



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Minnesota Applied Economist

SUMMER 2015 • VOL 726



Department of
**APPLIED
ECONOMICS**

ISSN #0885-4874

IN THIS ISSUE

FROM THE DEPARTMENT HEAD	3
FOOD AND CARBON TO 2050	4-5
OUTSTANDING ALUMNI AWARD: DICK TODD	6
FACULTY SPOTLIGHT: PAMELA J. SMITH	7
STUDENT SPOTLIGHT: BLAKE & BLAINE NELSON	8
STUDENT SPOTLIGHT: NEL PILGRIM-RUKAVINA	9
A TRIBUTE TO DELANE WELSCH	10
WHY WE GIVE: DOROTHY PETERSON	11

Applied Economics at the University of Minnesota

@ApEcMN



FROM THE DEPARTMENT HEAD

Since I last wrote to you, I had the honor of being named Head of the Department of Applied Economics. I am grateful to be part of a department with such a rich history and a promising future, and I am impressed every day with the quality and ambitions of our students, staff, faculty, alumni, and partners. I sincerely believe in our ability to address the grand challenges of solving important problems and developing a productive workforce in cooperation with our colleagues in the College and University.

This spring, we had to say goodbye to three faculty members as they became Professors Emeriti: Steve Taff, Claudia Parliament, and Tom Stinson. Steve, Claudia, and Tom have embodied our mission throughout their long careers in our department. Steve Taff has focused on bridging the information gap in areas related to land economics and agricultural and environmental policy. Through his scholarship and Extension programming, he brought information about a range of Minnesota topics (feedlots, forestry, biomass, hunting, land prices) to the public and to policy-makers. His non-judgmental approach and his wry sense of humor made it easy for us to listen and learn. My favorite paper title?: “A relatively complete and comparative societal accounting of the Conservation Reserve Program’s effects in a small watershed.”

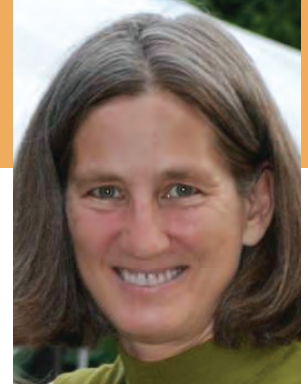
Claudia Parliament’s area of scholarship was in cooperatives, and she wrote widely about agricultural co-ops and labor co-ops, both domestic and international. In the early nineties, she took on leadership of the Minnesota Council on Economic Education. She built MCEE into a successful and healthy organization that fosters economic education and brings financial literacy to Minnesota students. Claudia has traveled extensively, establishing programs of economic education in numerous countries. She has also been an effective and well-loved teacher at the University of Minnesota, leading study abroad trips to South Africa, teaching macroeconomic principles, and championing writing in the curriculum. Fun fact—Steve and Claudia started work in the department on

the same day, along with Kent Olson and Harald von Witzke.

Tom Stinson’s long career of scholarship and service included 26 years as Minnesota’s state economist.

This was a half-time position although, as Tom said, “it’s half-time only if full-time means 24 hours a day, 7 days a week.” Tom’s careful analysis and deep understanding of macroeconomic data served the state of Minnesota well; his tenure as state economist included service to five governors. Tom is well-known as unflappable—a characteristic that has served him well in the classroom (where a student called it a “mellow vibe”), at the capitol, in the public eye, and when he was mistaken for another famous Minnesotan: bass guitarist Tommy Stinson. Tom has emphasized the importance of a well-educated workforce to the Minnesota economy, so it was fitting to recognize Claudia’s career in improving the education of Minnesota kids as we celebrated Tom’s career as state economist.

As Steve, Claudia and Tom leave, we are heartened and excited about the impending arrival of new faculty this year. Steve Miller will be an assistant professor in the area of environmental and natural resource economics, fresh from earning his PhD at UC Santa Barbara; Jason Kerwin comes to us from the University of Michigan and will start as an assistant professor in international development; Hikaru Peterson joins us as a full professor in the consumer economics area. Jeff Peterson is the new director of the Water Resource Center with his tenure home in our department. Hikaru and Jeff come to us from Kansas State University. Watch for more on these new faculty members in our next newsletter.



