



MICHIGAN STATE UNIVERSITY **PARTNERS**

SPRING 2015



Gift Leads to Discovery and **New Hope For Millions of Children**

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‘Extraordinary Gift’ Leads to Medical Breakthrough



“This is an extraordinary gift,” said Terrie Taylor, University Distinguished Professor, MSU College of Osteopathic Medicine. “It’s difficult to predict the impact of GE’s gift and what it will mean in the effort to understand and find treatments for diseases that are devastating across the African continent and in other parts of the world.”

Taylor was speaking in 2007 about GE Healthcare’s donation to Michigan State University of a magnetic resonance imaging (MRI) scanner for medical research and patient care in Malawi.

In less than a decade, that gift has led to a great leap forward in understanding how cerebral malaria annually kills more than half a million children in Africa.

“We discovered that some children with cerebral malaria develop massively swollen brains, and those are the children who die,” Taylor said.

Taylor and her research team found that the brain becomes so swollen it is forced out through the bottom of the skull and compresses the brain stem. This pressure causes the children to stop breathing and die.

While increased efforts targeting malaria elimination and eradication have had some effect on malaria infection and illness, death rates from malaria are still too high.

“It’s gut-wrenching when children die, but what keeps us going is that we are making progress against this Volde-mort of parasites,” Taylor said. “It’s been an elusive quarry, but I think we have it cornered.”

How Taylor and Her Team Found the Brain Swelling

In 2008, the GE Healthcare MRI was installed in a \$400,000 building constructed by the MSU College of Osteopathic Medicine at the Queen Elizabeth Hospital in Blantyre, Malawi, where Taylor spends six months of every year treating and studying children with malaria.

MRI is an important diagnostic tool that is so common in developed countries it's even used on family pets. But for the people of Malawi and neighboring parts of Mozambique before 2008, the closest MRI was 1,000 miles away.

With the help of MSU researchers, including Colleen Hammond and Matt Latourette in the Department of Radiology, Taylor and her team used the MRI to view brain images from hundreds of children with cerebral malaria, comparing findings in those who died to those who survived. That's when they made the discovery.

"We found that survivors' brains either had never swollen or decreased in size after two to three days. This was a triumphant moment," Taylor said. "I wanted to say to the parasite 'Ha! You never thought we'd get an MRI, did you?'"

"MRI is an amazing tool for imaging the body, especially

the brain, with great detail," said Eric Stahre, president and CEO of Global Magnetic Resonance Imaging at GE Healthcare. "GE Healthcare is committed to bringing new technology like MRI to rural areas and developing economies to increase access to life saving innovations."

"We are very proud to have been a part of Dr. Taylor's research on a topic as important as malaria," Stahre said. "Researchers like Dr. Taylor are expanding our understanding of this disease, which I'm confident will lead to better care."

Next Steps

Taylor said her team's next research steps will proceed on two parallel tracks. "One is to identify the causes of the brain swelling. We have

Nurse Anita Gumbi with patient at Queen Elizabeth Central Hospital, Blantyre, Malawi

four hypotheses and need to understand the relative contributions of each. We could then target treatment to the important causes."

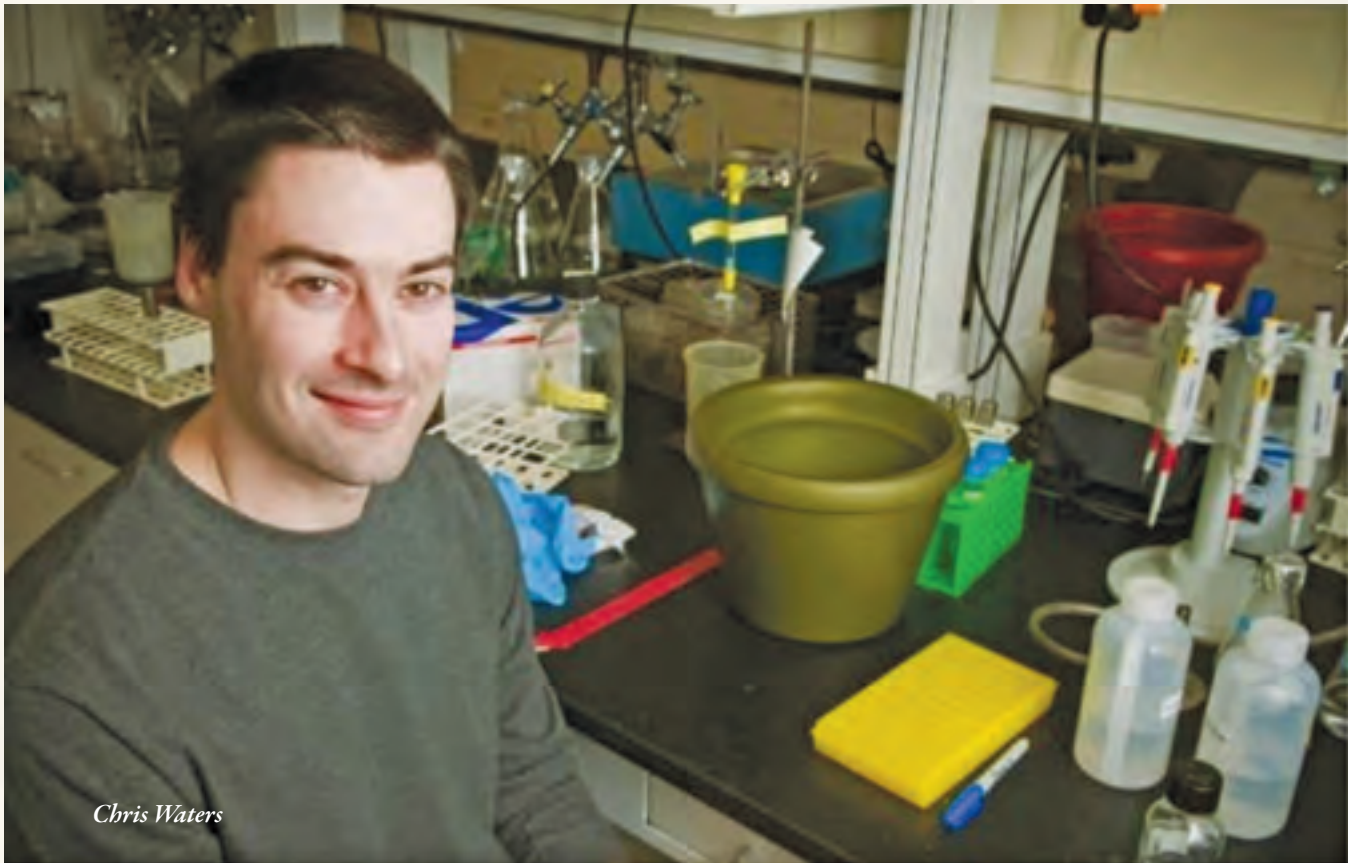
The second vital step Taylor emphasized is a trial of assisted ventilation. "This is based on our observations that kids die of a sudden respiratory arrest because the brain is so swollen," she said.

