Letter from the Head

There is much excitement at Purdue stimulated by President Martin Jischke. Strategic planning has been occurring at all levels to take Purdue to the next level of pre-eminence. We have been identifying strategies and metrics for evaluating our progress in the areas of learning, discovery and outreach. Purdue hopes to improve in each of these areas, but four signature areas have been identified for focused development. These areas are being featured in Discovery Park, which will be the home of new buildings with appropriate laboratories for nanotechnology, bioengineering, proteomics, entrepreneurship and e-commerce. The space will be flexible and occupied by interdisciplinary projects related to these priorities. Purdue has launched a University-wide fund-raising campaign connected with these ambitious goals. This investment by the University to partner with researchers is stimulating a number of large grant submissions. The Provost announced that 300 new faculty positions will be created over the next 5 years. We are in a more competitive position that we ever have been. Expect to see good things happening.

Learning Highlights: After spending several years altering the undergraduate dietetics curriculum to meet the American Dietetics Association competencies, which led to continued approval of our didactic and coordinated programs under the new guidelines, we turned our attention to our graduate curriculum. Faculty from several departments in the Interdepartmental Nutrition Program (INP) created and taught for the first time last year an 8-credit graduate core class for 23 new graduate students. The core provides an integrated approach of biochemistry and physiology applied to nutrition science. A matrix of advanced courses was compiled which began this year. The former individual vitamins, minerals, and macronutrient courses were eliminated. The Core course approach creates a bonding environment for each class of graduate students and provides a solid foundation of knowledge for each student. Interdepartmental graduate programs are encouraged at Purdue by providing fellowship opportunities from the graduate school only for these programs.

Discovery Highlights: Faculty in the department have provided leadership for several large research and student training programs. The NIH-funded Botanicals Supplement Research Center housed in Foods and Nutrition studies the efficacy and mechanism of action of botanicals for age-related diseases. This work is gaining more importance with the increasing problems associated with traditional drugs. For example, with the recent news that hormone replacement therapy for postmenopausal women has adverse cardiovascular side effects as well as increased breast cancer risk, the evaluation of alternatives to prevent bone loss by the Center is timely.

The multi-site trial to develop and test a curriculum for 6th graders to enhance bone mass is at the stage of enrolling subjects for the two year intervention. The ability for Purdue to coordinate the collection of bone density data from seven geographical sites should pave the way for other future studies. One such study, funded by the National Dairy Council, is a multi-site trial to evaluate the role of dairy products in weight loss. If you didn’t see it, look for the article in the July issue of Reader’s Digest, “Holy Cow-Look at What is Making You Thin.”

I am participating in a campus committee to plan a Life Sciences Mall at Purdue. We are interested in a medical sciences building for clinical research for nutrition, pharmacy, nursing, imaging, etc. Last year we remodeled a space for a new metabolic kitchen. We have three new large pieces of equipment for mineral analysis. We are now the service center for campus mineral analysis.

Engagement Highlights: Our Corporate Affiliates program now has 27 members. This is one of our most effective outreach activities. Our May Conference was on a topic gaining national interest, “Mood, Performance and Health: Do Diet and Supplements Help?”

Donna Vandergraff’s educational video, “Safe Food and You,” won a Silver Award from Agricultural Communication in Education. Charlie Santerre is often in the media connected with safety of eating fish. The faculty plan to work on strengthening ties with alums and is in the process of creating an alumni awards program.

Alumni Input: We have a special need in this newsletter for your input on some special projects. We need your input for an F&N teaching award and for our upcoming CSREES Review. We also need to gather data from our alums of the Nutrition, Fitness and Health major and the double major with Nutrition, Fitness and Health and Dietetics. Please take the time to respond to the surveys inside this newsletter. Our alums have a unique perspective that we can get no other way. As always, we welcome your reactions and input to what we are doing, please drop by and visit us. Wishing you the best!

Connie Weaver, Department Head of Foods and Nutrition.
Alumni Cameo—“Adjusting to Change Over 50 Years”

From Young Teacher to Wise Counselor,
“Even if you’re on the right track, you will get run over if you just stand there!”

Our alumni cameo focuses on Sister Mary Stuart, PhD, ’83. Though this cameo was already in the works for this year of her jubilee and retirement, the timing could not be better. Sister Mary has just announced she will endow a scholarship in honor of her parents, the Arthur and Cecilia Stuart Memorial Scholarship in Dietetics, awarded annually to a non-traditional, female dietetics student. Many students have already benefited from this scholarship as she gave it on a yearly basis. With this endowment, the scholarship will continue on a permanent basis in their name.

Sister Mary Stuart was born in Chicago during the depression, where her parents raised seven children with strong values for education. Her father worked as a chemical engineer at the Ford Motor Company, hired by Henry Ford himself! By the time he married he had become a lawyer. Her mother worked at the Chicago Evening American newspaper. In recalling family conversations, Sister remembers her father’s response when the children dreamed of what they would do when they grew up. Mr. Stuart always said, “You might think of doing that after you finish college.” The emphasis they placed on education was the greatest gift they could give their children. Together they represent 14 university degrees, two of which are PhD’s. The endowed scholarship in their name is a very meaningful legacy to this couple and their love of lifelong learning.

