



helping

**MAES scientists'
innovative research
is helping people
cope, learn and
make healthy choices
for themselves and
their families**

hands, helping humans

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he Michigan Agricultural Experiment Station funds researchers in six colleges, including the colleges of Social Science and Communication Arts and Sciences, but the word “agricultural” in the name conjures strong images of crops, animals and insects in many people’s minds.

Still, studies on youth, aging, family dynamics, food choices and parenting have always been part of the MAES mission. In the past year, the MAES has revitalized its commitment to family and community research, hiring a number of new faculty members who are changing the way research in this area is being done with new approaches and tools.

MAES criminal justice researcher April Zeoli, who has a background in health policy, is studying domestic violence from a public health perspective.

“It’s a relatively new way to look at violence,” she explained. “But if you look at the top 10 causes of death among age groups, homicide is in the top five for women ages 15 to 34 [for women age 20 to 24, homicide is the No. 2 cause of death]. Given the numbers, it’s obviously a public health issue.”

Zeoli, along with MAES advertising scientist Elizabeth Quilliam and MAES family and child ecology scientists Adrian Blow, Kathy Stansbury and Holly Brophy-Herb, are part of a growing cadre of researchers who are redefining what social science research means to the MAES.

“Social science research is an integral part of our mission,” said John Baker, MAES associate director. Baker’s administrative duties include maintaining liaison with the colleges of Social Science and Communication Arts and Sciences. “In partnership with MSU Extension and our affiliated colleges, we have made specific investments in faculty positions that are addressing family issues that are of immediate concern to Michigan and the nation. From posttraumatic stress in soldiers returning from Iraq and Afghanistan to childhood obesity, we have a commitment to study what’s important to Michigan families and communities.” ▼



MAES family and child ecology scientist Adrian Blow worked with the Michigan National Guard to help develop a reintegration program for soldiers returning from Iraq and Afghanistan and their families.

“I had real bad flashbacks. I couldn’t control them.... It was just horrible for anyone to experience.”

23-year-old Iraq war veteran

Home but Struggling with “Welcome”

Since Sept. 11, 2001, more National Guard troops have been deployed to Iraq or Afghanistan than at any other time since World War II.

“About 40 to 50 percent of the forces deployed are from the National Guard,” said Blow, who also is a licensed marriage and family therapist. “When National Guard troops come back, most of them don’t come back to a military base. They immediately come back to civilian life. They’re not hanging out with fellow soldiers that have been deployed and returned. Likewise, their families don’t have the support network that comes from living on a base.”

According to a 2008 study by the RAND Corporation, nearly 20 percent of military service members who have returned from Iraq and Afghanistan — 300,000 in all at the time of the study

— report symptoms of posttraumatic stress disorder (PTSD) or major depression, yet only slightly more than half have sought treatment.

Blow said that some of this reluctance to get help stems from the stigma attached to seeing a counselor. Veterans often say they are hesitant to seek treatment in part out of fear that the information will be used to derail their careers. (Commanders typically have access to a service member’s military medical records.) For some veterans, seeking mental health counseling is seen as a weakness that runs counter to being ready to fight a combat mission.

“When you’re deployed, you live with adrenaline and PTSD all the time,” he said. “It’s a way of coping with danger. But in civilian life you don’t need that.”

Suicide also is on the rise in the military. The number of suicides reported by the Army has risen to the highest level since record keeping began 30 years ago. According to reports in the New York Times and on the Army’s Web site, 192 active-duty soldiers and soldiers on inactive reserve status committed suicide in 2008, twice as many as in 2003. The 2009 numbers are likely to be higher:

from January to mid-July, 129 suicides were confirmed or suspected. This is more than the number of American soldiers who died in combat during the same period. Though these figures are disturbing enough, they don’t tell the full story. Suicide statistics are usually low, and there are no reliable figures for veterans who have left the service. The Department of Veterans Affairs systematically tracks suicides only among hospitalized patients, and no regular suicide reports are distributed.

To help members of the National Guard returning from Iraq and Afghanistan, Blow and Lisa Gorman, a recently graduated doctoral student who studied with Blow, in partnership with the Michigan National Guard (the Michigan National Guard assistant adjutant general, Brigadier General Jim Anderson, is an MSU alumnus) helped develop a reintegration program for National Guard soldiers and their families that uses other veterans to link the returning soldiers to counselors and other professional treatment.