The research was funded by the National Institute of Allergy and Infectious Diseases (NIAID), of the National Institutes of Health. In 2010, NIAID established a network of 10 International Centers of Excellence for Malaria Research (ICEMRs) located around the globe in malaria-endemic regions. For the Ma-

lawi ICEMR, Michigan State University was selected as lead institution with Terrie Taylor as principal investigator.

Published in the March 19 issue of the *New England Journal of Medicine*, the study was co-authored by Michael Potchen and Gretchen Birbeck, University of Rochester Medical Center; Sam Kampondeni, University of Malawi College of Medicine; Bill Bradley, University of California, San Diego; Malcolm Molyneux, Liverpool School of Tropical Medicine; Clarissa Valim, Harvard School of Public Health; Dan Milner, Brigham and Women's Hospital; and Robert Heyderman, Malawi/Liverpool/Wellcome Trust Clinical Research Programme.





Hunt For a Cure - Daring Ideas Advance Science

It takes novel, sometimes daring ideas to pave the way to great advances in science but sometimes big federal agencies are too cautious to fund projects to test new theories. Hunt for a Cure (HFC), a health advocacy organization based in Grand Rapids, Mich., has established a strong partnership with Michigan State University and its cystic fibrosis (CF) researchers to fund projects that explore just such ideas, the daring ones.

HFC's goal is to find treatments and a cure for CF to improve the quality of life of those with the disease. It raises

awareness and awards significant research grants. HFC's recent strategic donations to MSU, including \$114,000 in 2014 and more than \$500,000 overall, have leveraged several major grants from the National Institutes of Health and promise to help MSU generate more research support. Money buys science and MSU science buys life.

Pete Odland, founder and president of HFC, said the partnership with MSU has grown naturally. "Our initial goal was to partner with a university that is equipped with leading edge

technology and highly qualified people. We found what we were looking for in our own backyard when we partnered with MSU. Eventually research will break the biofilm barrier leading to improved results from antibiotic use. That of course will lead to lengthened life expectancy for CF patients."

Chris Waters, associate professor of microbiology and molecular genetics, is one of MSU's lead researchers on CF. He said private support has made his current work possible. "Funding from HFC was critical to the project I am working on as it al-

lowed us to get it off the ground and show we could successfully screen for PaNACEAs," the acronym for *Potent and Novel Anti-biofilm Compounds that Enhance Antibiotics*. "Now that we have new research results in hand, we will be even more highly competitive for federal funding from NIH and other sources, which we are actively seeking. But these types of projects will not be funded without the preliminary data we were able to generate with HFC funds."

The focus of Waters' CF research is the highly complex

study of biofilm. Waters explained, “Biofilm formation by pathogenic bacteria in the lungs of cystic fibrosis patients is the most serious problem that leads to lung failure. Biofilms are multicellular communities of bacteria encased in an extracellular matrix. This form of growth is problematic because bacteria in biofilms are able to resist high levels of antibiotics.”

This means that antibiotics can't clear the chronic infections that result from this growth. Waters' team recently found a new way to identify new PaNACEAs that promise to enhance the antibiotic tobramycin that is often given to CF patients. But tobramycin kills only about 50% of biofilms caused by the bacterium *Pseudomonas aeruginosa* in laboratory conditions. With support from HFC, Waters recently screened 6,080 biologically active molecules and identified 26 novel compounds that virtually eradicate the troublesome biofilms.

