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A N N U A L
R E P O R T

MICHIGAN AGRICULTURAL
EXPERIMENT STATION

MICHIGAN STATE UNIVERSITY





2002 Annual Report

This annual report not only highlights the research done within the Michigan Agricultural Experiment Station, it recognizes the people making that research happen.

This issue is dedicated to MAES researcher Ruben J. Hernandez (School of Packaging) who died this past year while still actively pursuing his research agenda.

His contributions to the MAES continue to be realized and he will be missed by the MAES family.

Michigan Agricultural Experiment Station

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Design by Christine Altese; editing and production by Robin Millsap, MAES information officer, ANR Communications.

All photos by Harley Seeley and Kurt Stepnitz, MSU photographers, unless otherwise noted.

A Time of Change

With changing times come different forms of challenges. Anticipating and preparing for these challenges is as important as responding to current situations. For the Michigan Agricultural Experiment Station to remain a premier research institution, it must continually anticipate these challenges through strategic research to enhance agriculture, natural resources, families and communities in Michigan.

Strategic visioning is key. Continual prioritization of issues is critical to success, and several colleges and organizations within Michigan State University (MSU) have developed or are developing strategic planning initiatives, including the MAES and MSU Extension. Tightening budgets are adding to the challenge and making it even more critical that we work together to satisfy the federally mandated mission of the MAES — to generate knowledge through strategic research to enhance agriculture, natural resources, families and communities in Michigan.

As part of the strategic planning process, the MAES, other college partners and state agencies are involved with the development and support of the Center for Emerging Infectious Diseases (CEID). The center's mission is to conduct research, provide field-based and clinical training, gather and evaluate data, and improve communication about emerging diseases. Interim codirectors are Ned Walker, MAES professor of entomology, and Steve Bolin, MAES professor of pathobiology. Bolin, Walker and colleagues have identified three areas of emphasis for the center: studying infectious agents and characterizing the traits that make them unique, studying the response of the host of infectious agents to discover the earliest response that animals would have to them, and research surveillance methods for infectious disease in animals, humans and the environment to develop the ability to predict outbreaks better. The work of the CEID will fully complement the activities of the new Diagnostic Center for Population and Animal Health being built on campus, which will assist in the detection and tracking of diseases in both animal and human populations.

In an even broader collaboration, Michigan State University is a major player in the creation of the U.S. Department of Agriculture's North Central Region Plant

Disease and Pest Detection and Surveillance Network, a part of its new Animal and Plant Disease and Pest Surveillance and Detection Network, to allow for rapid detection of diseases and pests introduced into the United States. This network is being created as part of the Homeland Security Act of 2002. MAES plant pathologist Ray Hammerschmidt and MAES entomologist Richard Merritt are working with scientists from Indiana, Ohio, Iowa, Wisconsin, Minnesota, Illinois and Missouri to develop an early warning system to detect natural and introduced plant pests.

The MAES is strongly committed to a sustainable and profitable agriculture in Michigan. MAES researchers affiliated with the Center for Animal Functional Genomics are addressing issues affecting the animal agriculture industry, such as animal health and well-being, disease and drug interactions at a cellular level to understand why animals react to physical conditions and drugs in a certain manner. This understanding leads to the development of management strategies to lessen economic losses and enhance profitability for producers. For example, an evaluation of the genetic susceptibility of dairy cows to mastitis and other infectious diseases will help producers select breeding stock less susceptible to disease and thus reduce their reliance on antibiotics.

Helping growers produce high-value agricultural products instead of bulk commodities is another MAES priority that will increase the profitability of agriculture and create jobs for Michigan. In a cooperative effort with the newly created Michigan Partnership for Product Agriculture, which includes Michigan agricultural and food industry organizations, the MAES, MSU Extension and College of Agriculture and Natural Resources (CANR) have invested in the MSU Center for Product Agriculture. This center is being created to support the development of new businesses and products, as well as supporting successful businesses through innovative agricultural product research, outreach and education.

The Plant Transformation Center (PTC) links future needs to industry. The PTC focuses on developing efficient gene transfer and regeneration systems for Michigan crops in an effort to decrease pesticide use, increase resistance

*“Anticipating future challenges keeps
the MAES prepared for the future.”*



Dr. J. Ian Gray

to pests and disease, and enhance value-added traits for consumer products. The collaboration among MSU plant scientists, industry and commodity groups is an integral part of making the center successful in serving the diverse needs of Michigan agriculture.

Production agriculture must exist in harmony with our natural resources. Toward that end the Environmental Science and Policy (ESP) program is being developed at MSU. The ESP program is a multidisciplinary research and graduate teaching program to be administered jointly by the colleges of Agriculture and Natural Resources, Natural Science and Social Science. The program will utilize the expertise of MAES researchers and other MSU faculty members. Land use management and policy issues in Michigan will be areas of focus for this program.

Family and community vitality continues to be an area of emphasis. The FACT (Families and Communities Together) coalition, sponsored in part by the MAES, continues to be successful in both the quality of programs and funding generated outside of the university. In an effort to create and sustain neighborhood networks, this year FACT funded the Strengthening Connections project, which seeks to build social capital, rejuvenate community vitality and promote citizen participation in five urban neighborhood centers in Lansing. FACT is also planning forums in 2003 on emerging social issues such as obesity, fathers, and ethical/moral issues and challenges in community-based research. The aim of these forums is to build campus and community dialogue and interdisciplinary work.

During the year, several faculty members have been named to endowed chairs.

Joan B. Rose was named to the Homer Nowlin Chair of Water in Agricultural and Natural Resources Systems, effective January 2003. Her research focus is on microbial water quality and risk assessment. Rose's skills and expertise are paramount in meeting the research challenges of the future, and her strategic research will have a positive impact on Michigan's citizens and water resources.

Christopher Peterson, MAES professor of agricultural economics, was selected the first Nowlin Chair in

Consumer-Responsive Agriculture. The Nowlin Chair in Consumer-Responsive Agriculture, to be housed in the Department of Agricultural Economics, will help Michigan agriculture and natural resources look beyond traditional commodity crops production and marketing strategies. Agricultural products of increased value to consumers will enhance sustainable profit margins for producers.

These endowed chairs are funded by proceeds of the estate of Homer Nowlin, a Lapeer County farmer who bequeathed his estate to the MSU College of Agriculture and Natural Resources upon his death in 1979.

Michael Hamm, previously the dean of Academic and Student Programs at Cook College, Rutgers University, has been selected the C. S. Mott Distinguished Professor of Sustainable Agriculture at Michigan State University, effective in January 2003. He will fill the position vacated by Richard R. Harwood, the first Mott chair, who retired in 2002. The MAES looks forward to working with these distinguished scientists and is excited about what they bring to Michigan State University.

Anticipating future challenges keeps the MAES prepared for the future. Interdisciplinary collaborations between MAES researchers and other scientists at MSU and in neighboring states are developing solutions to complex issues. While the MAES remains committed to traditional programs, it is looking ahead to developing further linkages to solve problems facing Michigan and the world. A balanced research portfolio of university-wide projects helps us do that.

The MAES is grateful to the faculty and staff members who, along with its stakeholders, are open, frank and candid on how the MAES can contribute to the future well-being of Michigan agriculture, natural resources, families and communities.

J. Ian Gray, Director
Michigan Agricultural Experiment Station

Michigan Agricultural Experiment Station

As of 10-1-2002

J. Ian Gray, Director

Janet L. Bokemeier, Associate Director

Gary D. Lemme, Associate Director

Doreen K. Woodward, Assistant Director

Debbie McCaffrey, Administrative Assistant

Linda Haubert, Support Staff

Martha Lovejoy, Support Staff

Alice Noel, Support Staff

Isidra Pérez, Support Staff



MAES Affiliated Deans

As of 10-1-2002

Jeffrey D. Armstrong, Dean
College of Agriculture & Natural Resources

Julia R. Miller, Dean
College of Human Ecology

George E. Leroi, Dean
College of Natural Science

Marietta L. Baba, Dean
College of Social Science

Lonnie J. King, Dean
College of Veterinary Medicine

MAES Unit Administrators

(Units receiving base funding)

As of 10-1-2002

Lynn R. Harvey, Acting Chairperson
Agricultural Economics

Ajit K. Srivastava, Chairperson
Agricultural Engineering

Margaret E. Benson, Acting Chairperson
Animal Science

Kirk L. Heinze, Chairperson
ANR Education and Communication Systems

William L. Smith, Chairperson
Biochemistry and Molecular Biology

Douglas D. Buhler, Chairperson
Crop and Soil Sciences

Richard W. Merritt, Acting Chairperson
Entomology

Lillian A. Phenice, Acting Chairperson
Family and Child Ecology

William W. Taylor, Chairperson
Fisheries and Wildlife

Mark A. Uebersax, Chairperson
Food Science and Human Nutrition

Daniel E. Keathley, Chairperson
Forestry

Richard E. Groop, Chairperson
Geography

Ronald L. Perry, Chairperson
Horticulture

Sally I. Helvenston, Chairperson
Human Environment and Design

L. Patrick Hart, Acting Director
Integrated Plant Systems (Center for)

Michael J. Klug, Director
Kellogg Biological Station

Charles J. Reid, Director
Land Management

Thomas H. Herdt, Chairperson
Large Animal Clinical Sciences

Jerry B. Dodgson, Chairperson
Microbiology and Molecular Genetics

Ewen C. D. Todd, Director
National Food Safety and Toxicology Center

Bruce R. Harte, Director
Packaging (School of)

Joseph D. Fridgen, Chairperson
Park, Recreation and Tourism Resources

Willie M. Reed, Chairperson
Pathobiology and Diagnostic Investigation

William S. Spielman, Chairperson
Physiology

Richard E. Triemer, Chairperson
Plant Biology

Raymond Hammerschmidt, Chairperson
Plant Pathology

Kenneth Keegstra, Director
Plant Research Laboratory (MSU-DOE)

Richard E. Groop, Director
Remote Sensing (Center for)

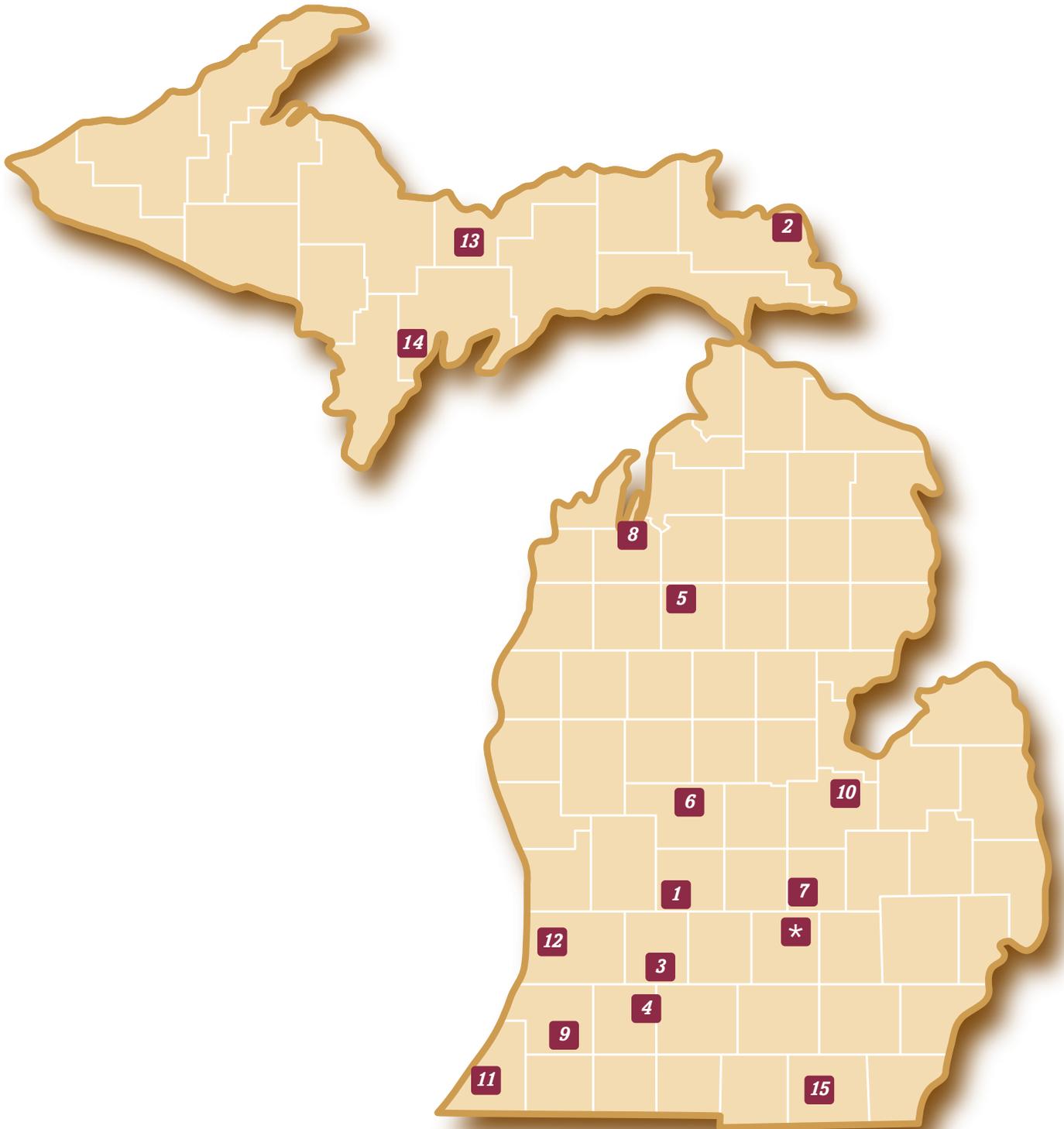
Scott G. Witter, Acting Chairperson
Resource Development

Gary R. Anderson, Director
Social Work (School of)

Thomas L. Conner, Chairperson
Sociology

Jon F. Bartholic, Director
Water Research (Institute of)

Michigan Agricultural Experiment Station Outlying Stations — 10-1-2002



- 1. CLARKSVILLE HORTICULTURAL EXPERIMENT STATION**
Established 1974
 9302 Portland Road
 Clarksville, MI 48815
 Phone: 616-693-2193
 FAX: 616-693-2317
 Gerald Skeltis
Farm Manager
 Phil Schwallier
Coordinator
- 2. DUNBAR FOREST EXPERIMENT STATION**
Established 1925
 12839 S. Scenic Drive
 Rt. 1, Box 179
 Sault Ste. Marie, MI 49783
 Phone: 906-632-3932 or
 906-786-1575
 Ray Miller
Nonresident Forester
- 3. W. K. KELLOGG BIOLOGICAL STATION**
Established 1928
 3700 E. Gull Lake Drive
 Hickory Corners, MI 49060
 FAX: 269-671-2351
 Bernie Knezek 517-353-4569
Director, Agricultural Programs
 Mike Klug 269-671-2341
Director, Programs and Development
- 4. W. K. KELLOGG EXPERIMENTAL FOREST**
Established 1932
 7060 N. 42nd Street
 Augusta, MI 49012
 Phone: 269-731-4597
 FAX: 269-731-4597
 Greg Kowalewski
Resident Forester
- 5. LAKE CITY EXPERIMENT STATION**
Established 1928
 5401 W. Jennings Road
 Lake City, MI 49651
 Phone: 231-839-4608
 FAX: 231-839-8663
 Doug Nielsen
Farm Manager
- 6. MONTCALM RESEARCH FARM**
Established 1966
 4747 McBrides Road
 Lakeview, MI 48850
 Phone: 989-365-3473
 FAX: 989-831-7263
 Richard Crawford
Research Technician
- 7. MUCK SOILS RESEARCH FARM**
Established 1941
 Rt. 3
 9370 E. Herbison Road
 Laingsburg, MI 48848
 Phone: 517-641-4062
 Ron Gnagey
Farm Manager
- 8. NORTHWEST MICHIGAN HORTICULTURAL RESEARCH STATION**
Established 1979
 6686 S. Center Highway
 Traverse City, MI 49684
 Phone: 231-946-1510
 FAX: 231-946-1404
 Bill Klein
Farm Manager
 James Nugent
Coordinator
- 9. FRED RUSS FOREST EXPERIMENT STATION**
Established 1942
 20673 Marcellus Highway
 Decatur, MI 49045
 Phone: 269-782-5652 or
 269-731-4597
 Greg Kowalewski
Nonresident Forester
- 10. SAGINAW VALLEY BEET AND BEAN RESEARCH FARM**
Established 1971
 3066 S. Thomas Road
 Saginaw, MI 48603
 Phone: 989-781-1160
 FAX: 989-781-5282
 Paul Horny
Farm Manager
- 11. SOUTHWEST MICHIGAN RESEARCH AND EXTENSION CENTER**
Established 1987
 1791 Hillandale Road
 Benton Harbor, MI 49022
 Phone: 269-944-1477
 FAX: 269-944-3106
 Dave Francis
Farm Manager
 Thomas Zabadal
Coordinator
- 12. TREVOR NICHOLS RESEARCH COMPLEX**
Established 1967
 6237 124th Avenue
 Fennville, MI 49408
 Phone: 269-561-5040
 FAX: 269-561-5314
 Matthew Daly
Farm Manager
 John Wise
Coordinator
- 13. UPPER PENINSULA EXPERIMENT STATION**
Established 1899
 P.O. Box 168
 E3774 University Drive
 Chatham, MI 49816
 Phone: 906-439-5114
 FAX: 906-439-5698
 Paul Naasz
Operations Supervisor
- 14. UPPER PENINSULA TREE IMPROVEMENT CENTER**
Established 1986
 6005 J Road
 Escanaba, MI 49829
 Phone: 906-786-1575
 FAX: 906-786-9370
 Ray Miller
Resident Forester
- 15. MSU MERILLAT EQUINE CENTER**
Established 1997
 2828 Wolf Creek Highway
 Adrian, MI 49221
 Phone: 517-265-6779
 FAX: 517-263-9294
 Christine Skelly
Coordinator
- ★ **EAST LANSING FIELD RESEARCH FACILITIES**
Established 1888
 109 Agriculture Hall
 East Lansing, MI 48824-1039
 Phone: 517-355-3272
 FAX: 517-353-5406
 Charles J. Reid
Director, Land Management

Alphabetical List of MAES Scientists

As of 10-1-2002

Faculty members with dual MAES appointments are listed in both of the departments in which they serve.