Frances Homans

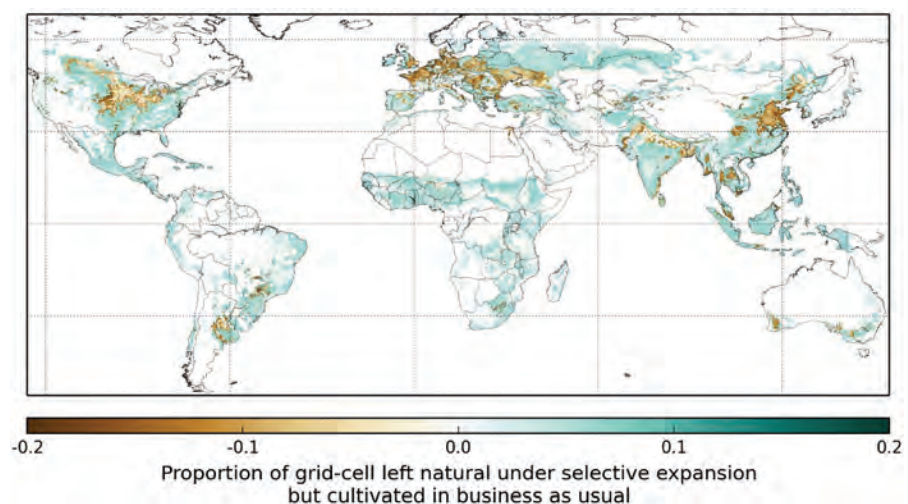
Department of Applied Economics

Food and Carbon to 2050

In the effort to meet global food needs, we may worsen the problem of global climate change. Conversion of grasslands and forestlands into agricultural lands can lead to releases of stored carbon, and the agricultural system that takes the place of the natural system may harbor less carbon than before. What if we kept this in mind, and targeted land conversion accordingly? We report here on a project that focuses on this question (Johnson et al., 2014).

In this project, Johnson assembled a data set which captured 175 crops grown on every 5 x 5 minute (10 x 10 km at the equator) grid cell on the surface of earth. Then, using data from other scientists (Monfreda, 2008; Ramankutty, 2008), Johnson calculated where crop expansion in each grid-cell would yield the greatest return in calories while preserving the most carbon. Specifically, the analysis found a selective strategy of cultivation which, if pursued globally, would meet projected caloric production targets for 2050 (increases of 100 percent). If cultivation was expanded selectively to meet this goal while preserving the maximum amount of carbon stored, the result would save 5.89 billion metric tons of carbon compared to an unselective “business as usual” scenario. The consequence, if carbon is valued

Figure 1. Difference between selective extensification and business as usual



at a consensus \$181/ton, would be a savings of 1.06 trillion dollars in carbon saved from 2008–2050. This assessment assumed that 75 percent of gains in caloric output would be met by increasing output on existing lands while 25 percent of the increase would come from expanding land area.

A map of where such gains would be realized globally is shown in Figure 1. More telling is the ability of the analysis to “zoom in” from global maps on areas such as the U.S. Corn Belt (Figure 2) to show how the pattern of land use would be affected by a selective versus a non-selective scenario. The major conclusion, intuitively obvious once stated, is that to preserve a maximum amount of carbon, we should expand cultivation at the edges of those areas of cultivation that already constitute the world’s

