

Resume of Accomplishments

Manjit K. Misra

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Curriculum Vitae

I. Name and Contact Information

Manjit K. Misra

Director, Seed Science Center

Director, Biosafety Institute for Genetically Modified Agricultural products (BIGMAP)

Dean's Chair for Distinction in the College of Agriculture and Life Sciences

Professor, Ag. & Biosystems Engineering

Iowa State University, Ames, Iowa 50011

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II. Education

| <u>Degree</u> | <u>Institution</u> | <u>Major Field</u> | <u>Dates</u> |
|----------------------|------------------------------------|---------------------------------|---------------------|
| Ph.D. | University of Missouri, Columbia | Ag. Engineering (Processing) | 1973-78 |
| M.S. | University of Missouri, Columbia | Ag. Engineering | 1971-73 |
| B.Sc. | Orissa Univ. of Ag. & Tech., India | Ag. Engineering | 1966-71 |

III. Professional Experience

| <u>Employer</u> | <u>Position and Nature of Work</u> | <u>Dates</u> |
|------------------------|--|---------------------|
| Iowa State University | Dean's Chair of Distinction, College of Agriculture and Life Sciences | 2008-Present |
| | Director, Institute for Food Safety and Security | 2005-2008 |
| | Director, Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP) | 2002-Present |
| | Director, Seed Science Center | 1991-Present |
| | Professor, Ag & Biosystems Engineering (ABE) | 1991-Present |
| U. of Missouri | Assoc. Professor, Department of Plant Pathology, Seed and Weed Sciences (PPSW) and ABE | 1984-91 |
| | Assistant Professor (PPSW and ABE) | 1979-84 |
| | Post-doctoral research associate | 1978-79 |
| U. of Missouri | Graduate Research Assistant | 1971-78 |

IV. Accomplishments

A. Research

External grants, contracts, and gifts (*Projects funded in last ten years*)

Risk and Benefit Analysis of genetically modified Agricultural products, USDA, \$247,198 2008-09

Food and Fuel Initiative, \$277,797, Cooperative State Research, Education, and Extension Service, USDA, 2008-09.

Bio-security Platform, Biosciences Alliance of Iowa, \$721,000, 2006-07, (PI).

Commercialization of a continuous in-line flow meter, Grow Iowa Values fund \$74,480, PI, 2006-08, (PI)

The Iowa Gold Livestock Traceability Project, Global Vet Link, \$30,000, PI, 2006-07.

Seed Science Center and BIGMAP Expansion Fund, \$2M, 2006, (PI).

BIGMAP Endowed Chair for “Policies and Regulations,” \$1.5 M, 2006, (PI).

Risk Analysis Minor Endowment, \$1 M, 2006, (PI).

Seed Science and Business Curriculum Endowment, \$1.7 M, 2006, (PI).

Seed Science Center Extern Program Endowment, \$1.5 M, 2006 (PI).

Iowa Livestock Traceability Project, \$180,000, Biosciences Alliance of Iowa, 2005, (PI).

Risks and Benefits Associated with Genetically Modified Products, USDA-APHIS, \$588,500, 2005-07, (PI).

A Global Curriculum on Seed Technology and Business Management, WOI Distance Education Initiative Grant, \$150,000, 2004-2006, (PI).

Magnetic Capture Hybridization and Real-time Multiplex PCR for the Detection of Seed-borne Pathogens, USDA Bio-security Program, \$900,000, 2004-08 (PI).

Science-based Risk Assessment for Genetically Modified Non-food Crops, a total of \$301,000, i.e. from Iowa Department of Economic Development (\$246,000), IA Co-op (\$50,000), Ag States (\$5,000), 2003-06, (PI).

Investing in People—An Endowment for Graduate Student Seed Scholarship, Various donors, \$1.2 M, 2004-ongoing, (PI).

Risks and Benefits Associated with Genetically Modified Products, Academic Enhancement Initiatives, Iowa State University, \$400,000, 2002-04, (PI).

Quantitative Risk Analysis of Plant-Made Pharmaceuticals and Industrials, Process Management for Biosafety Policies and Regulations, USDA federal support, \$178,000, 2004-05, (PI).

Harmonization of Phytosanitary Regulations for Seed Trade/Asia-Pacific Regions, USDA-FAS, \$101,200, 2002-03, (Co-PI).

Seed Quality Assurance Through Process Management for Yugoslavia, USDA-FAS, \$35,802, 2002-03, (Co-PI).

Validation of Seed Flow Measurement Leading to Commercialization, Center for Advanced Technology and Development (CATD), \$24,687, 2002-03, (PI).

Center for Food Safety and Public Health, Center for Disease Control, \$1,000,000, 2002-03, (Co-PI).

Seed Science Undergraduate Scholarships Endowment, Iowa Seed Association, \$300,000, 2000-on-going, (PI).

Seed Damage in a Sidewall Return Drag Conveyor, Sidney Mfg. Company, \$9,254, 2000-01, (PI).

Training Program for Zimbabwe Seed Scientist, USDA, \$7,425, 2000, (Co-PI).

Evaluation of a Chlorophyll Seed Sorter, Satake Company, \$20,000, 2000, (PI).

Seed Science Center Endowments (endowed chair, visiting scientists program, and for molecular seed research), \$5,000,000, 1999, (PI).

Seed Technology Training for Asia and Pacific Seed Delegates, USDA, \$23,118, 1999-00, (Co-PI).

Seed Training for Cochran Fellows from Russia, Ukraine, Georgia, and Armenia and Regional Harmonization of Seed Policies, USDA, \$51,485,1999, (Co-PI).

Soybean Seeds Infected with *Sclerotinia Sclerotiorum*, Iowa Soybean Promotion Board, \$29,420, 1998-99, (Co-PI).

Agribusiness Development Support Project in Kenya, USAID. \$300,000, 1998-2002, (Co-PI).

Harmonization of Seed Policies and Regulations in Central America, Regional Organization for Plant and Animal Health (OIRSA), \$33,900, 1998-99, (Co-PI).

Technology for Measurement of Depth in Grain Bins, CATD and Tristate, \$30,235, 1998-01, (PI).

Total obtained: \$34,445,608

Graduate students/undergraduates/visiting scientists

| Name | Degree | Year | Department | Role |
|--------------------------|-----------|------|-----------------|-----------------|
| Valacia Lakovoglou | Ph.D | 2006 | Forestry | POS Member |
| Audrey Hansen (ABE) | M.S. | 2004 | ABE | POS Member |
| Nicole Waterland | M.S. | 2004 | Horticulture | POS Member |
| Adriana Murillo-Williams | M.S. | 2004 | Plant Pathology | POS Member |
| Ruth Hein | M. of Ag. | 2002 | ABE | POS Member |
| Amy Wilke | M.S. | 2002 | Plant Pathology | POS Member |
| Li Gang | M.S. | 2001 | Horticulture | POS Member |
| Nezar Samarah | Ph.D. | 2000 | Agronomy | POS Member |
| Claudia Totir | M.S. | 2000 | Plant Pathology | POS Member |
| Eileen Feilmeier | M.S. | 1999 | Agronomy | POS Member |
| Kelly Gillette | M.S. | 1999 | Plant Pathology | POS Member |
| Ibni Rukunudin | Ph.D. | 1997 | ABE | POS Member |
| Mitsuru Tsubo | M.S. | 1997 | Agronomy | POS Member |
| Antonio Perdomo | Ph.D. | 1995 | Agronomy | POS Member |
| Ron Walcott | M.S. | 1995 | Plant Pathology | POS Member |
| Prince Dugba | M.S. | 1994 | ABE | POS Member |
| Slaven Aljinovic | M.S. | 1993 | ABE | POS Member |
| Cassandra Biggerstaff | M.S. | 1999 | Plant Pathology | POS Member |
| Loren Steenhoek | Ph.D. | 1998 | ABE | Major Professor |
| Sulaiman Al-Yahya | Ph.D. | 1991 | ABE | POS Member |
| Suranjan Panigrahi | Ph.D. | 1991 | ABE | Major Professor |
| Lal Pandya | M.S. | 1991 | ABE | Major Professor |
| Jorge Risse | M. S. | 1990 | ABE | Major Professor |
| Mike Potter | M.S. | 1989 | ABE | Major Professor |
| Leopold Baudet | Ph.D. | 1987 | ABE | Major Professor |

ii) Undergraduate students' research:

