

**COMMENTARY: UNIVERSITY CONSORTIUM IDENTIFIES RESEARCH ISSUES**

Joseph L. Wysocki and Sharon D. Oxley

Wysocki, National Program Leader, Housing and Indoor Environments, CSREES, U.S. Department of Agriculture, and Oxley, Executive Director, National Center for Housing and the Environment, reviewed the outcomes from the first meeting of the University Consortium, November, 2004. Three white papers were sent to participants prior to the meeting and then discussed in order to identify research priorities. Major research areas included: performance of policy options for land use patterns at the rural-urban fringe, analysis of farmland preservation policies, sprawl and residential preferences, supply impacts of regulation, and homeowner perceptions of the housing development impacts on water quality. The University Consortium members have goals to disseminate recommendations, identify funding opportunities, and collaboratively submit research proposals focusing on the identified research issues.

**A HOUSE IN THE COUNTRY: RURAL-URBAN ISSUES AND RESEARCH NEEDS**

Lawrence W. Libby

People at the interface between rural and urban places are increasingly at odds over how resources will be used. There are disputes over the mix of services (and dis-services) that flow from the land and water, and over the rules that govern how and by whom the mix is determined. The challenge is to design and maintain an institutional structure that achieves a satisfactory balance among the many interests involved. This article examined three issue clusters at the rural-urban fringe: (a) increasing demand for protection of farmland and open space as more people move to rural areas, (b) the environmental costs of large scale agriculture, particularly animal agriculture, and (c) the inadequacy of the legal infrastructure in rural areas to cope with change. Research priorities were identified concerning economic and social consequences of land use change and the performance of policy options to guide that change. An approach to institutional reform is to require that more of the costs attendant with residential and other development in farming areas be internalized in the decision to locate there in the first place. Research challenges resulting from consolidation of animal agriculture were also presented, emphasizing better understanding of the effects of specific technology on farm size and policy for coping with rural-urban conflict.

**THE ECONOMICS OF ENVIRONMENTAL REGULATIONS OF HOUSING DEVELOPMENT**

David Sunding

Conflicts over protection of biodiversity and other environmental amenities seem to be at their strongest when housing development is at issue. Housing affordability has emerged as a major national policy issue, and is seemingly in conflict with other mandates to protect and enhance environmental quality. Despite this apparent policy conflict, and despite the enormous potential wealth transfers resulting from environmental regulation of land use changes, it is somewhat surprising that there are relatively few papers linking these two problems. This article reviewed some of the issues arising from environmental regulation of housing development, and highlighted a number of areas for future research.

## **PRACTICAL MANAGEMENT STRATEGIES TO REDUCE EXPOSURE RISKS OF INDOOR AIR POLLUTANTS IN LIMITED RESOURCE HOUSEHOLDS**

Joseph Laquatra, Judy Boggess, Mark Pierce, and David Diligent

The goal of this research project was to test a teaching method that would encourage members of limited resource households to reduce their risks of exposure to indoor environmental toxins. The study focused on an educational approach for conveying the importance of healthy indoor air quality to those living in such households. This “Practical Management Strategies” project (PMS) had four components. The first was a summary of educational resources developed in this area for limited resource households. The second identified limits and gaps in these materials and developed new materials to fill these gaps. The third component was the implementation of a pilot program which both educated occupants about indoor environmental toxins and audited the presence of such toxins in their homes. The fourth component was a gauge of the effectiveness of this pilot program’s approach.

## **INNOVATIVENESS AND ACCEPTANCE OF RETIREMENT HOUSING IN THAILAND**

Virajada Buasri, Carmen D. Steggell, and Leslie Davis Burns

Changing demographics and lifestyles in Thailand are eroding traditional patterns of family support for the elderly. Caring for the elderly within the family structure is no longer assured. However, the concept of living in retirement housing is unfamiliar to most senior Thai citizens. The purpose of this study was to examine the acceptance of nontraditional retirement housing by pre-retirees in Thailand. The study was based on Rogers’ theory on diffusion of innovations. Personal innovativeness toward housing and acceptance of four types of nontraditional retirement housing were examined. Faculty (423) from an age-stratified sample at selected Thai universities completed a self-administered questionnaire. A positive correlation was found between personal innovativeness toward housing and acceptance of nontraditional housing types. Personal innovativeness also mediated the effect of demographic and housing characteristics on acceptance of all nontraditional retirement housing types. Of the four housing types, the universal designed single-family detached house was the most acceptable, followed by continuing care retirement housing. Acceptance was highest among males, those with higher incomes, and those with higher innovativeness scores.