BY C. FORD RUNGE AND JUSTIN JOHNSON



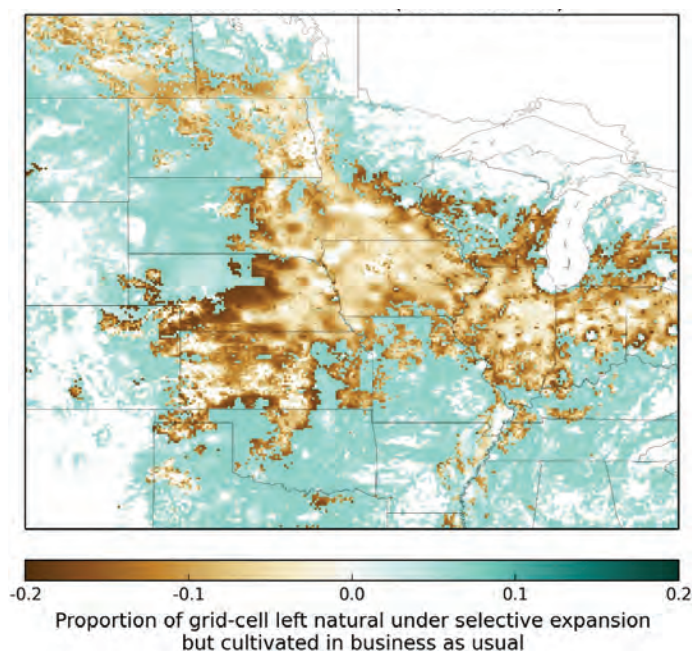
“breadbaskets,” while conserving land for carbon storage in those tropical, largely equatorial regions of Africa, Indonesia and South America where crop cultivation generates low yields but carbon storage is huge.

This conclusion is based on maximizing carbon saved while meeting a 100 percent increase in calories for the world as a whole. But as it “zooms in” to areas such as the Corn Belt, it shows the stresses of such a global solution. The map of the Corn Belt shows that expansion of land area for cultivation in Nebraska and Kansas will certainly increase irrigation water needs, much of which are met by boreholes into the

Ogallala Aquifer, a fossilized deposit of water which is unlikely to be refreshed. Hence, carbon retention to meet caloric demands confronts yet another constraint: underground water stores. In the carbon-rich equatorial regions of South America, Africa and Asia, reducing the expansion of cultivation in the name of carbon preservation confronts the real needs of subsistence farmers for food or products for market and the plans of large corporations for plantations such as oil palm.

Therefore, as our study emphasizes, pinpointing where cultivation should expand to save carbon while meeting caloric food goals is very different from actually executing such a strategy. Local, regional and national policies must support individual land use decisions that differ markedly from the status quo. Even so, we hope that our assessment can help guide these choices in the common interest of humankind.

Figure 2. Difference between selective extensification and business as usual (U.S. Midwest)



REFERENCES

- Johnson, J.A., C.F. Runge, B. Senauer, J. Foley and S. Polasky. 2014. “Global Agriculture and Carbon Trade-offs.” *Proceedings of the National Academy of Sciences* 111(34): 12342-12347, August 26.
- Monfreda, C., N. Ramankutty, and J.A. Foley. 2008. “Farming the Planet: 2. Geographic Distribution of Crop Areas, Yields, Physiological Types, and Net Primary Production in the Year 2008.” *Global Biogeochemical Cycles* 22(1): GB1022.
- Ramankutty, N., A.T. Evan, C. Monfreda, J.A. Foley. 2008. “Farming the Planet: 1. Geographical Distribution of Global Agricultural Lands in the Year 2000.” *Global Biogeochemical Cycles* 22(1): GB1003.

OUTSTANDING ALUMNI AWARD: DICK TODD

Richard (Dick) Todd received his PhD in Agricultural and Applied Economics in 1983. His dissertation applied rational expectation theory and dynamic equilibrium tools to agricultural economics. He joined the research department at the Federal Reserve Bank of Minneapolis in 1980, where he helped develop regional forecasting models and began a transition into management. He left the Research Department in 1993 for management responsibilities that eventually included statistical reporting, payments system risk, discount window lending, information technology, and banking studies. Dick continues to participate in the Bank's internal monetary policy briefings and, since 2002, has held the position of Vice President, Community Development. In this role Dick has provided leadership in developing community affairs programs. Dick is nationally recognized for his focus on financial and legal issues that hinder economic development within Native American reservations, and he serves as an advisor to the Bank's new Center for Indian Country Development. His active support of personal finance education programs and initiatives is also widely appreciated.