Advised or co-advised undergraduate students in research projects. **Six students won national/regional awards.** The details are as follows:

1. Nick Krueger won first place nationally in the student paper competition (2002) at the American Society of Agricultural Engineers (ASAE) meeting with research on "Gravity Separation of Commodity Corn"
2. Jasmine Zingler Bootman won second place nationally and \$1,000 at the Society of Women Engineers National Conference in 2000 with a paper titled "Storability of 16 Varieties of Shelled Corn."
3. Amy Van Dyke won first place nationally and \$1,500 in the Society of Women Engineers Technical Paper Competition in 1993 with a paper titled "Mechanical Damage to Soybean Seed During Bag Handling."
4. Brian Fischer won first place in the Mid-Central Region Student paper competition in 1992 with a paper titled "Effects of Brush Machine Adjustments on Physical Properties of Crambe and Oats."
5. Mitch Hushak competed in the American Society of Agricultural Engineers student paper competition in 1985 with a paper titled "Performance of a Revolving Screw Conveyor" and won second place.
6. Alan Gaul won second place in the American Society of Agricultural Engineers student paper competition in 1983 with a paper titled "Variation of Physical Properties of Gravity Separated Soybeans".

iii) Visiting scientists/post docs:

James Okono (Kenya, 2008), Paul Christensen (2003); Adelaida Harris (Argentina, 2003); Mick Turner (England, 2002); Yuh-Yuan Shyy (1985-91); Yehia Ibrahim (Egypt, 1992-93); Ahmed Zaid (Egypt, 1992-93); Sujit Jain (India, 1991); Anwar Kazi (Pakistan, 1992); Pervez Khan (1992); S. Jain (India, 1990); Y. Chung (Korea, 1984); and Oje Kayode (Nigeria, 1983).

Reviewer and editorial activities:

Grant review panel for American Seed Research Foundation (1991-present), reviewed approximately 30 proposals every three years and recommended funding priorities

Editorial Board, *Seed World*, 2002-present

Reviewed proposals annually for Plant Science Institute Grants Program (2000-present)

Reviewed papers annually for publication in the *Transactions of the ASAE* (and selected papers for the technical paper award by the ASAE), for publication in the *Journal of Seed Technology*, Association of Official Seed Analysts, for publication in *Cereal Chemistry*, and for publication in *Journal of Ag. Economics*

Reviewed proposals for The World Bank National Agricultural Technology Project in India and recommended funding

Reviewed proposals for the Illinois Soybean Program Board and recommended funding priorities

Patents/technology transfer:

Developed new technologies for which patents were obtained. The details are:

1. Shyy, Y. and M. Misra, “**Continuation in Part: Method of Measuring Flow Rate of Flowable Material under Continuous Flow Conditions, and an In-line Continuous Flow Meter.**” U.S. Patent 6,973,843, 2005.
2. Shyy, Y. and M. Misra, “**Method of Measuring Flow Rate of Particulate Material under Continuous Flow Conditions, and an In-line Continuous Flow Meter.**” U.S. Patent # 6805014 B1. 2004.
3. Misra, M. and Y. Shyy. “**Acoustic and Video Imaging System for Quality Determination of Pharmaceutical Products.**” U.S. Patent # 5,422,831 with 22 claims awarded June, 1995.
4. Misra, M. and Y. Shyy. “**Acoustic and Video Imaging System for Quality Determination of Agricultural products.**” U.S. Patent # 5,309,374, awarded May, 1994.
5. Misra, M. and Y. Shyy. “**Methods and Means for Gravity Table Automation.**” U.S. Patent #5,024,334, June, 1991.
6. Misra, M. and Y. Shyy. “**Automation of an Air-screen Cleaner.**” U.S. Patent #4,991,721, September, 1990.

In addition, the following patent disclosure has been made:

“**Methods and Apparatus for Detection of DNA and DNA Products.**”
(Disclosure to ISU Research Foundation--docket number 03408), 2006.

Another new technology for “**Digital Imaging System Development for Corn Germplasm Accessions,**” was made available in the public domain and no patent application was filed (because it was a USDA supported project). The USDA is using the new technology at the present time for their operation.

B. Teaching/Curriculum Activities

i) Teaching of classes:

I taught classes on seed conditioning and conducted laboratory exercises in AE 110, AE 214, AE 469, AE 648, AE 302, AE 437/537, Agron/Hort 338, Agron 237, Ag Mech 464X, PP 594, and ABE open house for freshmen engineering students. I am scheduled to teach the STB 539 (Seed Technology and Business) course by distance education technology during Fall, 2008.

ii) Facilitate Seed Science curriculum:

An undergraduate secondary major in Seed Science is offered. I facilitate this interdisciplinary/interdepartmental Seed Science curriculum. To attract

undergraduate students to Seed Science and to the seed industry, I provided leadership in raising an endowment through the Iowa Seed Association for providing scholarships for students with a Seed Science interest. A total of \$300,000 has been raised so far as an endowment. From the interest, about ten undergraduate scholarships of \$1,000 are awarded annually.

Both Ph.D. and M.S. degree programs are also offered with Seed Science emphasis through the primary major. To enhance this program, I initiated a “Investing in People” fundraising campaign through Iowa Seed Association. The goal for this campaign was \$1 million dollars, and the target has been exceeded.

iii) Implemented “Operation Student Connection”:

This is a national program by the American Seed Research Foundation with intent to support 20 graduate students annually to travel to the seed conference of the American Seed Trade Association. A further objective is to connect the graduate students with prospective employers. I have been involved from the beginning designing and refining the program. Two ISU graduate students have participated in this program every year since 2001.

iv) Initiated “Global curriculum on Seed Science and Business Management”:

C. Outreach/Extension Activities

i) Initiated and conducted seed conditioning workshops: I initiated this outreach program and the workshops are extremely popular with the seed industry as evidenced by the fact that five workshops were conducted in 1984, seven in 1987, and since then we continue to conduct an average of 10 workshops annually for domestic seed companies. Workshops are also conducted for international clientele and have been attended by personnel from numerous countries.

ii) Responded to critical need. An example is the workshop on “**Soybean Rust**” which was conducted in September 2002. It is estimated that this disease can cause losses of up to \$10 billions if introduced into our agriculture. I provided leadership and organized a proactive workshop to analyze the risk of incidence for Soybean Rust and to develop an action plan to respond if the disease is introduced in Iowa or elsewhere in the U.S. accidentally or deliberately. A total of 41 key stakeholders from the industry sector, USDA-ARS, USDA-APHIS, the Iowa Soybean Association, Agribusiness Association of Iowa, United Soybean Promotion Board, American Seed Trade Association, the Iowa Department of Agriculture, and academic institutions attended and developed an action plan. This was instrumental in making Iowa well prepared and brought additional resources to ISU.

