most households in the United States. The buildup of home equity provides financial resources and security. Median home values adjusted for inflation nearly quadrupled over the 60-year period since the first housing census in 1940. The median value of single-family homes rose from \$30,600 in 1940 to \$119,600 in 2000, after adjusting for inflation (United States Census Bureau, n.d.).

Krivo and Kaufman (2004) found substantial and significant gaps in housing equity for Blacks and Hispanics compared with Whites, even after controlling for variables such as location, life-cycle, socioeconomic, and mortgage characteristics. Blacks and Hispanics uniformly receive less benefit from mortgage and housing characteristics than do whites. These findings lend credence to the burgeoning stratification perspective on wealth and housing inequality that acknowledges racial-ethnic stratification that advantage some groups (Krivo & Kaufman, 2004).

### **Purpose**

This research endeavor is the first phase of a local study examining minority homeownership in Guilford County, North Carolina. The purpose of this poster is to evaluate minority homeownership by examining lending patterns and housing attributes in relation to select demographic characteristics. This phase of the study provides background information and establishes a foundation necessary for making inferences.

### **Procedure**

Secondary data from the Home Mortgage Disclosure Act (HMDA) and the US Census Bureau are analyzed to identify the mortgage lending patterns and the median housing values of Guilford County census tracts. HMDA requires lenders to provide information on location, loan guarantee and purpose, loan amount, loan disposition, race, and gender. The census data provide demographic and housing characteristics such as minority population percentage, median household income, and median housing value.

### **Findings**

The HMDA data revealed that African Americans in Guilford County are denied home mortgages more than twice as often as White borrowers, 16.2% compared to 7.9% respectively when applying for a FHA, FSA/RHS, and VA home purchase loan. Over 34% of the Hispanic applicants were denied conventional home purchase loans compared to 15% of the White applicants. The disparity extended across all income levels. In nearly every income bracket African American applicants held the largest percentage of rejected applications. For example, African Americans were rejected 24.7% of the time when their income was less than 50% of the median income and 11.6% when their income was 100-119% of the median income. In 2003, tracts identified as high minority and low income held the highest percentage of rejected loan applications for all loan guarantees.

The census data provided very interesting information. Nationally, 24.9% of the population is comprised of minorities. The homeownership rate is 69.2% and the median household income is \$41,994. The median value of owner-occupied housing units is \$119,600. Based on the 2000 census, 27.9% of NC's population consists of minorities. The homeownership rate is 69.4% and the median household income is \$39,184. The median value of owner-occupied housing units is \$108,300. Locally (Guilford County), 35.5% of the population is made up of minorities. The homeownership rate is 62.7% and the median household income is \$42,618. The median value of owner-occupied housing units is \$116,900. These numbers were used to establish a standard of measure.

Of the 98 census tracts in Guilford County, 46 tracts (47%) were identified as high minority (above 35.5%). Only four of the 46 census tracts (9%) were identified as having a median housing value higher than \$116,900 and only three (7%) had median household incomes of more than \$42,618. Although nearly half of the census tracts are composed of minorities, there are only three census tracts that are comparable to that of the county.

### **Conclusions**

The benefits of homeownership extend beyond net worth statements and real estate valuations. Owning a home offers a sense of pride, security, and enfranchisement that is quintessential to a stake in the American Dream (Graves, 2003). Unfortunately for some, this proves to be a difficult task. Racial discrimination in mortgage lending occurs in different forms such as pre-application screening, unfair application and credit standards in the loan approval process, differing levels of assistance provided during the application process, discriminatory pricing practices, and overt bigotry (Courchane, Nebhut, and Nickerson, 2000).

This examination provides a brief look at minority homeownership in Guilford County, NC. As was evidenced by the patterns of the HMDA data disparities still exist. This glaring disparity can negatively impact the opportunity to go to good schools, to find jobs, and to accumulate home equity. Based on the HMDA data for Guilford County, the number of rejection rates for minorities more than doubled that of the counterparts in some instances.

The HMDA data also revealed another social/ economic issue. There are 98 census tracts in Guilford County and not one is characterized as high minority/ upper-income. The largest percentage of minorities in an upper-income tract is 26.2%. Why this is so has yet to be answered. The impact of what appears to be racial segregation is sure to be felt directly and indirectly by many.