Currently Dick is working with Elton Mykerezzi on a project that examines the extent to which the business climate in reservations is different from nearby or similar non-reservation counties in terms of business density, employment, industrial composition, technology, and business dynamics. They also plan to examine the impact of reservation institutions on economic development in Indian Country. Dick's previous research is very diverse as reflected in his published articles on agricultural policy, monetary policy, business cycles, financial regulation, payments systems, forecasting and seasonality, risk management, financial education, and home ownership and foreclosures.

Several organizations benefit from Dick's active involvement. He is a past board member of the Minnesota Jump\$tart Coalition for Personal Finance and the Minnesota Council on Economic Education (MCEE) and serves on the board of the North Central Regional Center for Rural Development and the advisory board of the Economic Development Center based at the University of Minnesota Crookston. He has provided class presentations on macroeconomic policy within the department and at MCEE summer institutes.

Dick is well known and respected for his commitment to minority and underserved populations, rigorous analytics, thoughtful insights, supportive mentoring of professionals, and relevant, applied research. The Department is pleased to recognize Dick as the 2015 Outstanding Alumni Award recipient.



Pamela Smith's research focuses on topics in international economics, with an emphasis on international trade and policy, intellectual property rights, and trade in genetically modified crops. Her research appears in numerous journals including the Journal of International Economics, Review of International Economics, American Journal of Agricultural Economics, Journal of World Intellectual Property, Journal of Urban Economics, and the National Bureau of Economics Research working paper series.

Dr. Smith teaches core courses in international trade and policy for the M.S. and Ph.D. programs in Applied Economics at the University of Minnesota as well as a variety of special training programs for government officials such as the Bangladesh Training Program sponsored by the International Food Policy Research Institute; the Executive Masters in Rural and Industries Management Program at Olsztyn University of Agriculture and Technology (in Poland); and the Institute for Global Studies of the Carlson School of Management.

Dr. Smith's recent advising includes the supervision of collaborative research with University of Minnesota's own Fulbright Scholar, senior Erik Katovich. Dr. Smith began working with Erik in 2012 as his advisor on a UROP project and their research collaboration has since continued. Their current research-in-progress, which they plan to submit for journal publication, is entitled: Are GMO Policies Trade Related?: Empirical Analysis of Latin America.

Erik, who achieved the honor of receiving a Fulbright Scholarship to study economics at the State University of Campinas in São Paulo, describes one of his most enduring and rewarding experiences at the University as conducting research with Dr. Smith. "I approached Dr. Smith without a clue as to how to do research, and she guided me through the process ... working with her has been one of the most enriching and positive experiences that I've had at the U of M, and I owe a lot of what I've accomplished to her support."

"I believe that Erik is on a trajectory to make not only significant academic contributions in the area of development economics but practical contributions as a thoughtful citizen of our world," says Dr. Smith.

PAMELA
J. SMITH

FACULTY
SPOTLIGHT



BLAKE & BLAINE NELSON

STUDENT SPOTLIGHT

Blake Nelson, a junior in Agricultural and Food Business Management, is originally from Lancaster, Minnesota. He grew up on the farm that has been in his family for several generations. Blake chose to attend the University of Minnesota because of its fit with his agricultural background and because “it’s a very good school academically [and] has allowed me to broaden my horizons.” “I hope to gain skills that I can bring back and apply to the farm,” says Blake.

Blake is choosing to spend the summer as an intern with Cargill to learn more about the industry. “I hope to gain a greater understanding of grain merchandising and other ag areas that will be useful knowledge for sustaining and growing the family farm,” he explains further.

Blake has enjoyed much about his experiences at the University, including going out of his comfort zone to meet new people and joining organizations like the National Agri-Marketing Association (NAMA). “I feel like I’m gaining skills that I can use later on in life and I’m looking forward to next year.”

Blake’s hobbies outside of the University include hanging out with friends and family, working with numbers and deer hunting.

Blaine Nelson is a 2015 graduate of the University of Minnesota with a B.S. in Applied Economics. Like his brother, Blake, Blaine chose to attend the U of M for a variety of reasons including the U’s Big 10 sports and academic reputation.