Another example was to influence science-based legislation for establishment of the Maximum Allowable Variation (MAV) of number of seeds in a bag of seed. The proposed legislation of 1.5% MAV was found inaccurate. The industry task force accepted ISU findings and recommended that the Weights & Measures modify the legislation based on an Iowa State University study (it was modified).

Other examples are conditioning of extremely dry soybeans in 2000, discolored soybeans in 1998, and ergots in Barley in 1996, etc. In each case, applied research

was conducted and recommendations with hands-on training were provided to solve the problem thus protecting the revenues of Iowa suppliers.

iii) Media and other communications:

Presented radio and television programs: A series of 90 seconds TV spots were featured in "Good Morning, America" for five consecutive days.

The application of ultrasound and computer technology was broadcast on National Public Radio (NPR) and then by "Voice of America".

Developed four educational software programs: 1) Sizing of seed corn, 2) Design of a soybean seed conditioning plant, 3) Seed conditioning operation analysis, and 4) Screen selection

Produced videotapes: These videotapes are used by over 100 seed companies to train their employees. Pioneer translated the videotape in Spanish to train their employees in Latin America. Three of the four videotapes won awards (page 34).

Presented information at 73 national, international, and state seed conferences (these are invited presentations in addition to professional presentations...please see pages 18-21)

D. International Activities

The Seed Science Center conducted programs for seed professionals from over 70 countries in the last twelve years. In addition, I conducted the following activities:

UNDP consultant to China on millet seed processing plant design and training programs for seed quality assurance

USDA consultant to Ukraine on needs assessment for the country's national seed system and development of training program

World Bank consultant on designing of seed processing plant in Ethiopia and Ukraine

FAO consultant to India on seed improvement program

Completed AID Development Assistance Training (DAT) program (both basic and advanced)

Completed intensive one-week Spanish language training program

Negotiated two strategic partnerships: one with the American Seed Trade Association (ASTA) to conduct joint programs on seed policies and regulations worldwide and another with the Food and Agriculture Organization (FAO) to conduct international programs in global seed policy reforms.

E. Administration

Seed Science Center

I accepted the position of Director of the Seed Science Center beginning August 1, 1991. With this responsibility, I provide leadership for about 30 faculty and staff members, 10-12 graduate students, and 50-60 undergraduate students. The Seed Science Center is a state-of-the-art facility with 40,000 square feet of total space.

The Center's seed laboratory is presently the largest public seed laboratory in the world, testing 40,000 seed samples of over 300 species annually. The Center is the only one in the nation with a graduate and undergraduate seed science curriculum.

The Seed Science Center formed an advisory council in 1993 with leaders from the local and national industry, the World Bank, the USAID, associations, foundations and civic leaders. With the input from the Council, the programs increased from four to eight areas (the new program areas added are: International seed programs, Computer and information technology program, DNA seed quality assurance, and Global curriculum on seed science and business management. The annual budget also tripled (from \$1M to about \$3M dollars), of which 85% is generated from external grants, contracts, and fees.

The Center focused strongly on developing strategic partnerships and four memorandum of agreements were signed - two domestic, and two international. This resulted in significant increases in research activities and economic development activities. For example, the Seed Science Center conducts seed health testing for over 250 pathogens (the most in the country). This testing is instrumental in maintaining \$800 M worth of seed export from USA (Iowa is a major seed export state). The Seed Science Center also conducts about 20 workshops for the domestic geared toward improving the economic opportunities for the U.S. seed industry.

In the international arena, the Seed Science Center conducted programs in over 70 countries. At the present time, the Seed Science Center has programs in 30 countries of Africa. These programs are conducted with funding from the USDA, the World Bank, the UNDP, the USAID and other multilateral donor agencies with emphasis on science based policies and regulations. The Center publishes a newsletter that is mailed to over 1500 people in 40 countries with 2 issues published annually.

The Center is now recognized as the Center of Excellence in seeds nationally and internationally. The national prominence is verified by the fact that the USDA designated the Center to administer the National Seed Health System (NSHS). The international excellence is verified by the fact that the Food and Agricultural Organization signed an agreement with the Center to jointly develop science-based seed policies and systems worldwide.

These accomplishments are not my individual accomplishments, but the team accomplishment of the Seed Science Center personnel working in a spirit of collaboration. My main contribution is fostering and facilitating an environment of team spirit and trust that motivates the Seed Science Center faculty and staff to higher levels of productivity.

The Biosafety institute for genetically modified agricultural products (BIGMAP) is a national, independent, multi-university institute for science based risk and benefit for agricultural biotechnology. Working with a group of faculty leaders, I wrote the concept paper, refined it with input from a number of stakeholders and the concept was proposed by ISU to the Congress. I championed the concept to the Iowa delegation and various legislative and private groups. The concept was authorized in the new Farm Bill and ISU received a congressional appropriation. The Board of Regents approved the Institute in 2002 and I was appointed as the founding director.

BIGMAP develops scientific tools and methodologies to analyze the risks and benefits of genetically modified plant and animal products. The institute also provides strategies for mitigating the risks in order to safeguard consumers and the environment. Faculty and staff at the institute communicated the results of these activities to key policy and regulatory groups, private entities, and the public. The institute published a newsletter that is distributed to over 1500 professional from 40 countries. In a short time, the institute has become a credible authoritative source of information whose opinion is sought by policy-makers and the public with an annual budget of about \$2M most of which is procured from external sources.

Faculty affiliated with BIGMAP obtained federal funding for quantitative risk assessment of genetically modified plants, process management for science-based biosafety policies and regulations, risk communication, and supported development of regulatory knowledge and infrastructure for niche market product developers. In education, BIGMAP obtained a USDA Higher Education Challenge Grant for funding of a graduate minor in "Risk Analysis and Decision Making" with courses in "Risk assessment for the biological sciences", "Risk communication" and "Science, Policy and Food" (this particular course is team taught by former Governor Vilsack).

The Institute for Food Safety and Security

The Institute for Food Safety and Security (IFSS) was established as a "Presidential initiative" in 2003. It conducts interdisciplinary research to improve food safety and security in Iowa, the United States, and throughout the world. A special area of research interest is the protection of our food supply from bioterrorism.

I was appointed as the director of IFSS in 2005. During my tenure, the number of faculty affiliates rose from 79 to 107 faculty whose academic homes were in 19 different departments across six colleges at Iowa State University and the annual funding procurement climbed to about \$6M from external sources. Professional from the National Animal Disease Laboratory, the National Veterinary Services Laboratory, and at the U.S. Department of Energy Ames Lab also were affiliated with the institute. Enveloped within the umbrella of the institute were five centers: The Food Safety Consortium, Food Safety Research Consortium, Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), the Center for Food Security and Public Health (a CDC Center) and the Grain Quality Initiative.