## **HOUSING THE ELDERLY: INVESTIGATING SOLUTIONS TO HELP SENIORS AGE IN PLACE**

Starr M. Gobtop and Jean A. Memken

This study evaluated the information in the Americans with Disabilities Act (ADA) to determine if those guidelines would be helpful in the construction of new homes in the U.S. Universal design features and the housing needs of the elderly were compared to see if universal design features as outlined in the ADA could diminish the problems people have with aging in place. A case study was conducted on an existing house with three alternatives explored: a newly constructed house without universal design modifications, a newly constructed house with universal design modifications, and remodeling an existing structure to ensure usability for an elderly homeowner. The research revealed that new construction with modifications was not significantly different in cost than a newly constructed house without universal design features. The remodeling option to meet the requirements for an elderly homeowner proved to be extremely costly. Built environment professionals, such as interior designers and architects, must recognize the needs of the aging population and design houses that adapt to individuals as they age in place.

## **AGING IN PLACE: HOME MODIFICATIONS AMONG RURAL AND URBAN ELDERLY**

Christine C. Cook, Mary H. Yearns, and Peter Martin

The vast majority of older people say they want to age in place in their current homes and communities. However, as individuals age they are increasingly at risk economically, physically, and mentally. Despite these changes, there appears to be both a resistance to moving and a reluctance to modify the home to successfully age in place. This study examined housing resources and community supports available to a sample of rural and urban younger old (65-79 years) and very old (80+ years) individuals to age in place. The research question addressed was: What mix of sociopsychological, demographic, and physical characteristics predicts adoption of home modifications? Based on the results of a survey conducted in 2002, it was found that both rural and urban respondents wanted to live independently and age in place. Respondents had very few limitations—they had good health and stamina. Very old rural respondents, however, were found to have greater limitations in Activities of Daily Living and in their abilities to perform home repairs and maintenance without assistance. Few respondents had planned for future housing needs or made home modifications necessary to age in place. However, older respondents were more likely to have made home modifications than their younger counterparts. A surprising finding was that those who scored higher on the Geriatric Depression Scale were less likely but those that considered themselves to be coping well were more likely to have made home modifications.

## **PRICE OF SHELTER: HOUSING ISSUES AFFECTING LOW-INCOME, NEW IMMIGRANT LATINOS**

Lucy Delgadillo and Elizabeth Contos

This qualitative study identified housing issues affecting low-income, new immigrant Latino families in a recently designated metropolitan county. Researchers conducted focus groups with real estate professionals and interviews with Latino families. It was concluded that the housing challenges facing low-income Latinos in Cache County, Utah, were similar to those issues highlighted in quantitative research results. However, this research provided “a voice” for Latinos to express their views. It gave insights into the lives of immigrants attempting to learn the U.S. system of banking and checking. It also addressed the plight of the largest and fastest growing minority in the U.S. For example, the problem with obtaining affordable housing was directly related to Latinos’ struggles with low income and job stability. Their housing conditions were also influenced by a lack of financial knowledge in all aspects of the U.S. banking and credit system, and especially of the mortgage lending industry. Discrimination in the real estate and rental markets continued to be a major hindrance to the advancement of this minority group. Even after low-income Latinos obtained a rental unit or purchased a home they still faced problems of low quality housing. Most of them understood the social and economic benefits that derive from homeownership, but many could not obtain it because of their struggles with low income, legal status, and/or discrimination.

**Special Issue: Trends in Kitchen and Bath Design Research**

Guest Editors: Kenneth R. Tremblay, Jr., Sherylin Doyle, JoAnn M. Emmel,  
Carmen D. Steggell, and Andrea Garvin

**SPECIAL ISSUE INTRODUCTION: TRENDS IN KITCHEN AND BATH DESIGN RESEARCH**

Kenneth R. Tremblay, Jr., Sherylin Doyle, JoAnn M. Emmel, Carmen D. Steggell, and  
Andrea Garvin

This special issue of *Housing and Society* was the result of a collaborative effort between the Housing Education and Research Association (HERA) and the National Kitchen and Bath Association (NKBA). The call for papers was developed in summer 2004 and distributed to over 1,500 persons. Nine manuscripts were selected that highlighted important research being conducted on kitchen and bath design. Funded by an \$8,000 grant by NKBA, additional copies of this issue were printed and distributed at the 2006 Kitchen and Bath Industry Show and Conference.