“I like the wide variety in classes the U offers and the different perspectives so many people bring to campus,” Blaine says. “I can walk into Ruttan Hall and professors greet me by name and genuinely care about me as a person.”

Blaine credits his decision to pursue his M.S. in Agricultural and Applied Economics at the University of Illinois in Urbana-Champaign mostly to his professors here in the Applied Economics department. “Getting into graduate school is something I am most proud of, but I can take very little credit for that. My advisers, former professors...and the CFANS career center all contributed so much to me getting accepted,” Blaine explains.

In the future, Blaine sees himself in one of two places: either working for a large agribusiness company, or continuing his education even further and pursuing a Ph.D. “But I’ll leave that decision for a little later on in my life,” he says.

The department is proud to have Blaine as a graduate and looking forward to seeing the great things he is sure to accomplish as he continues his education. Congratulations, Blaine!

Nel Pilgrim-Rukavina, a 2015 graduate in Applied Economics with a product design minor, grew up in Mendota Heights, Minnesota and attended Henry Sibley High School. Nel's research interests include the intersection between business and design, and creating entrepreneurship that promote social innovation. Nel is involved in the Acara Program which allows her to combine her areas of interest in both applied economics and product design. She and her team developed a business model in which beekeeping equipment is rented to small plot farmers in India to increase the quality and quantity of crop yields.

"That's the thing I like most about the U," Nel explains: "the diversity of opportunities that are offered. In addition to my Applied Economics courses, I have taken classes on Honeybees and Social Insects, Toy Design and World Food Problems....there are so many interesting people doing interesting things."

One area in which Nel is particularly interested is that of researching ways in which to increase productivity during brainstorming activities. Together with her research advisor, Barry Kudrowitz from the College of Design, Nel determined a new framework for brainstorming in a more productive manner and last April was able to travel to Spokane, Washington to present her research findings during a poster session at the National Conference on Undergraduate Research.

"This was my most rewarding college experience," Nel comments. "The Applied Economics department was very supportive and it was great getting feedback from other researchers."

The instrumental experience of working on research and presenting that research to others at the undergraduate level has allowed Nel to feel ready to use those skills at her summer internship at the Center for Innovation Mayo Clinic, where she will be helping to improve systems and services within the Mayo Clinic health system. As for the future, Nel says, "I'm looking forward to using my internship to home in on what I want to do for a long term career. Once that is clearer to me, I would like to return to graduate school."

One thing that is clear? The opportunities, diverse classes and collaborations with students from a variety of majors have helped her gain a broader perspective that will be valuable for years to come.

NEL PILGRIM- RUKAVINA

STUDENT SPOTLIGHT



A TRIBUTE TO DELANE WELSCH

BY CHERYL
DOSS



It is with great sadness that we share the news that Delane Welsch died on January 29, 2015. Delane joined the faculty of the Department of Agricultural Economics in 1976 and served until his retirement in 2001. A full obituary would require more space than is available here; it would need to mention Delane's upbringing in Nebraska, his service in the Marine Corps, his decision to pursue a PhD in agricultural economics at Michigan State, and his subsequent work for the Rockefeller Foundation in Thailand, as well as his time on the faculty in Minnesota.

Delane's time at Minnesota was devoted to continuing his work in agricultural development. He taught undergraduates and graduate students, and he served for a number of years as Dean of International Agricultural Programs, expanding the University's connections in Morocco, Rwanda, Burundi, and Uganda, among others. For Delane, his academic work was close to his heart and reflected his strong interest in international development and his concerns with social justice.

I was fortunate to be a graduate student in the Department when Delane returned to teaching after completing his time as Dean. I was seeking an RA position and an advisor as I began my dissertation work. Delane encouraged me to pursue my interests—which he shared—in exploring gender issues in international agricultural development, and he challenged me with questions based on his experiences overseas.