The IFSS conducted a faculty retreat and based on the input, developed a vision statement, a mission statement, and five platforms to facilitate collaborative research, education, and outreach. The institute developed nationally recognized expertise in food safety risk analysis. The institute conducted a state-wide forum to address the

preparedness for Avian Influenza as it impacts agriculture in Iowa, the nation, and the global market. It also developed an animal traceability project employing a real-time web-based system. Partnering with colleges, the institute recruited new faculty hires and supported graduate students for affiliated faculty members. These graduate students were provided the opportunity to present their research at the IFSS symposium thus increasing the visibility of their work and the potential for external funding. The outreach programs included annual IFSS Symposium on various themes. The theme for the first year was “Safe and Secure Food for Public Health and National Security”. During the second year, the theme was Food safety: Production, Distribution and Policy. The newsletter “*Food Safety & Security UPDATE*” was introduced in 2005, was published quarterly and mailed electronically to over 1,200 faculty, students, policy-makers, and food professionals with two annual editions.

F. Invited Presentations (Total 73):

Invited presentations for last ten years are listed below:

“Service: the legacy of Dr. George Washington Carver”, Dedication of the George Washington Carver sculpture, Iowa State University 2008.

“Farmers Global Round Table Discussion on Networking on Biotechnology” at the World Food Prize International Symposium, **Moderator**, 2007.

“Service: the legacy of Dr. George Washington Carver, the National Black Caucus of State Legislators conference, Little Rock, Arkansas, 2007

“Global Round Table Discussion on Access to Biotechnology” at the World Food Prize International Symposium, **Moderator**, 2006.

“Biotechnology Opportunities and Challenge.” The World Food Prize International Symposium, Speaker and **Panel member**, 2005.

“The Iowa India Interaction (I³): A Formula and a Vision to Feed the World.” Presentation to the Indian Minister of Science and Technology and Delegation, 2006.

“The Biosecurity Platform.” Presentation to the Economic Development Committee of the Iowa Legislature, 2006.

“The Role of Quality Seed to Feed the World.” Plant Sciences Institute Board.

Panel moderator: “Land Grant Universities Prospective: Success Stories and the Principal Obstacles We Encounter when Working with USAID.” Board on International Food and Agricultural Development (BIFAD), October 13, 2004, Des Moines, Iowa.

Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), M.S. Swaminathan Research Foundation, Chennai, India, August 16, 2004.

“Risk Assessment Methodologies for GM Crops Intended for Non-food Applications,” Indian Institute for Agricultural Research, New Delhi, India, August 6, 2004.

Session chair: “Pharmaceutical Crops, Risk Assessments and Processing Capacity,” BIO 2004, June 8, San Francisco.

“Science-based Risk Assessment for Approval of Genetically Engineered Non-food Crops,” 117th AOAC international meeting, Atlanta, Georgia.

“Science-based Risk Assessment for Genetically Modified Non-food Crops,” University Industry Consortium Meeting, April 29, 2003, Ames, Iowa.

Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), Plant Sciences Institute Advisory Board meeting, April 16, 2003, Ames, Iowa.

Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), Monsanto Protein Technologies, April 9, 2003, St. Louis, Missouri.

“Science-based Risk Assessment of Plant-Made Pharmaceuticals,” Corn Promotion Board Biotech Committee, March 27, 2003, Des Moines, Iowa.

Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), Commodity Group Board meeting, March 5, 2003, Ames, Iowa.

“Homeland Security and Transgenics,” Biochem 2020, Defense Intelligence Agency (DIA), February 25, 2003, Washington, D.C.

“Risks and Benefits of Plant Made Pharmaceuticals,” Seed Technology Conference, ISU, February 18, 2003, Ames, Iowa.

“Science-based Risk Assessment for Genetically Modified Non-food Crops,” AgSTATE meeting, January 31, 2003, Des Moines, Iowa.

“Science-based Risk Assessment for Genetically Modified Non-food Crops,” Agribusiness Association of Iowa Annual Meeting and Conference, Jan 15, 2003, Des Moines, Iowa.

“Science-based Risk Assessment for Genetically Modified Non-food Crops,” North American Millers Association, December 19, 2002, Ames, Iowa.

“A Homeland Security Program for Countering Terrorism to Plant Agriculture.” U.S. Plant Agriculture Animal and Plant Health Inspection Services (APHIS), November 15, 2002, Washington, D.C.

“Countering Agro-Terrorism to Plant Agriculture,” Iowa Seed Association Convention, October 29-30, 2002, Ames, Iowa.

“Plant Agro-Terrorism,” Testimony to the House Committee on Government Reform’s Subcommittee on Government Efficiency, Financial Management and Intergovernmental Relations, (August, 2002), Iowa City, Iowa.

“Technologies and Systems to Counter Bio-Terrorism in Foods,” Sustainable Agriculture Colloquium, September 2002, Ames, Iowa.

“Advanced Technologies and Systems for Homeland Plant Security,” Midwest Governor’s Conference, Omaha, Nebraska, (July, 2002).

Chair, Planning and Program Committee: Soybean Seed Research Conference, American Seed Trade Association, December 2001.

Keynote Speaker: “Cooperation Between the Seed Industry and Public Seed Researchers,” The American Seed Research Foundation, San Antonio, Texas, (June 2001).

“Quality Seeds to Feed the World.” M.S. Swaminathan Research Foundation, Chennai, India, Jan 2001.

“Digital Imaging for Management of Germplasm Resources,” Central Rice Research Institute, Cuttack, India, (Jan 2001).

“Quality Seeds to Feed the World.” Plant Science Institute Colloquium, Iowa State University, Ames, Iowa.

“MAV for Regulating Seed Counts in a Bag,” National Council of Weights & Measures Meeting (San Antonio, TX, January, 1999).

Discussion Leader: “Regulating Seed Count,” Annual Meeting of the American Seed Trade Association, June 1998.

Maximum Allowable Variation Resolution Group (consisting of seed control officials, seed industry, representatives of Association of Official Seed Analysts), Chicago, February, 1999.

Annual Corn and Sorghum Research Conference, American Seed Trade Association, December, 1999.

“Serving Seed Conditioners Through Distance Education,” Annual Meetings of the American Society of Agronomy. October 1999, Salt Lake City, Utah.

“A National Survey on Seed Industry Trends and Needs,” Annual Seed Technology Conference, ISU February, 1999. Ames.

“Improving the Regulatory Environment for Agriculture in the Developing World,” Summer meeting of the American Seed Trade Association, 1999.

G. Committee Activities:

- Board member, Biosciences Alliances of Iowa (also co-chair of “Biosecurity” platform), 2006-present
- Board member, National Alliance for Food Safety and Security, 2005-2008
- College of Agriculture Budget Model Task Force, 2007
- Presidential candidate forum committee, ISU, 2006
- College of Agriculture “Case Statement” Committee
- Member, Social Responsibility Committee, Iowa State University, 2004
- Member, Soybean Rust Team, College of Agriculture, 2004