“The program is unique because it’s aimed at both the service members and their families,” Blow explained. “It’s a family reintegration program exclusively for the National Guard. About six workshops are conducted per year — it’s mandatory for the soldiers, and they’re encouraged to bring their families. We’ve worked with everyone in the Michigan National Guard who has come home in the past three years.”

Additionally, in collaboration with the Michigan National Guard and the University of Michigan, he helped create the Buddy-to-Buddy program (www.buddytobuddy.org) for returning Michigan National Guard members. The program offers each soldier the opportunity to be paired with another veteran to confidentially discuss any problems and issues.

“Buddy-to-Buddy was designed to help returning soldiers deal with the many challenges they may face when readjusting to life at home,” he said. “There aren’t Veterans’ Affairs offices everywhere. Someone living in the U.P. may have to drive a long way to get to a VA office. The Buddy-to-Buddy program can offer help closer to home.”

Blow and Gorman run the workshops with two Vietnam veterans who had difficulty reintegrating into civilian life when they returned from duty. The veterans received treatment for PTSD and depression and talk frankly about what they went through and continue to experience. The workshops are among several other programs aimed at easing the reintegration process for returning soldiers.

“There’s this expectation that when the soldier returns, everything will be better,” Blow said. “But it doesn’t always work that way.”

Data that Blow has collected indicate that some returning soldiers face difficulties with depression, PTSD and alcohol

use/abuse, as well as marital/relationship stress and parenting challenges. Spouses of soldiers report similar struggles.

“A 15-month deployment can have a huge effect on the family,” he said. “The spouse has had to do everything in the home, and now the soldier has to be put back into the family structure. There is a shift in the balance of power. Everything has to be renegotiated. In some cases, soldiers can feel like they’re on the outside looking in — no one listens to them — about 10 percent of male soldiers have had children born while they were deployed. In other cases, the spouse is exhausted from doing everything and just dumps it all on the soldier; it’s like, ‘I did it all that whole time, now it’s your turn.’ Our goal is to help both the soldier and the spouse understand what the other went through during deployment.”

Michigan’s bleak economic outlook doesn’t help mitigate any of the scenarios. Blow said that many soldiers don’t have jobs to return to when they return from deployment.

“Either they joined the National Guard because they didn’t have a job or the job changed drastically while they were gone,” he explained. “Work issues are huge.”

The workshops help give voice to what is going well in soldiers’ lives, as well as what isn’t working. The soldiers and spouses are separated for parts of the workshop, allowing each group to focus on the most pressing issues.

“Alcohol and tobacco use, which are connected to a lot of depression, is a bigger problem for soldiers than it is for spouses,” Blow said. “Drinking is a way to celebrate successes but also can be used as a way to cope with stress.”

Blow’s research has found that the ability to cope is very dependant on each individual and each deployment. Some soldiers find that each subsequent deployment is more difficult; others find that they cope better each time they return. On the basis of what he’s learned from the research, he and his team have helped add more programming for spouses and children to the reintegration process.

“We want to expose the soldiers and their families to the resources that are available, as well as raise their awareness of issues that may come up,” Blow explained. “Some issues have incubation periods and may not manifest right away. Above all, we want them to know that it’s OK to get help.” ▼

“The hitting became beatings almost every day. Even though I was pregnant, he did not care.”

18-year-old domestic violence survivor

Bang and Blame

According to the Michigan Resource Center on Domestic and Sexual Violence, 58 percent of Michigan women experience some type of violence perpetrated by a man, and 38 percent of women who have ever had a

husband or live-in male partner have experienced some type of violence perpetrated by that partner. Though statistics on domestic violence and divorce are difficult to find, one study in Oklahoma found that 30 percent of divorces in that state involved domestic violence. It's not completely clear how many of these divorce cases involve children, but research suggests that more than 1 million children in the United States are affected by domestic violence.

MAES criminal justice scientist Zeoli is investigating child custody in divorce cases involving people with a history of domestic violence.

“I want to know what happens if there has been domestic violence and the victim is forced, through court-ordered custody and visitation arrangements, to maintain contact with the perpetrator,” she said. “Early research suggests that the violence continues, but there is no concrete evidence at this point. Our study will go a long way to offering solid data on what's happening.”