After high school graduation, Sister Mary joined the Dominican Sisters of Adrian, MI, a teaching order of Catholic Sisters that minister throughout the United States and overseas in Puerto Rico and the Dominican Republic. Armed with a certificate in elementary education, Sister taught in Catholic elementary schools in Illinois and Florida. In 1962, upon completion of a BS and MS in science at Siena Heights University, she began a 17 year career as a math, chemistry, physics and biology teacher, as assigned in Florida, Puerto Rico and the Dominican Republic.

The winds of change in the late 1960’s also shook religious orders in the United States. The traditional religious habit was replaced by more comfortable and practical attire and Sisters moved into many non-traditional ministries which focused not only on education but also on issues related to poverty, health and ecology. Needs changed and the sisters “re-tool” to fit the needs. Sister Mary changed, too. As her parents aged, she decided to return to a ministry closer to home. Her mentor, Sister Miriam Stimson, advised her to consider nutrition, “It’s the area of the future!”

She came to Purdue and completed her PhD in Human Nutrition in 1983. During her tenure as a graduate student in Foods and Nutrition, she was awarded the David Ross Fellowship in both 1981-82 and 1982-83. After completing a two-year post-doctoral experience at the U.S.D.A. Human Nutrition Research Center in Grand Forks, ND, she became the director of the Coordinated Undergraduate Program (CUP) in Dietetics at the University of Kentucky. But in 1992, moved by need in her state, Sister decided to take yet another step in her career.

The lack of medically related support services in the Appalachian region of Kentucky drew her. She approached the local Catholic Hospital with a proposal for a nutrition outreach program. With a promise of five years of initial support from her Religious Order, she planned and implemented a nutrition outreach service to the rural counties. With the full backing and support of Saint Joseph HealthCare, she provided free nutrition counseling services to six rural clinics. Monthly, as needed, she cycled through each clinic providing a much needed service. This involved, on average, 1,000 miles/month. Without this service, most patients would not have received nutrition counseling for their diabetes, heart disease, hypertension or other nutrition problems. Health Fairs, school nutrition programs, talks to senior citizens and mentoring students filled up the other hours. “Watching patients get better is what it’s all about,” says Sister Mary.

Sister Mary Stuart extends her thanks, especially, to Dr. Connie Weaver, Olivia Wood and Dr. Paul Abernathy for their guidance and friendship during her years at Purdue. In 2000, she was the recipient of the CFS Community Service Award. What’s in the future? Retirement this fall, slowing down a bit, explaining the program logistics to a replacement and volunteering one day a week with the program will keep her busy. She is not about to stand still and get “run over.” We celebrate her career of service and thank her for the endowed scholarship that will permanently express her service and her parent’s commitment to education.

We Need to Hear from You!

Foods and Nutrition, Purdue University, Fall 2002, http://www.cfs.purdue.edu/Idsnutr/
Metabolic Research Kitchen

The kick off for the 75th Anniversary in the Department of Foods and Nutrition was the dedication of the Hafele-Stinsen Metabolic Research Kitchen. It was an opportunity for our alums and donors to see the growth and change to which they have contributed. This lab was designed by Wayne Campbell, whose research in protein requirements of the elderly, make him a principal user of the facility. The lab officially opened in October of 2001, and is located in room 231, Stone Hall. Many alums would remember this space as a former F&N 205 or F&N 203 laboratory.

The increase in human clinical research in the Department of Foods and Nutrition has created great space need for metabolic food preparation in the department. So when changes in the course structure of F&N 203 and 303 for HTM students resulted in less demand for instructional lab space, plans were initiated to change the function of Stone 231. As in any University renovation project, funding is always an issue. We are grateful to the donors who stepped forward to participate in the funding of this project.

Marion (Bud) and Annie (Stinsen) Hafele provided the seed money to renovate this space and the laboratory is named for them. Bud and Annie say, “With continued world population growth and the desire for better diets by third world countries, increased attention to foods and nutrition is essential. The research done in this new metabolic laboratory will be a strong step in that direction. We are well pleased with it and your progress.” We also want to gratefully acknowledge equipment purchases for this laboratory funded by Ilo Matchett, a longtime CFS supporter.

Stone 231 is now a separate laboratory designed for both research studies and special undergraduate student projects. The kitchen is fully equipped to prepare and feed volunteers in controlled feedings studies. We have cooking areas, prep area, dishroom and dining facilities. We endeavor to style our dining area with a comfortable friendly atmosphere so our volunteers feel more at home and less like they are in a lab. We have the ability to develop and provide for several different types of research feed diets ranging from

- estimated diets,
- weighted diets,
- nutrient controlled diets and
- metabolic balance diets

The most rigorous of these are the metabolic balance studies. These are very closely defined with prepared meals that address the specific need of the study. They are specifically prepared around the individual needs of the volunteers based on their caloric needs so each volunteer’s food is prepared individually, and weighed individually to the 10th of a gram.

We are prepared to feed and package foods that will feed our volunteers anywhere from a few days to several months depending on the protocol of the study. We can provide complete control of 3 meals per day 7 days per week or just select portions of meals. There is also a student area, where special projects and taste testing can be processed and completed, which augments the current food labs. Both the students who train in this facility and the research that is done here will have impact on nutrition knowledge in the USA and the world.