Waters said the results have been significant: “We showed that one of our PaNACEAs, already widely used clinically, kills 100% of clinical isolates tested and, when combined with tobramycin, greatly enhances our ability to kill *P. aeruginosa* biofilms in a CF animal model of infection. These compounds are being examined for their clinical potential to treat CF patients, and we are planning to screen an additional 200,000 molecules for new PaNACEAs.”

Ideas Develop with Early Funding

Even with progress like that made by the Waters team, the battle against CF is just beginning. And good beginnings often involve taking intelligent risks. Dr. Greg Fink, a leading neuroscientist and MSU professor of pharmacology and toxicology, explained: “The importance of private giving is in the quest to obtain federal grant support. HFC has always been extremely helpful, but it is far more important than ever today for two reasons.

“First, the committees that make decisions on federal funding are extremely conservative scientifically. Proposed studies have to be almost a ‘sure thing’ in order to be funded. As a consequence, truly novel and innovative ideas rarely make the cut. Private givers like HFC often see the potential in innovation and cutting-edge science and step up to support exciting new ideas at an early stage of development.

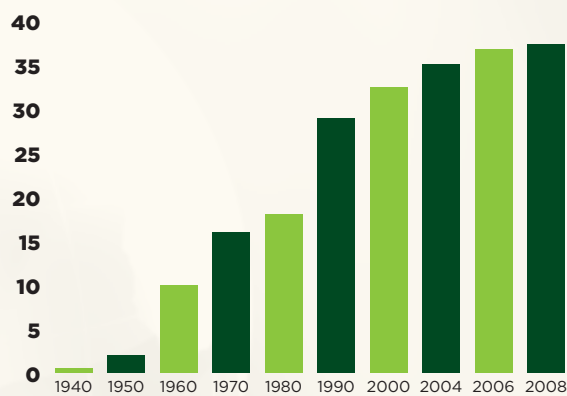
“Second, this particular pathway to discovery is even

more important today as the competition for federal biomedical research funds has become extremely tight. This is due in part to general economic issues and in part to some reordering of research priorities within the National Institutes of Health.”

Dr. Fink said HFC's generous giving is crucial: “The bottom line is that informed private giving by key organizations like Hunt for a Cure is now an essential part of the modern biomedical research enterprise that we all depend on to produce improvements in human health and disease management.”

Pete Odland founded Hunt for a Cure in 2001 in honor of his four-year-old son, Dylan, who has cystic fibrosis. When Pete learned of Dylan's disease, he knew he had to join the search for a cure. One day while sitting in his tree stand, he came up with the idea for HFC. Ever since, HFC has demonstrated its commitment to raising awareness and research funds to find a cure for CF.

Average Life Expectancy in Cystic Fibrosis Better Treatment = Better Survival



Source: Cystic Fibrosis Foundation

Other Current MSU Research on CF

A number of crucial projects are ongoing as MSU develops its partnership with HFC and advances its role as a leader in basic health sciences research.

Causes of lung infections

*Dr. Martha Mulks,
Department of Microbiology
and Molecular Genetics*

Dr. Mulks studies serious lung infections. One of the worst is caused by the pathogen *Burkholderia cenocepacia*. The Mulks research group has identified several genes of this pathogen that play a role in infections in plant and nematode models. The MSU BEACON Center, an NSF Science and Technology Center, will fund a part of the study of how *B. cenocepacia* evolves within the lungs of CF patients. HFC gifts initiated this work, which will measure loss of genes and gene functions. The team will perform whole genome sequencing on isolates from patients who have been infected for over 25 years.

CF and diabetes

*Dr. Dana Spence,
Department of Chemistry*

Dr. Spence's group is studying diabetes, a disease closely associated with CF. Rather than working in the most common area of study, bacterial infections, the Spence group is investigating why people with CF have a high occurrence of diabetes. The team is studying the C-peptide molecule, a possible replacement therapy. HFC support has helped persuade government agencies and the pharmaceutical industry to invest in the study of C-peptide efficacy. Last September, the group presented new findings at the European Association for Studies on Diabetes in Vienna, Austria, and has been invited to give an update in Stockholm this year. The group has applied to NIH for a four-year, seven-figure award.



Partnerships with companies are pivotal in making sure we educate engineers capable of taking on the biggest challenges, solving them, and helping redefine the economy here in Michigan.

From the CoRe freshman experience, through internships, and on to their senior capstone projects, engineering students are able to take the theoretical basics taught in class and go out to private companies to learn how they work in practice. Our students start to understand why that intellectual stress—that molding process of taking 18-year-olds just out of high school and helping them become professionals—is so important.

We need more engineers and computer scientists to help the state shape a sustainable economy. We're going through rapid change, incredible progress driven by technology. Change in the last decade was relatively slow compared to what we expect in the next 10 years. That's why we find ways to create graduates with nimble minds, who are creative, and have no technical fear. These students will take on any challenge, conquer it, and do it in a way that adds to the company and adds to the economy.