NAME	UNIT	NAME	UNIT
Adams, Gerard C.	Plant Biology	Bughrara, Suleiman S.	Crop & Soil Sciences
Adams, Gerard C.	Plant Pathology	Bursian, Steven	Animal Science
Allen, Michael	Animal Science	Burton, Jeanne L.	Animal Science
Allison, Richard F.	Plant Biology	Burton, Zachary F.	Biochemistry & Molecular Biology
Allison, Richard F.	Plant Pathology	Busch, Lawrence M.	Sociology
Alocilja, Evangelyn C.	Agricultural Engineering	Buskirk, Daniel	Animal Science
Ayers, George S.	Entomology	Cameron, Arthur C.	Horticulture
Bagdasarian, Michael	Microbiology & Molecular Genetics	Campa, Henry III	Fisheries & Wildlife
Baker, John C.	Large Animal Clinical Sciences	Cash, Jerry N.	Food Science & Human Nutrition
Balander, Richard J.	Animal Science	Champness, Wendy C.	Microbiology & Molecular Genetics
Banks, Bobby D.	Animal Science	Cheney, Laura L.	Agricultural Economics
Bates, Ronald O.	Animal Science	Chou, Karen	Animal Science
Batie, Sandra S. ¹	Agricultural Economics	Clarke, Robert H.	Packaging (School of)
Beaudry, Randolph M.	Horticulture	Claycombe, Kate	Food Science & Human Nutrition
Beckwith, JoAnn	Resource Development	Coe, Paul H.	Animal Science
Beede, David ⁵	Animal Science	Coussens, Paul M.	Animal Science
Behe, Bridget K.	Horticulture	Crawford, Eric W.	Agricultural Economics
Bence, James R. ⁶	Fisheries & Wildlife	Cregg, Bert M.	Horticulture
Benning, Christoph	Biochemistry & Molecular Biology	Crum, James L.	Crop & Soil Sciences
Bennink, Maurice R.	Food Science & Human Nutrition	Dazzo, Frank B.	Crop & Soil Sciences
Benson, Margaret	Animal Science	Dazzo, Frank B.	Microbiology & Molecular Genetics
Berglund, Kris A.	Agricultural Engineering	Della Penna, Dean	Biochemistry & Molecular Biology
Bickert, William G.	Agricultural Engineering	Dersch, Eckhart	Resource Development
Biernbaum, John A.	Horticulture	Dickmann, Donald I.	Forestry
Bingen, R. James	Resource Development	DiFonzo, Christina D.	Entomology
Bird, George W.	Entomology	DiFonzo, Christina D.	Integrated Plant Systems (Center for)
Bitsch, Vera	Agricultural Economics	Dilley, David R.	Horticulture
Bix, Laura	Packaging (School of)	Dolan, Kirk D.	Agricultural Engineering
Black, J. Roy	Agricultural Economics	Dolan, Kirk D.	Food Science & Human Nutrition
Bolin, Carole A.	Pathobiology & Diagnostic Investigation	Dong, Ke	Entomology
Bolin, Steven R.	Pathobiology & Diagnostic Investigation	Douches, David S.	Crop & Soil Sciences
Booren, Alden M.	Food Science & Human Nutrition	Doumit, Matthew E.	Animal Science
Bourquin, Leslie D.	Food Science & Human Nutrition	Doumit, Matthew E.	Food Science & Human Nutrition
Boyd, Stephen A.	Crop & Soil Sciences	Downes, Theron W.	Packaging (School of)
Bremigan, Mary T. ⁶	Fisheries & Wildlife	Epperson, Bryan K.	Forestry
Breznak, John A.	Microbiology & Molecular Genetics	Ernst, Catherine W.	Animal Science
Bristow, Catherine	Entomology	Erskine, Ronald J.	Large Animal Clinical Sciences
Bronstein, Daniel A.	Resource Development	Fernandez, Rodney	Horticulture
Bucholtz, Herbert F.	Animal Science	Ferris, Theodore A.	Animal Science
		Flore, James A.	Horticulture

NAME	UNIT
Fogwell, Ralph L.	Animal Science
Fraker, Pamela J.	Biochemistry & Molecular Biology
Fraker, Pamela J.	Food Science & Human Nutrition
Frank, Kevin W.	Crop & Soil Sciences
Freed, Russell D.	Crop & Soil Sciences
Friedman, Steven K.	Forestry
Friedman, Steven K.	Geography
Fulbright, Dennis W.	Plant Pathology
Gage, Stuart H.	Entomology
Gangur, Venugopal	Food Science & Human Nutrition
Garling, Donald L.	Fisheries & Wildlife
Gerrish, John B.	Agricultural Engineering
Giesy, John P.	National Food Safety & Toxicology Center
Grafius, Edward J.	Entomology
Grooms, Daniel L.	Large Animal Clinical Sciences
Grumet, Rebecca	Horticulture
Gut, Larry	Entomology
Guyer, Daniel E.	Agricultural Engineering
Han, Kyung-Hwan	Forestry
Hancock, James F.	Horticulture
Hanson, Eric J.	Horticulture
Hanson, Steven D.	Agricultural Economics
Harkema, Jack	Pathobiology & Diagnostic Investigation
Harris, Craig K.	Sociology
Harsh, Stephen B.	Agricultural Economics
Hart, James B., Jr.	Forestry
Hart, L. Patrick	Plant Pathology
Hausbeck, Mary K.	Plant Pathology
Hausinger, Robert P.	Biochemistry & Molecular Biology
Hausinger, Robert P.	Microbiology & Molecular Genetics
Hayes, Daniel B. ⁶	Fisheries & Wildlife
He, Sheng-Yang	Plant Research Laboratory (MSU-DOE)
Heins, Royal D.	Horticulture
Hill, Gretchen M.	Animal Science
Hoehn, John P.	Agricultural Economics
Hoerr, Sharon M.	Food Science & Human Nutrition
Holcroft, Deirdre M.	Horticulture
Holecek, Donald F.	Park, Recreation, & Tourism Resources
Hollingsworth, Rawle I.	Biochemistry & Molecular Biology
Hollingsworth, Robert M.	Entomology
Horan, Richard D.	Agricultural Economics
Hord, Norman G.	Food Science & Human Nutrition
Howe, Gregg A.	Plant Research Laboratory (MSU-DOE)

NAME	UNIT
Howell, Gordon S.	Horticulture
Huang, Zachary	Entomology
Iezzoni, Amy F.	Horticulture
Imig, David R.	Family & Child Ecology
Ireland, James J.	Animal Science
Isaacs, Rufus	Entomology
Jacobs, Lee W.	Crop & Soil Sciences
Jarosz, Andrew M.	Plant Biology
Jarosz, Andrew M.	Plant Pathology
Johnson, Nan E.	Sociology
Jones, Alan L.	Plant Pathology
Jones, Michael L. ⁶	Fisheries & Wildlife
Jump, Donald B.	Physiology
Kaguni, Jon M.	Biochemistry & Molecular Biology
Kakela, Peter J.	Resource Development
Kamdem, Donatien-Pascal	Forestry
Kaneene, John B.	Large Animal Clinical Sciences
Kaplowitz, Michael C.	Resource Development
Keith, Joanne G.	Family & Child Ecology
Kells, James J., Jr.	Crop & Soil Sciences
Kelly, James D.	Crop & Soil Sciences
Kielbaso, Julian J.	Forestry
Kirk, William W.	Plant Pathology
Kirkwood, Roy N.	Large Animal Clinical Sciences
Klug, Michael J.	Microbiology & Molecular Genetics
Knezek, Bernard D.	Crop & Soil Sciences
Kobe, Richard K.	Forestry
Kravchenko, Alexandra N.	Crop & Soil Sciences
Kroos, Lee R.	Biochemistry & Molecular Biology
La Pres, John J.	Biochemistry & Molecular Biology
Laboski, Carrie A. M.	Crop & Soil Sciences
Landis, Douglas A.	Entomology
Lang, Gregory A.	Horticulture
Lang, Nancy Suzanne	Horticulture
Leefers, Larry A.	Forestry
Leep, Richard H.	Crop & Soil Sciences
Lenski, Richard E. ³	Crop & Soil Sciences
Li, Weiming ⁶	Fisheries & Wildlife
Linz, John E.	Food Science & Human Nutrition
Liu, Jianguo ⁶	Fisheries & Wildlife
Lloyd, James W.	Agricultural Economics
Loescher, Wayne H.	Horticulture
Loudon, Theodore L.	Agricultural Engineering
Lownds, Norman K.	Horticulture
Lupi, Frank ⁶	Agricultural Economics
Lupi, Frank ⁶	Fisheries & Wildlife

NAME	UNIT
MacFarlane, David	Forestry
Maes, Roger K.	Microbiology & Molecular Genetics
Malmström, Carolyn	Plant Biology
Mansfield, Linda S.	Large Animal Clinical Sciences
Marks, Bradley P.	Agricultural Engineering
Matuana, Laurent M.	Forestry
Maurer, Brian A. ⁶	Fisheries & Wildlife
McCullough, Deborah G.	Entomology
McDonough, Maureen H.	Forestry
Meek, Katheryn	Pathobiology & Diagnostic Investigation
Melakeberhan, Haddish	Entomology
Merritt, Richard W.	Entomology
Millenbah, Kelly F.	Fisheries & Wildlife
Miller, James R.	Entomology
Mokma, Delbert L.	Crop & Soil Sciences
Myers, Robert S.	Agricultural Economics
Nair, Muraleedharan G.	Horticulture
Nelson, Charles M.	Park, Recreation, & Tourism Resources
Ng, Perry K. W.	Food Science & Human Nutrition
Ngouajio, Mathieu	Horticulture
Nielsen, Brian D.	Animal Science
Norris, Patricia E.	Agricultural Economics
Norris, Patricia E.	Resource Development
Northcott, William J.	Agricultural Engineering
Oehmke, James F.	Agricultural Economics
Ofoli, Robert Y.	Food Science & Human Nutrition
Ohlrogge, John B.	Plant Biology
Olsen, Larry G.	Entomology
Orth, Michael	Animal Science
Osburn, Wesley N.	Animal Science
Osburn, Wesley N.	Food Science & Human Nutrition
Osteryoung, Katherine W.	Plant Biology
Patterson, Jon S.	Pathobiology & Diagnostic Investigation
Peacor, Scott D.	Fisheries & Wildlife
Penner, Donald	Crop & Soil Sciences
Person, Howard L.	Agricultural Engineering
Pestka, James J.	Food Science & Human Nutrition
Peterson, H. Christopher ⁷	Agricultural Economics
Peyton, R. Benny	Fisheries & Wildlife
Poff, Ken	Plant Biology
Potter-Witter, Karen L.	Forestry
Prather, L. Alan	Plant Biology
Preiss, Jack	Biochemistry & Molecular Biology
Prince, Harold H.	Fisheries & Wildlife

NAME	UNIT
Propst, Dennis B.	Park, Recreation, & Tourism Resources
Pursley, James R.	Animal Science
Pysarchik, Dawn I.	Human Environment & Design
Raper, Kellie K.	Agricultural Economics
Reddy, C. Adinarayana	Microbiology & Molecular Genetics
Renner, Karen A.	Crop & Soil Sciences
Ricks, Donald J.	Agricultural Economics
Riley, Shawn J.	Fisheries & Wildlife
Ritchie, Harlan D.	Animal Science
Roberson, Kevin D.	Animal Science
Robertson, G. Phillip	Crop & Soil Sciences
Robinson, Norman E.	Large Animal Clinical Sciences
Robison, Lindon J.	Agricultural Economics
Rogers, John N. III	Crop & Soil Sciences
Romsos, Dale R.	Food Science & Human Nutrition
Rook, Joseph S.	Large Animal Clinical Sciences
Rosa, Guilherme J. M.	Animal Science
Rosenbaum, Rene P.	Resource Development
Rothstein, David E.	Forestry
Rowe, D. Bradley	Horticulture
Rozeboom, Dale	Animal Science
Rudy, Alan P.	Sociology
Rugh, Clayton L.	Crop & Soil Sciences
Runkle, Eric S.	Horticulture
Rust, Steven	Animal Science
Ryser, Elliott T.	Animal Science
Ryser, Elliott T.	Food Science & Human Nutrition
Safir, Gene R.	Plant Pathology
Sang, Tao	Plant Biology
Schemske, Douglas W.	Horticulture
Schiarnberg, Lawrence R.	Family & Child Ecology
Schilder, Annemiek C.	Plant Pathology
Schindler, Melvin S.	Biochemistry & Molecular Biology
Schmid, A. Allan	Agricultural Economics
Schmidt, Thomas M.	Microbiology & Molecular Genetics
Schultink, Gerhardus	Resource Development
Schutzki, Robert E.	Horticulture
Schwab, Gerald D.	Agricultural Economics
Schweikhardt, David B.	Agricultural Economics
Scriber, J. Mark	Entomology
Scribner, Kim T. ⁶	Fisheries & Wildlife
Sears, Barbara B.	Plant Biology
Sears, Phillip M.	Large Animal Clinical Sciences
Seita, John R.	Social Work (School of)
Singh, Sher Paul	Packaging (School of)
Sink, Kenneth C.	Horticulture

NAME	UNIT
Skole, David L.	Geography
Slocum, Ann C.	Human Environment & Design
Smith, George W.	Animal Science
Smitley, David R.	Entomology
Smucker, A.J.M.	Crop & Soil Sciences
Snapp, Sieglinde S.	Crop & Soil Sciences
Snapp, Sieglinde S.	Horticulture
Song, Won O.	Food Science & Human Nutrition
Sontag, M. Suzanne	Human Environment & Design
Soranno, Patricia A.	Fisheries & Wildlife
Staatz, John S.	Agricultural Economics
Steffe, James F.	Agricultural Engineering
Steffe, James F.	Food Science & Human Nutrition
Stehr, Frederick W.	Entomology
Sternquist, Brenda J.	Human Environment & Design
Strasburg, Gale M.	Food Science & Human Nutrition
Straw, Barbara E.	Large Animal Clinical Sciences
Stynes, Daniel J.	Park, Recreation, & Tourism Resources
Sundin, George W.	Plant Pathology
Surbrook, Truman C.	Agricultural Engineering
Suvedi, Murari	ANR Education & Communication Systems
Swinton, Scott M.	Agricultural Economics
Tempelman, Robert	Animal Science
Teppen, Brian J.	Crop & Soil Sciences
Thelen, Kurt D.	Crop & Soil Sciences
Thiem, Suzanne	Entomology
Thomashow, Michael F.	Crop & Soil Sciences
Thomashow, Michael F.	Microbiology & Molecular Genetics
Thornsbury, Suzanne D.	Agricultural Economics
Tiedje, James M.	Crop & Soil Sciences
Tiedje, James M.	Microbiology & Molecular Genetics
Trail, Frances	Plant Pathology
Triezenberg, Steven J.	Biochemistry & Molecular Biology
Trottier, Nathalie	Animal Science
Ustunol, Zeynep	Food Science & Human Nutrition
Van Ee, Gary R.	Agricultural Engineering
van Nocker, Steven R.	Horticulture
van Ravenswaay, Eileen O.	Agricultural Economics
VandeHaar, Michael	Animal Science
Vander Stoep, Gail A.	Park, Recreation, & Tourism Resources
Vargas, Joseph M., Jr.	Plant Pathology
Vogt, Christine A.	Park, Recreation, & Tourism Resources
von Bernuth, Robert D.	Agricultural Engineering
Walker, Edward D.	Entomology