Thank you to Bud and Annie Hafele.
Camp Calcium 2001

“Where the Boys Are”

An article about Camp Calcium is not new “news” in an F&N newsletter. So why should we have such a big feature on Camp Calcium 2001? After six different camps with adolescent girls, this was the very first camp with boys!

Recent studies have found that millions of men also suffer from osteoporosis. According to the National Osteoporosis Foundation, 2 million men in the United States have the disease, and 3 million more are at risk. Each year, men suffer one-third of all the hip fractures in the nation, and one-third of these fractures ultimately are fatal. So this is not a small problem. Factors such as physical activity, diet and hormones can greatly affect the amount of bone growth in the teenage years. These factors are different for males and females.

“Males are more efficient at building bones, but they may require more calcium to build their larger skeletons,” says Connie Weaver. “We don’t know to what extent the changing hormones of adolescence play into this. That’s one of the things we’re working to find out.”

“For years the medical and scientific communities have assumed that the calcium dietary needs for boys are the same as those for girls,” says Berdine Martin, research associate to Connie Weaver. Currently, the recommended daily levels of calcium for boys is 800 milligrams up to age 8 and 1,300 milligrams for ages 9-18, but these recommendations are based on research with adolescent girls. “There haven’t been any studies to actually determine if that is true. It’s important that we do these studies to determine if the dietary needs are the same for both genders.” Determination of the proper daily dietary calcium intake levels for boys was the goal of Camp Calcium 2001.

During their six weeks at Purdue, campers received meals prepared to provide a known daily dietary intake. Researchers also checked campers’ waste and blood samples each day. The boys received from 800 to 2,200 milligrams of calcium per day, according to the cohort group they were assigned. Berdine Martin says, “In order to estimate the optimum calcium intake levels, we had to give the boys a wide range of calcium levels. All of us in the lab are quite proud of what we’ve been able to accomplish. Camp Calcium is unique—no one else has been able to conduct this type of research, which requires the total dietary control of the participants for weeks at a time.” Aside from the research design, the boys were treated to mini-sports camps led by Purdue athletic department staff and athletes, field trips, movies, nutrition and health classes and educational opportunities set up by the chemistry and physics departments and the School of Veterinary Medicine. Researchers also assessed the fitness level of each participant.

Research from Camp Calcium 2001 will help set dietary guidelines for males that could help slow the bone density decline that occurs after middle age. (Information from a previous Purdue Camp Calcium was used by the National Academy of Sciences to establish the new 1998 dietary guidelines for calcium in females.) But to the campers, Camp Calcium didn’t feel like a tightly controlled research project. Instead, it was six weeks of fun!

A Decade of Camp Calcium

Six camps with adolescent girls looked at calcium metabolism relative to age, maturation, race and sodium.

• 1990 Comparison of calcium metabolism – adolescents vs. young adults;
• 1993 Establish calcium requirements for teenage girls;
• 1996 Effect of maturation on calcium metabolism – teenage girls;
• 1997 Effect of race on calcium metabolism;
• 1999 Effect of high/low levels of sodium in calcium retention in two races;
• 2000 Can higher calcium intakes negate the negative influences of sodium?

Because of the higher incidence of osteoporosis with females, it was logical to establish this research with girls.
New Opportunities and New Places . . .
Through Technology

A quality undergraduate program such as Foods and Nutrition at Purdue continually strives to provide an up-to-date learning environment for students. In a technology-driven society, that means new equipment. Two undergraduate courses in Foods and Nutrition, F&N 453 and F&N 424, have received University academic re-investment money during the last two years to add equipment to enhance student learning, one high-tech and one low-tech.

Hi-Tech

It became possible to acquire a second texture analyzer (TA.XT2i Stable Microsystems from Texture Technologies) for Food Chemistry, F&N 453. This additional instrumentation enables students to acquire hands-on experience with a state-of-the-art piece of equipment widely used in the food industry. A second instrument also relieved pressure on the older texture analyzer, especially when students are pushing to complete their special research projects.

Foods tested with the instrument range from extremely soft gels, such as pectin, gums, stabilizers, colloids, hydrocolloids, agars, carrageenan, surimi, protein gels, etc., to extremely hard products. Qualities that can be evaluated include firmness, relaxation, swelling, adhesiveness/stickiness, tackiness, springiness, cohesiveness, and extensibility.

The Food Chemistry lab has also been fortunate to obtain a Hunter Colorimeter for measuring optical properties of various foods. Like the texture analyzer, this is a state-of-the-art instrument, which significantly enhances our students’ experience in the laboratory.

A favorite Food Chemistry technology, that continues to thrive, is the Food Chemistry web site (http://www.cfs.purdue.edu/dfs/mtr/fs453/). There have been over 45,000 hits over three years (those three years probably represent 250-300 students). Jim Daniel hears good reports about the utility of the site and tries new innovations as he goes along. Student suggestions for improvements are always welcome, as are those from the general public.

Lo-Tech

Even in our technology-driven world, all equipment innovations are not “high-tech.” The new equipment purchases for Communications in Foods and Nutrition, F&N 424, range from high to low tech, but they are all innovative.