This is the future of our state and nation. Michigan has been the innovation capital of the world. It will be tomorrow and for a long time to come.

by Leo Kempel, Dean
MSU College of Engineering

Partnering to Keep Talent in Michigan



James McCormick

To keep Michigan's engineering and technical talent in the Great Lakes State, key partners need to connect with students. Consumers Energy and the MSU College of Engineering start early and generate the lessons, relationships, and network access it takes to turn freshman year experiences into serious career opportunities.

In 2014, Consumers Energy hired 54 MSU summer interns, mostly engineering students, for their strong critical-thinking, problem-solving skills, and keen willingness to learn and communicate.

Often the company looks for people like James McCormick, a senior electrical engineering major from Eaton Rapids, Mich. After two years as a cooperative assistant at Consumers Energy, McCormick has created an off-the-grid learning curve for himself.

"That's what is really cool," McCormick explained. "I'm in the field verifying that the engineering designs work by conducting tests and maintenance in electric substations. Sometimes I'm the last double check before they energize."

McCormick said the internships have ben-

efited him when he returned to campus. "I get to see how it all comes together and make sure it all works as expected. This kind of feet-on-the-ground experience lets me take what I've seen in the field and use it in the classroom."

"Consumers Energy is committed to attracting Michigan's next generation of talented college graduates to work with us," said John Butler, senior vice president of Human Resources and Shared Services at Consumers Energy. "We're excited to do even more with MSU and the College of Engineering to build relationships with these students today."

The vibrant strength of the MSU-Consumers Energy relationship was celebrated on March 20 at a ceremony honoring the company and the Consumers Energy Foundation's recent \$200,000 donation to the Cornerstone & Residential Experience (CoRe) program in the College of Engineering. CoRe is a first-year living-learning community program that works to "build the whole engineer" through integration of a range of academic, career-oriented, and social activities.

Representatives from Consumers Energy and MSU formally dedicated the redesigned second-floor lobby in East Wilson Hall. The updated lobby offers students a gathering space with charging stations and furnishings to encourage studying and socializing.

“Consumers Energy is a remarkable leader in welcoming and supporting our students,” said College of Engineering Dean Leo Kempel. “The company is particularly skilled at getting its information in front of our future engineers and computer scientists and actively competing for that young talent by offering valuable

engineering and volunteering experiences.”

Butler added, “We want engineering students to know they can work for world-class companies like ours when they graduate. This event at Wilson Hall is a symbol of our dedication to providing opportunities for these students now and in the future.”

Consumers Energy, Michigan’s largest utility and the principal subsidiary of CMS Energy, provides natural gas and electricity to 6.6 million Michigan residents.

Learn more about CoRe at egr.msu.edu/core/

Career-Ready in Computer Science and Engineering



(l-r) Dean Leo Kempel; Matt Bejin, global recruiting director, & Elizabeth Klee, chief information officer, Urban Science; MSU Trustee Melanie Foster

MSU’s Computer Science and Engineering (CSE) Capstone Lab has been significantly upgraded with a gift of \$30,000 from Urban Science, a Detroit-based business-solutions company. The Urban Science gift made possible the purchase of twelve Apple 27-inch iMacs for the lab. In 2011, Urban Science also donated \$30,000 for an initial set of twelve iMacs.

According to Wayne Dyksen, professor for the CSE capstone course, “Each powerful computer, in combination with so-called virtualization software, enables students to develop software for any architecture, including Apple Macs, iPads, iPhones, any version of Microsoft Windows, Android phones and tablets, and any version of Unix.”

A special ceremony celebrated Urban Science at a March 4, 2015 gathering in the CSE Capstone Lab. “We want to thank Urban Science so much for this \$30,000 gift,” said Leo Kempel, dean of the College of Engineering. “Strengthening this lab allows the College of Engineering to help students transition into being career-ready graduates.”

MSU Trustee Melanie Foster said, “As board members, we truly value our relationship with industry but especially with industry based in Michigan.” She also noted that Urban Science has hired 29 MSU alumni in the last five years, including two recent graduates.

Urban Science supports the sales and marketing needs of the automotive industry. The company leverages a scientific methodology to help increase vehicle sales, improve profitability, and reinforce customer loyalty. “We are thrilled to support this lab and really want to attract talent from MSU to Urban Science,” said Elizabeth Klee, chief information officer for the company. “This is a win for all of us.” Since 2009, Urban Science has sponsored 13 CSE capstone projects. For the 2014 fall semester project, titled “HR Matters,” students

on the Urban Science team developed a software tool that enables auto dealers to assess key behavioral competencies of their employees to help them develop in their role such as a salesperson or service advisor. Dyksen noted, “Our partnership with Urban Science helps us provide our students with outstanding computing facilities. In return, MSU provides Urban Science with outstanding computer science graduates.”

CSE capstone students gain hands-on experience working on projects sponsored by a long list of companies. “We have a strong portfolio of companies across many industries, ranging from small to large, from local to Michigan-based firms to national marquee concerns,” said Dyksen.

“It’s a matter of pride for our program and importance for our students that we engage with companies working in Michigan. We have coverage from Benton Harbor to Grand Rapids to Midland to Lansing to metropolitan Detroit. Last semester all of the projects were sponsored by Michigan-based companies or Michigan branches of companies headquartered elsewhere.”