Zeoli's study is limited to women victims of domestic violence because women make up the majority of domestic violence victims. The perpetrators are almost always men.

A history of domestic violence charges might seem to make a person less likely to be awarded any type of child custody, but Zeoli explained that, in Michigan, domestic violence is not a factor that immediately would eliminate someone from having or sharing custody.

“Domestic violence is just one of 12 factors that a judge considers when deciding on custody,” she said. “A lot of domestic violence is difficult to prove, even if there is a history of personal protection orders. The victim can come across as unstable or drained because of the ordeal of violence. And the perpetrator can be calm, cool and more believable. It's very much a case of ‘he said, she said’ in many instances.”

The topic also is somewhat difficult to study because many people don't want to admit that it exists, especially in intact families. And while domestic violence isn't a new problem, it is newly illegal, relatively speaking. Michigan's first anti-domestic violence laws were passed in 1978, the same year the legislature created the Michigan Domestic Violence Prevention and Treatment Board within the Michigan Family Independence Agency (now known as the Department of Human Services). Domestic violence has been studied in an organized way for only about 25 years.

Zeoli's study is looking at how the specter of domestic violence is perceived in court. If it's mentioned, how does the court react? How does the court determine the credibility of domestic violence allegations? Does domestic violence influence custody decisions? And do court procedures and custody decisions affect whether the violence continues after the divorce? She's also looking at whether the age of the children has any affect on whether the violence continues and whether violence is increased if the woman has other children that are not the biological children of the perpetrator.

In many cases, the perpetrator may use children as emotional abuse weapons against the victim, threatening the kids with both physical and/or sexual harm to coerce the victim into doing things his way. Or he might say horrible things about the woman to the kids so that they come to disrespect her so that the man regains control. According to a report released by the Michigan Legislature, children in families where the mother is abused suffer higher rates of abuse than children in other families. Some children are injured while trying to protect their mothers; others identify with the violent perpetrator and begin to abuse their mother and other siblings themselves.

“My interest is in the emotional and physical safety of the women and children,” Zeoli said. “Even if the child isn't being directly abused, research shows that children still suffer in a home with domestic violence. But I don't only want to find out what goes wrong. I want to find out what goes right. If the man stops abusing the woman and the children are safer, what were the factors that contributed to that? Are there policy changes that we can put in place to make that outcome more likely?”

Supervised visitation sites are one example of a possible policy change that may help decrease domestic violence after divorce. At a supervised visitation clinic, each parent arrives and leaves through a different entrance, and the former partners are kept completely separated throughout the entire visit. Trained staff members supervise the visit and ensure the child's safety.

“Maybe those types of resources need to be more plentiful,” Zeoli speculated. “Or maybe court processes need to change. Maybe courts and mediators need to focus more on domestic violence as a contributor to divorce.”

“Right now, joint custody is thought to be better than single-parent custody,” she continued. “But maybe in cases with domestic violence, it's not. There's really not a lot of research on this topic to inform decision making. We're hoping to fill some of the data gaps with this study.”

In a related study, Zeoli is investigating whether arrest laws play a role in escalating domestic violence. She's looking at the number of intimate partner homicides in states with discretionary domestic violence arrest laws (Michigan is one of these states) compared with states with mandatory arrest laws. In states with discretionary laws, police officers can use their discretion in deciding whether to arrest the alleged abuser. A mandatory arrest law means that the police must arrest an alleged perpetrator when a complaint is made, if there is probable cause. Some research suggests that mandatory arrest laws are more dangerous than discretionary laws, but Zeoli is skeptical of this research.

“Mandatory arrest laws vary greatly from state to state,” she said. “Some laws require that the alleged victim has an injury or that a dangerous weapon was involved in the assault to trigger mandatory arrest. Some states only mandate that officers arrest within a certain amount of time of the assault, and some states actually build discretion into the mandatory arrest laws. For example, the Nevada law states that arrest is mandatory ‘unless mitigating circumstances exist.’ The picture may not be as clear as previous research suggests. It may be that certain aspects and requirements of these laws are helpful while others are harmful. As we do more research, we hope to offer policymakers more data so new policies can be based on science.” ▼



◀ MAES criminal justice scientist April Zeoli, who has a background in health policy, is studying domestic violence from a public health perspective, a relatively new way to look at violence.

