



**PROCEEDINGS OF THE 2022 ANNUAL CONFERENCE OF THE  
HOUSING EDUCATION AND RESEARCH ASSOCIATION**

CONFERENCE THEME:  
***Housing, the Gateway to Well-Being***

October 16 – 18, 2022  
The Cheshire Hotel  
St. Louis, MO USA

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## **Korean Older Adults' Intention to Choose Home Modifications: A Case Study of Busan Residents**

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**Keywords:** Home modification, Theory of Planned Behavior, Korean older adults, Knowledge, Perceived benefits

This study aimed to better understand the intention of older (65+) Korean adults to choose home modifications for accessible housing within the conceptual framework of the theory of planned behavior (TPB) (Ajzen, 1991). TPB has three core constructs - attitude, subjective norm, and perceived behavioral control—which shape an individual's behavioral intention and, finally, actual behaviors. This theory has been widely applied for understanding the behavioral intention to predict behaviors in diverse fields. Furthermore, various attempts to increase its predictive power relating to specific behavioral intentions were undertaken through extension of the model by incorporating additional constructs (Montano & Kasprzyk, 2015), such as beliefs (French & Cooke, 2012) or knowledge (Yang, 2016). We posited older adults' home modification behavior for accessible housing as a health-related behavior. To better understand their home modification intention, our proposed model included three additional constructs (knowledge of accessible housing, perceived benefits, and perceived threats) which were revealed in previous research as a significant factor for health-related behaviors (e.g., Cook, 2018; Suki, 2013). To this end, we developed relevant hypotheses to investigate the direct association of additional constructs (knowledge, perceived benefits, and perceived threats) to the home modification intention and indirect associations to the behavioral intention through the TPB constructs (attitude, subjective norm, and perceived behavioral control).

Regarding measurement, additional constructs (perceived benefit with 3 items, perceived threats with 4 items, and knowledge with 4 items) were measured with modified items developed from relevant studies (Deshpande, Basil, & Basil, 2009; Flynn, & Goldsmith, 1999). All TPB components (attitude with 3 items, subjective norm with 3 items, and perceived behavioral control with 3 items) including behavioral intention (3 items) were measured with adapted items from previous studies (Ajzen, 1991; Conner, Norman, & Bell, 2002). Each item was measured on a 7-point Likert scale. Mean scores for each variable were calculated for the path analysis.

The target population was people aged 65 and older living in their homes (non-facilities) in Busan, Korea. We collected data through a face-to-face survey by a professional survey company

during December 2020. Survey participants were randomly selected by a survey company based on age and living situation criteria. Surveys with missing responses were discarded at the initial data collection stage. A total of 400 responses were used for this study. For the simultaneous investigation of causal effects among multiple constructs, path analysis was employed to test the proposed research model.

Significantly positive direct associations between the TPB constructs to the intention were found. These findings indicate that older Koreans' intention to make home modifications for accessible housing were explained within the TPB conceptual framework. In terms of hypothesized relationships of three additional constructs directly associated with the intention in the model, only knowledge was revealed as significant. However, all constructs included in the model showed positive significant relationships to the intention to make home modifications through the original TPB constructs. Specifically, perceived benefits showed significant associations with the attitude and subjective norm; perceived threats with the subjective norm; and knowledge with the perceived behavioral control.

Considering overall benefits and positive impacts of accessible residential environment on the well-being for older adults, such as relieving stress of falls or successfully completing activities of daily living (Keglovits & Stark, 2020), the findings from this study can be utilized as strategies when to encourage home modifications. For example, providing easily accessible learning opportunities for older adults for not only the benefits but also barriers of home modifications would contribute to building their positive attitude toward home modifications. This study is meaningful as a case study in investigating the intention of home modifications of the elderly living in Busan, Korea, however, its limitation exists in terms of generalizing the study results to the national older population due to the sampling. Further investigation regarding the implications and interpretations of the findings with this specific sample will be discussed.

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### **Acknowledgment**

*This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019R1F1A1054133).*

## **Does Population Size Matter? Analyzing Municipalities Permitting Affordable Housing Solutions**

Katrin B. Anacker, Professor, George Mason University

**Keywords:** Affordable Housing, ADUs, tiny homes, mobile homes, RV homes

Over the past several decades, much research has been published about local governments that have dealt with the NIMBY (Not in My Backyard) movement, especially in the context of multifamily housing (Fischel, 2001; Scally, 2012). Some researchers argue that jurisdictional population size matters, as local governments of large municipalities are influenced by politically active constituencies and interest groups whereas local governments of small municipalities are influenced by local homeowners (Fischel, 2001, 2008, 2015; Lewis, 2004). Limited research has examined the difference of jurisdictional population size of local governments that have permitted innovative affordable housing solutions, i.e., Accessory Dwelling Units (ADUs), tiny homes, mobile

homes, and Recreational Vehicle (RV) homes. The goal of this study is to analyze demographic, socioeconomic, housing, and regional variation among jurisdictions that permit ADUs, tiny, mobile, and recreational vehicle (RV) homes, differentiating by population size, i.e., (a) 100,000, (b) 50,000, (c) 25,000, and (d) 10,000 people. The data sets used for this study are the National Longitudinal Land Use Survey (NLLUS), conducted by the Urban Institute in collaboration with Rolf Pendall in 2019 (Urban Institute, n.d.) and the American Community Survey (ACS) 2015-2019 (5-year averages), conducted by the U.S. Bureau of the Census (U.S. Bureau of the Census, n.d.a). I utilize the following variables:

- Proportion of Whites of Total Population;
- Proportion of Blacks of Total Population;
- Proportion of Asians of Total Population;
- Proportion of Hispanics/Latinos of Total Population;
- Proportion of Households with One Person (of All Households);
- Proportion of Households with Two People (of All Households);
- Proportion of Households with Three People (of All Households);
- Proportion of Households with Four or More People (of All Households);
- Median Household Income;
- Proportion of Housing Units Owner Occupied;
- Year Median Housing Unit Built;
- Median Value Housing Unit (of Occupied Housing Units);
- Proportion of Detached Single-family Structures (of All Structures);
- Proportion of Attached Single-family Structures (of All Structures);
- Proportion of Structures with Two Units (of All Structures);
- Proportion of Structures with Three or Four Units (of All Structures);
- Proportion of Structures with Five to Nine Units (of All Structures);
- Proportion of Structures with 10 to 19 Units (of All Structures);
- Proportion of Structures with 20 to 49 Units (of All Structures);
- Proportion of Structures with 50 or More Units (of All Structures);
- Census Region Northeast;
- Census Region Midwest;
- Census Region South; and
- Census Region West.

I utilize descriptive statistics and t-tests.

Preliminary results indicate that a higher proportion of large jurisdictions allows ADUs,



mobile homes, tiny homes, and RV homes and that a lower proportion of small jurisdictions allows mobile homes, ADUs, and tiny and RV homes. Large jurisdictions that permit innovative affordable housing solutions are more racially and ethnically diverse, have lower median incomes and a lower homeownership rate, have a modest proportion of multifamily housing, and are disproportionately in Census region West. Small jurisdictions that allow innovative affordable housing solutions are less racially and ethnically diverse, have a modest proportion of small households, have lower median incomes and a lower homeownership rate and lower home values and are disproportionately in Census regions Northeast and Midwest. The paper will conclude with policy recommendations.

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## **Community Transformation and Residential Revitalization – Critical Environmental Interfacing, Ecosystem Resourcing, and Equitable Community Development**

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HERA 2022 Refereed Abstracts

**Keywords:** Critical Environmentalism, Community Development, Urban Housing, Ecosystem Services, Environmental Design, and Urban Design

This research and design project collaborates interdisciplinary efforts to develop multi-dimensional revitalization and redevelopment strategies for urban and community settings within the St. Louis metro-east areas of Brooklyn, Venice, and Madison (VBM), Illinois. The work collaboratively engages community leaders and residents, interdisciplinary Southern Illinois University System teams, graduate students, and partners from regional community colleges as key stakeholders to negotiate complex planning challenges toward for sustainable community development for a regional urban setting, while also advancing university efforts for transformative public interest design research and graduate education.

While maintaining rich cultural and historic bearings, the subject communities, as with many at-risk regional communities, suffer from socio-cultural, economic, and environmental disparities, mixed with repeated discriminating planning practices and ecological crises partially brought on by other systemically co-effective development, thus compounding already contentious issues. Current planning studies indicate great potential for new urban satellites, eco-towns, and environmentally-oriented developments within greenway and floodway revitalization areas in conjunction with strategic economic planning and metropolitan urban growth (Oswald & Baccini, 2003; Leynseele & Bontje, 2019). Being in close proximity to downtown amenities and employment opportunities, revitalization of VMB could foster attractive urban residential community developments, while also fostering systemic environmental development to the betterment of the region as a whole.

As embedded case-study research (Scholz & Tietje, 2002; Yin, 1994) the systemic scales of inquiry first address how typically marginalized communities can equivalently develop and maintain quality living conditions alongside other metropolitan area communities; second, how ecosystems and natural communities correspond at varying scales to support and build quality amenities; and third, how to build durable living-system relations to prevent detrimental environmental outcomes and foster flourishing community productivity. Centered on *Critical Environmentalist* (Anz, 2010; Van Buren, 1995) inquiry and what varying agents constitute as beneficial communities, multilevel attributes are acknowledged as trans-operative components of continually revitalizing, interconnecting, and co-supporting structural networks and living systems. The documentation builds upon progressive engagement practices for place-specific development that are applicable within pedagogical and community-based settings, but also critical practices interfacing multiple contexts for advancing urban development in productive

correspondence with cultural assets, socio-economic revitalization, environmental restoration, ecological service-systems strategies, and resilience planning (Mugerauer, 1994). The overall strategic planning then focusses on corresponding multi-scaled residential housing and community regeneration proposals for the township of Venice by example, which are now being implemented in varying stages.