A Leader in **Composite Materials Venture**



founding partners along with Michigan State University, Purdue University, University of Kentucky, the National Renewable Energy Laboratory, Oak Ridge National Laboratory, and the University of Dayton Research Institute.

IACMI focuses on advanced fiber-reinforced polymer composites, which combine strong fibers with tough plastics for cost-effective manufacture of materials that are lighter and stronger than steel.

MSU leads the light-and-heavy-duty vehicle component of IACMI with a goal of developing manufacturing processes that lead to substantial increases in the use of advanced fiber-reinforced polymer composites to reduce vehicle weight and increase fuel efficiency.

The advancement of composite-material research is particularly important in Michigan. These materials are crucial to the auto

industry, which seeks ways to manufacture vehicles that are fuel-efficient and safe. MSU, with more than 25 years of research excellence in the field of composite materials, serves as the primary academic partner in the state and will work closely with key industry and research partners like the Dow Chemical Company, Ford Motor Company, TARDEC, and General Dynamics Land Systems. In addition, the Michigan Economic Development Corp. has committed \$15 million in matching funds to the Michigan portion of the institute.

MSU is home to the Composite Materials and Structures Center and the Composite Vehicles Research Center, both long-recognized nationally as leaders in the field.

“These two world-class facilities will serve as the foundation for future work in this program,” said Lawrence Drzal, director of the MSU Composite Materials and Structures Center and director of the Michigan Center of Excellence for the newly formed institute. “We’re confident

the IACMI will create new jobs, support the expansion of companies, and educate technicians and engineers for these industries.”

“Michigan State University has long set the standard for research in the field of composite materials, and we are proud to be a part of this national endeavor,” said MSU President Lou Anna K. Simon. “We are grateful for Dr. Drzal’s leadership, the leadership of our faculty, and the continued congressional support that gives us the opportunity to have these kinds of programs. We appreciate the invaluable contribution from the MEDC that helped to make this a reality.”

Leo Kempel, dean of the MSU College of Engineering, said it’s only natural that MSU would take a lead role in this project: “Polymer composites are one of the most transformational technologies on the horizon for reducing the weight of vehicles, whether it’s automobiles, trucks, trains or aircraft. In concert with our partners, MSU will advance knowledge in this critical area.”

In January 2015, President Barack Obama announced a new Institute for Advanced Composites Manufacturing Innovation (IACMI). IACMI has received commitments of \$189 million from 122 of its core members and \$70 million (over five years) from the U.S. Department of Energy.

Michigan is one of six states in IACMI. The University of Tennessee – Knoxville leads the project and is one of seven

IACMI Michigan Members

Altair
American Chemistry Council
BASF
BioCycle, LLC
Continental Structural Plastics
Dow Chemical Company
DowAksa

Eaton Corporation
ESI North America
Faurecia US Holdings
Ford Research and Innovation Center
Huntsman Polyurethanes
Johnson Controls, Inc.

LayStitch LLC
Magni Group, Inc
Michigan Economic Development Corp.
Michigan Molecular Institute
Michigan State University

Plasan Carbon Composites
Toyota Motor Engineering & Mfg. NA
University of Michigan
XG Sciences



Teaching Common Core Math Standards Made Easier with Free Tool

The Leona M. and Harry B. Helmsley Charitable Trust has made a \$750,000 grant to support a way to utilize K-8 math textbooks more efficiently. The grant will help implement a free, web-based tool, created by researcher William Schmidt at MSU, to help American educators teach the Common Core State Standards for mathematics.

Through the Textbook Navigator/Journal, K-8 teachers can quickly find which parts of their existing math textbook cover a standard or identify which standards are addressed in specific textbook lessons.

Although the majority of U.S. states have adopted the standards, many teachers still must use outdated textbooks or find other materials to ensure students meet the common set of learning goals at each grade level.

“Higher learning goals for all students are a fundamental ingredient to an upgraded system of public education – but to realize the promise of the Common Core standards, educators need access to curricula that bring them to life in classrooms,” said Rachel Leifer, senior program officer of the Helmsley Charitable Trust’s Education Program. “The Navigator is a comprehensive, user-friendly tool that helps teachers make the best use of textbooks that may only partially address the requirements of the math standards. We commend Dr. Schmidt for translating his groundbreaking research into a practical resource for teachers, and we are proud to support this tremendous step toward helping educators find the level

of rigor and quality needed to prepare students for success in high school, college and beyond.”

A team led by William Schmidt, director of the Center for the Study of Curriculum at MSU’s College of Education, developed the Navigator based on an in-depth analysis of 34 commonly used math textbook series comprising 185 individual textbooks. They found that no textbook series covers 100 percent of on-grade standards, with the typical textbook skipping at least a quarter of the math topics students are expected to learn.

“We are asking teachers to depend on textbooks that are not well aligned and also vary widely, meaning children with different books may get entirely different, incoherent opportunities to learn important mathematics,” said Schmidt. “The Navigator will empower more teachers to design their own instruction by letting the standards, not the textbooks, guide the process.” The Navigator can help teachers and school district curriculum leaders decide the order in which the textbook lessons are covered (and which lessons to skip), rather than being rigidly tied to the order defined by a textbook. If there are no lessons in a textbook covering a particular standard, the Navigator points to several free, online sources of curriculum materials.