“I am deeply concerned about the current unhealthy trend toward poor nutrition and childhood obesity, which the Institute of Medicine has linked to the prevalence of television advertisements for fast food, junk food, sugared cereals and other foods wholly lacking in nutritional value. If this trend continues, our children could be the first in generations to enjoy shorter life expectancies than their parents.”

U.S. Rep. Edward J. Markey (Mass.)

Pour Some Sugar on Me

In results that should surprise no one, many studies have found that advertising influences the foods that children ask for, buy and eat. It's unlikely that food and beverage companies would spend nearly \$10 billion per year marketing their products to young kids and adolescents if they weren't getting some return on their investment. As expenditures on selling food to children in the United States have increased, so has childhood obesity. In the past 20 years, childhood obesity rates have more than tripled. The National Center for Health Statistics reports that 17 percent of children aged 2 to 19 are overweight.

A 2005 study found that candy, sweets and soft drinks were the top products in television ads aimed at kids. Another study in 2006 found that 89 percent of the foods advertised during children's television programming were classified as unhealthy, with most being especially high in sugar.

“It's a very complex issue, but overall, there is evidence that marketing to kids does shape their food choices and contributes to childhood obesity,” said MAES advertising researcher Elizabeth Quilliam. “But we really don't know how much.”

To help tease apart any cause-and-effect relationship, Quilliam is studying a relatively new food marketing tactic: online games that incorporate branded food products, which have been dubbed “advergames.” In one now-deleted advergame for M&M's candies, “Amazing Crispy,” the child became an M&M's “spokescharacter” named Crispy. To win the game, the child (as Crispy) had to collect as many M&M's as possible, earning a point for each M&M collected and moving to higher game levels as more candies were collected.

Instead of simply sitting and watching as they do with television ads, children actively participate in online game playing,

which may lead to more positive feelings about the game and the brands contained in it. In addition, though television shows aimed at children are required to make a clear distinction between the program and advertising, some researchers wonder if younger children can separate the persuasion from the entertainment in online advergames.

“I'm interested in the games because, unlike television, where ads are limited to 30 seconds, there is no limit on how long a child can stay online,” she said. “They may be playing advergames for hours and interacting with the food products the entire time. We suspect that these online games will affect children differently, but we need to do the research to see if that's true.”

Quilliam and MSU advertising colleagues Mira Lee and Richard Cole and former MAES advertising researcher Yoonhyeung Choi (now at Hanyang University in Korea) first analyzed advergames in 2006. The scientists evaluated a random sample of 250 games for brand integration strategies, the extent to which the advergames educated children about nutrition and healthy eating, the types of food promoted by the games and the proportion of products the games were promoting that were classified as low-nutrient foods.

The researchers found that almost all the food featured in the games were high in fat, salt and sugar — about 84 percent of the food products advertised in advergames were classified as low-nutrient foods. The study also found that very few advergames educated children about nutrition and health issues.



“We're currently updating the advergame study because the CARU guidelines now include online content and advergames,” Quilliam said. “We want to know if this is having an effect on the types of foods being promoted

in the advergames. We're also going to compare advergames for products made by CFBAI companies to those of non-participants to see if there is a difference in the types of foods that are being promoted. Ultimately, we want to understand how the games work and see if the same techniques can be used to promote healthy eating habits. That would be a nice contribution to make.”

In a related study, Quilliam and MSU advertising colleagues Bruce Vanden Bergh and Nora Rifon, MAES packaging researcher Laura Bix, and food science and human nutrition researcher Lorraine Weatherspoon are examining the packaging of children's food products to see how it contributes to kids' food choices. The scientists will do a content analysis of the packages and later examine the effectiveness of various techniques — using a celebrity on the package, for example. They'll be using eye-tracking software to see which images or words children and parents look at first and what holds their attention the longest.