Working with regional leaders, the proposals also anticipate government-funded infrastructure upgrade initiatives, while supplying environmentally-sound strategies for quality community development. Key to long-term success, supportive areas of interest include connective movement systems, corridors and greenways, connections to employment opportunities, community centers, education and workforce training facilities, locally operated retail amenities, community managed public green space, natural recreation and flood control areas. Restored natural infrastructures and eco-system resource capacities build resilience to flooding, while enhancing current grassroots efforts to promote healthy communities and local economy by way of shared community gardens and urban farms to cultivate increased fresh food capacities and local farmer markets. Outcomes include master planning scenarios, multi-scaled housing typologies, supportive amenities, environmental interfacing, as well as recommended strategic amendments to existing planning documents that communities can further cultivate for long-term developmental well-being.

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### **Learning to Reduce Indoor Asthma and Allergy Triggers: Does a Webinar Make a Difference? (poster presentation)**

Axton Betz-Hamilton, PhD, AFC(r), Assistant Professor, South Dakota State University; & Kathryn Morrison, Assistant Professor, South Dakota State University

**Keywords:** college students, indoor air quality, National Healthy Homes Partnership, online learning, student health

#### **Background**

The Environmental Protection Agency (EPA) has listed indoor air pollution among the top five environmental risks to public health (EPA, 2022a). Exposure to indoor air pollution can have both short-term and long-term effects on health including coughing, eye irritation, headaches, allergic reactions, and aggravated asthma and/or other respiratory illnesses (EPA, 2022b).

U.S. residents spend 90% of their time indoors (Klepeis, et al., 2001). College students follow similar patterns as the overall population. The Bureau of Labor Statistics (2016) estimated that full-time college students spend two-thirds of the day indoors.

In 2019, 9.9% of adults ages 20-24 in the U.S. reported having asthma (National Center for Environmental Health, 2019). Education regarding asthma is largely targeted around what to do during an attack, not on prevention.

Given how much time college students spend indoors, along with the limited education available on how to minimize indoor asthma and allergy triggers, this study sought to answer the research question, "Does participation in the National Healthy Homes Partnership webinar on asthma and allergies change college students' knowledge regarding indoor asthma and allergy triggers?"

#### **Methods**

Students attending public higher education institutions in South Dakota were invited to participate in a 30-minute webinar focused on asthma and allergy triggers in the home with both live and on-demand options. This webinar was conducted using the National Healthy Homes Partnership

materials on asthma and allergies. Participants were asked to complete a pre-test prior to viewing the webinar and two post-tests. The first post-test was given four weeks after the webinar and the second post-test was given 10 weeks after viewing the webinar. A four-week interval for administering a post-test has been used in prior studies that utilized an educational intervention (e.g., Cardenas & Ross, 2010; Windt, et al., 2015). The pre-test and post-tests were comprised of 19 questions. Five questions were designed to assess students' knowledge of asthma and allergy triggers in the home environment, seven assessed students' health behaviors, and seven gathered demographic information. All response options were nominal or ordinal in nature.

### **Preliminary Results**

Pre-test ( $n = 80$ ) and Week 4 post-test ( $n = 52$ ) data were used for this study. The sample consisted of primarily White ( $n = 53$ ) and female ( $n = 49$ ) students. Responses to the five questions that focused on students' knowledge of asthma and allergy triggers in the home environment were compared by conducting a series of cross-tabulations due to the nominal nature of the response options. Fisher's Exact Test was used to measure significance. Using a  $p$ -value of .10, only one result was statistically significant, which was difference in pre- and post-test responses to the question "Indoor humidity levels should be kept between\_\_% and \_\_%" ( $p = .086$ ). With the addition of age to the cross-tabulation, Fisher's Exact Test yielded a  $p$ -value of .007 for those aged 21.

### **Discussion**

This study provides preliminary findings resulting from college students' participation in a webinar that used the allergies and asthma lesson available from the National Healthy Homes Partnership. Preliminary findings reveal that those aged 21 are more likely to indicate they have learned about the impact of indoor humidity on controlling dust mites, which suggests the webinar made a difference for this specific age group. Additional work will explore students' health behaviors before and after viewing the webinar and their potential relationship to knowledge of indoor asthma and allergy triggers.

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### **Bridging the Intergenerational Communication Gap: A Case Study**

Dr. Randall A. Cantrell, Associate Professor, Housing & Community Development, University of Florida, College of Agriculture and Life Sciences, Department of Family, Youth and Community Sciences; Ms. Katherine N. Vasquez, Doctoral Student, University of Minnesota, College of Education, Family Social Science-Family Science Specialization; Dr. Larry Forthun, Associate Professor, Prevention Science University of Florida, College of Agriculture and Life Sciences, Department of Family, Youth and Community Sciences; Ms. Caroline De Paula, Undergraduate Student; University of Florida

**Keywords:** Housing, Aging-in-place, elderly, youth, empathy

**This Presentation's Purpose** is to show how one group of younger people (18-22 years old) found themselves compelled by the situation of an older couple in their early 80s. This large age differential between generations is referred to as the intergenerational gap. Some reasons this gap causes such disparity between generations can be attributed to issues such as use of technology and electronic screen time. Thus, the younger generation's lifestyles can sometimes lead to a mindset based more on instant gratification rather than hours of work; whereas, the older generation's mindset often is based more on a "traditional" work ethic (Newman et al, 2008). Though these characterizations are generalizations of both generation types and in no way capture the entirety of either, this case study shows one scenario of how the intergenerational communication gap was bridged substantially between these two generation types.

**The Objective** is to show one situation in which two generations, separated by nearly 60 years in age, was able to find a way not only engage, but do so with a high degree of intensity and passion. The importance of understanding the specifics of this engagement is that it dealt with communication regarding aging-in-place, which is a vital area for the success of families, housing and communities. .

**Qualitative Methodology** was used. Seven students (of the 8 that were in the class) comprised the sample, and seven open-ended questions were asked of each of them. Questions covered general themes dealing with issues such as aging, life, health and experiences, mostly with respect to older adults. Each response was approximately a paragraph long, resulting in about 50 paragraph responses. Each response was labeled with a theme, which was collectively used to develop a theme for each of the seven participants. Each of the seven participants' themes was used to develop an "omnibus" theme for the entire study. In each iteration, the resultant theme was a narrower theme summarizing the previous themes.

**The Procedures** were to provide a questionnaire to consenting members from a class of undergraduates, 18-22 years old, so they could respond to how they felt the material being studied was prompting them to specifically rethink views regarding: older aging adults/relatives, finite lifespans, and the students' approach toward their career/personal life. All responses were aggregated into themes. The class was being co-taught by the author of their class textbook--an 81-year-old, wheelchair-bound caregiver of his Alzheimer's-afflicted wife.

**Results** using NVivo software as well as triangulating the various themes with members of the research team showed that although the class members were initially tentative about the setting and relationship with the co-instructor/author, they came to appreciate much about the setting and him. Some students initially were not sure how interested they would be in the class but were curious because the author of the class textbook would be the co-instructor. The students soon realized that without the author being their co-instructor, they would be much less interested because in this position he was able to show them how to better relate to his generation. He emphasized to the students that his generation was composed of regular people who have different, yet challenging circumstances. This prompted the students to become more interested with the circumstances of older generations. Moreover, it caused them to realize they needed to be proactive and mindful about all aspects of life. They felt the course was life-changing for them and that much of the mystique regarding the elderly had been diminished. They generally felt a stronger sense of dedication toward life as a result of the experience with the co-instructor/author.

**Conclusions** of this study, based on the aggregated student responses from their open-ended interview questions, are that it is a lack of dedicated, intentional time relating to one another that cause younger and older generations to seem distanced. Relating requires spending time understanding the other's generation. The more time invested in doing so, the better the chance of understanding each other's generation (Kaplan et al. 2017).

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## Developing Apartment Industry Ambassadors

Carla Earhart, Professor of Property Management, Ball State University

**Keywords:** apartment industry, renter stigma, multifamily housing

**Introduction.** Owning a house is a long-held cultural norm in the United States...the so-called "American Dream" (Beamish & Goss, 2018). However, renting an apartment also has advantages, but this housing option may carry a social stigma (Warnock, 2019). The stigma can lead to negative treatment of apartment residents, can create NIMBYism that blocks apartment development, and can reduce the talent pool for the apartment industry.

**Project Objective.** Multifamily housing organizations try to raise awareness of the value of apartments and renting through their advocacy campaign (NMHC & NAA, n.d.). These organizations also use their advocacy platform to train apartment industry leaders to work with elected officials on public policy issues that impact the apartment industry. Professional organizations have attempted to address the issues that confront the apartment industry, but may not realize that members of the industry themselves may be unknowingly contributing to the stigma. What is needed in the apartment industry's advocacy campaign is education for apartment industry staff to have a better understanding of the debate regarding renting an apartment vs.



ownership of a traditional house, and how to improve apartment industry practices that may have unintentionally contributed to the stigma.