The Navigator fills an important need while writers, editors, and publishers work to adapt K-8 math textbooks to cover more fully the topics and lessons in the adopted Common Core State Standards.

Textbook Analysis Findings

The need for a tool like Navigator became evident through a study conducted with more than 1,000 teachers in three states.

Schmidt’s team selected textbooks for analysis from a 2011 survey of school districts in states that had already adopted Common Core State Standards. Textbooks were analyzed to identify which, if any, standards were covered in each lesson. The team has also analyzed more recently published textbooks.

“One of the most serious consequences we found is that textbooks contribute in a significant way to inequalities in our educational system,” Schmidt said. “The Navigator can create a bridge for teachers to make better use of what they have, until newer well-aligned textbooks become available.”

Key findings:

- Only half of a typical textbook focuses on math considered appropriate for grade level. Some devote up to two-thirds of the school year to standards for the wrong grade.
- On average, the textbooks allocate 62 to 74 percent of class days to grade-appropriate standards. Thus, students are likely to spend eight to 13 weeks on extraneous material.
- Newer (post-2011) textbooks cover, on average, a higher percentage of grade-specific standards (82 percent) than older books (64 percent).

The study received support from the Bill & Melinda Gates Foundation and the GE Foundation.



Sandra Spoelstra

Helping Older Adults Stay Independent

A three-year, \$600,000 grant from the Rita & Alex Hillman Foundation and an additional \$600,000 pending award from the Michigan Department of Community Health will allow MSU's College of Nursing to expand services that help older adults stay in their homes and communities.

Innovations in Care is a multi-year grant program created by the Hillman Foundation to enhance and expand nursing-driven projects that care for vulnerable populations.

"The needs of vulnerable populations often lie beyond the reach of much of the mainstream health care system," said Ahrin Mishan, executive director of the Hillman Foundation. "This is where nursing comes in. Nursing-driven innovations have a long history of making an enormous impact in these communities, and we strive to build on this tradition by bringing effective new models to scale."

The \$1.2 million in new funding will be used to expand a program that provides team-based home care and home repair services to help older adults. The college had already successfully piloted the program, called MiCAPABLE, with support from the Michigan Department of Community Health MI Choice Medicaid waiver program, which seeks to help older adults avoid nursing home admissions.

The new funding will allow the college to expand services to three of Michigan's 20 MI Choice waiver sites and will be used to train clinicians and offer MiCAPABLE to 270 patients.

Participating older adults will receive 12 weeks of home visits from a team that includes a registered nurse, an occupational therapist, and a handyman. To ensure that the needs of an aging adult are met, the team's work can include health care services, training to improve functionality and avoid falls, home accessibility improvements (e.g. installing bathroom grab bars), and managing medications.

An expansion of Community Aging in Place—Advancing Better Living for Elders (CAPABLE), a successful nursing-driven program originally launched by Johns Hopkins School of Nursing, MiCAPABLE will be co-led by MSU College of Nursing's Sandra Spoelstra, PhD, RN, and Sarah Szanton, PhD, RN/ANP, from Johns Hopkins.

"This program expansion will seamlessly build on our pilot program and is the next step to making MiCAPABLE available to all 15,000 lower-income, older adults across the state who are nursing-home eligible yet trying to remain at home," said Spoelstra.

A six-person review committee at the foundation selected the MSU College of Nursing from more than 260 applications, narrowed to 23 finalists. The committee grants awards to programs that demonstrate the greatest likelihood of broad impact and align with improving health, reducing costs, and improving the patient and caregiver experience.

Detroit Food Law Clinic: Legal Advocacy for Local Businesses

Detroit's Eastern Market has never been shy about its intentions. Since its inception in the 1800s, it has shown relentless commitment to nourishing the community around it—nutritionally, culturally, and economically.

The market is a place for

local farmers and growers to sell their bounty. It is a place for culinary entrepreneurs to network, seek funding, and rent low-cost kitchen space to make their food business a reality. It is a place that teaches the value of eating nutritiously—and makes

nutritious food choices accessible. Above all, it is a vibrant hub of activity and a gathering place for entrepreneurs and consumers from Detroit, Southeast Michigan, and beyond.

Organizations like The Kresge Foundation, whose Detroit Program uses a comprehensive framework to promote long-term economic opportunity in the city, provide major support to Eastern Market and its role in Detroit's rebirth.

"Food entrepreneurship is one of the exciting developments on Detroit's economic horizon today," said Wendy Lewis Jackson, deputy director of The Kresge Foundation's Detroit Program.

Naturally, every exciting development brings its own set of challenges for the city and its people, but it is within those challenges that MSU College of Law found a need it could fill: legal assistance.

Local entrepreneurs, community groups, and nonprofits looking to launch their own food businesses at Eastern Market face the same health, safety, and agricultural regulations as large, commercial grocery stores and restaurants, but seldom have access to the same top-notch legal advisors. "Detroit-based entrepreneurs – especially low-income individuals – that focus on Detroit's food system need strong advocates to cut through the red tape and clarify the gray areas of law," Jackson said.

A \$150,000 grant from The Kresge Foundation enables the MSU College of Law to do just that. "We are grateful for The Kresge Foundation's generosity so that we can

support these efforts," said Joan W. Howarth, dean of the MSU College of Law. "With our roots in Detroit, it makes sense for MSU Law to be such a vital part of its rebirth and continued growth."