Karen Jamesen, the developer of this course, saw the need for F&N students, as future professionals, to be comfortable with multi-media presentation equipment. Under her leadership, tools of the trade have become a computer, digital camera, video-capture equipment, color scanner and CDROM recordable disk drive. We highlighted this technology in the ’98 Newsletter, but recent funding has permitted purchase of additional computer workstations and a new camera so this equipment is available to more students at one time. At the end of the semester, students leave the course with a CDROM that contains all educational materials they have developed, along with a computer-designed presentation, a video of their TV interview, a recording of their radio interview and their newspaper article. These are high-tech resources, but Barbara Mayfield, instructor for F&N 424, saw the potential for a low-tech idea also. She envisioned a piece of equipment, which could hang backdrops for presentations, as well as store backdrops for presentations, when not in use. Working with a photographer and Purdue Carpentry Shop, she developed three rigid backdrops from enlarged photographs, a fourth sponge-painted neutral background and an enormous, long, narrow black box on wheels to store them. Heavy-duty Velcro holds the backdrops to the outside of the box when the scene is in use for a presentation. But when the presentation is over, the backdrops all store inside the box. The box also holds additional rolled scenes, which can be attached to the rigid backdrop boards. The large backdrops provide more than numerous settings for student presentations: laboratory, clinical/medical, grocery store, lush nature scenes, etc. This project has enhanced the creativity and polish of student’s finished projects.

New Places

Technology takes the faculty and students of Foods and Nutrition to new places. How does it “literally” take us to new places? The answer: videoconferencing.

The model for large grants of funded research today is interdisciplinary collaboration, as more can be accomplished when expertise is combined. So when Connie Weaver assembled a team to apply for a National Institutes of Health Botanical Center for Age-Related Diseases in the spring of 2000, the major players in her proposed plan were very diverse. She recruited researchers from various departments at Purdue, including Medicinal Chemistry and Molecular Pharmacology, Physics, Statistics, Horticulture, and Veterinary Clinical Medicine, as well as her own department of Foods and Nutrition. In addition, partnerships were formed with the University of Alabama-Birmingham, Indiana University School of Medicine, Rutgers University, the University of Illinois and Bioanalytical Systems of the Purdue Research Park. Since it would be essential for remote colleagues to work together efficiently, the grant application included a provision for videoconferencing.

When Purdue was awarded this Botanicals Center in the fall of 2000, Charles Santerre, developed a videoconferencing facility in Stone G53 that allows us to conference with Center members at other locations. We have also just used the facility to work jointly with faculty at Texas A&M during the development of a USDA proposal. The equipment allows us to conduct live (30 frames per second) conferences to share discovery results and to connect with remote clients directly over the Internet. The facility will be used to train F&N students and even to link them with prospective employers. A new need demanded new technology and created new opportunities.
“Thanks For the Memories”

A big “Thank You” to all of our F&N alums, who attended the 75th anniversary on October 25, 26, & 27. Many of you came and brought your memories with you! It was also a pleasure to entertain alums from other CFS disciplines attending F&N events during the 75th.

The kick-off event for F&N was the dedication of the Hafele-Stinson Metabolic Kitchen in Stone 231. (See the Dedication article on page 3.) The room was full for this event and many stayed for a Departmental tour, which followed.

One of our favorite scenes was of alumni clustered along the new F&N historical wall. It was a big hit to identify students, former faculty, and current faculty, who look a little different now. Some of the laboratory equipment, clothing styles, hair styles and activities made us realize it really was 20, 30, 40 or more years ago when these pictures were taken! (The wall is permanent, so make sure that you stop by and see it when you come to alumni events or football games!)

On Thursday evening, there was a dinner reception for F&N Hidden Diamonds before the CFS reception at University Inn. The memories that were shared at this event were common to many F&N alums and an example of the richness of the weekend. Stories ranged from touching to humorous. Hidden Diamond, Dan Inman of T&T Crust, recalled being unhappy at Purdue, until he transferred to F&N and found a challenging curriculum and thoughtful faculty who could really teach. Karen Jamesen, specifically, gave him career-shaping direction. (We heard this frequently about Karen that evening!) Another alum recalled getting points deducted in Meal Management class because cupboard doors were not closed! One of the biggest laughs of the evening came when an alumna recalled dropping a glob of gravy on the Dean’s foot during Meal Management lab! Many faculty who were singled out with memorable moments, but these other names came up very frequently: Vianna Bramblet, Helen Clark, Mary Fuqua, Connie Weaver, and Olivia Wood.

Our Department Head, Connie Weaver, astonished every one at the Reception when she identified alums by their Food Chemistry projects! She wasn’t always sure about their name, but she knew their project. After it came up several times, Dan Inman challenged her to remember what his project was and she did, down to the last detail. “He used fructose to lower water activity and produce a shelf-stable cookie dough.”

Marsha Cone Esaki came the farthest for the 75th from Japan! Another alumna, Reneé Evans, attended the Hidden Diamond Reception very pregnant. Yet another Hidden Diamond, Paula Shireman, could NOT attend. She had twin boys the week before. She says that she is truly a Purdue F&N woman now! She has followed the F&N faculty/staff lead of multiple births: Story, Evers, Weaver, Santerre (all with twins) and Jackman (triplets).