**Presentation Plan.** This presentation focuses on “best practices” in the apartment industry, to overcome the stigma associated with multifamily rental housing. With funding from Indiana Humanities (with support from the National Endowment for the Humanities) and Ball State University, a series of educational seminars were shared with a group of apartment industry professionals.

- Session 1 focused on general housing knowledge and perception, especially images of “home” and housing-related terminology used by housing professionals and the general population.
- Session 2 focused on the American Dream of owning a house and how those preferences have been shaped.
- In Session 3, participants focused on the impact of children’s literature in shaping housing ideals and beliefs.
- Continuing with the focus on children’s books that have a positive story and images about apartments, author Johanna Hurwitz joined the group in Session 4 to talk about *The Riverside Series*, a collection of books she has written that follow young children through their early years of living in an apartment building.
- Session 5 included the many situations in which apartment industry professionals can influence the way apartments, residents, and staff are perceived. This includes changes to apartment building interior and exterior design, marketing strategies, resident policies, resident activities, volunteer activities, and additional professional development opportunities for staff.
- Session 6 provided an opportunity for participants to share what they learned and how they will incorporate these strategies to overcome rental apartment stigma.

These educational activities have the potential to change the perception of rental apartments over time, thereby increasing respect for apartment residents, creating opportunities for additional apartment development, as well as providing greater regard for apartment industry professionals. The presentation will conclude with the many participant outcomes resulting from the seminar series.

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Credit is extended to Indiana Humanities (with support from the National Endowment for the Humanities) and Ball State University for funding this project.

### **“Home”Work: Incorporating Multifamily Housing Content into the Elementary Education Curriculum**

Carla Earhart, Professor of Property Management, Ball State University; Hanna McKellar, Honors College Fellow, Ball State University

**Keywords:** housing education, housing norms, elementary education, multifamily housing

#### **Introduction**

Most people equate “home” with a traditional house on its own plot of land, owned by the occupants...the proverbial *American Dream*. This image of “home” is understandable, as this housing norm is reinforced in our society in a variety of ways. Movies, TV shows, news media, social media, books, magazines, music, works of art, and public policy all tend to favor the traditional house, while multifamily housing is more likely to be portrayed negatively, if represented at all.

However, “home” has a much broader meaning than owning a house. “Home” is a more abstract concept representing the emotional feeling of where one lives. “Home” can be a traditional house, a tiny house, an apartment, a duplex, a mobile home, a nursing home, or even a room in a

university residence hall. And “home” can be a place one owns or one that is rented

“Home” is a common educational theme in the elementary grades. Our early work investigated a variety of elementary lesson plans related to “home”, finding they are more likely to focus on “houses” than other structure types. In these lesson plans, students are often asked to “draw your house”, or “write about your house”, or “describe your dream house”. We found very few educational materials related to multifamily housing for the elementary grades. Simultaneously, we also noted a lack of content on multifamily housing in the curriculum for Elementary Education majors at (name of university).

### **The Need for a Focus on Multifamily Rental Housing in the Elementary Grades**

Data from the American Housing Survey, tabulated by the National Multifamily Housing Council (2020) indicates that of the nearly 22 million apartment homes in the United States, nearly 15% are occupied by households with school-age children (ages 6–17). These children need to know that they (and their family’s housing choices) are valued and respected, and they need to know that it is okay to rent an apartment at any point in their lives.

Teaching about different living situations in the elementary grades is an example of culturally-responsive teaching. It allows those living in apartments to feel more accepted, and exposes other students to housing options they may not be aware of.

Today’s children are tomorrow’s housing consumers, housing professionals, and community leaders. Their increased knowledge about apartments and acceptance of apartments will help guide apartment development in the future.

### **A Proposal to Add Multifamily Housing Content to the Elementary Education Curriculum**

Wanting to overcome the absence of multifamily housing in the elementary education courses at (name of university), we created a series of educational materials and worked with a group of current elementary teachers, as well as university faculty and students, who pilot-tested the materials. Our presentation will provide an overview of the need for elementary educators to have a better understanding of multifamily housing, the educational materials we created, the reaction from those pilot-testing the materials, and the status of our desire to incorporate more multifamily housing into the elementary education curriculum at (name of university).

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Credit is extended to those involved at all stages of this project.

Appreciation is extended to the Creative Teaching Grant Committee for funding this project.

## **Why Blame Our Financial Troubles, Our Resident Advisors Lack Confidence in Financial Management?**

Michael Elonge, University of Maryland, College of Agriculture & Natural Resources - Extension

**Keywords:** housing, financial management

Rationale or purpose of the research

A study by this educator of public housing residents at risk of evictions revealed that residents are not getting enough financial management help from the frontline staff (resident advisors) and yet, residents are blamed for their financial troubles (defaults in rent and other financial liabilities). Parenthetically, most resident advisors claim that financial management is not in their job requirements, and they are not confident in providing such assistance. Discussions on housing eviction are prevalent in literature, but there is a limited focus on financial education for eviction prevention (Crane & Warnes, 2000; Elonge, 2013; Brisson & Covert, 2015; Campbell & Gaddis, 2017; Yang, 2017; Desmond, 2022). This study predicts a relationship between financial education and financial confidence that could be crucial in financial management.

Research objectives

This study teaches resident advisors financial education (FinEd) to gain financial confidence (FinCon) and assist residents with financial management.

Methodology

Classes were intentionally designed to teach basic financial management. First, the foundation of decision-making (FDM) class teaches essential decision-making concepts (scarcity, choice, opportunity costs) to facilitate mastering decision-making when income is limited (Ramey, & Zubairy, 2018). Second, household budgeting (HB) concepts (income, spending, and saving) teach basic methods for designing a household budget (Ando & Modigliani, 1963; Hashemzadeh, & Farhat, 2017). Third, credit (credit card, credit bureaus, credit reports, credit scores) and debt (CD) teach effective management of financial tools (Rothstein, & Valletta, 2017).

This study assumes that FinEd (FDM, HB, and CD) predicts FinCon. Whereby, FinCon is the dependent variable and the components of FinEd (FDM, HB, and CD) are the independent variables or predictors. To examine the assumption, multiple linear regression is used to analyze the relationship between the dependent variable and the independent variables.

## Procedures

212 resident advisors participated in financial education training on the foundation for decision-making (FDM), household budgeting (HB), and credit and debt management (CD). Classes for each topic were twice a week, Tuesdays and Wednesdays for a total of three weeks in a public housing facility.

The participants completed pre and post-surveys of a 5-point Likert scale questionnaire at the beginning and the end of each topic. The data from the pre and post-surveys were analyzed for regression in SPSS statistics using a multiple linear regression model to examine the relationship between the dependent variable (FinCon) and the independent variables (FDM, HB, CD) (Ando & Modigliani, 1963; Ramey & Zubairy 2018; Friedman, M. 2018).

The multiple linear regression model:  $\text{FinCon} = \text{FDM} + \text{HB} + \text{CD}$ .

## Results

The results from the multiple linear regression analysis are explained by the statistics in the overall model and the effects of each predictor in the model with alpha (0.05):

The overall model:  $\text{FinEd } \beta = .21, t(214) = 3.14, p = .002$  is statistically significant, indicating a positive relationship between financial education and financial confidence. Simply, each additional topic of financial education probably helps increase financial confidence by 0.2%.

Looking at the contribution of each predictor to the model:

$\text{FDM } \beta = .097, t(212) = 1.421, p = .157$ : FDM is not statistically significant.

$\text{HB } \beta = .241, t(212) = 3.392, p = .001$ : HB is statistically significant.

$\text{CD } \beta = .139, t(212) = 1.997, p = .047$ : CD is statistically significant.

## Conclusions

From the results, the predicted relationship between financial education and financial confidence exists. The results also attest that the predictive objective of teaching resident advisors financial education (FinEd) to gain financial confidence (FinCon) is evident. Implying that the financial confidence gained by resident advisors has the probability of a positive financial management dissemination effect on residents. Despite that three predictors in the relationship contribute to financial confidence, HB has the strongest predictive effect on the relationship. Resident advisors helping residents to understand and apply household budgeting could probably lead to significant gains in financial management skills - maximizing income, minimizing consumption spending, and maximizing saving. In a nutshell, financial management education leads to financial knowledge gained and confidence in financial management.

## Implications

Financial confidence has the probability to inspire better financial planning for better future well-being. More important, housing residents would feel confident in asking resident advisors for financial management help.

Public housing provides an opportunity for educators to provide a knowledge-based curriculum to help residents and resident advisors with desirable skills.

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## **Evaluating the Impacts of The National Healthy Homes Partnership (HHP)**

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**Keywords:** Healthy Homes, Healthy Homes Education, IAQ Education, Indoor Contaminants

### **INTRODUCTION**

The HHP was created in 1999 as a partnership between HUD and USDA, with outreach focused on home hazard self-assessment, mitigation strategies, and positive health outcomes from structural and behavioral changes. By providing funds, tools, resources, and networking opportunities, the partners have increased their knowledge base and professional ties, creating a strong network of state and county level educators to improve housing quality (Booth and Peek, 2013).

The HHP is based on a large body of scientific research, demonstrating that numerous housing-related hazards threaten human health (U.S. Department of Health and Human Services, 2009 and U.S. Department of Housing and Urban Development, 2013). The research is clear that unhealthy housing is costly. Programs are delivered through Extension and University Outreach Programs in all fifty states and territories. The goal of the HHP is to support research, education, and extension programs that increase home health and safety, improve family health, and build stronger communities.