NAME	UNIT
Walters, Michael B. ⁶	Forestry
Walton, Jonathan D.	Plant Research Laboratory (MSU-DOE)
Wang, Dechun	Crop & Soil Sciences
Wang, John L.	Biochemistry & Molecular Biology
Ward, Richard W.	Crop & Soil Sciences
Warncke, Darryl D.	Crop & Soil Sciences
Watson, J. Throck	Biochemistry & Molecular Biology
Weatherspoon, Dave D.	Agricultural Economics
Weber, Michael T.	Agricultural Economics
Weber-Nielsen, Miriam S.	Animal Science
Whalon, Mark E.	Entomology
Whipple, Judith M.	Agricultural Economics
Whittam, Thomas S.	Food Science & Human Nutrition
Whittam, Thomas S.	Microbiology & Molecular Genetics
Williams, Kurt	Pathobiology & Diagnostic Investigation
Winterstein, Scott R.	Fisheries & Wildlife
Witter, Scott G.	Resource Development
Wolf, Christopher A.	Agricultural Economics
Woods, Michael D.	ANR Education & Communication Systems
Yin, Runsheng	Forestry
Yokoyama, Melvin T.	Animal Science
Zabadal, Thomas J.	Horticulture
Zacharewski, Timothy R.	Biochemistry & Molecular Biology
Zandstra, Bernard H.	Horticulture
Zanella, Adroaldo	Animal Science
Zile, Maija H.	Food Science & Human Nutrition

¹ Elton Smith Endowed Chair

² C.S. Mott Distinguished Professor of Sustainable Agriculture

³ Hannah Distinguished Professor for Microbial Ecology and Plant Sciences

⁴ Homer Nowlin Professor for Water Research (50 percent of the appointment is paid by the endowment)

⁵ Clinton Meadows Chair

⁶ Partnerships for Ecosystem Research and Management (PERM) positions with salary funded by the Michigan Department of Natural Resources

⁷ Homer Nowlin Professor for Consumer Responsive Agriculture

MAES Scientists and Projects by Department

The names listed here represent faculty members who have an MAES appointment and are in the tenure stream as of 10-1-2002. Faculty members with dual MAES appointments are listed in both of the departments in which they serve.

SCIENTISTS

MAES = Michigan Agricultural Experiment Station
 MSUE = Michigan State University Extension
 Joint = Joint appointment in an MAES-affiliated College or Department
 12 = Professor
 13 = Associate Professor
 14 = Assistant Professor

PROJECTS

Projects listed are as of 10-1-2002.
 *Signifies Multistate Project

Agricultural Economics

Phone: 355-4563



Photo courtesy of John M. Staatz, Dept. of Agricultural Economics



Lynn R. Harvey, Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Batie, Sandra S. ¹	12	0.60	0.20	0.20	Food & Agriculture Policy
Bitsch, Vera	14	0.30	0.55	0.15	Human Resources & Farm Management
Black, J. Roy	12	0.80	0.00	0.20	Farm Management
Cheney, Laura L.	13	0.50	0.50	0.00	Livestock Industry Management
Crawford, Eric W.	12	0.40	0.35	0.25	International Development
Hanson, Steven D.	12	0.80	0.00	0.20	Agricultural Finance
Harsh, Stephen B.	12	0.20	0.65	0.15	Farm Management
Hoehn, John P.	12	0.70	0.00	0.30	Natural Resources & Environmental Economics
Horan, Richard D.	14	0.80	0.00	0.20	Natural Resources & Environmental Economics
Lloyd, James W.	12	0.20	0.00	0.80	Livestock Production/Health Management/Food Safety
Lupi, Frank ⁶	14	0.15	0.42	0.43	Fisheries & Wildlife Economics
Myers, Robert S.	12	0.80	0.00	0.20	International Trade & Price Analysis
Norris, Patricia E.	13	0.12	0.30	0.58	Land Use Management/Public Resource Economics
Oehmke, James F.	13	0.75	0.00	0.25	Price Analysis & Research Policy
Peterson, H. Christopher ⁷	12	0.80	0.00	0.20	Food and Agribusiness Management
Raper, Kellie K.	14	0.75	0.00	0.25	Livestock Industry Marketing Economist
Ricks, Donald J.	12	0.20	0.70	0.10	Food System Marketing
Robison, Lindon J.	12	0.65	0.00	0.35	Social Capital Theory
Schmid, A. Allan	12	0.60	0.00	0.40	Land Economics/Public Policy
Schwab, Gerald D.	12	0.20	0.50	0.30	Farm Management
Schweikhardt, David B.	12	0.25	0.40	0.35	Food, Agricultural & Trade Policy
Staatz, John S.	12	0.25	0.00	0.75	International Development
Swinton, Scott M.	13	0.70	0.00	0.30	Production Economics
Thornsbury, Suzanne D.	14	0.40	0.50	0.10	Food System Marketing

Agricultural Economics (continued)

van Ravenswaay, Eileen O.	12	0.75	0.00	0.25	Environmental Economics & Public Policy
Weatherspoon, Dave D.	13	0.40	0.00	0.60	Food & Agribusiness Management
Weber, Michael T.	12	0.80	0.00	0.20	International Development
Whipple, Judith M.	13	0.30	0.20	0.50	Food & Agribusiness Management
Wolf, Christopher A.	14	0.50	0.50	0.00	Dairy Farm Management Economics
TOTALS:		14.67	5.77	8.56	

PROJECTS

MICL01518*	Benefits and Costs of Resource Policies Affecting Public and Private Land	Hoehn, J.
MICL01519*	Private Strategies, Public Policies, and Food System Performance	van Ravenswaay, E.
MICL01530*	Fruit and Vegetable Supply-Chain Management, Innovations, and Competitiveness	Thornsbury, S.
MICL01625	Financial Decision Making and Investment in Agriculture	Hanson, S.
MICL01635	Collective Action in Agriculture, Natural Resources and Rural Development	Schmid, A.
MICL01642*	Impacts of Structural Change in the Dairy Industry	Wolf, C.
MICL01732	Political Economy of National and International Agricultural Policies and Policy Decision Processes	Schweikhardt, D.
MICL01770	Economic Analysis of Public Policies Affecting the Performance of Michigan Agriculture	Batie, S.
MICL01788	Economic Analysis of Tactical and Operational Decisions on Michigan Farms and the Design/Development of Information Systems to Support These Decisions	Harsh, S.
MICL01790	Structural Adjustments in Michigan's Beef and Crop Sectors With Risk Management Considerations	Black, J.
MICL01815	The Political Economy of Agribusiness Structure, Agricultural Research, and the Biotechnology Industry	Oehmke, J.
MICL01844	Risk Analysis and Management in U.S. Agriculture	Myers, R.
MICL01850	Incentives for and Impacts of Land Use Change	Norris, P.
MICL01865	Role of Information and Transactions Costs in Coordination of Global Food Systems	Staatz, J.
MICL01889	Social Capital, Terms of Trade, and the Internalization of Externalities	Robison, L.
MICL01891*	Financing Agriculture and Rural America: Issues of Policy, Structure and Technical Change	Hanson, S.
MICL01905	Agricultural Production Economics and Environmental Risk Management	Swinton, S.
MICL01925	Agribusiness Competitiveness: Strategies for Vertical Coordination and Customer Responsiveness	Peterson, C.
MICL01949	Global Ag-Biotech Trade and Marketing Research	Weatherspoon, D.
MICL01960	Structural Change, Competition, and Marketing Challenges in Agricultural and Livestock Industries	Raper, K.
MICL01963	Economics of Fishery and Wildlife Management	Lupi, F.
MICL01989	The Economics of Managing Environmental Resources	Horan, R.
MICL02006*	Impact Analysis and Decision Strategies for Agricultural Research	Oehmke, J.
MICL02014	Human Resources Management in Agriculture	Bitsch, V.
MICL03333	Improved Marketing and Competitiveness for Michigan Fruit Industries	Ricks, D.
MICL03356	Vertical Coordination in the Agri-Food System and the Structure of Animal Agriculture	Cheney, L.
MICL03381	Strategic Management in Agribusiness Using Key Performance Indicators	Lloyd, J.
MICL03384	Assessing the Economic Structure, Performance, Visibility and Competitiveness of the Michigan Dairy Industry	Wolf, C.
MICL03385	The Impact of Efficient Consumer Response on Michigan Food Manufacturers and Retailers	Whipple, J.
MICL03387	Agricultural Economics Research on International Agricultural Development and the Environment	Weber, M.
MICL08201	Enhancing Rural Economies Through Comprehensive Extension, Research and Partnering Approaches	Moser, C.
MICL08260	The Economics of Green Payments to Reduce Agricultural Non-Point Source Pollution	Horan, R.

Agricultural Engineering

Phone: 355-4720

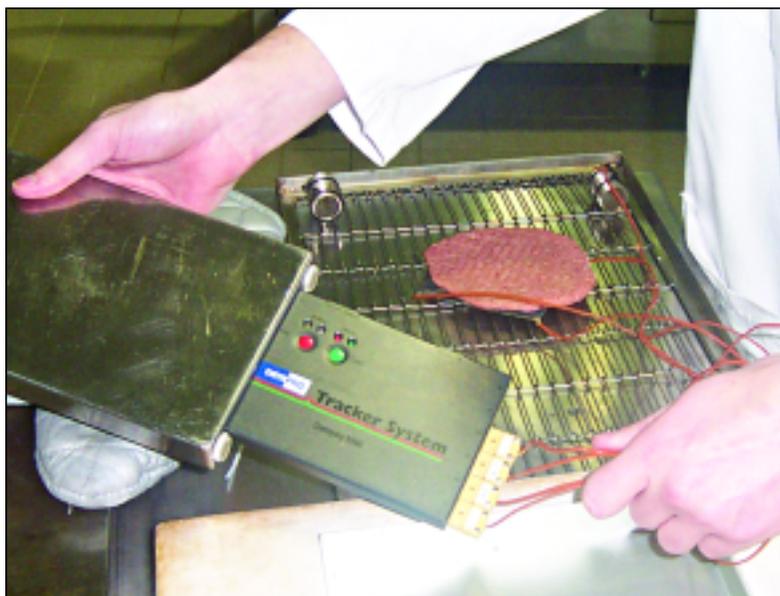


Photo courtesy Department of Agricultural Engineering



Ajit K. Srivastava,
Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Alocilja, Evangelyn C.	14	0.60	0.00	0.40	Systems Modeling/Early Detection & Control for Food Safety, Biosensors
Berglund, Kris A.	12	0.49	0.00	0.51	Bioprocess/Biotechnology
Bickert, William G.	12	0.20	0.80	0.00	Livestock Facilities/Environment/Manure Management
Dolan, Kirk D.	14	0.25	0.00	0.75	Food Engineering/Value Added Processing/Plant Products
Gerrish, John B.	12	0.40	0.00	0.60	Electronics/Odor Control
Guyer, Daniel E.	13	0.25	0.75	0.00	Fruit/Vegetable Storage/Handling
Loudon, Theodore L.	12	0.30	0.70	0.00	Irrigation/Waste Water Treatment
Marks, Bradley P.	13	0.60	0.00	0.40	Biosystems Engineering/Food Safety-Meat Products
Northcott, William J.	14	0.40	0.00	0.60	Watershed Hydrology/Water Quality/GIS Applications
Person, Howard L.	13	0.30	0.70	0.00	Swine Housing/Manure Management/Social Issues
Steffe, James F.	12	0.35	0.00	0.65	Food Engineering/Rheology
Surbrook, Truman C.	12	0.25	0.00	0.75	Electrical Technology /Stray Voltage
Van Ee, Gary R.	12	0.65	0.00	0.35	Chemical Application/Power & Machinery
von Bernuth, Robert D.	12	0.36	0.26	0.38	Manure Management/Irrigation
TOTALS:		5.40	3.21	5.39	

PROJECTS

MICL01245*	Improvement of Thermal and Alternative Processes for Foods	Steffe, J.
MICL01581	Postharvest Technology for Quality Control and Enhancing Value From Fruits and Vegetables	Guyer, D.
MICL01676*	Technology and Principles for Assessing and Retaining Postharvest Quality of Fruits and Vegetables	Guyer, D.
MICL01787	Improving Onsite and Decentralized Wastewater Treatment and Disposal	Loudon, T.
MICL01794	Analysis and Characterization of Biosystems	Gerrish, J.
MICL01799	Integrating Alternative Manure Treatments into Conventional Animal Manure Handling and Storage Systems	Bickert, W.

Agricultural Engineering (continued)

PROJECTS

MICL01862	Neutral-To-Earth Voltage Reduction on Livestock Farms	Surbrook, T.
MICL01883	Facilitating Beneficial Use of Livestock Manure	Person, H.
MICL01914	Irrigation and Waste Management Research in a Systems Context	von Bernuth, R.
MICL01935	Laser Spectroscopy for Analysis of Crystallization Processes	Berglund, K.
MICL01967	Engineering Methods to Optimize the Safety, Yield, and Quality of Value-Added Protein Foods	Marks, B.
MICL01972	Methods for Improving Water Quality in Agricultural Watersheds	Northcott, W.
MICL02004*	Animal Manure and Waste Utilization, Treatment and Nuisance Avoidance for a Sustainable Agriculture	von Bernuth, R.
MICL02007	Development of Lab-On-Chip Biosensor for Food and Environmental Safety and Biosecurity	Alocilja, E.
MICL07658	Achieving Lethality Performance Standards for Fully-Cooked Meat Products	Marks, B.
MICL07666	Biobased Technology	Srivastava, A.
MICL08245	Light Frequency Analysis, Fluorescence and Neural Networks for Fruit and Vegetable Quality Evaluation	Guyer, D.
MICL08247	Chemiluminescence Detection of Microbial Contaminants on Fresh Produce	Alocilja, E.
MICL08255	Incorporating Humidity into Microbial Inactivation Models for Convection Cooking of Meats	Marks, B.