“It's similar to the advergame study — those are two marketing strategies that may fly under the radar of parents,” Quilliam said. “Once we analyze what's being done, we're going to compare the packaging of nutrient-dense foods to the packaging of less nutrient-dense foods to see if there are differences based on nutrient levels. And like the advergame study, if the less nutritious foods are using more successful marketing strategies, we'd like to see if we can use those strategies to promote healthy foods and healthy lifestyles.” ▼

“From a policy perspective, there has been a lot of discussion about how food marketing to kids may be contributing to childhood obesity,” Quilliam said. “But we haven't seen any regulatory changes. There are so many factors that go into policy changes, it's hard to say if this research will lead to any reformulations.”

In a proactive move, 15 of the largest food and beverage companies joined the Children's Food and Beverage Advertising Initiative (CFBAI), a voluntary group launched in 2006 whose members have pledged to devote at least half of their television, radio, print and online advertising aimed at children younger than 12 to “better-for-you foods” and/or messages that encourage good nutrition and healthy lifestyles. Four of the companies have pledged to stop marketing directly to children younger than 12. Ten of the companies have pledged that all of their advertising aimed at kids will be for foods and beverages that meet the company's nutritional standards. The nutritional standards used to determine better-for-you foods appear to be somewhat less than stringent: under Kellogg standards, Froot Loops are considered better-for-you — even though a 1-cup serving contains 13 grams of sugar (41 percent of the product by weight). In comparison, a serving of three Chips Ahoy chocolate chip cookies has 10 grams of sugar, and a serving of 11 Gummi Bears candies has 13 grams of sugar.

Another self-regulatory program, the Children's Advertising Review Unit (CARU), sets guidelines for product advertising directed at kids in all media, as well as online privacy practices that affect children. CARU guidelines aim to ensure that advertising directed at children is not misleading, unfair or inappropriate for the intended audience.



MAES family and child ecology researcher Kathy Stansbury (right) is studying how the relationship between mother and child affects babies' and young children's responses to stress. One of MAES scientist Holly Brophy-Herb's (left) recent projects has been to develop a curriculum that parents can use to encourage healthy emotional development in infants and toddlers.

“At 10 a.m. I was tired. Having slept fitfully the night before, I was already at the end of my emotional rope.

It was during the early weeks of an unplanned pregnancy. My 4-year-old son, Luke, was bored and amused himself by taunting his 2-year-old brother, Ben. By the third round of shrieks, I snapped. I screamed at them both to stop and lunged at them in anger. Luke turned away and Ben gasped. Suddenly I noticed their faces. Terror.”

24-year-old mother of three

Teach Your Children Well

On the surface, the relationship between a mother and baby usually is filled with love, nurturing and protection. It only hints at the blend of biology, behavior and emotion swirling below the surface that all work together to teach the baby how to react to various emotional situations.

MAES scientists Kathy Stansbury and Holly Brophy-Herb are keenly interested in the social and emotional development of infants and toddlers, with each studying a different facet of this development. Stansbury focuses on how the relationship between mother and child affects babies' and young children's responses to stress; Brophy-Herb focuses on how parents teach their young children to express and manage their emotions.

“I'm interested in infants' stress responses from an evolutionary perspective,” Stansbury explained. “I want to know how a mother's behavior, stress hormone levels, heart rate and other physiological factors affect how a baby responds to stress — basically I want to know how the system works. The terms ‘good parenting’ and ‘bad parenting’ aren't helpful to me. My goal is to understand what's happening at a physiological level so others can provide interventions if they're needed.”

Emotion helps people move toward goals. For example, being buoyed by a random act of kindness from a stranger may make a person more likely to help someone else. Though babies have emotions, they may need to recruit help from their environment, usually a parent, to deal with their emotions or to fulfill a goal. If a young child is doing a puzzle and gets frustrated and starts to cry because he can't finish it, his mother will likely step in, calm the child and offer strategies to help him finish the puzzle. To do that, the mother needs to be able to regulate her own emotions and be present and paying attention to what's happening so she can objectively help the child. The process is natural and happens in all societies from New York City high rises to rainforest huts.

“But stress can distract a mother from the baby,” Stansbury said. “If she is a single parent and is worried about having enough food and paying rent or perhaps involved in a relationship that is violent, then her ability to manage her own stress behavior may go by the wayside in favor of meeting more pressing basic needs.

“I'm not making any judgments,” she added. “Food and shelter are very important and necessary for the baby's survival. If the environment the mother and baby are in isn't stable, then it's perfectly natural that a mother would be preoccupied with fixing that.”