### **MATERIALS/METHODS**

All U.S. land-grant colleges and universities are eligible to participate. Since the program began, grants have been distributed to 34 states and the U.S. Virgin Islands through a competitive process. Funds have been utilized to conduct research, create programming materials and tools, and foster stakeholder relationships.

## RESULTS

The HHP uses an online self-reporting system to collect healthy homes activities data.

Table 1 summarizes these activities.

<b>Outreach (Activities &amp; Events)</b>	<b>2014 - 2022 Total</b>
TV programs/Radio spots	5,777,594
News articles	4,435,161
Website activity	520,261
Social media	365,684
Displays/Exhibits	188,425
Newsletters with Healthy Homes Information	118,403
Trainings/Workshops/Presentations	92,339
Telephone calls (Healthy Homes related)	20,020
Other	11,140
Home visits	3,699
Direct mail	1,653
Total reach	11,534,37

## CONCLUSIONS

The effectiveness of the HHP could be improved by increasing assessments of intermediate/long-term health impacts. Program evaluation provides insights into knowledge gained and intent to make behavior changes. Follow-up surveys are needed to assess intermediate/long-term impacts, but require time and funding. University outreach and extension programs are an effective means of disseminating consistent and reliable healthy housing messaging. The partnership provides unbiased research-based information for free or low-cost. Face-to-face programs remain an important delivery method, but the pandemic brought about an increase in virtual programs. Partnerships and healthy housing advisory boards are becoming increasingly important. State partners need to continue experimenting with new ways to reach audiences and expand healthy housing knowledge.

## ACKNOWLEDGEMENT

Funding for this program is provided by the U.S. Department of Agriculture – National Institute for Food and Agriculture and the U.S. Department of Housing and Urban Development – Office of Lead Hazard Control and Healthy Homes.

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### **The Home Office: Environmental Factors Affecting Residential Work Situations**

Gregory Galford, Virginia Tech

**Keywords:** Surveillance, Privacy, Correlations, Work from Home

The recent pandemic has altered the way in which the managed employee produces work. From a strictly on-site situation that enables those employees to be visually controlled, to one where they are working independently at home, new strategies of control are now employed by management to ensure workers are present which indirectly refine methods of capitalism (Hirst, 1982). These systems of surveillance engage worker mental health in a new way and establish a new type of panopticon (Bauman & Lyon, 2013). The purpose of this study is to glean insight into the environmental effects upon behavior for people who choose to work from home as their primary employment, and this paper focuses on those whose jobs are managed by an outside employer through surveillance software. The research question seeks to know the behavioral effects of controlled environmental factors using data from residential correctional research as a foundation for the study. Domains of other types of residential control are used to understand the issue and build the body of knowledge around a relatively new field of study. The research design is qualitative in character and uses coded data from all stakeholders in a two-step interview process with male inmates in two medium security state prisons. Grounded theory was used as an analytic method. Findings were that time and routine operate uniquely within residential correctional environments, sound becomes dominant when vision is controlled, views to nature are important

for mental health, and trust is a dominant behavior for officers. The implications of this research for a controlled residential work environment are that spaces of acoustic privacy are important for productivity, visual connections to nature enhance mental health, and that spaces that promote routine and visual privacy promote discipline within the home when it is used as an office space.

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### **Preliminary Review of Surveying Adolescent Housing Norms**

Michael Gawrys, Ph.D. Candidate, University of Georgia

**Keywords:** Cultural Norms, Housing Adjustment, Homeownership

The central purpose of this study is to evaluate housing behaviors among adolescents by measuring awareness, satisfaction, and preferences related to established cultural norms. These measures are predicated on developing housing attitudes and opinions earlier in an individual's life. After all, prior research supports younger cohorts are active participants in developing future housing needs (Gurney, 1999; Brewer, 1986). So, to address early housing behaviors and their influences, the following research questions are addressed: When do adolescents become aware of current housing conditions? What housing features do adolescents prefer in their future housing? How do adolescent preferences align with cultural housing norms?

Cultural norms are transmitted through an intertemporal framework aligning the social influence of today with the behavioral expectation of tomorrow (Elder, 1975). The relationship adolescents develop with their housing between 12 to 18 years old, when susceptible to social pressures, can significantly impact future housing decisions. Therefore, special consideration must be given to influences occurring earlier in an adolescent's life. The transmission of norms is both an expression of familial needs and preservation of cultural standards (Morris et al., 1990). Homeownership, for instance, is a long-standing cultural norm that has grown indistinguishable from single-family, detached housing (Goodman & Mayer, 2018). What was once a pathway to homeownership has become a one-size-fits-all approach. Individuals recognize the need to be

housed, but the cultural standards dictate the tenure and structure preferences. Any conflict between the two poses a significant challenge to the accessibility of homeownership.

Further imposed upon the expectation of housing – similar to college, marriage, and children – is an age criterion for when an individual should achieve *housed* status (Elder, 1975). This age-dependent structure leverages a similar social framework as Housing Adjustment Theory – an evaluative measure of housing in relative terms (Morris & Winter, 1975). But, here, the theory also utilizes age as a meaningful point of comparison. Individuals evaluate their measure of fit to an age standard for single-family homeownership (Elder, 1994).

Research in adolescent housing has historically focused on the participant's physical development within the space. It asserts that outcomes are often pre-conditioned upon a child's environmental circumstances, otherwise characterizing adolescents as passive recipients of family housing norms (Matel, 2020). Instead, children are some of the most intense users of the housing environment (Brewer, 1986). So, it becomes critical to understand how adolescents perceive their environment, their level of satisfaction with current accommodations, and what they prefer in forming future housing needs.

This research solicits data from adolescents aged 12 to 18 in partnership with Georgia's statewide 4-H program. The organization holds two statewide conferences critical to the data collection efforts. The age, county, and socioeconomic status allow for a robust sample in addressing the preceding research questions. The data will be primary-sourced and quantitatively studied across the population. It will be collected using a self-administered survey of 24 questions, including general demographic information. The results will be instrumental in supporting the development of adolescent housing behaviors – both now and in the future.

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## **The Relationship Between Housing Costs and Financial Well-Being**

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**Keywords:** Financial well-being, housing costs

### **Introduction**

The study of financial well-being (FWB) has recently grown but is still a relatively new construct (Collins & Urban, 2020). The Consumer Financial Protection Bureau (CFPB) defines subjective FWB as "...a state of being wherein a person can fully meet... financial obligations... feel secure in their financial future and... [make] choices that allow them to enjoy life" (CFPB, 2017, p. 13). Studies have examined determinants of FWB such as financial literacy, savings, debt, and external economic conditions (Aboagye & Jung, 2018; Collins & Urban, 2020; Nanda & Banerjee, 2021). However, there is limited research examining the relationship between housing and FWB (Brown & Gray, 2016). Generally, a house will be the largest asset a U.S. household will own. Homeownership brings a sense of stability and control to households (Manturuk et al., 2012), but can also be the source of increased physical, emotional, and financial stress if mortgage payments are missed, equity is borrowed, or home value drops (e.g. Dunn & Mirzaie, 2016; Yilmazer et al., 2015).

The purpose of this research is to examine the relationship between three mortgage related variables (home value, mortgage debt, and monthly payment amount) and financial well-being. This will be done using data from the National Financial Well-Being Survey (NFWBS). The research questions being examined are:

- 1) What is the effect of home value on FWB?
- 2) What is the effect of mortgage debt on FWB?
- 3) What is the effect of monthly house payment on FWB?

## **Methods**

The CFPBs NFWBS was used to answer the research questions. The sample consisted of 2,896 homeowners. The dependent variable is a subjective FWB score derived from a 10-item scale created by the CFPB. The independent variables included: home value, mortgage amount remaining, and how much is paid for the home each month. In addition to the homeowners' sociodemographic characteristics (age, gender, race, education, marital status, household size, employment status), this study also controlled for financial status (e.g., income, savings, payday borrowing), financial experience (e.g., income volatility, foreclosure, home repair) and financial literacy (e.g., financial skill, financial knowledge). Ordinary Least Squares (OLS) regression was used to analyse the data. Results were weighted to represent the general U.S. population.

## **Results and Conclusions**

Monthly house payment was positive and significantly related to subjective FWB while home value and remaining mortgage debt were not significant. The OLS results indicate that day to day or regular financial responsibilities (like monthly house payment), financial status, experience, and literacy matter more for subjective FWB than factors that are primarily economically driven (home value) or debt with a long repayment period (mortgage amount). While educating consumers on not borrowing more for a house than they can afford is important, educating them on factors that will influence their day to day or regular finances (such as building a savings, avoiding risky debt, and avoiding foreclosure) may be more impactful for their subjective FWB. The complete results from the OLS regression will be shared in the presentation and conclusions and implications further discussed.