Animal Science

Phone: 355-8383



Margaret E. Benson,
Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Allen, Michael	12	0.50	0.50	0.00	Forage Nutrition
Balander, Richard J.	13	0.40	0.00	0.60	Avian Physiology/Reproduction
Banks, Bobby D.	12	0.25	0.00	0.75	Animal Genetics
Bates, Ronald O.	13	0.20	0.80	0.00	Swine Genetics/Management
Beede, David ⁵	12	0.50	0.40	0.10	Dairy Nutrition/Dairy Management
Benson, Margaret E.	12	0.20	0.50	0.30	Ruminant Nutrition/Sheep
Bucholtz, Herbert F.	12	0.15	0.70	0.15	Dairy Nutrition/Management
Bursian, Steven	12	0.85	0.00	0.15	Avian Physiology/Toxicology
Burton, Jeanne L.	13	0.80	0.00	0.20	Molecular Genetics/Dairy Cattle
Buskirk, Daniel	13	0.50	0.50	0.00	Ruminant Nutrition/Beef
Chou, Karen	13	0.80	0.00	0.20	Toxicology
Coe, Paul H.	13	0.20	0.00	0.80	Animal Health
Coussens, Paul M.	12	0.80	0.00	0.20	Molecular Biology
Doumit, Matthew E.	13	0.25	0.00	0.75	Meat Science/Muscle Biology
Ernst, Catherine W.	14	0.80	0.00	0.20	Meat Animal Genetics
Ferris, Theodore A.	12	0.20	0.80	0.00	Dairy Genetics
Fogwell, Ralph L.	12	0.30	0.00	0.70	Reproductive Physiology
Hill, Gretchen M.	12	0.75	0.00	0.25	Swine Nutrition
Ireland, James J.	12	0.95	0.00	0.05	Reproductive Physiology
Nielsen, Brian D.	13	0.60	0.00	0.40	Equine Exercise Physiology
Orth, Michael	13	0.80	0.00	0.20	Turkey Nutrition/Growth Biology
Osburn, Wesley N.	14	0.25	0.00	0.75	Meat Science
Pursley, James R.	13	0.20	0.80	0.00	Reproductive Management
Ritchie, Harlan D.	12	0.10	0.90	0.00	Beef Cattle Nutrition/Management
Roberson, Kevin D.	14	0.35	0.65	0.00	Poultry Nutrition/Management
Rosa, Guilherme J. M.	14	0.50	0.50	0.00	Population Genetics

Animal Science (continued)

Rozeboom, Dale	13	0.15	0.65	0.20	Swine Nutrition/Management
Rust, Steven	12	0.50	0.50	0.00	Beef Feedlot Nutrition
Ryser, Elliott T.	14	0.17	0.00	0.83	Dairy Manufacturing/Microbiology
Smith, George W.	14	0.75	0.00	0.25	Reproductive Physiology
Tempelman, Robert	13	0.50	0.00	0.50	Statistics
Trottier, Nathalie	13	0.75	0.00	0.25	Swine Nutrition/Management
VandeHaar, Michael	12	0.65	0.00	0.35	Dairy Nutrition
Weber-Nielsen, Miriam S.	14	0.30	0.00	0.70	Dairy Management
Yokoyama, Melvin T.	12	0.85	0.00	0.15	Animal Nutrition/Microbiology
Zanella, Adroaldo	13	0.75	0.00	0.25	Ethology/Stress Physiology
TOTALS:		17.57	7.70	10.73	

PROJECTS

MICL01156*	Management Systems for Improved Decision Making and Profitability of Dairy Herds	Beede, D.
MICL01182*	Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation	Doumit, M.
MICL01196*	Methods to Increase Reproductive Efficiency in Cattle	Pursley, J.
MICL01521*	Metabolic Relationships in Supply of Nutrients for Lactating Cows	VandeHaar, M.
MICL01573	The Role of Inhibin in Bovine Reproduction	Ireland, J.
MICL01604	Increasing Efficiency of Protein Production in Dairy Cattle	VandeHaar, M.
MICL01622	Control Mechanisms of Male Reproduction and Sperm Fertilizing Ability	Chou, K.
MICL01643	Microbial Ecology of Rumen, Gastrointestinal Tract, Ensiled Feeds, Probiotics, and Livestock Waste	Yokoyama, M.
MICL01652*	Environmental and Economic Impacts of Nutrient Management on Dairy Forage Systems	Allen, M.
MICL01691*	Genetic Improvement of Cattle Using Molecular Genetic Information	Burton, J.
MICL01727	The Fate and Biological Effects of Xenobiotics in Animals	Bursian, S.
MICL01760	The Effects of Specific Nutrients on Nutrient Management, Health and Productivity of Swine	Hill, G.
MICL01800	Investigating Ways to Improve Utilization, and Reduce and Predict the Excretion of Phosphorus by Dairy Cattle	Beede, D.
MICL01802	Optimizing the Nutritional Utilization of Forages by Dairy Cattle	Allen, M.
MICL01803	Nutritional, Management and Other Applied Studies Using Poultry and Other Avian Species	Balander, R.
MICL01818*	Biophysical Models for Poultry Production Systems	Rahn, A.
MICL01822	Development and Application of Hierarchical Statistical Models to Inferential Problems in Animal Science	Tempelman, R.
MICL01823	Methods to Enhance Decision Making by Dairy Producers	Ferris, T.
MICL01836	Genetic Basis of Parturition-Induced Immunosuppression and Mastitis Susceptibility in Dairy Cows	Burton, J.
MICL01852	Improving Skeletal Health in Livestock and Companion Animals	Orth, M.
MICL01853	Assessment of Behavioral and Physiological Responses of Animals to Difficult Situations	Zanella, A.
MICL01854	Optimizing Protein and Amino Acid Utilization	Trottier, N.
MICL01861	Management of Athletic Horses to Reduce Musculoskeletal Injuries and Improve Performance	Nielsen, B.
MICL01873*	Positional and Functional Identification of Economically Important Genes in the Pig	Ernst, C.
MICL01875	Using Milk Yield to Schedule Insemination in Dairy Cows	Fogwell, R.
MICL01877	Genetic Management and Control of Growth Carcass Merit and Quality	Bates, R.
MICL01879	Pre- and Postharvest Processing Strategies to Improve the Value of Muscle Food Products	Osburn, W.
MICL01880	Regulation of Skeletal Muscle Growth and Meat Quality	Doumit, M.
MICL01885*	Integration of Quantitative and Molecular Technologies for Genetic Improvement of Pigs	Bates, R.
MICL01890	Mechanisms of Ovulation in Dairy Cattle	Smith, G.

Animal Science (continued)

PROJECTS

MICL01913	Impact of Growth and Lactation on the Nutritional Needs and Economic Viability of the Sheep Flock	Benson, M. Smith, G.
MICL01928*	Reproductive Performance in Domestic Ruminants	
MICL01929	Identification and Evaluation of Genes Controlling Economically Important Traits in Pigs and Cattle	Ernst, C.
MICL01931	Molecular Mechanisms of Animal Disease I: PRRSV	Coussens, P.
MICL01943	Nutritional and Managerial Strategies to Minimize Phosphorus Excretion from Poultry	Roberson, K.
MICL01952	Increasing Efficiency of Milk Production in Dairy Cattle	Weber-Nielsen, M.
MICL01961	Factors That Limit Reproductive Success of Dairy Cattle	Pursley, J.
MICL01974*	Water Quality Issues in Poultry Production and Processing	Roberson, K.
MICL03340	Nutrition and Feeding Management for Michigan Dairy Herds	Bucholtz, H.
MICL03360	Nutrition and Management Regimes for Efficient Feed Utilization By Beef Cattle	Buskirk, D.
MICL03366	Utilization of Genetic Resources for the Improvement of Livestock Populations	Banks, B.
MICL03374	Maximum Utilization of Michigan Grown Feedstuffs for Growing-Finishing Cattle	Rust, S.
MICL03402	Animal Functional Genomics	Coussens, P.
MICL06889	Identification of PCR-RFLPS in Glucocorticoid Receptor Genes of Pedigreed Cattle	Burton, J.
MICL06892	Neuroendocrine Regulation of the Stress Response in Cattle	Smith, G.
MICL06896	Glucosamine's Role in the Regulation of Metalloproteinases in Equine Cartilage	Orth, M.
MICL06898	Identification of Differentially Expressed Genes Regulated by Zinc Supplementation of Weaned Pigs	Ernst, C.
MICL06901	Dynamics of Immune Responses to Johne's Disease in Infected and Vaccinated Calves	Coussens, P.
MICL06909	Use of Halothane Gas to Identify Novel SR Calcium Release Channel Protein Defects in Pigs	Doumit, M.
MICL08229	Identification of Single-Nucleotide Polymorphisms in Pig Sequence-Tagged Sites	Ernst, C.
MICL08236	Inhibin Regulation of Intrafollicular Estradiol Production	Ireland, J.
MICL08257	Leptin Regulation of Bovine Mammary Cell Proliferation	VandeHaar, M.
MICL08261	How Do Glucocorticoids Regulate CD62L Gene Expression in Bovine Neutrophils?	Burton, J.
MICL08262	Intrafollicular Role of Alpha-2-Macroglobulin in Regulation of Estradiol Production	Ireland, J.
MICL08263	Neuroendocrine Regulation of the Stress Response in Cattle	Smith, G.
MICL08266	Functional Genomics of Well-Being and Milk Quality in Cattle	Coussens, P.
MICL08268	The Role of Hippocampal Glucocorticoids on Behavioral Responses to Stress in Pigs	Zanella, A.
MICL08274	Enhancing Management and Profitability on Small and Mid-Sized Dairy Farms	Pursley, J.

ANR Education & Communication Systems

Phone: 355-6580



Kirk L. Heinze, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Suvedi, Murari	13	0.25	0.50	0.25	Program Evaluation
Woods, Michael D.	14	0.25	0.00	0.75	Risk Communication in Agriculture & Natural Resources
TOTALS:		0.50	0.50	1.00	

PROJECTS

MICL03372	Evaluation of Area of Expertise (AOE) Team Approach to Applied Research and Extension in Michigan	Suvedi, M.
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Biochemistry & Molecular Biology

Phone: 355-1600



William L. Smith, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Benning, Christoph	13	0.67	0.00	0.33	Plant Biochemistry
Burton, Zachary F.	12	0.20	0.00	0.80	Molecular Biology
Della Penna, Dean	12	0.25	0.00	0.75	Nutritional Genomics
Fraker, Pamela J.	12	0.30	0.00	0.70	Immunology
Hausinger, Robert P.	12	0.25	0.00	0.75	Enzymology
Hollingsworth, Rawle I.	12	0.25	0.00	0.75	Renewable Resource Chemistry
Kaguni, Jon M.	12	0.58	0.00	0.42	Molecular Biology
Kroos, Lee R.	12	0.54	0.00	0.46	Molecular Biology
La Pres, John J.	14	0.25	0.00	0.75	Functional Genomics
Preiss, Jack	12	0.25	0.00	0.75	Starch Biochemistry
Schindler, Melvin S.	12	0.35	0.00	0.65	Cell Biology
Triezenberg, Steven J.	12	0.20	0.00	0.80	Molecular Biology
Wang, John L.	12	0.20	0.00	0.80	Cell Biology
Watson, J. Throck	12	0.50	0.00	0.50	Analytical Biochemistry
Zacharewski, Timothy R.	13	0.20	0.00	0.80	Biochemical Toxicology
TOTALS:		4.99	0.00	10.01	

PROJECTS

MICL01290*	Regulation of Photosynthetic Processes	Preiss, J.
MICL01598	Gene Regulation During Development of Soil Bacteria	Kroos, L.
MICL01601	DNA Replication and Its Regulation in <i>Escherichia coli</i>	Kaguni, J.
MICL01608	Activation of Gene Expression by a Herpes Simplex Virion Protein	Triezenberg, S.
MICL01610	Functions of Transcription Factor IIF	Burton, Z.
MICL01754	Characterization of the Gap Junction Protein in Health and Disease	Watson, J.
MICL01781	Development of Starch-Based Microcellular Foamed Bioplastics	Schindler, M.
MICL01906	Identification and Assessment of Endocrine Disruptors	Zacharewski, T.
MICL01924	Dietary Zinc: Its Effects on the Immune Response	Fraker, P.
MICL01940	Regulation of Metabolism in Developing Seeds of Arabidopsis	Benning, C.
MICL01947	Symbiosis and the Metabolic Enzymes of <i>Rhizobium</i>	Hollingsworth, R.
MICL01973	Manipulation of Vitamin E Production in Plants	Della Penna, D.
MICL01997	The SMN Complex in Spinal Muscular Atrophy	Wang, J.
MICL07662	Bioprocessing for Utilization of Agricultural Raw Materials	Zeikus, J.
MICL07678	Bioprocessing for Utilization of Agricultural Raw Materials	Zeikus, J.
MICL08225	Genetic Engineering of Amylosaccharidases for Agricultural Bioprocessing	Zeikus, J.
MICL08253	Function of Glucose-6-Phosphate Dehydrogenase in Developing Oil Seeds	Benning, C.

Chemical Engineering

Phone: 355-5135

PROJECTS

MICL08215	Condensed-Phase Catalytic Hydrogenation of Crop-Derived Organic Acids	Miller, D.
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Chemistry

Phone: 355-9715

PROJECTS

MICL08258 Diamond Microelectrode Arrays: New Materials for the Electrochemical Detection of Aqueous Analytes

Swain, G.

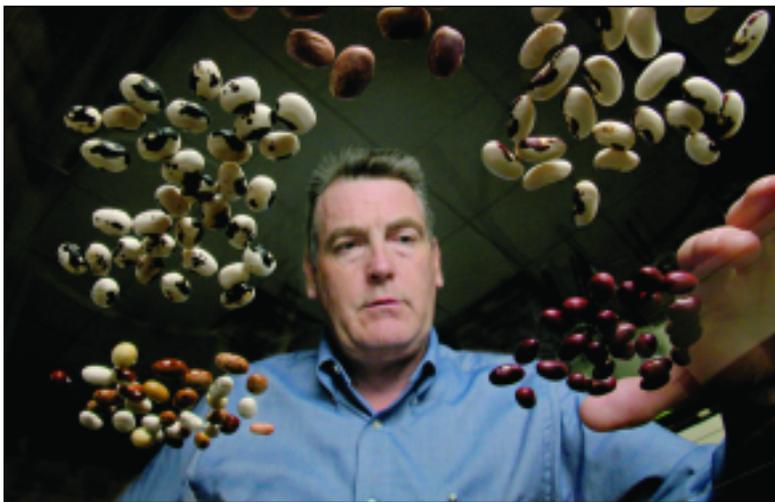
Composite Materials & Structures Center

Phone: 353-5466

PROJECTS

MICL08264 Bio-Composites from Engineered Bio-Fibers and Bio-Plastics

Drzal, L.



Crop & Soil Sciences

Phone: 355-0271



Douglas D. Buhler, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Boyd, Stephen A.	12	0.75	0.00	0.25	Environmental Soil Chemistry
Bughrara, Suleiman S.	14	0.75	0.25	0.00	Turfgrass Breeding & Genetics
Crum, James L.	12	0.25	0.00	0.75	Soil Class/Genesis/Turfgrass
Dazzo, Frank B.	12	0.10	0.00	0.90	Microbial Ecology
Douches, David S.	12	0.90	0.00	0.10	Potato Breeding/Genetics
Frank, Kevin W.	14	0.40	0.60	0.00	Turfgrass Management
Freed, Russell D.	12	0.36	0.00	0.64	International Agronomy/Plant Breeding
Jacobs, Lee W.	12	0.50	0.50	0.00	Environmental Waste Management
Kells, James J., Jr.	12	0.25	0.60	0.15	Weed Science
Kelly, James D.	12	0.85	0.00	0.15	Dry Bean Breeding
Knezek, Bernard D.	12	0.50	0.00	0.50	Micronutrient/Waste Utilization
Kravchenko, Alexandra N.	14	0.50	0.00	0.50	Spatial Variability in Agroecosystems
Laboski, Carrie A. M.	14	0.40	0.60	0.00	Soil Fertility Management/Sugar Beet & Dry Bean Cropping Systems
Leep, Richard H.	12	0.35	0.50	0.15	Soil Fertility/Forage Management
Lenski, Richard E. ³	12	0.40	0.00	0.60	Microbial Ecology & Evolutionary Biology

Crop & Soil Sciences (continued)

Mokma, Delbert L.	12	0.50	0.15	0.35	Soil Classification/Genesis
Penner, Donald	12	0.85	0.00	0.15	Crop/Weed/Physiology
Renner, Karen A.	12	0.50	0.50	0.00	Weed Science
Robertson, G. Phillip	12	0.38	0.00	0.62	Ecosystem Ecology
Rogers, John N. III	12	0.25	0.00	0.75	Turfgrass Management
Rugh, Clayton L.	14	0.25	0.00	0.75	Phytoremediation, Molecular & Cellular Genetics
Smucker, A.J.M.	12	0.75	0.00	0.25	Soil Biophysics
Snapp, Sieglinde S.	14	0.25	0.25	0.50	Integrated Production & Management of Vegetable Crops
Teppen, Brian J.	14	0.75	0.00	0.25	Surface Soil Chemistry
Thelen, Kurt D.	14	0.40	0.60	0.00	Cropping Systems Agronomist
Thomashow, Michael F.	12	0.76	0.00	0.24	Plant & Microbial Molecular Genetics
Tiedje, James M.	12	0.60	0.00	0.40	Soil Microbiology/Microbial Ecology
Wang, Dechun	14	0.75	0.00	0.25	Soybean Geneticist
Ward, Richard W.	13	0.75	0.00	0.25	Wheat Breeding
Warncke, Darryl D.	12	0.50	0.50	0.00	Greenhouse/Vegetable Soil Fertility
TOTALS:		15.50	5.05	9.45	

PROJECTS

MICL00319	Classification, Genesis and Evaluation of Michigan Soils	Mokma, D.
MICL00569	Breeding and Testing Oats, Barley and Canola for Michigan	Freed, R.
MICL00908	Fundamental Factors in Cultural and Chemical Weed Control, Weed Competition, and Weed Life Cycles	Renner, K.
MICL01462*	Management of Eroded Soils for Enhancement of Productivity and Environmental Quality	Mokma, D.
MICL01471*	Chemistry and Bioavailability of Waste Constituents in Soils	Jacobs, L.
MICL01568	Plant Biotechnology: Molecular Approaches to Improve Environmental Stress Tolerance	Thomashow, M.
MICL01574	Movement and Degradation of Organic Contaminants and Pesticides in Soils and Sediments	Boyd, S.
MICL01617*	Characterizing Weed Population Variability for Improved Weed Management Decision Support Systems to Reduce Herbicide Use	Kells, J.
MICL01654	Genetic Improvement of Bean (<i>Phaseolus vulgaris</i> L.) For Yield, Pest Resistance and Food Value	Kelly, J.
MICL01685	Crop Rotation Effects on Soil Microbial Activity, Nutrient Use Efficiency and Productivity	Harwood, R.
MICL01761	Weed Management as a Component of Field Crop Production Systems	Kells, J.
MICL01772*	Assessing Nitrogen Mineralization and Other Diagnostic Criteria to Refine Nitrogen Rates for Crops and Minimize Losses	Laboski, C.
MICL01779	The Physiology and Biochemistry of Herbicide Action, Selectivity, and Degradation	Penner, D.
MICL01780	Impact Absorption, Traction, and Wear Tolerance Investigation on Turf and Soil Surfaces	Rogers, J.
MICL01782	Application of Organic and Other Waste Residuals to Agricultural Soils as a Waste Management Option	Jacobs, L.
MICL01806	Breeding and Genetics for the Improvement of Potato (<i>Solanum tuberosum</i> L.) For Yield, Quality and Pest Resistance	Douches, D.
MICL01807	Properties of High Sand Content Soils for Turfgrass Uses	Crum, J.
MICL01821	Microbial Ecology of Soil and Biodegradation	Tiedje, J.
MICL01830	Wheat Breeding and Genetics	Ward, R.
MICL01855	The Role of Mutation in Bacterial Evolution	Lenski, R.
MICL01872	Nitrogen Loss in Row Crop Agriculture	Robertson, G.
MICL01884	Soil Biophysical Mechanisms of Soil Aggregation	Smucker, A.
MICL01953	Fundamental Interactions of Soil Colloids with Environmental Chemicals	Teppen, B.