Much of the weekend was spent looking back over the 75 years of F&N and CFS, but on Friday during the Back to Class segment the focus was on the future. Two F&N speakers were featured, Karen Ross (HE ’71), project leader for the United Space Alliance, and Jim Fleet, Associate Professor of Foods and Nutrition.

Karen Ross shared the challenges and features of her work with NASA. Karen is the dietitian in charge of preparing food for astronauts to consume during space shuttle trips. We saw packaging and products that were a challenge to identify as food at all! There were many questions for her about the practicalities of eating in zero gravity conditions.

Jim Fleet of this Department helped us look into the future with a discussion of nutritional genomics. Nutrition is one of the most promising areas for impact with the identification and understanding of the human genome.

An anniversary weekend is a great reminder that no matter how exciting the future of this department and these areas of study, we must acknowledge those who paved the way for new discoveries. And it is our capable alums in the workplace who use their skill and knowledge to make a difference in lives. Thanks for the memories!
Hidden Diamond Reception!

Above, from left: Sarah Johnson (F&N ’69) and husband with Sally Laan (F&N ’69).

Right: Phyllis Gladden (F&N ’60) and husband.

Left: Mother and daughter Hidden Diamonds, from left: Mary Ann Boarini Noble (F&N ’76) and Mary Alice Boarini (Home Ec ’51) with Dorothy Morré.

Below: Karen Jamesen (center) with Hidden Diamond, Dan Inman and family.

### Congratulations to Our F&N Hidden Diamonds!

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<th>Name</th>
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<td>1939/1950</td>
<td>Marcia Cone Esaki</td>
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<td>Mary Yeager Smith</td>
<td>1941</td>
<td>Deborah Neilson Green</td>
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<td>Sarah Cauble Johnson</td>
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<td>Sally Sendmeyer Laan</td>
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<td>Mary Ann Boarini Noble</td>
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<td>Arlene Wilson</td>
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<td>Dan Inman</td>
<td>1980</td>
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<td>1958</td>
<td>Teresa Reising Ryzowicz</td>
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<td>Paula Shireman</td>
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<td>Renee Evans Wright</td>
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<td>Nadine Carnell</td>
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F&N Outreach to At-Risk Audiences

EFNEP is a federally funded nutrition education program based at land-grant universities in all 50 states and territories, such as Purdue, that helps limited resource families and youth by teaching a series of food and nutrition topics which lead to behavior change in their homes or community sites. Specially trained paraprofessionals, like Family Nutrition Advisor Katherine Davis (see retirement article below), convey this information through hands-on teaching to both individuals and groups. EFNEP participants have shown dramatic behavior change in improved nutrition, food resource management and food safety practices. A recent cost-benefit study showed that for every $1 spent to implement programming; approximately $10.64 was saved in future health care costs. A graduate student in our department is currently evaluating the impact of this program after participants have completed their lessons.

The highly successful Have a Healthy Baby Program, which reaches an audience of pregnant adolescents and adults, and Exploring the Food Pyramid with Professor Popcorn, designed to reach youth in grades K-12, began in Purdue’s EFNEP program and have been utilized nationwide. EFNEP collaborates with several agencies both at the state and local level such as WIC, Food Stamps, March of Dimes, Head Start, Departments of Health, Maternal and Child Health Clinics, local food pantries, Healthy Start, Minority Health Coalitions and Healthy Families.

Recent collaborations with March of Dimes have extended the Have a Healthy Baby program to physicians’ offices via videotape. The Dept of Foods and Nutrition with Purdue Extension are the facilitators for the statewide Indiana Folic Acid Council, also funded by March of Dimes.

EFNEP Family Nutrition Advisor Retires After 31 Years

Katherine Davis, EFNEP (Expanded Food and Nutrition Education Program) Family Nutrition Advisor, recently retired after 31 years of service to the people of Indiana. Katherine began her career in EFNEP in November of 1970 at $1.60 per hour. Until her retirement she worked on the southeast side of Indianapolis.

In addition to her work, every summer she spends one week of her vacation time serving as a camp counselor at an overnight youth camp. During the 2001 EFNEP Conference, Katherine briefly shared the similarities and differences between the 1970 program and the current one.

April Mason, CFS Associate Dean of Extension and Continuing Education, honoree Katherine Davis and David Petritz, Director of Purdue Extension, celebrate Katherine’s 30 years in service to EFNEP.

Above: Connie Weaver congratulating Alma Jones, bilingual educator in Marion County.

EFNEP has extended its reach to the Hispanic/Latino community by adding a bilingual staff. Plans to add an additional staff person to serve a second part of the state depend upon expanded funding.

Left: A Safe Food and You FNA, Kimberly Thomas, and participant test the internal temperature of meat as it cooks. Safe Food and You is a recent grant from the Food Safety and Quality Initiative of USDA, provided for the collaboration and development of Safe Food and You, a video lesson highlighting food safety during pregnancy.

This program received the Silver Award in the Non-Credit Educational Video category of the ACE (Agricultural Communicators in Education) Critique and Awards Program.
Emerging Science

For years, advertisers have claimed that fat-free foods taste just as good and are as satisfying as their guilt-laden counterparts. But common experience suggests this often is not the case. Now, Richard Mattes, professor of Foods and Nutrition, is backing up dieters’ experiences with some newly published research. His finding that humans can indeed taste fat contradicts prevailing scientific opinion. If replicated, it could partly explain why fat-free foods aren’t as popular as full-fat versions. The public health implications of this study will require further examination and research.