Delane's approach to mentoring went far beyond the academic dimension of advising. He encouraged us to lead rich and full lives. He demonstrated through his own example that it was both possible and important to live out one's values in the academic community and the broader world—and, even more important, at home with a rich and full family life. In my case, Delane arranged for me to spend a summer at IFPRI, identifying data and empirical approaches for my dissertation—perhaps a standard role for an adviser. But he also encouraged me to serve on leadership committees at the St.

Anthony Park UCC church, which we both attended. And when I was unable to travel home for Christmas because I was pregnant, he invited my husband, Doug, and me to spend Christmas Day with his family. In an era when it was still uncommon for female graduate students to have babies and complete their degree, he gave me encouragement and support as I finished my PhD and pursued my career in academia.

In more recent years, Delane had suffered from health problems of increasing severity, but when we visited him and Kay last July, his smile was the same. We will miss Delane—a kind, caring, and committed man; a teacher and scholar; and a mentor to me and to many other students. Our hearts go out to his wife, Kay, his daughters, Susan and Jo Anne, and the rest of his family.

WHY WE GIVE: DOROTHY PETERSON

Dorothy Peterson, founder of the Willis L. Peterson Undergraduate Study Fund and Willis Peterson Scholarship, has an extensive and profound connection with the University of Minnesota and the Department of Applied Economics. These funds were established, “as a way to honor Willis’ commitment to teaching at the University,” Peterson explains.

Willis received his undergraduate and master’s degrees from the department in 1960 and 1962. In the fall of 1965, he returned to the University of Minnesota as an Assistant Professor and was promoted through the years to Professor, where he served until his death in 1999. Willis conducted research and taught graduate level courses in the area of production economics. From the beginning, though, he taught courses in the principles of both micro and macroeconomics. Although unusual to teach principles courses throughout one’s career, Dorothy delighted in the fact that, “...he just really enjoyed it! And he usually did it without the help of a teaching assistant.” This may have been due to the fact that, when Willis was a student himself, his interest in economics was sparked when he himself took a class in economic principles. The desire to teach, especially at an undergraduate level, was one of the motivating factors for Dorothy when she decided to give to the University.

When Dorothy first chose to donate, she was moved by Willis’ dedication to this students. “I wanted to honor his legacy,” she expressed. Professor Phil Pardey was one of Willis’ many students and he “really respected his work,” Dorothy states. “That and the education mission of the University resonates with me. I hope[d] to help contribute to this mission by providing opportunities to young students to grow and discover where their futures lie.”

The theme of connecting to education and helping students seems to resound overwhelmingly with Dorothy. “I’ve received wonderful letters of thanks from students and have been able to meet students who have received



A photo from Dorothy Peterson’s farm with graduate student Yu Na Lee. Dorothy, Willis Peterson’s widow, established a graduate fellowship that is funding Yu Na’s education.

help from our scholarships and fellowships. It’s very rewarding,” she comments warmly.

Willis’ dedication to teaching was truly admirable, and the legacy of his career continues to be seen through not only the generous donations given by Dorothy, but by the sharing of memories he created with his fellow colleagues, friends and students.

Dorothy graduated from Indiana University and Easton School of Music, and later taught at Concordia Teachers College in River Forest, Illinois, where she met Willis. They were married in 1969 and later moved to Minnesota and worked on the Peterson family farm in Ham Lake.

Dorothy Peterson graciously agreed to share why she chooses to give to the University of Minnesota. If you would like to be featured in one of our upcoming reports, please contact Sadie Brendalen at will1945@umn.edu.

UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

Department of
**APPLIED
ECONOMICS**

1994 Buford Avenue
Ruttan Hall Room 231
Saint Paul, MN 55108



Minnesota Applied Economist Volume 726 • Edited by Sadie Brendalen and Frances Homans • ISSN #0885-4874

THE UNIVERSITY OF MINNESOTA IS AN EQUAL OPPORTUNITY EDUCATOR AND EMPLOYER. THE UNIVERSITY'S MISSION, CARRIED OUT ON MULTIPLE CAMPUSES AND THROUGHOUT THE STATE, IS THREEFOLD: RESEARCH AND DISCOVERY, TEACHING AND LEARNING, AND OUTREACH AND PUBLIC SERVICE.