Crop & Soil Sciences (continued)

PROJECTS

MICL01957*	Development of Pest Management Strategies for Forage Alfalfa Persistence	Leep, R.
MICL01965	Corn and Soybean Cropping Systems	Thelen, K.
MICL01975	Genetic and Turfgrass Breeding	Bughrara, S.
MICL01985*	Reducing the Potential for Environmental Contamination by Pesticides and Other Organic Chemicals	Boyd, S.
MICL01987	Improvement of Plants for Environmental Decontamination by Integrated Ecosystems and Biotechnological Approaches.	Rugh, C.
MICL01990	Nitrogen Use and Fate in Turfgrass	Frank, K.
MICL02013	Genetic Improvement of Soybean for Food Value, Yield and Pest Resistance.	Wang, D.
MICL02015	Development and Correlation of Soil Test Procedures With Crop Yields and Plant Nutrient Contents	Warncke, D.
MICL03260	Forage Management Studies in Northern Michigan	Leep, R.
MICL03302	Management of Organic Soils for Crop Production	Warncke, D.
MICL03324	Drought Resistance in Common Bean	Foster, E.
MICL03405	Seed Biology of Annual Weed Species in Turf and Agronomic Crop Systems	Buhler, D.
MICL07649	Improving the Sustainable Production of Speciality Crops	Kelly, J.
MICL07653	Sustainable Agriculture: Ecological Integration of Soil, Plants and Animals	Harwood, R.
MICL07661	Sustainable Agriculture: Ecologically-Based Farming Systems	Harwood, R.
MICL07663	Improving the Sustainable Production of Speciality Crops	Kelly, J.
MICL07669	Improved Production and Utilization Technology Through Variety Development	Douches, D.
MICL07673	Sustainable Agriculture 2002: Ecologically Based Nutrient Cycling and Systems Integration	Knezek, B.
MICL07674	Improving the Sustainable Production of Specialty Crops	Kelly, J.
MICL08220	Pesticide-Clay Mineral Interactions in Aqueous Systems	Boyd, S.
MICL08224	Mechanism of CBF Gene Regulation by Low Temperature	Thomashow, M.
MICL08244	An Integrated Assessment of the Bioavailability of Soil-Sorbed Pesticides	Boyd, S.

Entomology

Phone: 355-4663



Richard W. Merritt,
Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Ayers, George S.	12	0.25	0.00	0.75	IPM/Apiculture & Pollination
Bird, George W.	12	0.23	0.62	0.15	Agricultural Nematology/Ecology
Bristow, Catherine	13	0.30	0.00	0.70	Ecology of Social Insects
DiFonzo, Christina D.	13	0.10	0.25	0.65	Field Crop Entomology/Pesticide Education Coordinator
Dong, Ke	13	0.25	0.00	0.75	Insect Toxicology & Neurobiology
Gage, Stuart H.	12	0.48	0.12	0.40	Computational Ecology, Bioinformatics
Grafius, Edward J.	12	0.20	0.65	0.15	Vegetable Insect Ecology Management
Gut, Larry	13	0.25	0.65	0.10	Tree Fruit Insects
Hollingworth, Robert M.	12	0.62	0.11	0.27	Pesticide Toxicology/Action, Insecticide Resistance, NRSP 4 Program
Huang, Zachary	14	0.21	0.53	0.26	Apiculture
Isaacs, Rufus	14	0.45	0.45	0.10	Small Fruit Insect Management
Landis, Douglas A.	12	0.66	0.18	0.16	Insect Ecology, Biological Control
McCullough, Deborah G.	13	0.30	0.50	0.20	Forest Entomology
Melakeberhan, Haddish	13	0.20	0.00	0.80	Plant-Nematode Interaction Physiology

Entomology (continued)

Merritt, Richard W.	12	0.50	0.00	0.50	Aquatic Insect Ecology
Miller, James R.	12	0.42	0.00	0.58	Insect Behavior, Physiology
Olsen, Larry G.	13	0.20	0.80	0.00	Agrimedicine/PIAP Program
Scriber, J. Mark	12	0.50	0.00	0.50	Insect Ecology
Smitley, David R.	12	0.25	0.60	0.15	Landscape/Turf/Greenhouse Insect Management
Stehr, Frederick W.	12	0.40	0.00	0.60	Insect Biocontrol, Systematics
Thiem, Suzanne	13	0.40	0.00	0.60	Insect Molecular Biology/Pathology
Walker, Edward D.	13	0.29	0.00	0.71	Medical/Veterinary Entomology
Whalon, Mark E.	12	0.60	0.00	0.40	Fruit Insect Pest Management/ Insecticide Resistance Management
TOTALS:		8.06	5.46	9.48	

PROJECTS

MICL01067*	Impact of Climate and Soils on Crop Selection and Management	Gage, S.
MICL01584*	Biologically Based IPM Systems for Management of Plant-Parasitic Nematodes	Bird, G.
MICL01606	Mitigating Outbreaks of Japanese Beetle and European Chafer in Michigan Through Host Plant Resistance and Introduction of Natural Enemies	Smitley, D.
MICL01640*	Ecology and Management of European Corn Borer and Other Stalk-Boring Lepidoptera	DiFonzo, C.
MICL01644	Plant Chemical Defenses: Insect Detoxification and Ecological Factors Affecting Gene Flow and Host Selection in Generalist Lepidoptera	Scriber, J.
MICL01663	Biology and Management of Insect Pests of Vegetable Crops	Grafius, E.
MICL01700	Ecology and Management of Forest Insects in Michigan	McCullough, D.
MICL01730*	A National Agricultural Program to Clear Pest Control Agents for Minor Uses	Hollingworth, R.
MICL01733	Mechanisms of Baculovirus Pathogenesis in Insects	Thiem, S.
MICL01741*	Persistence of Heterodera Glycines and Other Regionally Important Nematodes	Bird, G.
MICL01745	The A. J. Cook Arthropod Research Collection	Stehr, F.
MICL01783	Arthropod Biological Control	Landis, D.
MICL01792	Physiological Basis for Integrated Approach Towards Sustainable Management of Plant-Parasitic Nematodes	Melakeberhan, H.
MICL01813*	Genetic Variability in the Cyst and Root-Knot Nematodes	Melakeberhan, H.
MICL01814	Applied Behavioral Ecology of Insects	Miller, J.
MICL01826	Development of Bee Forage Systems	Ayers, G.
MICL01915	Large Scale Assessment of Insect Populations From an Ecosystem Management Perspective	Gage, S.
MICL01936	Molecular Characterization of Knock-Down Resistance in Agriculturally Important Insect Pests	Dong, K.
MICL01942	Shifts in Ant Communities in Response to Habitat and Management Regime	Bristow, C.
MICL01951	Better Pest and Disease Management Through Studying Their Mode of Action and Effect on Honey Bees	Huang, Z.
MICL01971	Ecology and Management of Insects in Michigan's Small Fruit Industries	Isaacs, R.
MICL01984*	Soybean Aphid: A New Pest of Soybean Production.	DiFonzo, C.
MICL01986	Tree Fruit IPM/ICM and Pesticide Regulatory Policy in Michigan	Whalon, M.
MICL03338	Ecology and Management of Arthropod Vector Populations and Vector-Borne Diseases	Walker, E.
MICL03361	Biology and Control of Biting Flies in Michigan	Merritt, R.
MICL03365	Biology and Management of Insects in Michigan Field Crops	DiFonzo, C.
MICL03379	New Arthropod Pest Controls and Management Strategies for Michigan Tree Fruit Production Systems	Gut, L.
MICL07641	Safeguarding the Supply of Speciality Crops for the Consumer	Gut, L.
MICL07643	Insecticide Mitigation Strategies for the High Risk High Value Michigan Blueberry Crop	Isaacs, R.

Entomology (continued)

PROJECTS

MICL07659	NC Region IR-4 Leader Lab Program to Clear Pest Control Agents for Minor Uses	Hollingworth, R.
MICL07667	Safeguarding the Supply of Speciality Crops for the Consumer	Gut, L.
MICL07677	Safeguarding the Supply of Fruit Crops for Consumers	Gut, L.
MICL08238	Role of PA Technology in Biological and Environmental Monitoring of Potato IPM	Bird, G.
MICL08242	Establishment of a Transitional North Central Region Pest Management Center	Olsen, L.
MICL08259	Assessing the Relationships Among Cover Crops, Weed Seed Predators and Weed Communities	Landis, D.
MICL08267	Is Corn Phenology Causing Crop Rotations Failure to Manage Western Corn Rootworm?	Landis, D.
MICL08277	Developing a Blueberry IPM Program to Address Critical Insect Management Issues	Isaacs, R.
MICL08284	Field Test of an Alternative Method for Controlling the Most Serious Honey Bee Pest, the Varroa Mite	Huang, Z.
MICL08289	Methyl Bromide Alternatives Research-Education for Herbaceous Perennial-Woody Ornamentals and Vegetables in MI, NY and RI	Bird, G.

Family & Child Ecology

Phone: 355-7680



Lillian A. Phenice,
Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Imig, David R.	12	0.25	0.00	0.75	Family Ecology
Keith, Joanne G.	12	0.10	0.80	0.10	Human Development/Family
Schiemberg, Lawrence R.	12	0.28	0.00	0.72	Human Development/Family
TOTALS:		0.63	0.80	1.57	

PROJECTS

MICL01841	Identification and Evaluation of Internal and External Assets in the Lives of Children, Adolescents, Their Families and Communities	Keith, J.
MICL01897*	Rural Low-Income Families: Tracking Their Well-Being and Functioning in the Context of Welfare Reform	Imig, D.
MICL01911	Moving and Aging-In-Place in the Retirement Planning of the Maturing Population	Schiemberg, L.
MICL01991*	How Do Structured Out-Of-School Experiences Contribute to Positive Youth Development	Keith, J.
MICL03349	The Study of Family Social Capital in Rural Michigan Communities	Imig, D.

Fisheries & Wildlife

Phone: 355-4478



Photo by Francie Todd



William W. Taylor, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Bence, James R. ⁶	13	0.75	0.20	0.05	Fish Population Dynamics/Fish Ecology
Bremigan, Mary T. ⁶	14	0.60	0.00	0.40	Fish Management
Campa, Henry III	12	0.50	0.00	0.50	Wildlife Habitat Ecology
Garling, Donald L.	12	0.30	0.50	0.20	Aquaculture
Hayes, Daniel B. ⁶	13	0.75	0.20	0.05	Stream Fisheries Biology
Jones, Michael L. ⁶	13	0.75	0.20	0.05	Fisheries Stream Models
Li, Weiming ⁶	14	0.75	0.20	0.05	Fish Physiology
Liu, Jianguo ⁶	13	0.75	0.20	0.05	Wildlife Systems Models
Lupi, Frank ⁶	14	0.10	0.28	0.62	Natural Resource Economics
Maurer, Brian A. ⁶	13	0.50	0.20	0.30	Landscape Ecology
Millenbah, Kelly F.	13	0.50	0.00	0.50	Restoration Ecology
Peacor, Scott D.	14	0.25	0.25	0.50	Aquatic Ecological/Ecosystem Modeler
Peyton, R. Benny	12	0.42	0.00	0.58	Human Dimensions
Prince, Harold H.	12	0.55	0.00	0.45	Waterfowl/Wetlands
Riley, Shawn J.	14	0.30	0.50	0.20	Wildlife Ecologist
Scribner, Kim T. ⁶	13	0.75	0.20	0.05	Molecular Ecology
Soranno, Patricia A.	13	0.50	0.00	0.50	Limnology
Winterstein, Scott R.	12	0.50	0.00	0.50	Wildlife Biometry
TOTALS:		9.52	2.93	5.55	

PROJECTS

MICL01540	Ecology, Population Dynamics and Management of Michigan Great Lakes Fisheries Resources	Taylor, W.
MICL01646	Wildlife Responses to Habitat Management	Campa, H.
MICL01719	Management of Forests and Wildlife for Multiple Use Benefits	Campa, H.
MICL01740	Development of Commercial Fish Culture Techniques	Garling, D.
MICL01758	Relationship Between Habitat Characteristics and Fish Population Dynamics	Hayes, D.
MICL01759	Tools and Information for Improved Management of Great Lakes' Fisheries	Bence, J.
MICL01785	A Spatially Explicit Approach to Modeling Wildlife Habitats and Populations Across Heterogeneous Landscapes	Liu, J.
MICL01868	The Influence of Landscapes and Biological Communities on Freshwater Ecosystems	Soranno, P.
MICL01893	Uncertainty and the Management of Great Lakes Fisheries	Jones, M.
MICL01894	Intraspecific Chemical Communication of Fish	Li, W.

Fisheries & Wildlife (continued)

PROJECTS

MICL01904	Classification of Aquatic Ecosystems for Management Across Ecological Gradients	Bremigan, M.
MICL01923	Habitat and its Effects on the Ecology and Management of Fishes	Coon, T.
MICL01976	Understanding Spatial Patterns of Wildlife Habitat Use in Human-Modified Ecosystems at Different Scales	Maurer, B.
MICL01977	Effects of Watershed Forest Cover on Stream Habitat Conditions and Population Dynamics of Juvenile Steelhead (<i>Onchorynchus mykiss</i>)	Hayes, D.
MICL03378	Wildlife Response to Ecological Restoration	Millenbah, K.
MICL03380	Modeling Wildlife Population Dynamics	Winterstein, S.
MICL03382	Composition of Waterfowl Harvest and Avian Use of Wetland Habitats in Michigan	Prince, H.
MICL03383	Genetic Diversity of Native and Introduced Fisheries in the Great Lakes	Scribner, K.
MICL03386	Human Dimensions of Managing Natural Resource Issues: Cultural Carrying Capacity of Deer in Michigan	Peyton, R.
MICL06891	Predictive Genealogical Model for Transmission of Tuberculosis in Free-Ranging Michigan Deer	Scribner, K.
MICL08256	Information Exchange, Citizen Water Monitoring and Agricultural Best Management Practices	Habron, G.
MICL09006	Regional Aquaculture Center	Batterson, T.
MICL10010	Regional Aquaculture Center	Batterson, T.
MICL10011	Regional Aquaculture Center	Batterson, T.
MICL10012	Regional Aquaculture Center	Batterson, T.
MICL10013	Regional Aquaculture Center	Batterson, T.
MICL10014	Support for a National Coordinator for New Animal Drug Applications	Batterson, T.
MICL10015	Regional Aquaculture Center — North Central Region	Batterson, T.