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### **Informing Homeowners Associations Through Housing Design Trends**

Dr. Erin A. Hopkins, Ph.D., Assistant Professor, Virginia Tech; & Olivia Garber, Undergraduate Researcher, Virginia Tech

**Keywords:** homeowners associations, architectural control guidelines, housing design trends

Since the 1970s, the United States has seen a tremendous amount of its housing stock built into homeowners associations. From 1970 to 2016, community associations have grown from 10,000 to 342,000 with homeowners associations (HOAs) representing over half of these associations (Community Associations Institute, 2019). One reason for association popularity is the belief that associations add to property value by protecting their residents from the risk of negative externalities associated with living in a subdivision with many neighbors. One technique for reducing risk in HOAs is by implementing and enforcing architectural control guidelines (ACGs) throughout the community. This architectural integrity is enforced through covenants, conditions &

restrictions (CC&Rs) which mitigate negative externalities through constraints (Hopkins, 2017). These reduced negative externalities tend to positively impact the housing values of owners within a community association (Agan & Tabarrok, 2005; Cheung, Cunningham, & Meltzer, 2014; Groves & Rogers, 2011; Hughes & Turnbull, 1996; LaCour-Little & Malpezzi, 2001; Meltzer & Cheung, 2014; Rogers, 2006; Rogers, 2010; Scheller, 2015; Speyrer, 1989).

However, as the age of a community association rises, this property value benefit begins to decrease (Hughes & Turnbull, 1996; Rogers, 2010). Therefore, the following question presents itself: How can current single-family home design trends be incorporated into specific characteristics within ACGs so that the HOA documents remain current and property values protected? The answer to this question can be informed through the review of single-family home design trends from a national, regional, and township level and thereafter compared to the specific components of architectural control guidelines for a particular homeowners association. The research put forth in this presentation addresses the issue by performing a review of the extant literature on this topic, examining current housing design trends, and using this knowledge to put forth best practices for typical architectural control guidelines found in Burke, VA, a suburb of Washington, D.C. An influx of new home buyers moving to the Northern Virginia area combined with diminishing land available for new construction encourages prospective homeowners to evaluate the housing stock on a potential improvement basis. If the aging ACGs conflict with current home design trends, limiting the freedom to update their housing as they wish, prospective home buyers may place a lower value on the homes themselves. This lower perceived value can cause home buyers to offer a lower purchasing price for homes in HOAs that have little success of updating ACGs or encourage them to move elsewhere with fewer restrictions. For these reasons, it is important for HOAs to implement a fair and open ACG amendment process as they see the increased demand for such activities in their respective communities.

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### **Developing a 3D Virtual Town in an Interdisciplinary Project**

Eunju Hwang, Virginia Tech;; Andrew Park, Trinity Western University; Annie Maxwell, Virginia Tech; Chandler Calloway, Virginia Tech; Nicole Hauck, Virginia Tech; Kieran Clarke, Trinity Western University; Jimmy Kha, Trinity Western University; Ming Ip Chung, Trinity Western University; Jared Klassen, Trinity Western University; Yaacov Kochatkov, Trinity Western University



**Keywords:** Virtual environment, issue-based problem solving, interdisciplinary, crime prevention through environmental design

Providing a safe environment has been a goal for many communities. The primary purpose of this interdisciplinary team consisted of students and faculty from housing, psychology and computer science was to assess neighborhood walkability and to develop a virtual environment (VE) for further investigation of the neighborhood walkability. In developing experiential learning activities in a class required for housing and disability studies students, two instructors from Residential Environments and Design and Computer Science collaborated and developed a multi-disciplinary class project in 2021-2022. The purpose of this presentation is to share the instructional strategies and students' learning outcomes with the interdisciplinary team project.

Using the adopted from Bahr and Kovaleski (2006)'s issue-based problem solving classroom projects, the multi-disciplinary class project was proceeded in three phases: identifying the problem; conducting research; developing a virtual environment (VE) for further investigation. Coming out of the pandemic years, the team identified that providing a safer environment was the urgent goal as crime rates changed dramatically across the United States during 2020. To address the problem, housing and psychology students in the team assessed neighborhood walkability in the research phase. For the assessment, the team explored several neighborhoods and selected the downtown area of a small college town where a gun shooting happened in early 2022. The Pedestrian Environment Data Scan tool (Clifton & Rodriguez, 2005) was modified adding more safety related items for the project and the team conducted the street level walkability assessment. The area had general walkability features such as mixed-land use, mature trees, street furniture, and well-marked crosswalks. However, there was a lack of natural surveillance elements in the area. After the walkability assessment, the team developed VE to be used in the community's safer neighborhood initiative. In the presentation, the role of faculty as facilitators and challenges the interdisciplinary team ran into will be presented.

#### Acknowledgements

Funded by the VT Niles Grants, ICTAS Inclusion and Diversity, and ISCE.

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## **A Studio Project Exploring Regenerative Housing for Autistic Adults**

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**Keywords:** Studio, housing, autism, regenerative, interdisciplinary

In this studio course, students explored regenerating an obsolete building by converting it into homes for young adults with autism. This is important because, after young autistic adults transition out of the K12 education system and into independent living, there are few affordable residential spaces designed to meet their unique needs (Breslow, 2019). With a rise in numbers diagnosed with autism, estimated at 1:44 (Maenner, et al., 2021), finding suitable housing is an issue faced by increasing numbers of families.

This course was one of several options of interdisciplinary studio open to graduate and senior students in a College of Design. Fourteen students from Architecture, Interior Design, Landscape Architecture, Graphic Design, and Industrial Design enrolled. The course was co-taught by two faculty, one with expertise in autism and housing and the other in sustainability.

The project site was a former Veterans Affairs hospital complex in Knoxville, IA, “a small Iowa town (that) once revolved around the VA hospital” (Leys, 2017). The site closed in 2004 and the buildings deteriorated beyond repair except for a former laundry building, c. 1991. We formed links with the City, which had developed mixed use plans for the site, and the County overseeing the demolition works, to visit the site.

Students were charged with designing (on paper) 18-20 living units for young adults with ASD needing daily support and a 6-bedded unit for those needing 24-hour support, including staff accommodation. Students also had to design a community space that could be used by all residents and the wider community. A broad spatial program was provided highlighting design considerations, e.g., sensory sensitivity and potential challenging behaviors. Students were divided into three teams of four-five led by an architect with two-three interior designers. Since teams did not have every discipline, deliverables were flexible, e.g., teams with a landscape architect developed landscaping, the team with a graphic designer developed signage, and the team with an industrial designer developed an app for the site.

Developing residential housing ideas from an existing building followed Elefante’s philosophy that “the greenest building is one that is already built” (2012). To underpin their designs, students

explored the principles of regenerative architecture, including the Living Building Challenge (LBC), i.e., buildings that “give more than they take,” that go beyond sustainable to provide positive interactions between humans and nature (ILFI, 2022). Students examined the seven imperatives of the LBC, place, water, energy, health and happiness, materials, equity, and beauty (ILFI, 2019) and their application to housing for autism, an unexplored area.

A pre- and post-study survey tested the benefits to students and pedagogy from engaging in this interdisciplinary studio. Most students appreciated learning new perspectives from other disciplines. Students’ final projects demonstrated a sensitivity to designing for autistic adults, e.g., quiet areas in public spaces and opportunities for community interaction to combat isolation, as well as the challenges of applying regenerative architecture principles to housing for this population. This studio project could be replicated with different housing typologies and with students from other disciplines.

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## Housing For Seniors: What About Seniors with Autism Spectrum Disorder?

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## Issue

The number of children diagnosed with autism spectrum disorder (ASD) is currently 1:44 (Maenner et al., 2021). Moreover, while ASD diagnostics improved from the 1960s, it was less commonly recognized, so there are many older undiagnosed individuals (Happé & Charlton, 2011; Stuart-Hamilton & Morgan, 2011). By 2030 it is estimated that there will be 700,000 US adults with ASD aged 65+ (Amanullah et al., 2019). Despite this, the housing needs of seniors with ASD are under-studied.

## Method

A literature review examined current research considering the following questions, *What are the housing needs of seniors with ASD? How can housing be designed to support seniors with ASD?*

## Findings

There is limited research into aging and ASD, and most literature is concerned with characteristics rather than living needs (Mason et al., 2022; Mukaetova-Ladinska et al., 2011; Patra, 2016; Stuart-Hamilton & Morgan, 2011).

Seniors with ASD have worsening health outcomes, e.g., hearing and vision loss, mental ill-health, and physical disabilities (Crompton et al., 2020a). Some similarities are noted to the general aging population, e.g., insomnia, weight issues, and indigestion, but there is insufficient knowledge about how other common aging disabilities, e.g., arthritis, dementia, and obesity, affect seniors with ASD (Edelson et al., 2020). Stuart-Hamilton & Morgan (2011) found that older adults experience anxiety/depression more than the general population. Since depression precursors suicide, the authors suggest this could be a problem in seniors. There is also a higher rate of epilepsy compared to the neurotypical population (Patra, 2016; Stuart-Hamilton & Morgan, 2011). These health issues impact housing choice.

Housing issues for seniors with ASD include inaccessibility (Breslow, 2019; Mukaetova-Ladinska et al., 2011); a lack of understanding of service needs (Happé & Charlton, 2011; Mukaetova-Ladinska et al., 2011); inadequate services (Mukaetova-Ladinska et al., 2011); and unaffordability (Breslow, 2019; Mukaetova-Ladinska et al., 2011). Breslow (2019) notes that the average rental for a 1-bedroom apartment is “104% of average SSI benefit” (p.2).

Quality of life is lower in older adults with ASD compared to the general population (Stuart-Hamilton & Morgan, 2011). Seniors often feel isolated, but researchers hypothesize that focusing on limited hobbies/interests may help seniors with ASD feel less isolated (Happé & Charlton, 2011). Providing space for hobbies/interests is therefore important (Crompton et al., 2020b).