The next phase of this study will focus on the housing value, quality, and equity of minority homeowners. This study will include the use of sophisticated statistical techniques to compare other HMDA variables and census data. According to Fannie Mae Chairman and CEO, Franklin D. Raines, three million more American homeowners, an additional \$760 billion in home equity value, is what could be gained by achieving racial equality in housing in America. All Americans and our economic systems can benefit from making homeownership tangible for all people.

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## SETTING HOUSING ISSUES ON THE POLICY AGENDA: A REVIEW OF LITERATURE

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Housing not only gives people shelter, but provides a safe haven for all household members. There are a myriad of issues that are associated with buying a home, such as the bundle of services provided in the area where the home is purchased. They are the schools your children will attend, community programs available, the price of utilities, etc. (Cisneros, Colton, Kemp, & Retsinas, 2004). Housing plays a large part in community development as well. It helps to improve the long-term social, economic, and environmental conditions in a community to create a better over-all quality of life for the members.

If housing is so well recognized as an important public and private good, why is it rarely given the recognition it warrants on the policy agenda? The Fannie Mae Foundation held a bipartisan panel in November of 2004 and stated that with homeownership up to 68% in the nation, politicians do not see housing as being in crisis. One problem proposed in this panel was that those affiliated with housing suffer from their own success, in that housing is not an issue because it is already in good shape (Fannie Mae, 2004).

There are a lot of things that consumer scientists can do to place housing issues on the public and policy agenda. This literature review will give specific recommendations to promote these issues.

### **Agenda Setting**

In a model developed by Robert Mayer (1991) there are two ways to look at “how do consumer issues (or housing issues) emerge from the much larger set of consumer problems?” (Mayer, 1991). The three most important agendas in this model are the media agenda, the public agenda, and the policy agenda. The media agenda is composed of the issues that are given high priority by the mass media. The public agenda consists of the issues that are most on the minds of the citizens. The policy agenda are the issues that are important to politicians and the government. The most common view for agenda setting is that scandals and tragedies cause media coverage, then it becomes a public concern then they receive attention of government policy makers (Mayer, 1991).

### **Media Coverage Agenda→ Public Agenda→ Policy Agenda**

A more effective model to use when studying agenda setting is that the policy agenda influences the public agenda that in turn influences the media coverage (Mayer, 1991).

### **Policy Agenda→ Public Agenda →Media Agenda**

The latter model is multidirectional and has a tendency to have a re-occurring cycle. In this cycle the public and media themselves cannot turn a consumer/housing problem into a consumer/housing issue. The policy agenda stands alone (Mayer, 1991).

Specific recommendations are:

#### **1. Educate policy makers and the public through lobbying and advocacy**

Lobbying and advocacy are the most fundamental skills that any consumer scientist can learn. The first step in this process is to analyze the issue and develop/propose a policy solution that can be presented to policy makers or other influential groups. The fine line between advocating and lobbying is hard to draw and see. The difference between lobbying and advocating is who benefits from the effort. “As an advocate, one tries to influence the government or political parties toward certain policies on behalf of a cause in order to benefit someone else rather than oneself or one’s interest group or professional organization” (McGregor, 1997, p.1). Advocacy is more likely to educate the public about issues. One can also become an advocate by being appointed to advisory boards, task forces, and working groups. Possibly the most important need associated with advocacy is the need to empower those affected by the problem which will encourage them to assume power for themselves (McGregor,

1997). Lobbying is also about influencing bureaucrats or legislators. Every interest group has a different strategy and depends on the resources the group has available (McGregor, 1997).

## **2. Create a bipartisan platform**

Kent Colton (Cisneros et al., 2004), stated that one problem with placing housing issues on the policy agenda is that it is often difficult to assemble the necessary players in the housing industry to create a bi-partisan platform. Each group within the housing industry has its own opinion and it is hard to get them to agree. One example of a successful bi-partisan platform was the 1993 Low-Income Housing Tax Credit, a program where government and private contractors were involved in the process.

## **3. Realize that action delivery systems are at the local level**

Nicolas Retsinas, Director of Harvard University's Joint Center for Housing Studies, states that we need to realize that all the action regarding housing is at the local level. Retsinas mentioned that devolution has given the federal government almost an excuse not to act (Fannie Mae, 2004). Ronald Reagan weakened the federal government's power by giving policy authority back to the states. But due to huge budget constraints it is almost impossible for the states to meet the demand of affordable housing (O'Connor & Sabato, 1993).