Food Science & Human Nutrition

Phone: 355-8474



Mark A. Uebersax,
Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Bennink, Maurice R.	12	0.50	0.00	0.50	Nutritional Biochemistry
Booren, Alden M.	12	0.15	0.75	0.10	Meat/Poultry/Fish
Bourquin, Leslie D.	13	0.25	0.75	0.00	Food Safety
Cash, Jerry N.	12	0.25	0.75	0.00	Fruit/Vegetable Products
Claycombe, Kate	14	0.50	0.00	0.50	Nutritional Biochemistry
Dolan, Kirk D.	14	0.25	0.50	0.25	Plant & Food Engineering
Doumit, Matthew E.	13	0.25	0.00	0.75	Meat Quality
Fraker, Pamela J.	12	0.20	0.00	0.80	Cellular Immunology
Gangur, Venugopal	14	0.25	0.00	0.75	Food Allergy
Hoerr, Sharon M.	12	0.40	0.00	0.60	Community Nutrition
Hord, Norman G.	14	0.25	0.00	0.75	Nutritional Epidemiology
Linz, John E.	12	0.50	0.00	0.50	Food Microbiology
Ng, Perry K. W.	13	0.50	0.00	0.50	Cereal Science
Ofoli, Robert Y.	13	0.49	0.00	0.51	Colloid/Interface Science
Osburn, Wesley N.	14	0.15	0.00	0.85	Meat/Poultry Production
Pestka, James J.	12	0.62	0.00	0.38	Food Microbiology/Immunology
Romsos, Dale R.	12	0.50	0.00	0.50	Lipid Metabolism
Ryser, Elliott T.	14	0.53	0.00	0.47	Dairy Foods/Microbiology

Food Science & Human Nutrition (continued)

Song, Won O.	12	0.23	0.00	0.77	Nutritional Assessment
Steffe, James F.	12	0.25	0.00	0.75	Food Engineering/Rheology
Strasburg, Gale M.	12	0.65	0.00	0.35	Muscle Biochemistry
Ustunol, Zeynep	13	0.72	0.00	0.28	Dairy Foods
Whittam, Thomas S.	12	0.08	0.00	0.92	Nutritional Genomics
Zile, Maija H.	12	0.50	0.00	0.50	Nutritional Biochemistry
TOTALS:		8.97	2.75	12.28	

PROJECTS

MICL01323	Improving Process Efficiency, Product Quality, and Nutrient Composition of Fruit and Vegetable Products	Uebersax, M.
MICL01413	Metabolism and Function of Vitamin A	Zile, M.
MICL01444*	Role of N-3/N-6 Polyunsaturated Fatty Acids in Health Maintenance	Claycombe, K.
MICL01448	Microbial Foodborne Disease	Pestka, J.
MICL01478*	Genetic Improvement of Beans (<i>Phaseolus vulgaris</i> L.) For Yield, Disease Resistance and Food Value	Uebersax, M.
MICL01599	Improving Quality and Safety of Muscle Food Products	Strasburg, G.
MICL01623	Comparative Aspects of Nutrition and Lipid Metabolism	Romsos, D.
MICL01664	Enhancing the Value of Dairy and Dairy-Based Products	Ustunol, Z.
MICL01665	Nutritional Assessment in Population-Based Epidemiological Studies	Song, W.
MICL01694*	Nutrient Bioavailability: A Key to Human Nutrition	Bennink, M.
MICL01699	Molecular Structure of Soft Wheat Proteins in Relation to End-Use Quality	Ng, P.
MICL01706	Interactions of Biological Macromolecules at the Liquid-Liquid Interface	Ofoli, R.
MICL01715*	Improve Food Safety Through Discovery and Control of Natural and Induced Toxicants and Antitoxicants	Pestka, J.
MICL01762	Relationship of Diet and Cancer	Bennink, M.
MICL01791	Processing and Quality Evaluation of Fruits and Vegetables	Cash, J.
MICL01804*	Using Stage Based Interventions to Increase Fruit and Vegetable Intake in Young Adults	Hoerr, S.
MICL01856	Aflatoxin B1 Biosynthesis in <i>Aspergillus</i>	Linz, J.
MICL01878	Reducing Dietary Risk for Chronic Disease via a Behavioral Approach in High Risk Populations	Hoerr, S.
MICL01895	Influence of Diet and Phytochemicals on Colon Carcinogenesis	Bourquin, L.
MICL01920*	Marketing and Delivery of Quality Cereals and Oilseeds	Ng, P.
MICL01932	Microbial Safety of Foods	Ryser, E.
MICL01937	Processing Treatments Influencing Functional Properties and Utilization of Muscle Foods	Booren, A.
MICL01945*	The Poultry Food System: A Farm to Table Model	Booren, A.
MICL01948	Plant-Derived Dietary Components and Chronic Disease Risk	Hord, N.
MICL01964*	Enhancing Food Safety Through Control of Food-Borne Disease Agents	Linz, J.
MICL01981	Enhancing Economic and Nutritional Value of Plant Products Through Food Processing Technology	Dolan, K.
MICL02019	Evolution of Acid Resistance in Pathogenic <i>E. coli</i>	Whittam, T.
MICL02023	Assessment of Allergenic Potential of Food	Gangur, V.
MICL03363	Institute for Food Laws and Regulations	Hegarty, P.
MICL07644	A Time-Temperature Integrator to Validate <i>Salmonella</i> Destruction in Beef Patties	Orta-Ramirez, A.
MICL08239	Function of Vitamin A in Quail Embryogenesis	Zile, M.
MICL08269	Genetic Defect in Pale, Soft, Exudative Turkey Meat	Strasburg, G.
MICL08275	Apple Juice and HACCP: Hazard Surveillance, Training, and Perceptions	Bourquin, L.



Daniel E. Keathley,
Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Dickmann, Donald I.	12	0.55	0.00	0.45	Fire Ecology, Silviculture
Epperson, Bryan K.	12	0.70	0.00	0.30	Forest Genetics
Friedman, Steven K.	14	0.35	0.00	0.65	Forest Resource Management/GIS
Han, Kyung-Hwan	14	0.70	0.00	0.30	Genomics
Hart, James B., Jr.	13	0.50	0.00	0.50	Forest Soils
Kamdem, Donatien-Pascal	12	0.70	0.00	0.30	Wood Science
Kielbaso, Julian J.	12	0.15	0.25	0.60	Urban Forestry
Kobe, Richard K.	14	0.70	0.00	0.30	Forest Ecology
Leefers, Larry A.	13	0.50	0.00	0.50	Forest Economics
MacFarlane, David	14	0.60	0.00	0.40	Forest Measurements/Modeling
Matuana, Laurent M.	14	0.60	0.00	0.40	Wood Composites
McDonough, Maureen H.	12	0.15	0.50	0.35	Forest Sociology
Potter-Witter, Karen L.	13	0.20	0.65	0.15	Forest Economics
Rothstein, David E.	14	0.60	0.00	0.40	Forest Nutrient Dynamics
Walters, Michael B. ⁶	14	0.75	0.20	0.05	Forest Ecology
Yin, Runsheng	14	0.70	0.00	0.30	Forest Economics
TOTALS:		8.45	1.60	5.95	

PROJECTS

MICL01693*	The National Atmospheric Deposition Program (NADP)	Kobe, R.
MICL01748	Economic Analysis of Forest Management Opportunities in Michigan	Potter-Witter, K.
MICL01774	Managing the Genetic Diversity of Michigan Pines	Epperson, B.
MICL01811	Incorporating Risk, Natural Resources Accounting and Hedonic Valuation in Forestry Decisions	Leefers, L.
MICL01871	Modeling Landscape-Level Variation in Forest Community Dynamics	Kobe, R.
MICL01899	Justice in Public Participation and Natural Resource Decision Making	McDonough, M.
MICL01944	Assessment of the Effects of Prescribed Burning on the Flora and Fauna of Mature Pine Communities	Dickmann, D.
MICL01970*	Integrating Biophysical Functions of Riparian Systems With Management Practices and Policies	Walters, M.
MICL01996	A Study of Producer Performance and Products Markets of Michigan's Forest Products Industry	Yin, R.
MICL02008	Durability and Protection of Wood Products	Kamdem, D.
MICL02009	Forest Biogeochemistry in a Glaciated Landscape	Rothstein, D.
MICL02022	Integrating Ecology and Economics for Ecosystem Management of Forested Landscapes	Walters, M.
MICL07639	Advanced Technology Applications to Eastern Hardwood Utilization	Kamdem, D.
MICL07650	Advanced Technology Applications to Eastern Hardwood Utilization	Kamdem, D.
MICL07668	Advanced Technology Applications to Eastern Hardwood Utilization	Kamdem, D.
MICL07675	Advanced Technology Applications to Eastern Hardwood Utilization	Kamdem, D.
MICL08249	Genomics of Heartwood Formation	Han, K.

Geography

Phone: 355-4649



Richard E. Groop, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Friedman, Steven K.	14	0.25	0.00	0.75	Forest Resource Management
Skole, David L.	12	0.18	0.00	0.82	Land Use & Land Cover Change
TOTALS:		0.43	0.00	1.57	

PROJECTS

MICL01983 Land Use and Cover Change Dynamics Using Geospatial Information

Skole, D.

MICL03373 Impacts of Weather and Climate on Michigan Agriculture

Andresen, J.

Horticulture

Phone: 355-5191



Ronald L. Perry, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Beaudry, Randolph M.	12	0.50	0.50	0.00	Postharvest Fruit Physiology
Behe, Bridget K.	12	0.40	0.00	0.60	Horticulture Marketing
Biernbaum, John A.	12	0.20	0.00	0.80	Plant Physiology/Sustainable Horticulture
Cameron, Arthur C.	12	0.70	0.00	0.30	Plant Physiology/Landscape Horticulture
Cregg, Bert M.	14	0.50	0.50	0.00	Plant Physiology/Woody Ornamentals
Dilley, David R.	12	0.80	0.00	0.20	Postharvest Physiology/Pomology
Fernandez, Rodney	14	0.25	0.50	0.25	Integrated Crop Management for Nurseries
Flore, James A.	12	0.65	0.00	0.35	Plant Physiology/Pomology
Grumet, Rebecca	12	0.84	0.00	0.16	Vegetable Breeding/Genetics
Hancock, James F.	12	0.84	0.00	0.16	Small Fruit Breeding/Genetics
Hanson, Eric J.	12	0.35	0.42	0.23	Pomology Small Fruits
Heins, Royal D.	12	0.75	0.00	0.25	Plant Physiology/Floriculture
Holcroft, Deirdre M.	14	0.40	0.00	0.60	Post Harvest/Vegetables
Howell, Gordon S.	12	0.80	0.00	0.20	Plant Physiology/Viticulture/Enology
Iezzoni, Amy F.	12	0.80	0.00	0.20	Fruit Breeding/Genetics

Lang, Gregory A.	12	0.75	0.25	0.00	Pomology/Growth & Development
Lang, Nancy Suzanne	13	0.70	0.00	0.30	Plant Physiology/Integrated Crop Management
Loescher, Wayne H.	12	0.45	0.00	0.55	Plant Physiology
Lownds, Norman K.	13	0.25	0.00	0.75	Landscape Horticulture/Stress Physiology
Nair, Muraleedharan G.	12	0.90	0.00	0.10	Natural Products/Chemistry
Ngouajio, Mathieu	14	0.40	0.50	0.10	Vegetable Crops
Rowe, D. Bradley	14	0.25	0.00	0.75	Landscape Horticulture
Runkle, Eric S.	14	0.50	0.00	0.50	Floriculture
Schemske, Douglas W.	12	0.10	0.00	0.90	Plant Adaptation & Evolution of Pollination Systems
Schutzki, Robert E.	13	0.10	0.00	0.90	Landscape Horticulture
Sink, Kenneth C.	12	0.75	0.00	0.25	Genetics/Plant Breeding
Snapp, Sieglinde S.	14	0.25	0.25	0.50	Vegetable/Integrated Crop Management
van Nocker, Steven R.	14	0.75	0.00	0.25	Reproductive Development/Genetics
Zabadal, Thomas J.	13	0.25	0.75	0.00	Viticulture
Zandstra, Bernard H.	12	0.25	0.75	0.00	Vegetable Crops
TOTALS:		15.43	4.42	10.15	

PROJECTS

MICL01155*	Postharvest Physiology of Fruits	Dilley, D.
MICL01222*	Plant Germplasm and Information Management and Utilization	Iezzoni, A.
MICL01272	Physiology of Carbon Balance in Fruit Crops: Abiotic and Biotic Thresholds	Flore, J.
MICL01305*	Rootstock and Interstem Effects on Pome and Stone Fruit Trees	Perry, R.
MICL01325	Weed Control in Vegetable Crop Management Systems	Zandstra, B.
MICL01428	Sour Cherry and Peach Breeding and Genetics	Iezzoni, A.
MICL01607	Physiological Adaptation and Cultural Manipulation of Plant Systems	Schutzki, R.
MICL01680	Value-Added Products for Improving Human, Animal and Plant Health.	Nair, M.
MICL01684	Modified Atmosphere Packaging of Horticultural Produce	Cameron, A.
MICL01697*	Decision Support for Design and Control of Plant Growth Systems	Heins, R.
MICL01731	Genetic and Biotechnology Studies for Selected Horticultural Crops	Sink, K.
MICL01753	Application of Molecular Genetic Approaches to Vegetable Crop Improvement.	Grumet, R.
MICL01778	Environmental and Physiological Variables Effect on Growth, Quality, and Marketability of Garden Crop	Carlson, W.
MICL01810	Genetic Improvement of Strawberries and Blueberries	Hancock, J.
MICL01839	Efficient Use of Fertilizers in Fruit Production	Hanson, E.
MICL01848	Enhancement of Control Over Quality Loss in Horticultural Commodities Following Harvest	Beaudry, R.
MICL01901	Marketability and Performance of Selected Horticultural Products and Services	Behe, B.
MICL01908	Utilization of Chlorophyll Fluorescence in Propagation by Stem Cuttings	Rowe, D.
MICL01927*	Freeze Damage and Protection of Horticultural Species	Howell, G.
MICL01933	Greenhouse Organic Crop Production for Small Farms	Biernbaum, J.
MICL01941	Repellents for Animals Derived from Plant Species.	Ries, S.
MICL01955*	Technical and Economical Efficiencies of Producing, Marketing, and Managing Environmental Plants	Behe, B.
MICL01956*	Postharvest Quality and Safety in Fresh-Cut Vegetables and Fruits	Beaudry, R.

Horticulture (continued)

PROJECTS

MICL01978	Water and Nutrient Management in Nursery and Landscape Systems.	Cregg, B.
MICL01980	Integrated Crop Management to Improve Resource Efficiency and Resilience of Vegetable Systems	Snapp, S.
MICL01998	Site-Specific Management Using Remote Sensing for Detection of Abiotic/Biotic Stress in Horticultural Crops	Lang, N.
MICL02002	Integrated Tree Fruit Physiology, Genetics, and Management	Lang, G.
MICL02003	Polyol Metabolism, Compartmentation, and Transport.	Loescher, W.
MICL02010	Phytoremediation of Agricultural Chemicals Using Ornamental Plants	Fernandez, R.
MICL02011	Improving Vegetable Production and Ecology under Short Crop Rotation	Ngouajio, M.
MICL02021	Environmental and Cultural Strategies to Control Growth and Development of Floriculture Crops	Runkle, E.
MICL03218	Achieving Sustainable Grapevine Yields, Maximum Processed Quality, Resistance to Environmental Stress	Howell, G.
MICL03305	Vineyard Mechanization in Michigan Vineyards	Zabadal, T.
MICL03375	Plant Science Education Outreach Through the MSU Horticultural Gardens	Lownds, N.
MICL03388	Molecular Biology of Plant Development Relating to the Needs of Michigan Horticulture	van Nocker, S.
MICL08250	Cultural and Biological Alternatives to Methyl Bromide Fumigation of Strawberries	Hancock, J.
MICL08288	Cultural and Biological Alternatives to Methyl Bromide Fumigation of Strawberries	Hancock, J.

Human Environment & Design

Phone: 355-7712



Photo by Robin Willisp



Sally I. Helvenston, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Pysarchik, Dawn I.	13	0.31	0.00	0.69	Merchandising Management
Slocum, Ann C.	13	0.25	0.00	0.75	Apparel Design & Textiles
Sontag, M. Suzanne	12	0.25	0.00	0.75	Apparel Design & Textiles
Sternquist, Brenda J.	12	0.25	0.00	0.75	Merchandising Management
TOTALS:		1.06	0.00	2.94	

PROJECTS

MICL01442*	Occupational Safety and Health Through the Use of Protective Clothing	Slocum, A.
MICL01775	Processed Food Industries in India: Market Evolution	Pysarchik, D.
MICL01833	Food Retailer's Buyer-Supplier Relationships in Emerging Markets	Sternquist, B.
MICL02024	Ecological Theory Construction in Clothing and the Self	Sontag, M.

Integrated Plant Systems (Center for)

Phone: 353-9430



L. Patrick Hart, Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
DiFonzo, Christina D.	13	0.10	0.40	0.50	Field Crop Entomology/Pesticide Education Coordinator
TOTALS:		0.10	0.40	0.50	

PROJECTS

MICL08278 Implementation of an IPM Decision Support System for Plum Curculio in Processed Cherries Whalon, M.

Julian Samora Research Institute

Phone: 432-1317

PROJECTS

MICL08210 Latinos in the Rural Midwest: Community Development Implications Millard, A.

Kellogg Biological Station

Phone: 269-671-2341

PROJECTS

MICL08276 Genetic Mechanisms of Adaptation and Integration Among Floral Traits in a Weed Conner, J.