Until now, scientists have agreed that humans have four or five basic food tastes: sweet, salty, sour, bitter, and possibly umami, which is evoked by monosodium glutamate (MSG) in foods. Fat, they’ve believed, only provides texture and “mouth feel” in foods.

Recent studies have hinted, however, that chemical detection systems cause animals to prefer fat, either because they can taste or smell it. Mattes and his graduate students decided to research this phenomenon in humans.

Previous studies by Mattes had shown that blood fat levels were changed in humans just by putting fat in their mouths. For this research into fat detection, “Our initial hypothesis was that odor was responsible,” he says.

In the study, researchers checked subjects’ blood fat levels before and after they were exposed to cream cheese on crackers. Some participants were allowed to taste and smell fat; some wore nose plugs so that they could only taste it; and some were allowed to smell the food but not taste it. A control group received no sensory stimulation at all.

In the group that both tasted and smelled fat, blood fat levels rose significantly more than the control group. But surprisingly, the blood levels rose similarly in people who were wearing nose plugs. Blood fat levels didn’t rise in those who could only smell the cream cheese. This strongly indicates that taste is the stimulus that causes the rise in blood fat levels. Further studies using different fat sources as well as fat replacers further support this observation.

If further studies confirm Mattes’ findings, they could explain why many consumers bypass fat-free products on grocery store shelves and reach for fat-laden products instead. “It is possible that the less-than-perfect performance of current fat replacers may be due to a lack of understanding of all mechanisms for fat perception,” Mattes says. “Failure to account for a taste component may compromise quality.” Though his research could prompt development of tastier options for those who are watching their waistlines, the rise in blood fat levels observed in this research has a broader implication for public health.

Calcium, ‘The Pill,’ Exercise and Bone Health

Many young adult women think osteoporosis is something only their grandmothers need to worry about. Staying fit and maintaining their ideal weight typically rank higher on their immediate list of health worries. For those who take birth control pills and who also exercise, however, some newly published research gives them a good reason to stock up now on milk, yogurt and other calcium-laden products at the grocery store.

Led by Connie Weaver and Dorothy Teegarden, the two-year study suggests women ages 18 to 30 who exercise while using oral contraceptives may lose bone density in the hip and spine, even more than sedentary women who take the pill. This loss of density could make a woman susceptible to bone fractures later in life. On the bright side, the research also indicates that women in this age group who consume the minimum daily requirements for calcium may be able to ward off bone loss.

“The study showed that, overall, exercise had positive affects on whole body bone mineral content for everyone,” Weaver says. “Only the spine and hip were compromised if subjects who were on oral contraceptives exercised, and only then if calcium intakes were inadequate.”

Funded through the National Institutes of Health, the study investigated the effects of exercise on bone mineral content and bone mineral density in women 18 to 30 years old who either were or were not taking birth control pills. The study, published in the June 2001 issue of Medicine and Science in Sports and Exercise, gleaned several unexpected results. “One big surprise was that for women who use birth control pills, exercise had a negative impact on the spine and the hip, especially in the first six months,” Weaver says. “By the end of the two years, that group fell below the groups of nonexercisers or non-pill-users in terms of bone mineral content and bone mineral density.”

Previous research has demonstrated that oral contraceptives can prevent the increases in bone mass that normally occur in young adult women. Because exercise has been shown to help accumulate bone mass, health professionals usually advise women on birth control pills to exercise in order to maintain bone health. But, Weaver’s study suggests the solution is more complicated than that. “This negative interaction is very scary because we want women to exercise for all kinds of beneficial reasons,” she says. “But we don’t want bone, especially of the hip, to be compromised because that’s the worst kind of fracture you can have.”

Only three of the women in the study who both took birth control pills and exercised did not experience a loss in bone density. These women differed from the others in the study because their diets included higher levels of calcium. Weaver emphasized the role of calcium in the exercise-contraception equation. “If you’re going to be on birth control pills and exercise, you have to get enough calcium,” she says. “You either need to get calcium through foods—and that could be dairy or fortified foods, such as juices or cereals—or you need to supplement.”

Con’t on bottom of page 10
New Faculty

The Department filled three important positions for Fall 2001. Our newest faculty is Assistant Professor, **Dr. Young-Cheul Kim**. He fills the vacancy left when Dr. Martha Belury moved to the state of Washington. As a basic metabolic researcher, he joins the Department with research experience in the genetic regulation of lipid biogenesis, intestinal mechanisms of energy balance, Stearoyl-CoA desaturase and elevation of HDL’s, and the action of insulin on calcium metabolism.

Dr. Kim’s current research is dietary regulation of gene expression and lipid metabolism. This research has relevance for human nutrition and health issues such as obesity, diabetes, atherosclerosis, heart disease and certain cancers. These are all health issues connected with aberrant fat deposition.

His undergraduate major was biology and his Master’s work in Food Microbiology, both of which he did in Korea. His Ph.D. was in Tennessee under Dr. Michael Zemel. His post-doctoral experience was at the University of Wisconsin Medical School, where he continued as a research assistant before coming to Purdue.