**KITCHEN ACTIVITIES OF TWENTY-FIRST CENTURY AMERICAN HOUSEHOLDS**

JoAnn M. Emmel, Julia O. Beamish, and Kathleen R. Parrott

Space standards used today to design kitchens have evolved from analyses of work in the home. Lifestyle and demographic changes, however, suggest that kitchen users and activities have changed since basic research on work centers and workflow was first conducted. A national telephone survey of 630 households assessed kitchen activities by household type and size. Survey results revealed that, in general, households cook meals on a regular and frequent basis and entertain at home despite the perception that Americans regularly eat carryout foods. Fresh produce is widely used. Households with an older adult present perform more basic cooking activities, like scratch cooking and baking. The microwave oven takes a dominant place in the cooking activities of most cooks. Households also have many small appliances in their kitchens. One person usually conducts the meal preparation, but many non-cooking activities take place in the kitchen during meal preparation and throughout the day.

**KITCHEN AND BATH DESIGN: STRATEGIES FOR WORKING WITH ARTISTS**

Carolyn Deardorff and Craig Birdsong

A continuing trend in both home building and remodeling is to aesthetically personalize kitchen and/or bath designs to better reflect the tastes and needs of the client. One method of doing this is to utilize custom commissioned artwork such as stained glass, murals and frescos, faux finishes, trompe l'oeil, mosaics, and painted floor cloths. This field report shared the results of a survey conducted with a small group of designers and artists from a major metropolitan area. All of the participants had worked nationally or internationally. Only those responses representing more than 50% of the designers or artists were noted. Some of the topics addressed included who typically generates the initial idea for custom artwork and when in the design process, what is the involvement of the client and designer, how are artists selected, and who is responsible for installation. From the results of the study eight strategies were presented. These were intended as helpful aids for designers working with commissioned artists to personalize client spaces.

## **ATTITUDES TOWARD PROFESSIONAL AFFILIATIONS AND ACCREDITATIONS AMONG DESIGN STUDENTS**

Carmen D. Steggell, Carol C. Caughey, and Steven R. Mansfield

Universities expend significant resources to obtain and maintain accreditations and professional affiliations. The purpose of this study was to investigate design students' attitudes regarding professional organizations. Students majoring in housing, interior design, and/or interior merchandising/marketing at two state universities responded to a two-part questionnaire. Results revealed that only a minority of students was able to correctly identify relevant acronyms and few considered professional accreditations in their selection of universities. However, senior students stated that they were likely to join professional organizations in their careers. Findings are important in considering the resources expended in accreditations and in student opportunities to connect to professional organizations and attain credentials.

## **RETHINKING GUIDELINES FOR KITCHEN STORAGE**

Kathleen R. Parrott, Julia O. Beamish, and JoAnn M. Emmel

A major re-evaluation of the National Kitchen and Bath Association Kitchen Planning Guidelines led to an investigation of the type and number of items stored in kitchens today, as the basis for new guidelines for kitchen storage requirements. Data were collected through inventory surveys of 87 households in 23 states. Data were sorted by small (150 square feet or less,  $n = 31$ ), medium (151 to 350 square feet,  $n = 31$ ), and large (over 350 square feet,  $n = 24$ ) size kitchens, and by 16 item categories. Every item in more than 25% of kitchens was in the final totals. A sample inventory for each item category was mocked-up in standard spaces 12 inches deep, by needed length, to determine running inches of storage space. Small kitchens had 655 items needing 1,047 running inches, medium kitchens had 820 items, needing 1,377 running inches, and large kitchens had 1,019 items, needing 1,519 running inches. A conversion factor was developed to determine shelf/drawer frontage, a measure more useful to designers. Recommendations, which were adopted by the National Kitchen and Bath Association, included increasing total storage in the kitchen; using shelf/drawer frontage to calculate storage; distribution of storage among types (e.g., wall or base cabinet) of storage, allowing flexibility in achieving the total; and increasing recommended counter space to allow counter storage areas.

## **GREENING KITCHEN AND BATH CABINETS**

Elena O'Brien, Rebecca Sweet, and Yaprak Sagdic

The purpose of this study was to illustrate a process that developed an environmental education system (EES) for consumers to identify and compare green scores of cabinets for kitchens and baths. The process sought to close the gap that exists in the literature available to consumers, the data produced by the scientific community, and manufacturers' product information on the selection of environmentally friendly products. The lack of uniform information distribution and the lack of an organizing device to disseminate the information may lead to frustration and confusion by the consumer. The EES contains a matrix and a label for providing information about cabinet construction and a cabinet questionnaire, which is the rating tool. These information tools can help consumers fairly evaluate and compare manufactured cabinets based on their impact to the near environment and human health.