Large Animal Clinical Sciences

Phone: 355-9593



Thomas H. Herdt, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Baker, John C.	12	0.20	0.00	0.80	Bovine Respiratory Diseases
Erskine, Ronald J.	12	0.25	0.33	0.42	Dairy Cattle Mastitis
Grooms, Daniel L.	14	0.50	0.50	0.00	Beef Disease Management
Kaneene, John B.	12	0.14	0.00	0.86	Epidemiology/Disease Impact
Kirkwood, Roy N.	13	0.37	0.22	0.41	Swine Reproduction
Mansfield, Linda S.	13	0.23	0.00	0.77	Food Safety/Campylobacter Pathogenesis
Robinson, Norman E.	12	0.25	0.00	0.75	Respiratory Physiology
Rook, Joseph S.	12	0.20	0.40	0.40	Small Ruminant Animals
Sears, Phillip M.	12	0.35	0.35	0.30	Dairy Disease Management
Straw, Barbara E.	12	0.28	0.50	0.22	Swine Veterinary Medicine
TOTALS:		2.77	2.30	4.93	

Large Animal Clinical Sciences (continued)

PROJECTS

MICL01417*	Evolving Pathogens, Targeted Sequences, and Strategies for Control of Bovine Respiratory Disease	Grooms, D.
MICL01688*	Mastitis Resistance to Enhance Dairy Food Safety	Erskine, R.
MICL01708	Reducing Economic Losses and Food Safety Risks Related to Mastitis	Erskine, R.
MICL01801	Hemorrhagic Bowel Syndrome and Antimicrobial Resistance in Swine	Straw, B.
MICL01819	Nutritional Assessment of Animals and Animal Populations by Laboratory Means	Herdt, T.
MICL01916	Diagnosis and Prevention of Bovine Viral Diarrhea Virus (BVDV)	Grooms, D.
MICL01917	Bovine Respiratory Disease: Risk Factors, Immunology, Pathogenesis and Control	Baker, J.
MICL02016	Preharvest Food Safety: Reducing the Risk of Preharvest Pathogens, Antibiotic Residues and Antibiotic Resistance in Cows	Sears, P.
MICL02017	Improving the Reproductive Performance of Swine Herds	Kirkwood, R.
MICL02025	Elimination of <i>Campylobacter jejuni</i> From the Food Chain	Mansfield, L.
MICL03355	Perinatal Lamb Mortality and Production Issues Associated with Pasture Lambing Systems in Michigan	Rook, J.
MICL06886	Mucus Secretion in Horse Airways	Robinson, N.
MICL06893	Purification of Bovine Anti-Coliform Antibodies for Passive Immunization Against <i>Coliform</i> Mastitis	Erskine, R.
MICL06895	Epidemiology and Mechanisms of Resistance to Fluoroquinolones in Selected Bovine Bacterial Isolates	Kaneene, J.
MICL06897	Development of a Novel Method for Investigation of Upper Gastrointestinal Function in Horses	Schott, H.
MICL06899	Pathogenesis of Acute Infection with Bovine Viral Diarrhea Virus	Grooms, D.
MICL06906	Natural Transformation Between Genetically Marked <i>Campylobacter jejuni</i> Strains in the Pig Intestine	Mansfield, L.
MICL06907	Development of a Biosensor for Rapid Detection of Viruses	Grooms, D.
MICL08227	Mucus Secretion and Clearability in Equine COPD	Robinson, N.
MICL08246	Antibiotic Usage and Risk Factors for Antimicrobial Resistance in Pork Production	Norby, B.
MICL08273	Antimicrobial Resistance in Swine Given 5 In-Feed Antibiotic Regimens	Straw, B.
MICL08286	Mucus Secretion and Clearability in Equine COPD (RAO)	Robinson, N.
MICL08294	Interventions for Controlling Antimicrobial Resistance of <i>Salmonella</i> and <i>Campylobacter</i> in Dairy Cattle	Kaneene, J.

Microbiology & Molecular Genetics

Phone: 355-6463



Jerry B. Dodgson, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Bagdasarian, Michael	12	0.39	0.00	0.61	Molecular Biology
Breznak, John A.	12	0.30	0.00	0.70	Microbial Ecology
Champness, Wendy C.	12	0.50	0.00	0.50	Microbial Genetics
Dazzo, Frank B.	12	0.80	0.00	0.20	Microbial Ecology
Hausinger, Robert P.	12	0.40	0.00	0.60	Microbial Physiology
Klug, Michael J.	12	0.25	0.00	0.75	Microbial Ecology
Maes, Roger K.	12	0.03	0.00	0.97	Virology
Reddy, C. Adinarayana	12	0.46	0.00	0.54	Microbial Physiology/Ecology
Schmidt, Thomas M.	14	0.40	0.00	0.60	Microbial Ecology
Thomashow, Michael F.	12	0.14	0.00	0.86	Plant & Microbial Molecular Genetics
Tiedje, James M.	12	0.15	0.00	0.85	Soil Microbiology
Whittam, Thomas S.	12	0.17	0.00	0.83	Nutritional Genomics
TOTALS:		3.99	0.00	8.01	

Microbiology & Molecular Genetics (continued)

PROJECTS

MICL01154*	Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety	Maes, R.
MICL01314	The Beneficial <i>Rhizobium</i> -Rice Association.	Dazzo, F.
MICL01557	Molecular Genetic Regulation of Streptomyces Antibiotics	Champness, W.
MICL01593*	Advanced Technologies for the Genetic Improvement of Poultry	Dodgson, J.
MICL01629	Molecular Biology and Enzymology of Lignin Degradation By Basidiomycete Fungi	Reddy, C.
MICL01728*	National Animal Genome Research Project	Dodgson, J.
MICL01757	Understanding the Distribution of Microbial Populations in Soils	Schmidt, T.
MICL01857	Physiology and Phylogenetic Diversity of Termite Gut Symbionts	Breznak, J.
MICL01918	Enzymology of Alpha-Ketoglutarate-Dependent Dioxygenases	Hausinger, R.
MICL02020	Pathogenicity Factors of <i>Vibrio</i> and <i>E. coli</i> O157: Secretion of Toxins and Dissemination of Genes	Bagdasarian, M.
MICL06890	Recombinant Vaccines for Enhanced Antiviral (Cellular) Immunity	Bagdasarian, M.
MICL06902	Requirement for Branched-Chain Amino Acid Biosynthesis in <i>Actinobacillus pleuropneumoniae</i> Disease	Mulks, M.
MICL06903	T-Cell Epitope Mapping in Bovine Viral Diarrhea Virus Proteins	Bagdasarian, M.
MICL06904	The Role of Bovine Enteric Calicivirus (BECV) in Calf Diarrhea	Maes, R.
MICL08232	An Integrated BAC Map of the Chicken Genome	Dodgson, J.
MICL08243	Towards an Understanding of the Untapped Microbial Diversity in Soils	Schmidt, T.
MICL08252	Characterization of Allantoinase	Hausinger, R.
MICL08265	Bridging Genome Sequence to the Prevention of Marek's Disease in Poultry	Dodgson, J.
MICL08281	<i>In vivo</i> Expressed Genes of <i>Actinobacillus pleuropneumoniae</i>	Mulks, M.

National Food Safety & Toxicology Center

Phone: 432-3100



Ewen C. D. Todd, Director

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Giesy, John P.	12	0.25	0.00	0.75	Aquatic Toxicology
TOTALS:		0.25	0.00	0.75	

PROJECTS

MICL01919	Fates and Effects of Potential Endocrine Modulating Compounds in the Environment	Giesy, J.
MICL01995	A Toxicogenomic Approach to Understanding Environmental Pollutants	Lapres, J.
MICL03364	Improved Microbial Food Safety Through Risk Assessment, Management, Communication and Analysis	Mather, E.
MICL07670	NC Region IR-4 Leader Lab Program to Clear Pest Control Agents for Minor Uses	Hollingworth, R.
MICL08228	Anti-Oxidant, Anti-Inflammatory and Anti-Cancer Compounds from Tart Cherries	Nair, M.

Packaging (School of)

Phone: 355-9580



Bruce R. Harte, Director

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Bix, Laura	14	0.25	0.00	0.75	Medical Packaging
Clarke, Robert H.	14	0.50	0.00	0.50	Manufacturing Operations
Downes, Theron W.	12	0.20	0.00	0.80	Packaged Food Quality
Singh, Sher Paul	12	0.20	0.00	0.80	Distribution/Transportation/Environmental Measuring/Packaging Dynamics
TOTALS:		1.15	0.00	2.85	

PROJECTS

MICL01735	New Reusable Containers for the Fresh Produce and Meat Packaging	Singh, S.
MICL01736	Quality Retention in Packaged Food	Downes, T.
MICL01921	Automatic Data Capture for Packaging Line Forces That Impact Operations	Clarke, R.

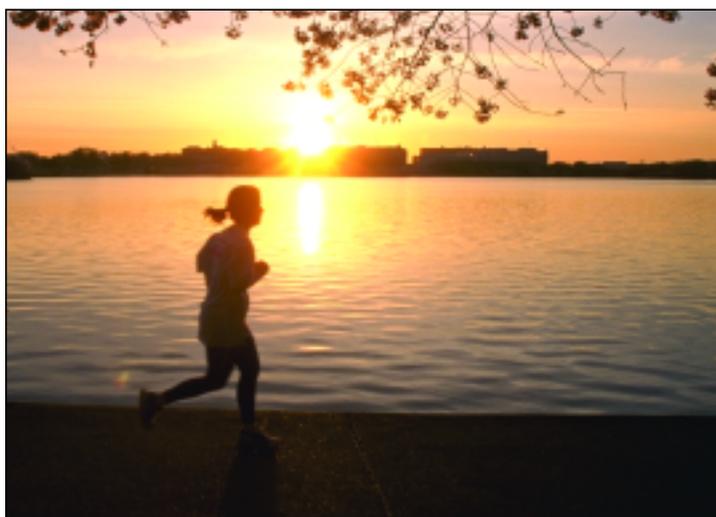


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Park, Recreation & Tourism Resources

Phone: 353-5190



Joseph D. Fridgen, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Holecek, Donald F.	12	0.75	0.25	0.00	Resource Economics/Tourism
Nelson, Charles M.	13	0.25	0.00	0.75	Natural Resource Management
Propst, Dennis B.	13	0.50	0.00	0.50	Psychology/Policy/Economics
Stynes, Daniel J.	12	0.50	0.00	0.50	Quantitative Methods/Economic Impacts
Vander Stoep, Gail A.	13	0.25	0.25	0.50	Communications/Human Dimensions
Vogt, Christine A.	14	0.50	0.00	0.50	Tourism/Marketing/Communications
TOTALS:		2.75	0.50	2.75	

PROJECTS

MICL01763	Influences of Natural Resource Recreation on Land Management	Nelson, C.
MICL01903	Extent and Role of Participation and Choice in Outdoor Recreation Planning and Management	Propst, D.
MICL01994	Integrating Interpretation, Heritage and Community with Tourism Development and Resource Management: Maritime/Coastal Focus	Vander Stoep, G.
MICL03280	Travel, Tourism and Recreation Resource Center	Holecek, D.
MICL03362	Economic Impacts of Recreational Tourism	Stynes, D.
MICL09009	Corps of Engineers Marina User/Dock Owner Expenditure Study	Propst, D.

Pathobiology and Diagnostic Investigation

Phone: 432-4680



Willie M. Reed, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Bolin, Carole A.	12	0.22	0.00	0.78	Infectious Diseases of Livestock & Companion Animals
Bolin, Steven R.	12	0.22	0.00	0.78	Infectious Diseases of Livestock & Companion Animals
Harkema, Jack	12	0.31	0.00	0.69	Toxicology
Meek, Katheryn	13	0.25	0.00	0.75	Molecular Immunology
Patterson, Jon S.	13	0.25	0.00	0.75	Veterinary Pathology/Infectious Disease/ Animals
Williams, Kurt	14	0.30	0.00	0.70	Comparative Pulmonary Pathology & Lung Injury & Repair
TOTALS:		1.55	0.00	4.45	

PROJECTS

MICL01720	Immunohistochemical Diagnosis of Infectious Diseases	Patterson, J.
MICL01776	Endotoxin/Ozone Co-Exposures and Airway Epithelial Remodeling	Harkema, J.
MICL01958*	Avian Respiratory Diseases: Pathogenesis, Surveillance, Diagnosis and Control	Reed, W.
MICL01999	Diagnosis and Epizootiology of Emerging Infectious Diseases of Livestock and Poultry	Bolin, S.
MICL02012	Mechanisms of Protective Immunity in Bovine Leptospirosis	Bolin, C.
MICL06905	Characterization of a New Disease and a Novel Calicivirus Detected in Michigan Rabbits	Bolin, S.
MICL06908	Equine Cushing's Disease: Changes in Immune System Function and in Epidermal Laminae with Laminitis	Bowker, R.

Physiology

Phone: 355-6475



William S. Spielman, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Jump, Donald B.	12	0.50	0.00	0.50	Molecular Endocrinology
TOTALS:		0.50	0.00	0.50	

PROJECTS

MICL01892	Dietary Fat Regulation of Hepatic Gene Expression	Jump, D.
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Plant Biology

Phone: 355-4683



Richard E. Triemer, Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Adams, Gerard C.	13	0.20	0.00	0.80	Plant Pathology/Mycology
Allison, Richard F.	13	0.55	0.00	0.45	Plant Molecular Virology
Jarosz, Andrew M.	13	0.45	0.00	0.55	Plant Pathology/Pathogen Epidemiology
Malmström, Carolyn	14	0.25	0.00	0.75	Ecosystem Dynamics/Ecological Role of Plant Pathogens
Ohlrogge, John B.	12	0.84	0.00	0.16	Plant Physiology/Biochemistry/ Molecular Biology/Plant Lipid Synthesis
Osteryoung, Katherine W.	13	0.25	0.00	0.75	Biochemistry/Molecular Biology
Poff, Ken	12	0.25	0.00	0.75	Plant Physiology
Prather, L. Alan	14	0.25	0.00	0.75	Plant Systematics
Sang, Tao	13	0.25	0.00	0.75	Plant Systematics & Molecular Evolution
Sears, Barbara B.	12	0.25	0.00	0.75	Molecular Biology & Plant Organelle Genetics
TOTALS:		3.54	0.00	6.46	

PROJECTS

MICL01533	Genetic Engineering of Oilseed Crops	Ohlrogge, J.
MICL01679	Chloroplast Microsatellite Mutators	Sears, B.
MICL01808	Viral Transgene Recombination in Gene Silenced Virus Resistant Transgenic Plants	Allison, R.
MICL01896	Phylogeny of the Rice Genus, <i>Oryza</i> , and Evolution of Rice Disease Resistance Genes	Sang, T.
MICL01907	Development and Dispersal of Inoculum for the Wheat Head Scab Fungus, <i>Gibberella zeae</i>	Trail, F.
MICL01910	Molecular Biology of Plant-Bacterial Interactions	He, S.
MICL01912	Pathogen Population Biology As a Tool in Developing Disease Control Strategies	Jarosz, A.
MICL01922	Plant Evolution and Conservation: The Role of Flower Form and Function	Prather, L.
MICL01938	The Relationship Between Phototropism and the Positioning of Leaves and Flowers	Poff, K..
MICL01988	Analysis of Chloroplast Division in Plants	Osteryoung, K.
MICL08216	Production of Acetylated Glycerides in Transgenic Oil Crops	Pollard, M.
MICL08240	Homologous Recombination in Plant Mitochondria	Sears, B.
MICL08271	The Mechanism of Forcible Discharge of Ascospores in <i>Gibberella zeae</i>	Trail, F.
MICL08272	Regulation and Organization of the Plastid Pyruvate Dehydrogenase Complex	Thelen, J.
MICL08282	Viral Transgene Recombination in Gene Silenced Virus Resistant Transgenic Plants	Allison, R.
MICL08283	Tradeoffs Between Mechanical Strength, Xylem Safety, and Conductive Efficiency	Telewski, F.