Some seniors with ASD will need continued daily living support, e.g., hygiene, dressing, and feeding (Patra, 2019). Those with behavioral problems, including self-injury, will need continued support with these as they age (Patra, 2019).

To help seniors transition into supported care, permit touring the facility, accommodate therapy animals, learn how they communicate, manage pain and stress, and about any environmental sensory sensitivities (Crompton et al., 2020b). To support sensory sensitivities, limit light, noise, and odor, provide room temperature control, and let seniors personalize their spaces (Crompton et al., 2020b).

## **Conclusions**

Supported accommodation for seniors with ASD with declining health and behavioral support requirements is an increasing issue. More research is needed to study the housing needs of this demographic.

## **Implications**

An aging autistic population needs housing consideration. Those 1:44 children diagnosed with ASD will grow older!

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### **Conceptualizing and Defining Homeownership Literacy**

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**Keywords:** Housing counseling & education, homeownership education knowledge & literacy

#### *Rationale or Purpose*

Despite over 60 years of housing counseling, the research findings on the efficacy of homeownership education remain mixed. Researchers have expressed the need for standardization in housing counseling and education, including standard definitions (Carswell, 2009; Feins et al., 1980; Hiraad & Zorn, 2002; Housing Assistance Council, 1997; Mallach, 2001; Martin, 2007). Further, Skobba et al. (2018, p. 5) identify the need for a "set of more robust indicators to measure motivations, knowledge, and changes in behavior...." Without clear definitions, confusion ensues, slowing progress and hindering efforts to develop meaningful and effective consumer education programs (Remund, 2010).

#### *Research Objectives*

The purpose of the research project is to gain consensus toward a novel concept, homeownership literacy: a specific housing-related form of human capital. The study includes three questions that ask, based on practitioners and e academic knowledge: (1) how should homeownership literacy be conceptually defined, and (2) how should homeownership literacy be operationally defined, and

what are the associated homeownership literacy knowledge, skills, and motivational attributes.

### *Methodology*

A concurrent exploratory embedded mixed methods research design is employed that nestles a qualitative survey within a semi-structured interview design. The survey explores subjective assessments of the definition of homeowner literacy and the ranked importance of 22 homeownership knowledge, skills, and behaviors. The qualitative interview further investigates questions on consumers' knowledge of the homeownership process.

### *Procedures*

Housing policymakers, real estate professionals, mortgage industry professionals, homeownership educators, coaches, and counselors, housing policy experts, and academics were identified through publicly and privately available websites: Department of Housing and Urban Development, state Department of Community Affairs, National Association of Realtors (NAR), Nationwide Multistate Licensing System & Registry (NMLS), and Housing Education and Research Association (HERA) directory. Approval of the University of Georgia Institutional Review board was obtained before contacting prospective participants via email. Criterion purposeful sampling, maximum variation and snowball approaches was employed in this study to conduct semi-structured interviews with participants.

### *Results*

The sample for this study consisted of 25 highly experienced housing experts: four academics, five real estate professionals, four housing policymakers, nine housing educators, counselors and coaches, and three mortgage professionals. Thematic analysis of the open-ended definition responses revealed four themes pertinent to defining homeownership literacy: homeownership as a process and product, financial and physical aspects, purchase, maintain, sustain, and knowledge, skill, and capability. The findings were synthesized into both a conceptual and operational definition. The conceptual definition of homeownership literacy provides a concrete explanation of the abstract term, while the operational definition offers measurable attributes of the concept.

### *Conclusions & Implications*

The research supports homeownership literacy as a specific form of human capital. The results suggest that in no existing concept are all the attributes of homeownership otherwise comprehensively explored although it shares overlap with some existing forms of literacy. The emphasis on the specific attributes observed in participant interview responses, to the exclusion of

other attributes, highlights the necessity of this work. Homeownership knowledge is vast. The processes involved are complicated. Financing, legislation, taxation, and legal implications are ever-changing. Yet, homeownership attainment is an American ideal for many and a cornerstone of the United States economy. Conceptualizing homeownership literacy has significant implications for the government and economy, many industries, communities, and American homebuyer and homeowner consumers.

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## **Revitalizing Small Communities for Aging Population In Iowa: Making Home Modifications More Accessible**

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**Keywords:** Aging in place, Home modification, Rural area, Aging, Community development

The continually aging demographic in Iowa has produced a growing number of older adults living in homes that are becoming or have become risky places to live. It is well-known that home modification plays an essential role in reducing the risk of falling, which leads to more successful



aging in place (Hwang et al., 2011; Kim & Portillo, 2018). Even if older adults have funds to make changes, many of them don't have a proactive plan to make changes and wait until an accident or health problems arise. Further, low-income older households living in small rural communities with few resources may not have the means to pay for much-needed home modifications. As a result, many older households live in unnecessarily risky environments and rely more on family, friends and neighbors to carry out basic tasks.

This home modification pilot project aimed to explore older adults' housing modification needs in a rural community in Iowa and undertake home modification plans. The main goal of this project was to demonstrate a replicable model for how municipal and county governments in low population areas can come together with the land-grant university, AARP, different stakeholder groups, and invested community volunteers to assist older households in making home modifications aimed toward aging in place.

Thus, community involvement is necessary for this project. Charles City in Floyd County in Iowa, with a significantly high percentage of older households, participated in this project. Our research team met with city officials, including their current Mayor and other stakeholder groups such as AARP Iowa, city officials, and local volunteers in the area. Our research team with AARP Iowa visited four older adults' housing in Charles City and conducted a home assessment in order to identify environmental hazards in November, 2021. For these residential buildings in Charles City, 61 sophomore interior design students in Interior Design Studio II worked on home modification strategies for five weeks during Spring 2022. Learning about the concept of Aging-in-place, 23 student teams identified the older adults' specific needs in their homes and evaluated the existing conditions. The students focused on applications of home modification strategies to each residential unit and accessible furnishing arrangements. Several useful ideas have been generated, especially improving circulations inside the home and accommodating the individual needs of the residents. This project was also beneficial for beginning interior design students to better understand the concept of aging in place in the real world and design outreach to the community while they are involved in various phases of research and designing prototypes. Student works selected by AARP-Iowa were presented at the senior center in Charles City. More than 30 older adults including four homeowners joined the students' presentations.

This home modification pilot project was essential to explore various issues and problems that older adults encountered and find a reasonable solution by implementing home modification strategies in their homes. This project will greatly impact on a rural community because home modification strategies allow the elderly to remain within their social network, bringing better opportunities for social participation, social inclusion, and community engagement.

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### **Impacts of COVID on a Person-Environmental Fit Study**

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**Keywords:** Research Issue, Person-Environmental Fit, COVID-19, Older Adults

Older homeowners having limited resources may not be able to maintain their homes to support aging in place. A concern is the COVID-19 pandemic has further challenged low-income older homeowners (Arbaje, 2020; Senior Health, 2020), given their increased social isolation in addition to existing home environmental barriers. This highlights an even greater research need than pre-COVID, to understand: (1) how older, low-income homeowners remain at home, and (2) how their limited personal competence interacts with home environmental barriers to sustain their daily life. However, concurrently, COVID has also given a research-related challenge to a Person-Environment (P-E) Fit study in terms of how to collect data from the aging population.

The pandemic led the North Carolina A&T State University (N.C. A&T) Housing Research team to re-think data collection methods in the mid and post-pandemic era. What would be feasible when assessing the home environment and older homeowners? This abstract discusses two key research methods that have changed due to the pandemic.

**Tech-savvy, older homeowners:** The conventional approach of *home visitation*, for home assessment, has been the research team's experience. However, due to COVID restrictions, online interview meetings via Zoom, FaceTime, or Facebook; and/or an online survey (e.g., Qualtrics) will be conducted to cover the semi-structured interview components and/or checklist reviews previously done in person. Thus, the sample will likely be restricted to homeowners 65 and older who are familiar with *computer technology and/or online meetings*. We will provide Zoom webinar sessions to educate study participants on how/where to take photos of the home with their phone,

camera, or other hand-held equipment, and how to share the photos with team members. Thus, the participants' photos will provide data for the P-E fit assessment.

**Face-to-face survey to the online survey:** Before the 2020 pandemic, we used survey data collection via site visitations, after obtaining permission from the site and/or organizational director to access their clients. Senior centers, churches, or nutrition centers, where older adults gathered for meals or program participation, were previous study sites. However, COVID has restricted the face-to-face survey data collection with older adults, who are considered a vulnerable population. Thus, an online survey becomes a timely option under pandemic conditions to access the large portion of older homeowners.

We believe research never stops. Our team's decade long history in community participatory research has helped us take the global threat of the pandemic as a research opportunity to build new ways of data collection with older homeowners. It remains, however, to be seen as to how the changes in data collection, especially being more reliant on participants, change the quality and quantity of data we can collect.

During the presentation, we will further cover our current P-E fit project and updates on the success of alternative data collection methods (e.g., photo-taking with Go-Pro camera and video-editing application). Additionally, we will seek to encourage discussion of the audiences' best practices during the pandemic, which can be applicable to our project as well as the audience's research efforts.

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**Acknowledgment:** This work was supported by the USDA National Institute of Food and Agriculture, Evans Allen Grant Program [700296]. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Institute of Food and Agriculture.