- Chair, Strategic Planning Committee, College of Agriculture, ISU, 2003
- Chair, Biocontainment Task Force for Plant-made Pharmaceuticals, ISU, 2002-06
- Member, Biotechnology Working Group formed by Iowa Secretary of Agriculture, 2003
- Member, Counter Agroterrorism Committee, Iowa State University, 2002-2005
- Member, ABE Strategic Planning Committee, 2002-present
- Member, Transboundary Movement of Seed and Biotechnology Committee, International
- Seed Trade Federation (FIS), 1999-2002
- ISU Project Leader, W-168 Regional Seed Production and Quality Committee, 1993 present
- Member, Scientific Advisory Council, American Seed Foundation, 1991-present
- Chair, Planning committee, Soybean Seed Research Conference, Seed Trade Association, December 2001 (This is the largest seed conference in the world attended by over 2,500 seed professionals), member 2000-2003
- Chair, Planning Committee, Plant Sciences Institute Colloquium, ISU, 2001
- International Seed Network Committee, International Seed Trade Federation 2001
- Panel moderator, USAID Conference on “Global Agriculture and the American Midwest”
- Chairman, Identity Preservation Committee, Iowa Crop Improvement Association, 1994-01
- Member, Public Research Advisory Committee, Am. Seed Trade Association, 1995-96.
- Member, Value-added Processing Committee, ISU Extension, 1995,96
- Member, Value-added Processing Committee, Agriculture Extension, 1995
- Chairman, International Programs Subcommittee, College of Agriculture Planning Advisory Council (CPAC), 1994
- Member, College Planning Advisory Council (CPAC), College of Agriculture, 1994, 2002
- Chairman, International Programs Subcommittee of College Planning
- Member, College Planning Advisory Council (CPAC), College of Agriculture, 1994
- Advisory Council (CPAC), College of Agriculture, 1994.
- Member, Intellectual Properties Committee, American Seed Trade Association, 1993-94
- Member, NIS Steering Committee, College of Agriculture. 1993,94.
- Chairman, Fiber Optics Network Committee, Agriculture Extension, 1993
- Member, NIS Steering Committee, College of Agriculture. 1993-94
- Chairman, Fiber Optics Network Committee, Ag. Extension, 1993
- Member, Intellectual Properties Committee, Am Seed Trade Assoc, 1993-94
- Member, several nomination writing committees for ABE faculty
- Member, Board of Directors, Iowa Crop Improvement Association, 1993-present
- Chairman, Identity Preservation Committee, Iowa Crop Improvement Association, 1992 to present
- Member, Board of Directors, Iowa Seed Association, 1991-present
- Full member, Graduate Faculty Committee, 1990-present

Civic committees

- Co-organizer, Martin Luther King Day Program, City of Ames

- Search committee for Ames Middle School principal, Ames schools district superintendent, etc.
- Invited speaker on community issues (4 speeches/yr on topics such as “Non-violence the True Meaning,” (on Martin Luther King’s day), “Beauty: External and Internal,” “Seven Habits of Most Effective People,” “The Art of Living,” and “Modern Relevance of Gita” etc.)

H. Professional Improvement Activities:

- a) Kaizan Workshop, ISU, 2006
- b) Media Training Workshop, ISU, 2003, 2001
- c) Process Improvement (ISO 9000) workshop, Pioneer Hi-bred International, Inc., 1999
- d) Fund Raising seminar series, by ISU Foundation, 2003, 1997
- e) Intellectual Property Law Seminar, by ISU Research Foundation, 1997
- f) Facilitative Leadership, by Texas Instruments Learning Institute, 1995
- g) ISO 9000 Orientation Seminar by CIRAS, ISU, 1994
- h) Total Quality Management, by Texas Instruments Learning Institute & ISU, 1994
- i) Building and Maintaining Employee Morale: How to Manage Negative Thinking, by CPED, ISU, 1992
- j) Leadership and Team Development Skills for Supervisors. by I.S.U. Extension and the Center for Professional and Executive Development, Ames, Iowa, 1991
- k) Focus Groups, by Iowa State University Extension, 1991
- l) Biotechnology for Extension. July 30 - August 10, 1990. I.S.U., Biotechnology Council.
- m) Time Management. March 6-10, 1989. I.S.U. Ames, University Extension and Agricultural Education Department.
- n) Bar Code Technology Workshop. December 6-7, 1988, I.S.U., Ames, Iowa
- o) Machine Vision. June 27-28, 1987. Baltimore, Maryland. American Society of Agricultural Engineers
- p) Expert Systems in Agriculture. May 27-30, 1986. Purdue University, West Lafayette, IN.
- q) Cost Reduction Through Methods Analysis. 1984. I.S.U., Engineering Management Institute, Ames, Iowa.
- r) Integrating Layout Planning and Materials Handling Analysis. March 27, 1984. Engineering Management Institute, I.S.U., Ames, Iowa.

Awards, Honors, and Recognition:

- Order of the Knoll Distinguished Faculty and Staff Award, Iowa State University, 2008
- Dean’s Chair of Distinction, College of Agriculture and Life Sciences, 2008
- Honorary member, Iowa Seed Association, 2007
- Moderator, Global Farmer-to-Farmer Roundtable, World Food Prize Symposium, 2007
- Moderator, Global Farmer-to-Farmer Roundtable, World Food Prize Symposium, 2006
- “Misra Outstanding Senior Award in Seed Science”, established by a donor to recognize Misra’s contribution to seed science, 2006
- Editorial Board, *Seed World*, 2002-2006

- Appreciation plaque for formation of the National Seed Health System, American Seed Trade Association, 2002
- Plaque of appreciation and \$25,000 for graduate student support for acting as the Chair of Soybean Seed Research Conference at The American Seed Trade Association Convention, 2001 (This is the largest gathering of seed professionals in the world—about 2,500.)
- Distinguished Service Award, American Seed Trade Association, 1999 for Leadership, Vision, and Exemplary Service to the U.S. seed industry (This is their highest award.)
- Scientific Advisory Council, American Seed Research Foundation, 1991-present
- Superior Engineering Extension Award, College of Engineering, ISU, 2001
- Certificate of Excellence, American Society of Agronomy for “Development of Outstanding Educational Materials Contest,” 1998
- Six U.S. patents on new inventions (2005, 2004, 1995, 1994, 1991, 90) and 1 provisional patent, 2002
- Board of Directors, Iowa Crop Improvement Association, 1993-present
- Engineer of the Year, Iowa Section, American Society of Agricultural Engineers, 1992
- Excellence in Research and Extension Award, Iowa State University, Ames, Iowa, 1992
- Certificate of Appreciation, Iowa Seed Association, for contribution on the Board, Convention, and Field Day, 1992
- Board of Directors, Iowa Seed Association, 1991-present
- A blue ribbon was awarded by the American Society of Agricultural Engineers for Extension publication "Seed Lot Sampling," 1991.
- A blue ribbon was awarded by the American Society of Agricultural Engineers for videotape "Basic Operation and Adjustments of an Oliver Gravity Separator," 1990
- A blue ribbon was awarded by the American Society of Agricultural Engineers for Extension publication "Conveyors for Bulk Handling of Seed," in 1983
- Gold medal, Best University Graduate, Orissa University of Agriculture and Technology, India, 1971
- Gold Medal, Best Agricultural Engineering Graduate, College of Agricultural Engineering, Orissa University of Agriculture & Technology, India, 1971
- Chancellor's cup, Best debater, Orissa University of Agricultural and Technology, India, 1971
- Indian Council of Agricultural Research Scholarship, 1966-71

J. Publications:

Refereed journal articles:

1. Krueger, N. A., C. J. Bern, M. K. Misra, K. M. Adam. 2007. “Gravity table sorting of commodity corn. *Applied. Engineering in Agriculture*, 23(3), 319-325.
2. Iakovoglou, V., M. K. Misra, R. B. Hall, and A. D. Knapp. 2007. “The Effect of Seed Size and Parent Tree on Seed Variables and Seedling Growth of *Quercus* spp.” *Seed Science and Technology*, Vol. 35:771-777.
3. Wolt, J.D., Y-Y. Shyy, P. Christensen, K.S. Dormin, and M. Misra. 2005. “Quantitative Exposure Assessment for Confinement of Maize Biogenic