Plant Pathology

Phone: 353-8645



Raymond Hammerschmidt,
Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Adams, Gerard C.	13	0.35	0.27	0.38	Plant Pathology/Mycology
Allison, Richard F.	13	0.20	0.00	0.80	Plant Molecular Virology
Fulbright, Dennis W.	12	0.83	0.00	0.17	Plant Pathology/Plant Pathogen Genetics/Christmas, Oak, and Nut Tree Diseases
Hart, L. Patrick	12	0.40	0.50	0.10	Plant Pathology/Field Crops
Hausbeck, Mary K.	12	0.29	0.61	0.10	Plant Pathology/Ornamentals, Vegetables & Greenhouse Crops
Jarosz, Andrew M.	13	0.30	0.00	0.70	Plant Pathology/Pathogen Epidemiology
Jones, Alan L.	12	0.50	0.40	0.10	Plant Pathology/Fruit Tree Crops
Kirk, William W.	14	0.45	0.45	0.10	Plant Pathology/Vegetables/Potatoes/ Perennial Herbaceous Plants
Safir, Gene R.	12	0.78	0.00	0.22	Plant Pathology/Mycorrhizal Fungi
Schilder, Annemiek C.	14	0.45	0.45	0.10	Plant Pathology/Small Fruits
Sundin, George W.	14	0.50	0.50	0.00	Plant Pathology/Fruit Tree Crops/Phylobacteriology
Trail, Frances	14	0.27	0.00	0.73	Host Pathogen Interactions
Vargas, Joseph M., Jr.	12	0.26	0.49	0.25	Plant Pathology/Diseases/Sod & Turf
TOTALS:		5.58	3.67	3.75	

PROJECTS

MICL01206*	Biological Control of Soil and Residue-Borne Plant Pathogens	Safir, G.
MICL01259*	Mycotoxins in Cereal Grains	Hart, L.
MICL01408*	Biological Improvement of Chestnut and Management of the Chestnut Pathogens and Pests	Fulbright, D.
MICL01499	Control and Utilization of VA Mycorrhizal Root Colonization	Safir, G.
MICL01562	Physiology of Resistance and Induced Resistance to Disease in Potato	Hammerschmidt, R.
MICL01662	Managing Tree Diseases in Michigan	Fulbright, D.
MICL01673	Biology and Control of Pathogens of Field Crops	Hart, L.
MICL01756*	Multidisciplinary Evaluation of New Apple Cultivars	Sundin, G.
MICL01832	Management of Turfgrass Diseases	Vargas, J.
MICL01843	Cryptic Plant Pathogenic Fungi: Biology of Latent Pathogens in Symptomless Trees	Adams, G.
MICL01954	Epidemiology and Integrated Management of Small Fruit Diseases	Schilder, A.
MICL01966	Management of Soil, Seed and Foliar Diseases of Potato and Vegetable Crops in Michigan in Relation to Environment and Host Specificity	Kirk, W.
MICL02001*	Eradication, Containment and/or Management of Plum Pox Disease (Sharka)	Jones, A.
MICL02018	Oak Wilt Management in Michigan Using a Hypovirulent Strain of the Pathogen	Fulbright, D.
MICL03377	Diseases of Upland and Muck Vegetables and Transplants, Greenhouse Ornamentals, and Their Control	Hausbeck, M.
MICL07657	A Partnership Among Eastern U.S. Carrot Stakeholders to Develop and Implement IPM	Hausbeck, M.
MICL07660	Controlling Fire Blight Disease of Apple Trees FY01	Sundin, G.
MICL07671	Controlling Fire Blight Disease of Apple Trees FY02	Sundin, G.
MICL07672	Controlling Armillaria Root Rot of Cherry	Jones, A.
MICL08251	Genetics of Zearalenone Biosynthesis and Grain Colonization by <i>Gibberella zeae</i>	Trail, F.
MICL08270	Seeking Alternatives to B2 Fungicides and Carbamate Insecticides for Asparagus Production	Hausbeck, M.
MICL08285	A Strategy to Advance IPM For Celery Growers in Michigan, California and Florida	Hausbeck, M.

Plant Research Laboratory (MSU-DOE)

Phone: 353-2270



Kenneth Keegstra, Director

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
He, Sheng-Yang	13	0.25	0.00	0.75	Plant Pathology
Howe, Gregg A.	14	0.23	0.00	0.77	Plant/Insect Defense
Walton, Jonathan D.	12	0.23	0.00	0.77	Plant Pathology
TOTALS:		0.71	0.00	2.29	

PROJECTS

MICL01886	Mechanisms of Fungal Pathogenicity	Walton, J.
MICL01900	Molecular Genetics of Plant Defense Against Insects	Howe, G.
MICL03376	Interdiscipling Research And Training in The Plant Sciences	Keegstra, K.
MICL08197	Photoperiodic Control of Gibberellin Metabolism in Long-Day Rosette Plants	Zeevaart, J.
MICL08230	Co-Evolution of Phytotoxin Production and Auto-Immunity in a Pathogenic Fungus	Walton, J.
MICL08233	<i>Pseudomonas syringae</i> pv. Tomato Hrp-Controlled Extracellular Proteins	He, S.
MICL08254	Control of mRNA Stability in Dicotyledonous Plants	Green, P.
MICL08280	Microarray Analysis of the Susceptible Interaction Between Arabidopsis and <i>Pseudomonas syringae</i> pv. Tomato DC3000.	Thilmony, R.
MICL08291	Regulation and Manipulation of Gibberellin Metabolism and Stem Growth in Long-Day Rosette Plants	Zeevaart, J.
MICL08293	Role of the Hrp Pilus in <i>Pseudomonas syringae</i> Pathogenesis	He, S.

Political Science

Phone: 355-6590

PROJECTS

MICL03403	Brownfield Redevelopment in Michigan	Hula, R.
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Population Medicine Center

Phone: 353-5941

PROJECTS

MICL07664	Epidemiology and Risk Analysis of <i>Mycobacterium bovis</i> in Wild and Domestic Animals in Michigan	Kaneene, J.
MICL07676	Bovine Tuberculosis: Epidemiology, Diagnosis, and Pathogenesis	Kaneene, J.
MICL08235	Risk Factors for Salmonella and Campylobacter Infections and Drug Resistance in Dairy Cattle	Kaneene, J.

Remote Sensing (Center for)

Phone: 353-7195

PROJECTS

MICL03404	Applications of Spatial Information Technologies to Management of Agriculture and Natural Resources	Groop, R.
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Resource Development

Phone: 355-3421



Photo courtesy USDA Online Photography Center



Scott G. Witter, Acting Chair

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Beckwith, JoAnn	14	0.25	0.25	0.50	Environmental Planning & Management
Bingen, R. James	12	0.40	0.00	0.60	International Development
Bronstein, Daniel A.	12	0.40	0.00	0.60	Environmental Policy & Law
Dersch, Eckhart	12	0.25	0.50	0.25	Natural Resources Management
Kakela, Peter J.	12	0.70	0.00	0.30	Natural Resources Management
Kaplowitz, Michael C.	13	0.25	0.00	0.75	Land Use Law
Norris, Patricia E.	13	0.08	0.20	0.72	Land Use
Rosenbaum, Rene P.	13	0.40	0.00	0.60	Community Economic Development
Schultink, Gerhardus	12	0.50	0.00	0.50	Natural Resources Management
Witter, Scott G.	12	0.30	0.00	0.70	Natural Resources Management
TOTALS:		3.53	0.95	5.52	

PROJECTS

MICL01536	Comparative Indicators for Rural Development, Environmental Planning and Public Policy Formulation
MICL01817	Watershed Management in the Rural/Urban Fringe
MICL01859	Organic Agriculture and Rural Development Policy
MICL01870	Use of Impact Assessment in Policy Formulation
MICL01968	Public Acceptance of Plant Biotechnology
MICL01979	The Role of Economics and Law on Environmental Management
MICL03352	Mineral Lands Development, Energy Requirements, and Environmental Impacts
MICL03358	Michigan Seasonal Agriculture Labor Markets

Schultink, G.
Witter, S.
Bingen, J.
Bronstein, D.
Beckwith, J.
Kaplowitz, M.
Kakela, P.
Rosenbaum, R.

Social Work (School of)

Phone: 353-8616



Gary R. Anderson,
Director

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Seita, John R.	14	0.25	0.25	0.50	Youth Development
TOTALS:		0.25	0.25	0.50	

Sociology

Phone: 355-6632



Photo courtesy of Families and Communities Together Coalition (FACT)

FACULTY

	RANK	MAES	MSUE	JOINT	INTEREST
Busch, Lawrence M.	12	0.47	0.00	0.53	Agriscience Structure/Agricultural Research Policy
Harris, Craig K.	13	0.50	0.00	0.50	Sociology of Agriculture
Johnson, Nan E.	12	0.50	0.00	0.50	Demography
Rudy, Alan P.	14	0.30	0.00	0.70	Sociology of Agriculture
TOTALS:		1.77	0.00	2.23	



Thomas L. Conner, Chair

PROJECTS

MICL01829*	Rural Restructuring: Causes and Consequences of Globalized Agricultural and Natural Resource Systems	Harris, C.
MICL01874	Social Processes in Disability and Death for Nonmetro Americans: A Longitudinal Study	Johnson, N.
MICL01926	The Management of Risk in Agrifood and Natural Resource Systems	Harris, C.
MICL01939	Community Responses to Hazardous Waste Crises: Alternatives to Increase Public Involvement	Aronoff, M.
MICL01950	Regional Agricultures, Landscapes and Ecologies	Rudy, A.
MICL01969*	Rural Labor Markets: Workers, Firms and Communities in Transition	Bokemeier, J.
MICL01992*	Systems Analyses of the Relationships of Agriculture and Food Systems to Community Health	Ten Eyck, T.
MICL02005	Standards and Strategies in Commodity Subsector Organization	Busch, L.

Water Research (Institute of)

Phone: 353-3744



Jon F. Bartholic, Director

PROJECTS

MICL01838	Development of a Knowledge Based Decision-Support System for Integrated Landscape/Watershed Planning	Bartholic, J.
MICL02026*	Development and Evaluation of TMDL Planning and Assessment Tools and Processes	Bartholic, J.

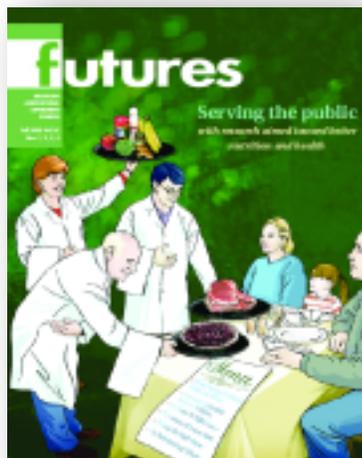
Faculty Appointments

	MAES	MSUE	JOINT
GRAND TOTALS	139.62	48.26	140.12
¹ Elton Smith Endowed Chair			
² C.S. Mott Distinguished Professor of Sustainable Agriculture			
³ Hannah Distinguished Professor for Microbial Ecology and Plant Sciences			
⁴ Nowlin Professor for Water Research (50 percent of the appointment is paid by the endowment)			
⁵ Clinton Meadows Chair			
⁶ Partnerships for Ecosystem Research and Management (PERM) positions with salary funded by the Michigan Department of Natural Resources			
⁷ Homer Nowlin Professor for Consumer Responsive Agriculture			

Futures Magazine

Futures is the magazine of the Michigan Agricultural Experiment Station. If you live in the United States and would like to receive *Futures* free of charge, write to: *Futures* editor, 312 Agriculture Hall, MSU, East Lansing, MI 48824-1039, call 517-355-0123 or e-mail millsap@msu.edu. *Futures* is also available for viewing on the MAES web site at <<http://www.maes.msu.edu>>

Fall 2002 Vol. 20 Nos. 1, 2, 3, 4



“Don’t play with your food.”

Chances are that parents have been saying this longer than there has been recorded history. What we sometimes fail to realize is that humans have been manipulating or “playing” with food and foodstuffs in one form or another since our ancestors took up agriculture some 10,000 years ago. From the early

days of the domestication of wild plants and animals to present-day genetic manipulation, humans can’t stop playing with their food. Food played a big part in creating society as we know it today. Nomadic hunter-gatherers evolved into farmers, forming communities. These communities, now free from the constant task of finding food, developed language, technology, science and literature.

MAES researchers are seeking and finding answers to questions concerning the food we eat. This issue of *Futures* focuses on how food plays a role in health.

Healthy eating starts at birth. Mari Douma, MSU assistant professor of pediatrics, hopes to increase the number of nursing mothers and the number of months they breast-feed their babies with the Breastfeeding Initiative developed with funding from the FACT (Families and Communities Together) coalition. The Breastfeeding Initiative gives physicians and new mothers information on the importance of human breast milk for babies’ optimum health and development. Breast-feeding can protect both baby and mother from diseases and infections while providing complete nutrition for newborns and young infants. Douma hopes more Michigan mothers will learn about and apply the benefits of breast-feeding and breast-feed their babies at least one year.

Toddlers are a group that is often overlooked. The NEAT (Nutrition Education Aimed at Toddlers) program, funded in part by FACT and coordinated by Mildred Omar, MSU professor of nursing, provides nutrition education for rural, low-income caregivers of children 12 to 36 months of age. The NEAT program partners with other community agencies to find the families that will benefit most from the program, which educates participants in meal management, food guidelines and food safety.

Eating dry beans may mean more than just a tasty meal. MAES bean breeder Jim Kelly works to bring consumers dry beans that look pretty, taste good and are economically competitive for producers. Beyond that, MAES food science and human nutrition researcher Maurice Bennink has found that dry beans can reduce the incidence of colon cancer in laboratory rats. A diet high in dry bean content also meant the rats were thinner. Bennink’s findings were so positive that his next study will focus on a bean diet and its effects on breast and prostate cancer.

Continued consumer awareness of the benefits of healthy eating is showing in their food choices, and the food industry is paying attention. Producers of beef, pork and chicken products are responding to consumer desire for low-fat, high quality meat choices. Consumer-driven research by MAES animal scientists — such as breeding for carcass merit and meat quality, identifying genes that contribute to economically important traits and using other technology to help make desirable animal selections — is aiding the meat industry.

Animal genetics plays a big part in producing a healthy, desirable animal for consumers, but it goes beyond that. At Michigan State University, the Center for Animal Functional Genomics and National Bovine Functional Genomics Consortium look at some of the smallest bits of life to find the answers to big questions. What goes on in an animal that is stressed by giving birth? What is it that makes her more prone to illness or infections? If certain drugs are given to her to make her healthy, how does that drug affect other parts of her body? Research in animal genomics comes under the umbrella of biotechnology, a word that often creates controversy. Larry Busch, MAES sociologist, has been looking at the complex issue of biotechnology. He gives a perspective on how its integration into agriculture and the food supply could be handled to bring about compromise between what researchers can do and what the public wants done.

JoAnn Beckwith, MAES resource development researcher, has done a focus group study to gain a better understanding of how individuals view plant biotechnology and genetically engineered foods. The participants in the focus groups ranged from farmers to environmental group members and students to senior citizens. Though different in many ways, they had similar consensus on more than one issue.

MAES research is conducted in five colleges at Michigan State University. All aspects of research in food — including its beneficial elements, importance in growth and development, nutritional education and technological advances — are taking place within the organization. We highlight a few examples of this important work in this issue of *Futures*.

MAES Contributors

July 1, 2001 to June 30, 2002

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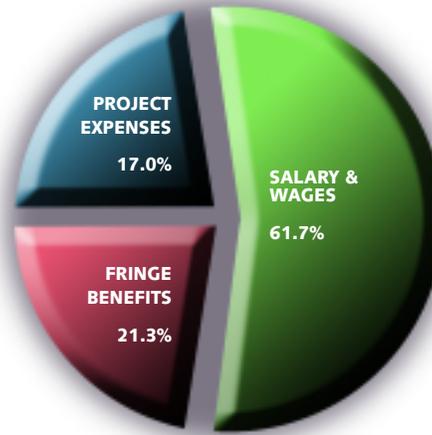
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Financial Report

July 1, 2001 to June 30, 2002

DISTRIBUTION OF APPROPRIATED FUNDS



INCOME:	<u>\$80,836,372</u>
Federal Appropriations	\$.5,163,886
Hatch	\$ 3,928,797
McIntire-Stennis	\$ 210,708
Hatch RRF	\$ 930,266
Hatch Animal and Disease, Section 1433	\$ 94,115
State Appropriations	\$.36,848,700
TOTAL APPROPRIATIONS:	\$.42,012,586
Grants — Federal, State and Private	\$.38,823,786
 EXPENSES:	 <u>\$80,836,372</u>
Salaries	\$25,907,195
Fringe Benefits	\$ 8,928,656
Project Expenses	\$ 7,176,735
Grants — Federal, State and Private*	\$38,823,786

Personnel

(Full-time Equivalents Funded From Appropriated Funds)

Research Staff**	157.84
Professors	70.21
Associate Professors	25.33
Assistant Professors	34.23
Research Associates and Specialists	28.07
 Support Staff	 179.98
Administrative Professionals	98.30
Supervisors	23.66
Clerical	42.35
Technicians	15.67

* Grants are reported using most recent three-year average

** Does not include department chairpersons/unit administrators

MICHIGAN AGRICULTURAL EXPERIMENT STATION

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109 Agriculture Hall

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East Lansing, Michigan 48824-1039



SR-121 • February 2003

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