## **DEVELOPING CABINET PROTOTYPES FOR A UNIVERSAL DESIGN KITCHEN**

Mary H. Yearns, Patrick E. Patterson, and Andrew Bice

Older women want kitchens that can adapt to their changing needs and allow them to continue to prepare meals in their own homes. This article described the development of cabinet prototypes for a universal design kitchen that can accommodate a wide variety of users, regardless of their age or ability. Information gathered in each phase of the project provided input into the further evolution of the prototypes. During Year 1 focus group and ethnographic interviews were conducted in conjunction with the videotaping of participants (for ergonomic analysis) while they prepared a typical meal in their own homes. Design issues were identified, culminating in the construction of free-standing kitchen furniture with modular components that were easily adjustable by do-it-yourselfers. Year 2 focused on further refining the prototypes, analyzing the ergonomic benefits of the cabinets, and obtaining feedback from consumers and providers on the usability of the cabinets. Participants first cooked one food using the modules in a traditional arrangement; then they rearranged the modules into a configuration of their choice and prepared the same food again. Participants invariably arranged the modules into configurations that improved the ergonomic characteristics of the cooking experience. The multi-pronged research design yielded important insights about user characteristics, as well as the usability and appeal of kitchen cabinets with universal design components.

## **UNIVERSAL DESIGN FEATURES AND PRODUCT CHARACTERISTICS FOR KITCHENS**

Sandra C. Hartje

The purpose of this research was to answer the question: What universal design features and products are essential for kitchens in new, single-family housing to be universally designed? One-hundred and one respondents with a strong working knowledge of universal design and housing completed a Web-based survey. The survey results identified design features and product characteristics considered essential and/or advanced for kitchens. Twelve of the 16 general features presented for kitchens were considered essential, including adjustable height shelves in wall cabinets, stretches of continuous countertops (same height) at 32" – 34", and an option for high toe kick space (9" x 6"). Essential features for the kitchen sink included 27" – 29" minimum clear knee space under the sink (with pipe protection required), a disposal or two-basin sink, and a rear mounted drain. Essential characteristics of the faucet included faucet controls with single levers (crosses or loops), non-slip textures, an easy to control flow rate and easy to adjust temperature, and a display/label with easy to distinguish hot from cold with letters and color. This article also identified the design features and product characteristics where the percentage difference between the categories of essential and advanced was 10% or less.

## **DEVELOPMENT AND USE OF THE SUPPORTIVE KITCHEN FEATURES CHECKLIST IN HOMES DESIGNED FOR RETIRED PERSONS**

Glenda Gilmore Andes and Julia O. Beamish

The purpose of this study was to determine what supportive features were being included in the kitchens of homes being built for persons living in age-restricted retirement communities. Research recommendations for seniors' kitchens were reviewed and a list of research and design recommendations based on empirical research was compiled and organized into categories of supportive features. Design recommendations were provided for most elements in kitchens and point values were assigned to individual supportive features on the basis of safety and ease of use. An assessment tool was created providing the means to compare kitchens in different homes on supportive features regardless of the configuration or combination of appliances and fixtures. Scores of different kitchens can be compared using either the total score or the percentage score for the number of supportive features. The assessment tool can be refined for use by consumers and members of different housing and design professions. Sixty

homes in 23 age-restricted retirement communities from four states were observed and photographed for this study using the assessment tool. Kitchens in the retirement community homes studied had 46% - 77% of the possible number of recommended supportive kitchen features.

### **ADVANCED STUDY IN KITCHEN AND BATH DESIGN AND BUSINESS**

Katherine Warsco, Marjorie Inman, Runying Chen, and N. Yaprak Sagdic

The purpose of this research was to identify the need for advanced study in kitchen and bath design and business among segments of the kitchen and bath industry. The study also investigated both advanced level competencies impacting the career paths of professional kitchen and bath designers and Web-based distance education to achieve educational goals. A quantitative analysis of a survey of the voting membership of the National Kitchen and Bath Association found a majority demand for advanced study in kitchen and bath design and business by all segments of the industry responding to the survey (498 usable responses). The findings revealed 13 areas of expertise expected of an employee with advanced study and 20 topics of interest to the industry for continuing education and/or master's degree program. A majority of respondents perceived that continuing education units would be more attractive if they could count toward a master's degree and that their respective firms would approve of employees pursuing advanced study completed on-line while continuing their present employment. The findings supported the need for advanced study in key areas of kitchen and bath design as well as business management.