Under the direction of Adjunct Clinical Professor Jayesh Patel, the Detroit Food Law Clinic will be staffed by second- and third-year law students. "This is an opportunity for students, too, to grow their legal skills and cultivate a lifelong commitment to the needs of low-income, underserved populations," Howarth added.

These future lawyers will have all the tools they need to succeed in this niche. As the former Detroit College of Law, MSU is familiar with the territory. It has an intensive commitment to clinical legal education. It has a Global Food Law program and an Urban Food, Farm, and Agriculture Law Practicum from which to pull experience and expertise. And, 90 miles to the west, it has MSU's vast array of academic resources in food and agriculture at its disposal.

"Detroit can only benefit by having Michigan State leverage its deep expertise in food and agriculture here," Jackson said. "The Detroit Food Law Clinic is well positioned to anticipate and work through the complex legal and regulatory issues that could otherwise hamper this important field. It is providing needed advocacy while fulfilling our foundation-wide mandate to expand opportunities for vulnerable people living in America's cities."



Eastern Market

photo courtesy of Michigan Municipal League



Jayesh Patel

photo by Joshua Ladd



*Kathy Fish
and MBA
class*



Procter & Gamble CTO on Innovation

A lot is at stake every time a company with the size, scope, and history of Procter & Gamble launches a new product or innovation. Millions are invested in making sure that the product meets a real need for consumers and that it can sell widely and profitably. In a business like P&G's there are big risks to be taken and big opportunities not to be missed.

Kathy Fish, chief technology officer for Procter & Gamble since 2014, is a leader in the company's development of new and innovative products, most of which are designed to sell on a global scale. Fish, a 1979 MSU graduate (B.S. chemical engineering; honors college) keeps her eye on the company's strategic goals and on sound methods of product development that match research to consumer need and demand.

In a recent visit to MSU during BroadWeek IV, Fish explained

to MBA students the crucial role of innovation in high-stakes research and development at P&G. "About 60% of our growth is driven by innovation. We operate with excellence and discipline and at the same time create the future. We have to work with design thinking and a creative approach."

As chief technology officer, Fish is responsible for the company's innovation program, which involves an annual \$2 billion investment in research and development and nearly 8,000 global R&D employees.

During BroadWeek, Fish told students that product development research at P&G starts with the consumer. "We work hard to develop products that meet the needs of consumers so that they will want to come back and buy our products again. When you really listen to consumers, you often come out in a completely different place than you

expected when developing a new product. As we work at creating and innovating, we work hard to articulate consumer needs."

Fish added that at a company of the size and scope of Procter & Gamble innovation always comes with the intense pressure of short-term success. Innovation must be continuous, as it always has been since P&G's founding 178 years ago. "You have to reinvent yourself to stay relevant in a time frame that long."

During her more than three decades at P&G, Fish has been involved in many major, highly successful product unveilings including the launch of Tide Pods, P&G's 3-in-1 laundry pac. She discussed a number of P&G innovations including Swiffer Sweeper, WetJet, Crest Whitestrips, and the Gillette Fusion razor with flexball technology. Fish said, these are ingenious and useful products that "people didn't know they

needed until they had them but now can't live without."

Fish also spoke of the company's need for continuous innovation of many kinds to satisfy customers and keep profits strong. "A common misperception is the belief that innovation occurs only in moments of serendipity. What makes P&G innovation unique is that it's not just one year, but consistent performance over time." And innovation delivers, Fish said, boosting sales across the world. P&G considers innovation part of the company's DNA— it practically invented the concept of "new and improved."

Since joining P&G in 1979, Fish has risen steadily through the ranks from product developer to her current position. As CTO, Fish says she will be focused on driving new capabilities and technologies to deliver discontinuous innovation that enables the long-term growth of the business.



The winning student team with GM executives. (l-r) Mary Sipes, VP of global portfolio planning, GM; Warwick Stirling, director of innovation, GM; Derek McBaine; Sridhar Thirumalai; David Wenner, director of labor relations, GM; Joseph Domenico; Elizabeth Congdon

BroadWeek—Where Business Expertise Meets Creative Thinking

So what exactly is BroadWeek? It's a challenge to students at the Eli Broad Graduate School of Management. Over three days, full-time MBA students form teams to create business solutions under the tutelage of top corporate executives, who donate their time and expertise to educate the next generation of business leaders.

The students draw on their growing knowledge and business imagination to present ideas to executives from companies like Procter & Gamble and General Motors. These intensive one-credit courses are designed

to put creativity, innovation, and business acumen to the test.

During BroadWeek IV this spring, student teams pitched ideas to GM to best use the bundle of technologies related to connectivity and automated driving, determining best business models and considering new services that could be offered to drivers.

BroadWeek IV challenged students with experiential exercises for creating new business models. Along with other executives, Kathy Fish, CTO at Procter & Gamble, made presentations that reinforced

the students' work. In turn, the corporate partners heard student ideas on how to approach business differently.

Todd Stollberg, vice-president of business development of the Global Gillette Shave Care Team, said, "It was encouraging to see everyone embrace this work and see them have some fun and advance the thinking."