- Systems,” *Environmental Biosafety Research*, 3:183-196. Also at <http://www.edpsciences.org/10.1051/ebr:2005004>.
4. Adam K, M. Misra, and D. Thoreson. 2004. “Removal of Ergot from Barley by Density Separation,” *Applied Engineering in Agriculture*, 20(1):39-43.
 5. Rukunudin, I. H., C.J. Bern, M. Misra, and T.B. Bailey. 2004. “Carbon Dioxide Evolution from Fresh and Preserved Soybeans,” *Transactions of the ASAE*, 47(3): 827-833.
 6. Adam K, M. Misra, and D. Thoreson. 2003. “Removal of Ergot from Barley by Density Separation,” *Applied Engineering in Agriculture*, 20(1):39-43.
 7. Steenhoek, L., M. Misra, W. Batchelor, and J. Davidson. 2001. “Probabilistic Neural Network for Segmentation of Features in Corn Kernel Images,” *Applied Engineering in Agriculture*, 17(2): 225-234.
 8. Steenhoek, L., M. Misra, C. Hurburgh, and C. Bern. 2001. “Implementing a Computer Vision System for Corn Kernel Damage Evaluation.” *Applied Journal in Agriculture*, 17(2): 235-240.
 9. Panigrahi, S., M. Misra, and S. Wilson. 1999. “Shape Classification of Corn Germplasm using Fractal Geometry and Invariant Moments,” *Computers and Electronics in Agriculture*, 20,1-20.
 10. Walcott, R., M. Misra, and D. McGee. 1998. “Detection of Asymptomatic Fungal Infections of Soybean Seeds using Ultrasound Analysis,” *Plant Disease*, 82(5):584-589.
 11. Taylor, A., P. Allen, M. Bennett, K. Bradford, J. Burris, and M. Misra. 1997. “Seed Enhancements.” Proceedings of the Symposium on Seed Biology and Technology,” 8(2):245-256.
 12. Panigrahi, S. and M. Misra. 1997. “Color Image Processing for Quality Evaluation of Edible Beans,” The Proceedings of the International Conference on Imaging Science, Systems, and Technology. pp. 178-183.
 13. Dugba, P., C. Bern, I. Rukundin, M. Misra, and T. Bailey. 1996. “Preservative Effects of Ipordione on Shelled Corn,” *Transactions of the ASAE*, 39(5): 1751-1756.
 14. Bultena G, M. Duffy, S. Jungst, R. Kanwar, B. Menzel, M. Misra, P. Singh, J. Thomson, A. Van Der Walk, and R. Willham. 1996. “Impacts of Agricultural Developments on Biodiversity: Lessons from Iowa,” World Bank Studies and Monograph Series 311:80-94.
 15. Panigrahi, S., M. Misra, C. Bern, and S. Marley. 1995. “Background Segmentation and Dimensional Measurements of Corn Germplasm,” *Transactions of the ASAE*, 38(1):291-297.
 16. Misra, M. and Y. Shyy. “Acoustic and Video Imaging System for Quality Determination of Pharmaceutical Products,” U.S. Patent # 5,422,831 with 22 claims awarded June, 1995.
 17. Aljinnovic, S., Slaven, C.J. Bern, P.N. Dugba, and M.K. Misra. 1995. “Carbon-dioxide Evolution from High-moisture Shelled Corn Treated with Ipodione,” *Journal of Food Production*, 58(6), 673-677.
 18. Al-Yahya, S, C. Bern, M. Misra. 1994. “Simulation of Ambient Air Drying of Fungicide Treated High Moisture Corn,” *Transactions of the ASAE*, 37(5), 1550-1560.
 19. Misra, M. and Y. Shyy. “Acoustic and Video Imaging System for Quality Determination of Agricultural products,” U.S. Patent # 5,309,374 with 21 claims awarded May, 1994.
 20. Misra, M. “Maintaining Soybean Seed Quality During Processing,” *Seed Research*. Indian Society of Seed Technology. Sp. 2. 841-850, 1993.

21. Misra, M., B. Koerner, and Y. Shyy. 1993. "Ultrasound and Computer Vision Technology for Determining Seed Quality," *Seed Research*. Indian Society of Seed Technology, Sp. Vol. 2: 809-817.
22. Al-Yahya, S., C. Bern, M. Misra, and T. Bailey. 1993. "Carbon-dioxide Evolution of Fungicide-treated High-moisture Corn," *Transactions of the ASAE*, 36 (5):1417-1422.
23. J. Risse, M. Misra, A. Knapp, and C. Bern. 1991. "Conditioning Shriveled Seed: Part 1. Variation in Physical Properties," *Transactions of the ASAE*, 34(2): 481-486.
24. M. Misra, Y. Shyy, L. Baudet, S.J. Marley. 1991. "Conveyors for Bulk Handling of Seed Soybeans," 1991, *Transactions of the ASAE*, 7(6): 735-740.
25. J. Risse, M. Misra, A. Knapp, and C. Bern. 1991. "Conditioning Shriveled Soybean Seed: Part 2. Correlation of Physiological Characteristics with Physical Properties," *Transactions of the ASAE*, 34(2):487-491.
26. Misra, M. and Y. Shyy. "Methods and Means for Gravity Table Automation." U.S. patent #5,024,334 with 13 claims awarded June, 1991.
27. Misra, M., B. Koerner, A. Pate, and C. P. Burger. 1990. "Acoustic Properties of Soybeans," *Transactions of the ASAE*, 33(2):671-677.
28. Misra, M. and Y. Shyy. "Automation of an Air-screen Cleaner." U.S. patent #4,991,721 with 16 claims awarded September, 1990.
29. Misra, M. 1990. "Maintaining Seed Quality During Processing," Proceedings of the International Conference on Seed Science and Technology, New Delhi, India.
30. Balascio, C., M. K. Misra, and H. P. Johnson. 1988. "Stochastic Modelling of Granular Flow in Seed Sorting," *Mathematical Computation Modelling*. 11: 523-527.
31. Misra, M. K. 1987. "Removal of Black Nightshade Contamination from Soybean Seeds," *Seed Science and Technology*, 15: 219-227.
32. Balascio, C., M. K. Misra, and H. P. Johnson. 1987. "Particle Movement and Separation Phenomena for a Gravity Separator. I. Development of a Markov Probability Model and Estimation of Model Parameters." *Transactions of ASAE*, 30(6):1834-39.
33. Balascio, C., M. K. Misra, and H. P. Johnson. 1987. "Particle Movement and Separation Phenomena for a Gravity Separator: II. Experimental Data and Performance of Distance-transition Markov Model." *Transactions of ASAE*, 30(6):1840-47.
34. Gaul, A., M. Misra, C. Bern and C. Hurburgh. 1986. "Variation of Physical Properties in Gravity Separated Soybeans," *Transactions of ASAE*, 29(4):1146-49.
35. Misra, M. K., A. Gaul, and O. Kayode. 1985. "Soybean Seed Quality During Conditioning," *Transactions of ASAE*, 28(2):576-579.
36. Misra, M. K. and D. B. Brooker. 1980. "Thin Layer Drying and Rewetting Equations for Shelled Corn," *Transactions of ASAE*, 23(5):1254-60.
37. Misra, M. K. and R. P. Beasley. 1975. "Performance of Corrugated Plastic Tubing in Underground Drainage," *Transactions of ASAE*, 18(2):260-262, 269.

Book chapters and handbook

1. Book chapter: Christensen, P., S. Goggi, M. Westgate, J. Wolt, and M. Misra. 2005. "Seed Biology" Chapter in the USDA-APHIS Environmental Impact Statement (EIS) Handbook.