## **An Accessibility of Housing Education in Academia: A HBCU's Master of Science in FCS**

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**Keywords:** Housing, Master of Science, Social Entrepreneurship, HBCU, FCS

A graduate-level housing program in a higher education setting can have a positive impact on the well-being of people and the community by interconnecting education (teaching in academia and outreach in the community) and research activities. However, few graduate programs focusing on housing have been available within the 1890 institutions (Historically Black Colleges and Universities [HBCU]) in the nation, and North Carolina (where the authors' institution is located) is no exception. This can be a threat that hinders the accessibility of housing degree programs to students of color who seek housing knowledge and subsequently, housing professions upon degree completion. Moreover, in our society, housing has been discussed within the context of challenges, e.g., lacking affordability, accessibility, and disaster readiness for under-resourced people and their community. Thus, there is a clear instructional opportunity for HBCUs to develop degree programs that will enhance students' knowledge and skills in housing and will contribute to resolving housing issues in our society.

A new Master of Science (M.S.) Program in Family and Consumer Sciences (FCS), housed in the FCS Department at North Carolina A&T State University, will launch in 2023. This program has a concentration, in *Housing Studies*, and focuses on social entrepreneurship (see Curricula section), which is timely in meeting both academic and societal needs. In 2018, an initial effort to build the program was made by four FCS faculty members by applying for USDA NIFA's 3-year capacity building grant, which was funded in 2019. Subsequently, the faculty have sought appropriate approvals as requirements by the institution and the University of North Carolina system.

**Curricula.** The M.S. in FCS requires 30 credit hours and two years of full-time study (Table 1). Students specialize in one of three areas (12 credit hours; FCS Electives) that previously offered no graduate study opportunities: Housing Studies, Child and Family Studies, and Fashion Management and Entrepreneurship. The Housing Studies concentration has 4 FCS electives: (1) Housing and Sustainable Communities (cross-listed class, 3 hours); (2) Advanced Interior Design (existing, 3 hours) (3) Influences on Housing Choices (new, 3 hours), and (4) Housing for Special Needs (new, 3 hours). The program has a comprehensive focus on *social entrepreneurship* (12

credit hours; core requirements) that provides the potential to strengthen institutional capacity, increase educational opportunities for students, and support the profession's efforts to address complex issues that may face individuals, families, and communities. In the program, external industry and community partners will work with the faculty and students in applied project-based learning (practicum, 3 hours) and/or thesis research (6 hours).

This new M.S. program at N.C. A&T will expand the accessibility of graduate housing programs. With the social entrepreneurship focus, there is a great opportunity regarding educating future housing professionals who will work for a better society. During the presentation, details on curricula in Housing Studies and social entrepreneurship will be provided, and feedback and concerns from the audience will be sought to enhance the graduate program in housing.

**Table 1. Degree Requirements**

Course Number	Course Name	Credits
	<b>CORE COURSES</b>	<b>12</b>
FCS 711	Research Design and Methods in Family and Consumer Sciences	3
FCS 716	Social Entrepreneurship in Family and Consumer Sciences	3
FCS 704	Current Issues in Family and Consumer Sciences	2
FCS 789	Graduate Seminar in Family and Consumer Sciences	1
ABM 705	Statistical Methods for Agriculture	3
	<b>OPTION COURSES</b>	<b>18</b>
	<b>THESIS OPTION</b>	
FCS 797	Thesis Research	6
	FCS Electives (e.g., four 3-credit courses in Housing Studies)	12
	<b>PRACTICUM OPTION</b>	
FCS 717	Practicum Experience	3
	FCS Electives	15
	<b>OTHER REQUIREMENTS</b>	
	Comprehensive Exam	0
	<b>TOTAL DEGREE REQUIREMENTS</b>	<b>30</b>

**Acknowledgment:** This work was supported by the USDA National Institute of Food and Agriculture, Capacity Building Grant Program [1018154]. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Institute of Food and Agriculture.

## A Student Led Initiative to Support Persons with Permanent Housing

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**Keywords:** housing, crisis treatment

When persons in crisis graduate from a treatment program, they are often challenged with the process of moving into permanent housing. Many obstacles stand in their way, such as availability of affordable housing, the need for housing and utility deposits and outfitting the home with necessities. Often these individuals are starting over with nothing.

The objective of the study was to explore the feasibility of an interior design student led initiative to assist those persons graduating from treatment with the conceptual design, selection, procurement, and placement of domestic products for their new homes. Persons interviewed were those personnel who oversee housing placement for victims of domestic violence and persons recovering from drug and alcohol addiction. The goals of the study were to determine if there is a need for such assistance, to identify particular concerns of the populations, and to establish how interior design students from a midsize midwestern university might provide support.

Grounded theory methodology was used to explore preliminary research questions. The primary investigator and undergraduate research assistant conducted in depth interviews after receiving IRB approval from their institution. Persons selected for the interviews were identified as professionals currently providing housing support for persons graduating from treatment.

Preliminary findings indicate that interior design professionals and students have the skill set required. Themes emerged regarding availability of affordable housing, survivors of domestic violence and their need to be housed a distance away from their abuser and relapse rates among those recovering from addiction. Victims of domestic violence were found to be the most likely candidates for the program because their success depends more on the home that they are able to secure and their ability to afford and maintain it. Those persons recovering from drug and alcohol addiction have a significant risk of relapse so it was found that housing support might be more appropriate after they have stabilized in their recovery efforts for a year or more. For both populations, challenges exist in securing a place, paying necessary deposits, and equipping the home with furniture and other domestic products.

Concluding data indicates a need for support, both in planning and in securing products such as furniture, bedding, housewares, dishes, artwork, and accessories. It was found that thrift stores operated by Adult and Teen Challenge are doing an amazing job of soliciting and securing appropriate donations at their 220 locations around the United States. Rather than duplicating their efforts by organizing a similar program, it makes sense to facilitate a partnership with them.

Implications of this exploratory study are believed to be widespread. While products are available, particularly in local thrift stores such as Adult and Teen Challenge, the ability to plan and implement a safe, healthy, and comfortable environment lies within the skillset of interior design students. Those students are eager to provide their services to persons in crisis as they move into homes of their own.

### **Barriers to Aging in Place: Assistive Technologies for Active Living**

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**Keywords:** Aging, Housing, Technology, Assistive, Sustainable

This research outlines an exploratory study to some potential barriers to Aging in Place, and more specifically to Active Living as identified by older adults. Older adults can require assistive technologies to allow them to stay in their own homes. Recent building standards such as WELL and FitWell emphasize wellness and the connections between physical activity, access to nature, and health. A recent study by AARP (2018) indicates that 76% of adults over 50 want to remain in their own homes as they age. Active Living encourages wellness through movement such as gardening, house cleaning, and other movement within and outside the home. While much has been written about Active Living in the urban context (apartment buildings), less attention has been given to this on the scale of the individual living unit (single-family house or retirement community). Ahrentzen and Tural (2015) identified the scope of literature related to Aging in Place and Active Living and found it to be focused mainly on accessibility related studies and those about prototyping specific new technologies. The current study focuses on a gap in research around the use of assistive technologies and interior modifications to the home that could facilitate aging in place.

The goals of this study were to examine attitudes of older adults towards assistive technologies, to provide guidance for potential policy changes, and to identify gaps in the types of assistive technologies which older adults might desire for active living.

The study used a mixed method approach combining a survey instrument with visual images of assistive technologies including a modified version of the Technology Acceptance Model (TAM) framework to predict user acceptance of any technology, based on perceived usefulness, perceived ease of use, and perceived affordability factors (Davis et al, 1989; Orillaza, Orillaza &

Barra, 2014) and focus group research to examine older adults' attitudes to assistive technologies in their home ranging from highly technical interventions to more basic manual interventions with the ability to interact with the devices in more detail as a followup to the broad survey.

The study included 130 participants who were recruited using three different approaches—the Virginia Tech Center for Gerontology, New River Valley Agency on Aging and Warm Hearth Village. Non-institutionalized adults ranging in ages from 60+- 90+ years old with a range of physical abilities.

The preliminary findings of this research focused on three areas: predictors of attitudes towards assistive technologies, predictors of intention to use, and methods for delivery of information about the technologies. Age, income and level of independence directly correlated to whether the perceptions of these devices were favorable. Perceived usefulness and affordability also contributed substantially to whether participants felt they would use the devices and adaptations. Further, community wide education seemed to be the preferred delivery model for how to use such devices.

An early goal of the study was to integrate biophilic design elements (bringing in nature) into the interior in order to support overall wellbeing as indicated by WELL and Green Building Rating Systems (Living Future Building Accreditation for example). As the study developed, this component was separated out for a second phase of research. The results of this study indicate that sustainability (economic, ecological and environmental), perceived ease of use and affordability are keys to adoption as is the seamless integration of assistive technologies to appear as standard interior features.