## **4. Tie housing issues to other important consumer issues**

Retsinas stated that housing as an issue does not make an agenda or a consensus on its own. Many times advocates have to tie the housing issues together such as: sprawl + education, or labor markets + demand for housing (Fannie Mae, 2004).

## **5. Think inside the box**

Cisneros et al. (2004) said that most people want housing officials to think outside the box, and that is exactly the opposite of what needs to be done. The box he refers to is the budget problems and these problems will not be solved by new federal programs. In fact, according to the Office of Business and Management (OMB) the 2005 FY budget for HUD was \$31.3 billion dollars (OMB, 2004). The 2006 FY budget for is \$28.5 billion, which represents an 11% decrease (OMB, 2005).

Housing plays an important part in all of our lives. Everyone involved with housing needs to raise their voice and become an advocate for the issues that concern them.

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## RESIDENTIAL CONSUMER ENERGY EDUCATION PROJECT

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The average U.S. family spends approximately \$1,500 a year on their home's utility bills (U.S. Environmental Protection Agency, 2005). As utility prices continue to climb, homeowners are becoming increasingly interested in finding ways to save money by making home energy improvements. Improving the energy efficiency of a home's envelope and appliances is one aspect of decreasing energy use. Estimates are that by implementing energy saving measures, home energy bills can be reduced from 10%-50% (U.S. Department of Energy, 2002). Occupant behavior is another. In a study on the affects of occupancy and behavior on residential energy use, researchers suggest that energy efficient behaviors can have a substantial influence on energy use and propose the importance of investigating initiatives focused on energy efficient behaviors (Seryak & Kissock, 2003). The project described in this poster is a partnership between North Carolina Cooperative Extension and the State Energy Office. Its goal is to reach residential energy consumers with information about the economic and environmental benefits of energy efficient practices and technologies. The program involves both educational outreach efforts and actual services designed to assist consumers in identifying potential energy issues in their own homes.

Five pilot counties were selected for initial implementation of this project. The counties were selected by the project director and funding agency based upon their geographical distribution across the state and their willingness and ability to conduct programming in the area of residential energy consumption.

Six consumer education workshops were conducted in March, April and May of 2005 in the five pilot counties. Each workshop was 2½ hours in length and covered the following topics: ten no cost/low cost energy savers, energy efficient appliances, energy efficient windows, insulation, heating and cooling equipment, and closed crawl spaces. A total of 201 individuals attended the workshops. Names and addresses of the participants were collected at each of the workshops.

In addition to receiving verbal information about energy efficiency at each workshop, each workshop participant also received a series of five fact sheets and a consumer energy conservation kit. The fact sheet and kits were designed to reinforce the information shared during the workshop. The fact sheets focused on Energy Audits, Programmable Thermostats, Energy Efficient Water Heating, Home Insulation and Caulking and Weather Stripping. Participants also received a small consumer energy conservation kit that included a compact fluorescent light bulb, a hot water temperature gauge, a low energy nightlight, a refrigerator thermometer, and a faucet aerator.

Approximately four weeks after receiving the energy kit, participants received a follow up questionnaire to determine whether or not they had installed or used any of the items in the consumer energy conservation kit. The questionnaire reminded them of the workshop they had attended and of the kit they received. It also included a wall gasket insulator as an incentive to complete the questionnaire. Participants were asked to return the survey within two weeks of receiving it. Not all workshop participants were sent a questionnaire, as some participants were Cooperative Extension County Agents and some participants were from a local senior center. Both of these groups were purposely left out of this initial follow-up questionnaire and will be queried about their use of the kit at a later date. In all, a total of 75 questionnaires were sent, of those 15 were returned with insufficient addresses and 41 completed surveys were returned. A total of 73% of the respondents had installed their fluorescent light bulb, 68% had installed their bathroom aerator and 80% had plugged in their nightlight.

In addition, participants were asked whether they had made any changes to their home as a result of the workshop. Responses to this open ended question included: installed wall gaskets; adjusted hot water temperature; changed lifestyle including adjusted thermostat, turned off unnecessary lights, cleaned HVAC filters; added insulation in attic; and weather stripping and sealing air openings around windows.