2. Handbook: Paul J. Christensen, Manjit K. Misra, Satish Rai, Yuh-Yuan Shyy, and Jeffrey Wolt. *A Management Manual for Confined Production Processes for Non-Food Corn.*

Proceedings

1. Misra et-al. "A National Survey on Seed Industry Trends and Needs," ASTA Proceedings, Annual Corn & Sorghum Research Conference, American Seed Trade Association, 2000.
2. Misra et-al. "A National Survey on Seed Industry Trends and Needs," Proceedings, Seed Technology Conference, Iowa State University, 1999.
3. Misra, M. 1995. "The Latest on Regulating Seed Count." Proceedings of the twenty fifth soybean seed research conference, American Seed Trade Association, #25, pp 97-106.
4. Misra. 1994. "Getting the Most From your Gravity Table," Proceedings of the 24th Soybean Seed Research Conference, American Seed Trade Association.
5. Shyy Y and M. Misra, "Development of a Soybean Quality Analyzer," Proceedings of the FPAC III Conference, FPEI, Orlando, FL, 1994.
6. Shyy, Y. and M. Misra. 1993. "Development of a Soybean Quality Analyzer." Conference on Food Engineering, Am. Inst. of Chemical Engineering, Chicago, IL.
7. Panigrahi, S. and M. Misra. 1992. "Color Classification of Corn Germplasm using Computer Vision." Proceedings of the International Society of Optical Engineers, Vol. 1836, Boston, Mass.
8. Misra, M. 1991. "Ultrasound and Computer Imaging for Soybean Seed." Proceedings of the twenty-first soybean seed conference, American Seed Trade Association, Chicago.
9. Misra, M. 1990. "Ultrasound and Computer Vision Technology for Determining Seed Quality." Proceedings of the International Seed Technology Conference, New Delhi, India.
10. Panigrahi, S., M. Misra, and S. Illangantileke. 1990. "Computer Vision: Its Potential and Application in Agriculture for Developing Countries." Proceedings of International Agricultural Engineering Conference, Bangkok, Thailand (to be presented in December).
11. Misra, M. 1990. "Computer Vision: Potential for Application to Agriculture." Proceedings of the Annual Conference of Association of Official Seed Certification Agencies.
12. Misra, M. 1989. "Maintaining Seed Quality During Conditioning and Handling," Proceedings of the Mid-Atlantic Seed Conference, North Carolina State University.
13. Risse, J., M. Misra, and A. Knapp. 1989. "Conditioning of Shrivelled Soybean Seed." Proceedings of the Nineteenth Annual Soybean Research Conference. American Seed Trade Association, pp 48-52.
14. Misra, M. 1989. "Conditioning Drought-stressed Soybean Seed." Proceedings of the Eleventh Annual Seed Technology Conference. Iowa State University, pp. 93-100.
15. Misra, M. K. "Challenges in Seed Conditioning." 1988. Proceedings of the Tenth Annual Seed Technology Conference, Iowa State University, pp 33-42.
16. Misra, M., L. Baudet, Y. Shyy, and S. Marley. 1987. "Soybean Seed Handling." Proceedings of the Ninth Annual Seed Technology Conference, pp 153-175.

17. Koerner, B., A. Pate, M. Misra, and C. Burger. 1987. "Classification of Soybeans by Impact-force Response." Proceedings of National Noise Control Conference, Pennsylvania State University, Pennsylvania.
18. Misra, M., Y. Shyy, and Y. Chung. 1986. "Profitability Through Computerized Conditioning." Proceedings of the Eighth Annual Seed Technology Conference, Iowa State University, Ames, Iowa.
19. Misra, M., L. Baudet, and Y. Shyy. 1986. "Soybean Seed Handling." Proceedings of the Mississippi State Seed Technology Conference, Starkville, Mississippi.
20. Misra, M. "Soybean Seed Conditioning." 1985. Proceedings of the Third Kentucky Seed Conditioners' Workshop, Lexington, Kentucky, pp 12-32.
21. Misra, M., A. Knapp, and D. McGee. 1985. "Reduction of Wheat Scab Through Conditioning." Proceedings of the Third Kentucky Seed Conditioners' Workshop, pp 40-44.
22. Misra, M., A. Knapp, and D. McGee. 1985. "Reduction of Wheat Scab Through Conditioning." Proceedings of the Third Kentucky Seed Conditioners' Workshop, pp 40-44.
23. Misra, M. 1984. "Black Nightshade—Problems and Solutions in the Field and at the Plant." Proceedings of the Fourteenth Soybean Seed Res. Conf., Am. Seed Trade Assn., Chicago, pp 106-115.
24. Misra, M., A. Gaul, and O. Kayode. 1983. "Soybean Seed Quality During Conditioning." Proceedings of the Thirteenth Soybean Seed Res. Conf., Am. Seed Trade Assn., Chicago, pp 57-67.
25. Misra, M. "Drying of Soybean Seed." 1983. Proceedings of the Sixth Annual Seed Technology Conference, Iowa State University, Ames, Iowa, pp 75-87.
26. Misra, M. 1982. "Soybean Seed Quality During Conditioning." Proceedings of the Mississippi State Seed Technology Conference, Starkville, Mississippi, pp 49-53.
27. Misra, M. 1981. "Engineering Aspect of the Soybean Seed Storage. Proceedings of the Fourth Annual Seed Technology Conference, Ames, Iowa, pp 103-111.

Technical papers

1. Adam, M., M.K. Misra, and L.M. Shepherd. Presented at the Mid-Central meeting of the ASAE March 26th, 2004 as Paper No. MC04-404.
2. Adam, K. and M.Misra, "Effects of Various Adjustments of a Spiral Separator for Removing Splits from Soybeans," Paper #MC03-101, presented at the 2003 Mid-central ASAE meeting.
3. Adam, K. and M. Misra. "Effect of Dropping Height, Flow Pattern and Landing Surface on Mechanical Damage to Soybean Seeds," Paper # MC02-101 Mid-central ASAE meeting, 2002.
4. Krueger, N., C. Bern, M. Misra, and Adam K, "Gravity Table Separation of Commodity Corn. Paper presented in 2002 Mid-central ASAE meeting.
5. Adam, K., M. Misra., Y. Shyy, and Dan Curry. 2001. "Regulating Seed Count and Bag Weight for Seed Corn and Soybean Packaging." ASAE Paper No. MC01-104. St Joseph, MI: ASAE.
6. Adam, K., M. Misra, and D. Thoresen, 1997. "Removal of Ergot from Barley by Density Separation," Am. Society of Ag. Engineers, paper #MC97-122.
7. Dugba, P. N. et-al. 1994. "Preservative Effect of Ipordione on Shelled Corn," Paper # 946040, Am. Society of Agricultural Engineers, Kansas City, MO.