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Published online 2021 May 22. doi: [10.1177/23337214211017340](https://doi.org/10.1177/23337214211017340)

### **Improving Health and Home Environments for Older Adults**

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**Keywords:** healthy homes, asthma, housing, environmental health

#### **Research Rationale and Objectives**

Research has documented that housing conditions often negatively impact resident health, particularly vulnerable populations, such as low-income older adults with asthma (Northridge, 2010). Asthma has many known indoor environmental triggers, as evidenced by approximately 7.1 million children (U.S. EPA, 2013) and 18 million adults (CDC, 2014) in the U.S. with asthma. Home intervention studies have demonstrated that air purifiers with HEPA/carbon filters reduce indoor nitrogen dioxide (NO<sub>2</sub>) concentrations more effectively than ventilation hoods (Paulin et al, 2014), and HEPA air filter interventions effectively reduce indoor particulate matter (PM) (Maestas et al, 2019; Cox et al, 2018; Rice et al, 2018). However, a major gap in these findings is the absence of any study measuring both PM and NO<sub>2</sub> concentrations from cooking with gas stoves and measuring the concurrent reduction in both pollutants when using HEPA/activated charcoal purifiers. The objective of this research project is to test the hypotheses that: 1) use of HEPA/charcoal filtration will decrease NO<sub>2</sub> and PM levels from cooking in homes with gas stoves; 2) reduction in PM and NO<sub>2</sub> will improve respiratory symptoms and reduce health care utilization in asthmatic older adults. One area that has been difficult to address in previous intervention projects

is the emissions from gas stove cooking. Our study would provide environmental data on the effectiveness of air purifiers, document changes in respiratory health measures following the air purifier intervention.

### **Methodology and Procedures**

We use a stepped wedge design with a control period where no intervention occurs to evaluate the impact of this intervention separately and in combination with the well documented improvements seen with our typical multifaceted educational and environmental interventions. Health assessments include collecting data on respiratory health outcomes before and after intervention (questionnaires on symptoms, quality of life, medication use, and doctor/ER/hospital visits). Environmental assessments include evaluation of PM and NO levels, asthma trigger activities (ATAs) and exposures before and after healthy homes intervention (questionnaire, home survey, environmental samples). Assessments are conducted in English, Khmer, and Spanish. Major analysis includes health effects on medication use, wheezing, asthma attacks, doctor and ER visits and hospitalizations and asthma scale assessments on emotional/physical health, physical/social activity.

### **Results**

Data collection is ongoing, but preliminary results show the use of HEPA/charcoal filtration decreases NO<sub>2</sub> and PM levels emitted from cooking in homes with gas stoves, improves respiratory symptoms and reduce health care utilization. The comparison of baseline (pre-intervention) to follow-up (post-intervention) change in health and environmental data involves using a paired sample t-test. All statistical analysis uses SAS statistical software.

### **Conclusions and Implications**

In many public and subsidized housing units, the electrical system upgrades needed to convert to electric stoves are beyond the capacity of the housing unit and not economically feasible for the housing authority or management. This study will fill a major knowledge gap by measuring both PM and NO<sub>2</sub> concentrations in homes that cook with gas stoves and documenting the reductions in both pollutants when using HEPA/activated charcoal air purifiers. Perhaps more importantly, no study has linked indoor reductions in PM and NO<sub>2</sub> when using air purifiers with improvements in respiratory health outcomes.

### **Acknowledgement**

Funding was provided by the US Department of Housing and Urban Development, Office of Lead Hazard Control and Healthy Homes (grant MAHHU0048-19).

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## Home Ownership Education: Cooperative Extension's People Centered Approach

Cynthia White, Auburn University; and Dr. Portia Johnson, Auburn University

**Keywords:** Home ownership education; Pre-purchase homebuying;

According to the National Association of Realtors, first time homebuyers made up 34% of all homebuyers in 2021. While the dream of owning could be suited for some it may be less than ideal for others depending on one's financial situation, personal preferences, lifestyle, or stage of life.

These individualized indicators will influence the suitability and timeline for homeownership.

Considering the individualistic characteristics, the relative pre-purchase education should differ respectively. The goal of this session is to present a two-track model for homeownership education. This proposed program differs from other homeownership programs in that it begins with the central question of whether homeownership is the tenure option or attainable at present.

### *Methodology*

We propose a novel person-centered approach to homeownership education in six modules, across two pathways that address a few homebuying questions. All participants start with module one addressing the question “is owning the right choice for me (right now)?” The answer to this question indicates the appropriate next module, or the pathway, for that person. There are two pathways, Track A and Track B.

Individuals who are not yet purchase-ready for any number of reasons are directed to Track B. Track B participants will enter a six-to-twelve-month pre purchase housing coaching program. Purchase ready individuals will proceed to Track A. Track A will answer: Achieving and sustaining homeownership. This track will connect participants with HUD approved counseling agencies to complete pre purchase counseling.

### *Delivery & Evaluation*

The homebuyer curriculum will be delivered via an On-demand, interactive, delivery method hosted on the Auburn.edu continuing education educational platform. The desired outcome of the curriculum is for Track A to satisfy qualification requirements for federal down payment assistance programs, and for Track B to (i) connect participants with housing coaches that will partner with them to achieve their goal of homeownership, or (ii) connect them with housing counselors and financial advisors that empower them as renters to repair/build credit and build wealth.

Evaluation of the curriculum will be conducted at various points along the module pathway. As a component of module 1, “Are you ready to buy a home”, there will be a pre-test assessing existing home ownership knowledge. Each subsequent module on both Tracks will include knowledge checkpoints embedded within the modules. At the culmination of the identified track, whether A or B, each participant will complete a post-test requiring 75% accuracy for successful course completion and certification.

### *Conclusions and Implications*

Cooperative Extension has the platform and capacity to help citizens make informed housing tenure choices. They are widely known, embedded in local communities, and a trusted source of information, making them an ideal homeownership education agency. By implementing a two-track approach more people who are interested in owning a home might have the support to begin

assessing their personal values and readiness and create an actionable plan. Through partnerships with existing HUD approved coaching and counseling agencies, extension can further empower citizens' housing goals and decision making.

## Presidents

### **American Association of Housing Educators (AAHE)**

1965-1966 Tessie Agan  
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1996-1997 John Merrill  
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2015-2016 Michael Goldschmidt  
2016-2017 Pamela Turner  
2018-2019 Gina Peek  
2019-2020 David Turcotte  
2020-2021 Kandace Fisher-McLean  
2021-2022 Eunju Hwang

## Conference Locations & Dates

### Conferences held prior to formalization of the organization, AAHE

- 1946 Urbana, IL: April 1-4
- 1948 West Lafayette, IN: October 17-19
- 1957 Urbana, IL: October 9-12
- 1958 Ames, IA: October 22-25
- 1959 Stillwater, OK: October 7-10
- 1960 Ithaca, NY: October 12-15
- 1961 Manhattan, KS: October 11-14
- 1962 Minneapolis, MN: October 18-20
- 1963 University Park, PA: Oct. 30- Nov. 2
- 1964 East Lansing, MI: October 14-17
- 1965 Columbia, MO: November 3-6

### American Association of Housing Educators (AAHE)

- 1966 Urbana-Champaign, IL: October 26-29
- 1967 Lafayette, IN: October 11-14
- 1968 Athens, GA: October 27-29
- 1969 Davis, CA: October 15-17
- 1970 Lincoln, NE: October 14-16
- 1971 Blacksburg, VA: October 17-20
- 1972 Dallas, TX: October 10-13
- 1973 Madison, WI: October 10-13
- 1974 Boston, MA: October 29-November 2
- 1975 Fort Collins, CO: October 7-11
- 1976 Columbus, OH: October 12-16
- 1977 Tucson, AZ: October 19-21
- 1978 Minneapolis, MN: October 11-14
- 1979 College Station, TX: October 16-19
- 1980 University Park, PA: October 6-8
- 1981 San Francisco, CA: October 6-10
- 1982 Knoxville, TN: August 10-12
- 1983 Lincoln, NE: October 4-7
- 1984 Washington, DC: August 8-10
- 1985 Ames, IA: October 15-18
- 1986 Santa Fe, NM: October 14-17
- 1987 Newport, RI: November 2-7
- 1988 Corvallis, OR: October 11-14
- 1989 Greensboro, NC: October 24-27
- 1990 Columbia, MO: October 16-19
- 1991 Durham, NH: October 15-18
- 1992 Winnipeg, Manitoba Canada: Sept. 16-19
- 1993 Columbus, OH: October 6-9
- 1994 Atlanta, GA: October 18-21
- 1995 Salt Lake City, UT: October 11-14
- 1996 Manhattan, KS: October 16-19
- 1997 New Orleans, LA: October 22-25
- 1998 Seoul, South Korea: August 5-8
- 1999 Orlando, FL: October 18-23
- 2000 Stone Mountain, GA: November 15-18
- 2001 Big Sky, MT: July 22-25
- 2002 Minneapolis, MN: October 23-26

### Housing Education and Research Association (HERA) (name changed)

- 2003 Washington, DC (w/ AAFCS): June 28-30
- 2004 Chicago, IL: October 20-23
- 2005 Denver, CO: October 4-7
- 2006 Ithaca, NY: October 8-11
- 2007 Charlotte, NC: October 23-26
- 2008 Indianapolis, IN: October 7-10
- 2009 Santa Fe, NM: November 1-4
- 2010 Portland, OR: November 3-6
- 2011 Baton Rouge, LA: October 12-15
- 2012 Roanoke, VA: October 28-31
- 2013 Tulsa, OK: October 27-30
- 2014 Kansas City, MO: October 5-8
- 2015 Springfield, IL: October 11-15
- 2016 Jacksonville, FL: October 23-26
- 2017 Lowell, MA: October 8-11
- 2018 Savannah, GA: October 7-10
- 2019 Austin, TX: November 10-13
- 2020 Conference cancelled due to COVID-19
- 2021 Minneapolis, MN: Oct. 31-Nov. 3
- 2022 St. Louis, MO October 16 - 18