In addition to the consumer kits, workshop participants were also given the opportunity to have a complete home energy audit conducted on their home, subsidized by the project. The value of each audit was approximately \$300, and participants were asked to pay \$10 in order to insure that they would be

available during the time the audit was scheduled. A total of 42 audits were completed. Certified home energy raters performed each audit. Audits consisted of a blower door and duct blaster test to determine duct leakage, a review of the home's insulation and an inspection of the mechanical equipment. After the audit, each homeowner received a written report summarizing the audit findings. The report includes a priority listing of energy efficient improvements, first prioritizing low cost/no cost items and then prioritizing higher cost items.

Audit findings revealed that on average, the certified home energy rater recommended nine energy saving measures to each homeowner. These included no cost/low cost improvements such as cleaning refrigerator coils, replacing air filters, insulating hot water pipes and insulating the attic pull down stairs. Higher cost improvements included having the home's duct work professionally sealed, buying Energy Star appliances, adding attic insulation and replacing HVAC equipment. In summary, the blower door test measured 55% of the homes as leaky, 17% of the homes as being average in terms of leakiness and 14% of the homes as tight. Noted causes of house leakiness included: duct system – air holes, no visible insulation and loss of mastic; access doors; electrical outlet penetrations, inefficient windows; and sub floors.

As this pilot program progresses additional information will be gathered to determine whether or not participants implemented the energy audit recommendations and what behaviors individuals are willing to adjust or participate in to save energy. The program will also focus on barriers and incentives to implementing residential energy saving technologies.

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## **SECOND EMPIRE ARCHITECTURE: THE HEALTHY HOME OF THE 19<sup>th</sup> CENTURY**

Jean Memken and Amy Raber, Illinois State University

Households living during the Victorian era were concerned not only about “keeping up with the Joneses,” but also creating a healthy environment for their families. They built elaborate and spacious homes in a variety of styles. While the Queen Anne and Italianate styles are prevalent in the Midwest, one not so common Victorian style that has a presence in many communities throughout Central Illinois is the Second Empire style. Second Empire was quite profound throughout Europe between the 1850s to the 1870s. However, how the style made its way to the Midwest was not readily known. Architects and designers working in historic preservation, as well as housing educators teaching historic architecture, could benefit by better understanding the migration of this style into American communities and its historical significance as the first “modern” home.

The purpose of this research was to document the origination of Second Empire housing in the Midwest, and describe the characteristics of the style that were more commonly used in residential architecture. In addition, an objective of this research was to determine how families came to choose this style for their homes.

### **Origin of the Second Empire Style**

When Louis Napoleon III came into power in 1852, he implemented his grand ideas for the new future of Paris (Kain, 1978). Napoleon’s main focus during the Second Empire was on the urban planning. “Much of the distinctive street pattern of present-day Paris, Lyon and Marseille dates from the 1850s and 1860s, while regional capitals and dozens of small towns in provincial France were provided with new streets, town halls, museums, railway stations or public baths. Napoleon III had a long established interest in improving the working and living conditions of ordinary people” (Kain, 1978, p. 236). He was very interested in improving the quality of life of those under him, along with beautifying his country. Second Empire architecture was his attempt to create aesthetic, as well as healthy, housing.

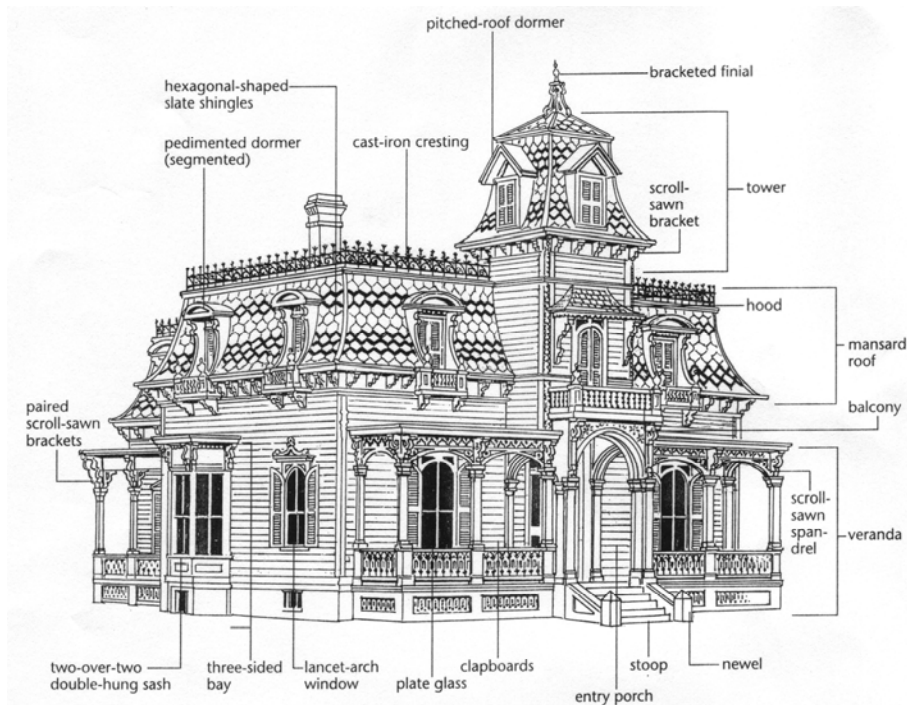
### **Characteristics of Second Empire Housing**