He is a member of the North American Association for the Study of Obesity and is a reviewer for the International Journal of Obesity.

**Rachel Geik**, a Registered Dietitian specializing in sports nutrition, is now the Director of the Nutrition, Fitness, and Health major.* Ms. Geik is a graduate of this Department, receiving her BS in the Double Major of Dietetics and in Nutrition, Fitness, and Health (NFH). She received her MS in Exercise and Sports Nutrition from Texas Woman’s University (TWU).

Ms. Geik began doing research with an undergraduate Honors project. She used her connection as a collegiate rower to investigate the dietary carbohydrate intake and energy expenditure of a collegiate crew (rowing) team. Her love of the sport inspired her MS thesis, which sought to determine whether collegiate crew coaches constitute a barrier to appropriate sports nutrition practices by crew athletes. As a graduate research assistant at TWU, Ms. Geik also participated in an NIH-funded study to investigate the effect of exercise and calcium on the growing bones of 4th and 5th grade students. She hopes to pursue collaboration with Dr. Weaver’s research on calcium metabolism and mentoring undergraduate students on honors projects.

Ms. Geik is responsible for F&N 415, a practicum course for NFH seniors, which allows students to apply theory, knowledge, and skills in a “live” setting. In this course, each student works one-on-one with a client to assess nutrition and fitness levels, interpret assessment data, set goals, design and implement an individualized nutrition and fitness program, meet with and advise the client on a regular basis, incorporate behavioral strategies, monitor the client’s progress, and evaluate the effectiveness of the nutrition and fitness program that was implemented.

Her appointment is a dual one with the Purdue Athletic Department. She works with Purdue student-athletes, coaches, athletic trainers, and physicians as a sports nutritionist. Her responsibilities include the nutritional concerns of individual athletes, team nutrition meetings, and dietary supplements. She also serves on an interdisciplinary committee that focuses on disordered eating issues in athletics.

She says, “When people advise you to choose a career that you enjoy waking up for in the morning, my job is what they are talking about! I couldn’t be happier to be back at my alma mater.”

**Steve McKenzie** joined Foods and Nutrition as a Continuing Lecturer for our Nutrition, Fitness and Health major. As this interdisciplinary major has grown, the Department of Health and Kinesiology in the School of Liberal Arts was stressed to provide faculty support for the additional students from F&N. A new position was created from F&N to teach our students in fitness and wellness courses and to serve as a liaison between both departments, attending the faculty meetings of both groups.

Steve was the Director of Cardiopulmonary Rehabilitation at Forrest General Hospital in Hattiesburg, MS. He brings a wealth of experience and training to enhance the experience of F&N students. He has a master’s degree in exercise physiology and is ACSM, ACSLS and BLS for Healthcare Providers certified. He was previously an adjunct instructor, Auburn University at Montgomery and the University of Southern Mississippi and worked as a collaborator on research at both. He has been involved in teaching or patient education throughout his professional career. Our students are the benefactors of Steve’s desire to join academia at this time in his life.

The latter two positions join Dr. Wayne Campbell (summer 2001 issue) to complete the faculty for the Nutrition, Fitness and Health major. Their combined strengths are a great asset for our students.

* Former director of this major, Lisa Jackman, retired from the Department upon the birth of triplets in May of 2000. She is very busy raising Sam, Matt and Mary.

Calcium, ‘The Pill,’ Exercise and Bone Health, continued from page 9

Another surprising finding, was that women in the control group of nonexercisers also lost bone density throughout the two years. “It wasn’t that the non-exercising group maintained bone throughout and the exercising group went up,” Weaver says. “These young, college-age women were already losing bone if they weren’t exercising.” This may change the way researchers look at the development of osteoporosis, she says. “We didn’t expect 18-to-30-year-old women to already be losing bone,” she explains. “Doctors aren’t even doing bone scans, for the most part, on these young people, so they haven’t known. Even before they go through menopause, they can already be in trouble, which is what we showed.”

The study, conducted by an interdisciplinary group of 12 experts in foods and nutrition, health, mechanical engineering and medicine, differs in several ways from others that have assessed the role of exercise on women’s bone health. First, none of the participants regularly exercised before the study began. They were randomly assigned to a non-exercise control group or to a group that exercised three times weekly. This is an important distinction, because, quantitatively, you can’t assess the effects on bone if you don’t randomize. “This study focused on a younger age group than most of the previous research. “Data in this age group from exercise intervention studies is very scarce,” Weaver says.
Surveys! Surveys! Surveys!

This page highlights a two-in-one survey and our new F&N Teaching Award. We need your input for all of these activities. As Connie Weaver discussed in her Letter from the Head on the first page, we are preparing for our USDA Cooperative State Research Education and Extension Service (CSREES) Review in September of 2003. Alumni input is essential data for the process. In addition, we are in the beginning stage of evaluating the Nutrition, Fitness and Health major and need for those graduates to focus on information we need them to include in the survey. (See the NFH sidebar at right.) The new teaching award needs your input also. When graduates begin to work in their profession, their perspective on which teachers most helped prepare them for their career gains a new perspective. So we would like for you to follow-up with the requested information by e-mail, as indicated in that article.