Fixing an unstable environment affects the mother's behavior, which in turn affects her stress and hormone levels, which affect her mental health. All of these factors then affect the baby's physiological development. Stansbury's research suggests that a mother's ability to regulate her emotions, as measured by heart rate, blood pressure and stress hormones, affects her ability to keep the baby on track emotionally.

“The job of the mother is to convey the level of safety or threat in the environment to the baby, and the baby's response will match that,” she explained. “We're looking at the behavioral, emotional and physiological factors that affect how this works within the mother-child interaction. As far as I know, this is the first time the relationship among these factors has been investigated in such a systematic way.”

Stansbury and her colleagues are preparing to publish a study demonstrating a synchronous match in stress hormone levels between mothers and their 6-month-old babies across a number of activities, including play and a stressful situation.

The scientists found a similar match in stress level hormones between mothers and children up to 4 years old in another study, but with one important difference.

“The match in stress hormone levels for 2- to 4-year-olds depended on whether the mom was good at organizing her

child's behavior,” Stansbury explained. “If she wasn't good at this, there was no match at all in stress hormone levels. This likely means the children are using other things, other cues, to organize their environment and react to situations.”

Stansbury is now beginning to investigate the role that genetic variation may play in the relationship. She's screening saliva collected from mothers and 2-month-old babies for commonly occurring variants in the genes related to stress hormones.

“We want to know if we can use genetics to help predict stress response outcomes,” she said. “In several stress-related genes, some variants seem to mean that the babies' stress response will be more affected by the environment. So we suspect that the babies with certain variations of common genes that receive very high quality maternal care will do better than babies without the variant that also receive very high quality maternal care. Similarly, babies that have the variant and receive lower quality care will do worse than babies without the variant that receive the same level of care.”

Viewing the same issue through a different lens, one of Brophy-Herb's recent projects has been to develop a curriculum that parents can use to encourage healthy emotional development in infants and toddlers. The Building Early Emotion Skills (BEES) curriculum features four sections focused on building parents' emotion-related parenting skills, building sensitive parenting skills, identifying and labeling emotions, and becoming aware of how children regulate their emotions. Before the BEES curriculum, no empirically based curriculum was available to help parents teach infants and toddlers how to express emotions in a healthy way — BEES is the first of its kind.

Emotion-related parenting skills include techniques such as labeling emotions, responding with empathy to a child's emotions, letting the child know that expressing emotion is acceptable, modeling appropriate strategies for managing emotions, and providing support as infants and toddlers work to control their emotions.

“Expressing emotion in an acceptable way underlies a number of life skills that begin to develop in early childhood,” Brophy-Herb said. “School readiness, handling oneself in the lunchroom, navigating peer conflicts — these all depend on healthy emotional development, which affects how well children do in school and how likely they are to stay in school.”

In a recent paper, Brophy-Herb and colleagues found that lower income parents knew that they needed to demonstrate appropriate ways to manage emotions to their children. The fact that parents' discipline practices didn't necessarily match their beliefs reflects the need for tools to enhance early emotion-related parenting.

Implementing and evaluating the BEES curriculum involved 173 parents and infants/toddlers in central and upper lower Michigan who were enrolled in Early Head Start (EHS) programs. Early Head Start is a federally funded, community-based program for low-income families with infants and toddlers and pregnant women. Although the final analysis of the curriculum isn't completed, early results suggest that low-income parents' beliefs about the appropriateness of emotion expression by their children, as well as the parents' use of strategies to support early self-regulation in parent-child interactions, are related to toddlers' self-regulation skills.

Besides Brophy-Herb, BEES curriculum research team members are, from MSU: Hiram Fitzgerald, Laurie Van Egeren, Mildred Horodyski, Esther Onaga and Sara Dupuis; from the University of Wisconsin-Milwaukee: Rachel Schiffman; from Louisiana State University Health Sciences Center: Erika Bocknek; from the Jackson Community Action Agency: Mary Cunningham-DeLuca and Shelley Hawver; from Eightcap, Inc.: MaDonna Adkins; and from the Mid-Michigan Community Action Agency: Joanne Pittman.

— Jamie DePolo