Second Empire housing is similar to other Victorian styles in size and ornamentation; however, it was developed with its own unique characteristics. Carley (1994) stated that the skyline of Paris, which was overhauled during the period of 1852-70 by Napoleon III, inspired the Second Empire style. Generally, these structures are quite tall, boldly modeled, and have a three dimensional effect, as shown in Figure 1. The predominant feature of Second Empire housing is a high mansard roof. Dormer windows are also prevalent. In addition, chimneys are an important element of the Second Empire style, and usually include classical details. In larger homes, porches running along the front and sides of the home, each with their own roofline is also present (Whiffen, 1992).

### **Methods**

The researchers investigated numerous primary and secondary sources regarding housing built during the mid-1800s in Central Illinois. From this research, 13 homes were identified that were built in the Second Empire style. A field study was used to investigate the homes that were still standing and historical research design was used to determine the origin of the housing design and daily activities that went on in the homes.





**Figure 1. Second Empire Architectural Styled Building (Carley, 1994, p. 148)**

### Analysis

A majority of the homeowners investigated in this study had ties to the East Coast. Many had migrated from New England states where Second Empire housing was prevalent. Although no evidence was found that this was the source of their interest in the design, it might have inspired them to build Second Empire homes. Likewise, many of the families were interconnected through professions, social organizations, or business affiliations. Therefore, they might have communicated among themselves about their housing design. As all the houses were built within a 10-year span, it is quite likely that families living in the same community would have observed each other's homes. In addition, the researchers found Midwest architectural publications showing this style that might have helped the style gain popularity.

In spite of all these homes being built in the Second Empire style, differences were found among the three communities. Those homes built in Bloomington and Peoria exhibited many more of the Second Empire features including the mansard roof, a tower, dormer windows, iron grill cresting, porches, and bracketed finials, whereas homes in Champaign-Urbana were much less likely to exhibit these characteristics.

The mid-1800s was a time of intense interest in consumerism and modernism. All of the homes in this study exhibited the homeowners' commitment to achieving the very best home money could buy. The homes investigated in this study were some of the first homes in the Midwest to have indoor plumbing, so family members could more easily practice good hygiene. They had modern kitchens with refrigeration techniques that kept food safe. The prevalence of large windows on all sides of the home brought in sunlight, and allowed for good cross ventilation, both contributing to good indoor air quality and a healthy environment. In all, these Second Empire homes and their other Victorian counterparts, were the first attempt by American architects to create not only beautiful, but also healthy housing.

### **Summary**

This study appears to be the first of its kind in Central Illinois. Homeowners in this study had access to the Second Empire design from their East Coast connections and architectural publications. This research revealed that the homeowners of these Second Empire homes were highly regarded citizens, and their homes symbolized their stature in the community where they resided. Their housing was precisely constructed, making them prominent landmarks in Central Illinois.

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## THE OLD ORDER AMISH HOUSE: A HEALTHY HOME?

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### Introduction

The Old Order Amish is a unique group within today's society. The basic premise for Old Order Amish housing is generally that it is consistent with functional healthy simplicity that pervades the Amish lifestyle and is dictated by traditions and basic beliefs, but can vary by religious leaders' discretions. Old Order Amish are considered a pre-industrial, labor intensive, production-based society that does not embrace the ethic of consumer consumption. Thus, a question to address is whether Amish housing is an example of a healthy home that promotes family well-being physically and psychologically? The research for this project is based primarily on the Old Order Amish settlement in Arthur, Illinois, but basic similarities exist among the other 350 geographical settlements in the U.S. and Canada, covering 28 states and Ontario. Over 1400 Church Districts and 180,000 Old Order Amish are included in these settlements, with 60% residing in Ohio, Pennsylvania, and Indiana (Kraball, 2005).