As you can tell by the emphasis we have made throughout this newsletter, these surveys are very important this year. We thank you for the effort you make to help us gather this information and hope this process helps you realize that, as our alums, you are still very important to us!

Teaching Awards

We have some excellent teachers in F&N and we want to recognize them for their efforts. What are the measures of a good teacher? Someone who keeps us awake in class? Someone who challenges us to our full potential? Someone who is easy to talk to and makes us laugh?

Undergraduate students are asked to give input on teaching awards and their input is valuable. But the long-range perspective of a professional, who is actually using the information gained in F&N classes, is extremely valuable also. We would appreciate any comments you would be willing to share from your vantage point of a professional on current professors whose teaching you judge as excellent.

To participate in the selection of the Foods and Nutrition Department Teaching Award, please identify a current professor whose teaching was excellent. In a short paragraph indicate components of their teaching that have been valuable. Current teachers in the department are listed below. You may send your recommendation paragraph to the address on this newsletter or you may send it by e-mail to <troyerm@cfs.purdue.edu>.

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<th>Carol Boushey</th>
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<td>John Burgess</td>
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<td>James Fleet</td>
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Scholarships

The CFS Awards Convocation is a new event developed in the last three years to honor scholarship recipients and donors. It is a wonderful opportunity for donors to meet the students they are supporting and for the students to personally thank their sponsor. This event is held in September on Family Day (formerly Parents Day), before the football game. The following F&N students were honored for the 2001-2002 school year.

National Scholarships: American Dietetic Association Scholarships: Abby Hamm (Rose S. Fowler Memorial Scholarship), Sara Hurm (Mead Johnson Nutritionals/Bristol Myers Squibb Scholarship), Lisa Kasten (Margaret Ross Scholarship), Julie Vanderpool (Jeanne P. Sanford Memorial Scholarship), Katherine Giberson (Sodexo-Marriott Services Health Care Division). International Fellowship of Food Technologists Scholarship: Hui Hui Chong.


Calling all Nutrition, Fitness and Health Grads!

Though Nutrition, Fitness and Health (NFH) is our newest major, we now have six years of graduates in this major. We need to get complete information about what you are doing in your careers. Many of you will be doing jobs that have nothing to do with your degree and some will have started a family and may not be working at this time. We are interested in all of that.

If you are no longer working in this field, but did after graduation, would you put that career history in the comments section of the survey. Make sure that you clearly let us know if you were a Nutrition, Fitness and Health major or if you were a double major. One thing we hope to discover with this survey is if there have been opportunity differences for single NFH majors and double majors in NFH and dietetics. Since this is an emerging field, you may have discovered or developed employment positions that we have not considered. It will be a help to future students to hear what you are doing and the employment patterns of this major. The information we learn from you will be used for curriculum decisions and recruitment information.

Please take time to fill out the enclosed survey or its online version. If in the comments section you can help us get the placement information we need for your major, it will be very useful for future students. Thank you!

Ada Decker Malott Scholarships: Kendra Brenner, Hui Hui Chong, Megan Cohlheep, Cynthia Cosenza, Juno Farnsworth, Traci Field, Leslie Fleener, Nikole Friend, Melinda Heinhold, Sara Hurm, Julie James, Lisa Kasten, Alyssa Mathis, Kristi McClung;

F&N Extension Kudos

The USDA publication, *The Food Safety Educator*, highlighted the *Safe Food for the Hungry* newsletter, produced by Dr. Carol Boushey, Barb Nolan and Martha Gipson, in a recent publication. They described the unique information that this newsletter provides for staff and volunteers of emergency feeding programs. Since inadequate nutrition can contribute to a special susceptibility to foodborne illness, food safety is especially important for people using emergency food assistance. Topics in a recent newsletter included “safe storage tips for donated fresh produce” and “a look at the connection between malnutrition and obesity.” It is distributed in printed copy to soup kitchens and others in Indiana, but emergency food providers can access the newsletter via the Web site. For more information go to: http://www.cfs.purdue.edu/safefood/sfhungry.html

Correction

The last Foods and Nutrition Newsletter stated in the Awards section that Jim Daniel won the Mary L. Matthews Award for 2001. He was a nominee, but not the winner. He wanted that corrected in this edition of the newsletter.

Helen Clark Scholarship

Thank you to those who have chosen to honor the life and career of Dr. Helen Clark with contributions to a scholarship in her memory. The Department of Foods and Nutrition is pleased to make this opportunity available.

We hope that enough funds will be accumulated to permanently endow this scholarship. (The University requires $20,000 to establish endowments.) If the amount raised does not equal this within the next 2 years, the total amount raised will be given to worthy students as a named scholarship until the money is depleted. For that reason, if you would like to contribute to the fund, please let us know if you would like to pledge an amount over the next two years to help us achieve this goal.

Please send a note with your intentions, and make payable checks to:

Purdue Foundation, in the memo write:
Helen Clark Scholarship
C/o CFS Development Office
1260 Stone Hall
West Lafayette, IN 47907

Upcoming Events

- Avanelle Kirksey Lecture-January 24, 2003
- Spring Fest-April 12 & 13, 2003
- Gala Weekend-April 25 & 26, 2003
- May Conference-May 9, 2003

Purdue University
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