Richard Simonds, MSU professor of finance, explained the executives' role: "The case study GM developed challenged the students to think about the future of the auto industry worldwide and the role of

connected-car technology. This entire experiential learning effort has helped GM learn more about our students' capabilities, and our students have a much richer understanding of the technological revolution in the auto industry."

BroadWeek can be stressful for students, but the experience is highly beneficial, according to second-year MBA student Chris Schramski, who saw significant benefits in the challenges. "This is good stress," he said, "similar to what we'd experience in the real world—with time constraints."

VISA

MSUFCU



(l-r) MSU Provost June Pierce Youatt; Ken Munzing, VP for Financial Institution Sales, Visa; Patrick McPharlin, then-president and CEO, MSUFCU



INSET PHOTO: (l-r) Jody Pearce, sr. processing specialist, Visa; Ken Munzing; April Clobes, then-COO and currently president and CEO, MSUFCU

\$250K for **Personal Finance Education**

Much needed help with understanding personal finance is on the way for MSU students. In partnership with Visa, the MSU Federal Credit Union (MSUFCU) will provide Michigan State University funding for the next eight years to underwrite the Financial Peer Education Program.

The program's curriculum will be developed by MSUFCU and will include financial topics relevant for college students, such as

budgeting in college and after, understanding credit, and identity theft. It will feature peer educators providing one-on-one sessions to assist students in establishing budgets. The Financial Peer Education Program will be available to MSU students beginning in fall 2015.

"For most of our students, coming to Michigan State University is an induction into adult independence and its responsibilities," said MSU

Provost June Pierce Youatt. "The opportunity afforded through this generous gift from Visa and the MSU Federal Credit Union will help students gain valuable skills and understanding, whether they are just beginning their college experience or getting ready to graduate and begin their professional careers."

In addition to this new financial education program, MSUFCU offers Financial 4.0, a financial website geared

toward college-age students. The site houses blogs on financial topics, financial education videos, free financial resources, and contests, providing students with the opportunity to improve their financial literacy.

"We're very pleased to have the opportunity to enhance our partnership with MSU by creating a bigger financial education presence on campus," said April Clobes, president and CEO of MSUFCU. "We

The School of Hospitality Business

are pleased to provide students with the financial knowledge and resources that will help them achieve their goals and dreams — during college and beyond.”

For 20 years, Visa has been a private sector leader in developing innovative, free programs that help people effectively learn the fundamentals of personal finance, including budgeting,

saving, responsible spending, and the wise use of credit. Visa’s flagship financial literacy initiative, Practical Money Skills for Life, is a free program to help parents, teachers, students, and consumers of all ages learn the essentials of personal financial management.

MSUFCU is the world’s largest university-based credit union, offering a full range of

personal and business-related financial services to Michigan State University and Oakland University faculty, staff, students, alumni association members, and their families worldwide in addition to a variety of select employee groups.

Founded in 1937 by a few MSU professors and employees, MSUFCU now has 14 branches, more than 197,000

members, over \$2.8 billion in assets, and more than 642 employees. MSUFCU was named 2014 Credit Union of the Year by the National Association of Federal Credit Unions and as the #1 employer on the Detroit Free Press Top Workplaces list for 2014.

New Director for The School of Hospitality Business

On January 1, 2015, Michael McCall officially donned two hats for Michigan State University’s Eli Broad College of Business. The first is Director of The School of Hospitality Business. The second, the National Automatic Merchandising Association (NAMA) Endowed Professor.

McCall, who earned his bachelor’s degree from SUNY Buffalo and a master’s and doctorate at Arizona State, comes to Michigan State from Ithaca, N.Y., where he held academic positions at both the Ithaca College School of Business and the Cornell University School of Hotel Administration.

He’s astute, enthusiastic, and constantly in search of ways to make his industry better. One of those ways involves using data accumulated through customer loyalty programs to make a consumer’s experience more individualized, more luxurious, and more cost-effective.

In Ithaca, he had everything he needed to pursue this research, but in East Lansing? He has more. For him, moving to Michigan to fill big shoes in a big program at a big university was the opportunity of a lifetime.

Previously led by Ron Cichy, the longest-serving director in its 87-year history, MSU’s School of Hospitality Business is recognized as one of the best hospitality business programs in the world. Walking into it, McCall wasn’t intimidated. He was excited. “The school is in the perfect place,” he said of the award-winning program cultivated by Cichy. “Now, I get the opportunity to envision it in three to five years and figure out how to get there.”

McCall said a key factor is being part of the Eli Broad College of Business. “I’m looking forward to partnering with the rest of the college and being able to engage all of the people and resources it has to offer,” he said.

Fresh off his first 100 days in office, McCall is already form-

ing plans. “Have you ever heard of the Fosbury Flop?” he asked, referencing the innovative style, now used by every world-class high jumper, that was introduced into international competition in 1968 by U.S. Olympic gold medalist Dick Fosbury. “We need to have a Fosbury Flop in hospitality

business.” That is, what we currently understand and teach about hospitality business helps the industry succeed. But eventually, someone is going to come up with a creative new idea that will raise the bar. He wants The School of Hospitality Business at Michigan State to be that “someone.”



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