Beliefs of Old Order Amish are based on the practice of their forefathers and the *Ordnung* (German word meaning rules and order), a sacred order that unites members but separates them from the world. Amish traditions and basic beliefs emphasize that members be homogenous rather than persons who are recognized for their individual achievements. They have four basic social groups that differentiate them as a group, specifically the

1. *Household unit* (two to three generation families),
2. *Settlement* (Amish families in contiguous relationships),
3. *Church District* (the ceremonial unit), and
4. *Various affiliations* (church districts that share the same discipline and communion together).

Old Order Amish value simplicity and self-denial over comfort, convenience, and leisure. Also the conventional marks of social status such as education, income, occupation, and consumer goods are less evident in Amish society (Kraball, 2001). The Old Order Amish lifespan usually consists of

1. Being born, often at home (average of seven children per family),
2. Schooling in separate school houses or public schools,
3. Socializing and worshipping (often in home),
4. Courting (in home),
5. Wedding usually held in home or homestead (spouse usually within 20 mile radius),
6. Establishing a residence (never moving) in the rural area (premise of Amish belief),
7. Parenting (average seven children) and often changing houses with older generation as family size increases,
8. Aging and living in Dawdy Haus attached to primary house or located on homestead, and
9. Burying (funeral at home with 400 to 600 people being fed) in a local cemetery.

Amish women's traditional roles include laundry, yard work, cooking, gardening, canning food, sewing, and sometimes helping with barn chores and fieldwork. This lifestyle requires large houses with large rooms, a usual characteristic of Amish houses.

### Analysis of Amish Housing

These beliefs and practices provide the foundation for Old Order Amish families, church, and culture, and in turn, influence the physical and psychological aspects of housing and the family. First, since they value simplicity and self-denial over comfort and self-gratification, their housing environment is designed with functional priorities. These basics are observed in the kitchens, considered the focus of family life. Kitchens accommodate a large table and backless benches so all sit and converse over simple meals, thus encouraging viable family interaction that is supported by the absence of technology "noise." Since they often "cook from scratch" kitchens usually have generous counters with crafted wood cabinets

built into the stud walls with their own hands. In some communities, the wood is stained dark in that a light finish would show wood grain and “decoration.”

Three of the conventional indicators of banned social status – income, occupation, and consumer goods – are evident in Old Order Amish housing. They do not place emphasis on consumer goods such as electronics, computers, or other gadget trends, but rather choose basic kitchen technology and goods that support integrative family/household functions. Amish religion bans technology that connects houses with the outside world such as electricity or telephone lines. This promotes nuclear family life in that telephones are allowed on the outside but not within the perimeters of the house. Limited lighting draws family members to a central place for reading, discussion, and games. Their consumer consumption does not promote obsolescence, and thus theirs is a more sustainable lifestyle/environment. Amish ethics dictate they will work with their hands and often the house may become a part of their occupation and entrepreneurship for selling meals and other homemade productivity in homes and elsewhere to tourists (bakery and jam items, quilts, rugs, baskets, and other dry goods). Amish men also maintain their work occupations at the homestead. In addition, since the Amish are regarded as a homogenous group, their income cannot be used in or outside the white painted house to set them apart from the others through unacceptable adornments.

The design and layout of the Amish house supports the above cited traditional women’s roles by providing space for a wringer washer, drying racks around stoves (no central heat) for clothes, canned food storage areas, and a sewing machine. The woman has charge of the house, an authority her husband gives her. The house is also designed to hold their church services. Most have movable folding interior walls/doors or hinged ones that swing up and hook to ceilings.

### **Summary of Findings**

The Amish house design is based on religious beliefs with the integration of family life as the primary focus. Houses are considered functional for church services, the entire lifespan, leisure activities, and even to accommodate a funeral. Functional, simplistic, environmentally sustainable housing design to last a life span and support regular and daily basic functions with no planned obsolescence certainly is germane to the question of whether the Old Order Amish Home is an example of a healthy home

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