8. Shyy, Y. and M. Misra. 1992. "High-speed Ultrasound Signal Analysis." ASAE paper # 92-3008, St. Joseph, MI.
9. Bern, C. J., S. Al-Yahya, and M. Misra. 1992. "Preservation of High-moisture Maize with Rovral Fungicide." Paper presented at the International Conference on Agricultural Engineering, Uppsala, Sweden.
10. Shyy, Y. and M. Misra. "Computer Control of a Gravity Table," ASAE paper # 92-3546, paper presented at Winter ASAE meeting, Nashville, TN.
11. Panigrahi, S., M. Misra, and S. Wilson. 1991. "Fractal Geometry for Shape Analysis of Ear-corn Images." J. 14287 of Ag. Experiment Station.
12. Panigrahi, S., M. Misra, T. Ramabadrnan, and M. Yung-Hyan. 1991. "Noiseless Compression for Color Images of Ear Corn." ASAE paper # 91-7004, St. Joseph, MI.
13. Panigrahi, S. and M. Misra. 1991. "Machine Vision for Shape Classification of Ear Corn Images." Mid-Central Conference of the ASAE. St. Joseph, MI (presentation at "Machine Vision Applications Workshop").
14. Sulaiman, Al-Yahya, C. Bern, and M. Misra. 1991. "Simulation of Natural-air Drying of Fungicide Treated High-moisture Corn in Iowa." ASAE paper # 91-6556, St. Joseph, MI.
15. Sulaiman, Al-Yahya, C. Bern, M. Misra, and D. C. McGee. 1991. "Carbon Dioxide Evaluation of Fungicide-treated High-moisture Corn." Mid-Central Conference of the ASAE. St. Joseph, MI.
16. Sulaiman, Al-Yahya, C. Bern, and M. Misra. 1991. "Simulation of Natural-air Drying of Fungicide-treated High-moisture Corn in Iowa." ASAE paper # 91-6556, St. Joseph, MI.
17. Risse, J., M.K. Misra, A. Knapp, and C. Bern. 1990. "Physical Properties of Shrivelled Soybeans." American Society of Agricultural Engineers # 90-6063, St. Joseph, MI.
18. Misra, M., B. Koerner, and Y. Shyy. 1989. "Ultrasound Evaluation of Soybean Quality." American Society of Agricultural Engineers paper # 89-3016. St. Joseph, MI.
19. Panigrahi, S., M.K. Misra, and Y. Shyy. 1989. "Color Image Acquisition for a Machine Vision System of Corn Germplasm." American Society of Agricultural Engineers paper MCR-89-124, St. Joseph, MI.
20. Shyy, S. and M. K. Misra. 1989. "Color Image Analysis for Soybean Quality Determination." 1989. American Society of Agricultural Engineers, paper # 89-3572, St. Joseph, MI.
21. Chen, F., S. Marley, L. Xie, and M. Misra. 1989. "Dynamic Analysis of Seeds in Vacuum Vibrational Cleaning." American Society of Agricultural Engineers paper # MCR-89-126, St. Joseph, MI.
22. Xie, L., S. Marley, and M. K. Misra. 1989. "Motion Analysis of Sieves in Vacuum-vibrational Cleaning." American Society of Agricultural Engineers, paper # 89-6537, St. Joseph, MI.
23. Misra, M., B. Koerner, and Y. Shyy. 1989. "Computer Vision for Soybeans." American Society of Agricultural Engineers paper # 89-3001, St. Joseph, MI.
24. Panigrahi, S. and M. Misra. 1989. "Color Image Processing for Characterization of Corn Germplasm." 1989. American Society of Agricultural Engineers, paper # 89-3568, St. Joseph, MI.
25. Shyy, S. and M. K. Misra. 1989. "A Prototype for Acoustic Determination of Soybean Quality." American Society of Agricultural Engineers, paper # 89-6608, St. Joseph, MI.

26. Panigrahi, S. and M. K. Misra. 1990. "Feature Extraction Techniques for Corn Germplasm by Color Computer Vision." American Society of Agricultural Engineers paper # 90-7050, St. Joseph, MI.
27. McGee, D.C. and M.K. Misra. "Combined Application of Soybean Oil and Fungicides for Dust Suppression and Control of Storage Fungi in Corn and Soybeans." Paper presented at the symposium on "Soybean Utilization Alternatives," Univ. of Minnesota, pp 419-421.
28. Misra, M., Y. Shyy, L. Baudet, and S. Marley. 1988. "Soybean Seed Handling." American Society of Agricultural Engineers paper # MCR-88-121, St. Joseph, MI.
29. Shyy, Y. Y. and M. Misra. 1987. "Automation of an Air Screen Seed Cleaner." American Society of Agricultural Engineers, paper # 87-6038. St. Joseph, MI.
30. Baudet, L., C. Bern, and M. Misra. 1986. "Response of Electronic Meters in Measuring Moisture of Rewetted Corn." Am. Soc. of Agricultural Engineers, Paper # MCR-86-102, St. Joseph, MI.
31. Misra, M.K. and C. J. Bern. 1982. "Evaluation of Nylon Bristles Auger for Handling of Soybean Seeds." American Society of Agricultural Engineers, Paper # 82-3568, St. Joseph, MI.
32. Misra, M. 1980. "Seed Quality Loss to Soybeans During Processing." American Society of Agricultural Engineers, paper # 80-3356, St. Joseph, MI.
33. Misra, M. and D.B. Brooker. 1978. "Thin-layer Drying of Shelled Corn." American Society of Agricultural Engineers, paper # 78-3002, St. Joseph, MI.
34. No, Sang, D.B. Brooker, and M. Misra. 1977. "Heat Storage from Solar Energy in a Low Melting Temperature Eutectic for Grain Drying." American Society of Agricultural Engineers, paper # 77-4538, St. Joseph, MI.

Published abstracts

1. Fessehaie, A., L.M. Shepherd, C.C. Block, and M.K. Misra. 2006. "A Diagnostic Real-time TaqMan PCR Assay for the Detection of *Pantoea stewartii* subsp. *stewartii*." *Phytopathology* 96: S35.
2. Misra, M. 2003. "Science-based Risk Assessment for Approval of Genetically Engineered Non-food Crops," abstract # 1102 of the 117th AOAC International Annual Meeting, Atlanta.
3. "Image Integrated Computer Cataloging of Maize Germplasm," Abstracts of the Annual Meeting of the Association of Official Seed Analysts, June 1996, 70(2): pp 19.
4. Walcott, R., M. Misra, and D. McGee. 1994. "The Detection of Asymptomatic Soybean Seeds Infested with *Aspergillus* and *Penicillium* spp. Using Ultrasound Analysis." *Phytopathology*, 84:1153.
5. Misra, M., Y. Shyy, S. Panigrahi, M. Millard, and P. Bretting. 1993. "An Image-integrated Computer Cataloging System for Maize Genetic Resources," Abstracts of *Am. Journal of Botany*, (80)6: 77.
6. Baudet, L. and M. Misra. 1992. "Quality Attributes of Maize Seed Conditioned by a Gravity Table." Abstracts of the International Seed Testing Congress. Buenos Aires, Argentina, pp. 48.
7. McGee, D.C., A. Iles, and M. Misra. 1989. "Suppression of Storage Fungi in Grain with Soybean Oil," *Phytopathology Abstract* 79:1140.
8. Misra, M., Y. Shyy, and S. Panigrahi. 1989. "Equipment and Software Components for a Seed Imaging and Analysis System." *Agronomy Abstract*.

- Misra, M., A. Gaul, and O. Kayode. 1984. "Soybean Seed Quality During Conditioning." World Soybean Research Conference III, Abstracts, Ames, Iowa.

Posters

- Fessehaie, A., C.C. Block, L.M. Shepherd, and M.K. Misra. 2007. "Molecular Characterization of *Stenocarpella maydis* Based on Nuclear Ribosomal Internal Transcribed Spacer Regions Between the 18S and 28S Nuclear rRNA Gene Sequences." *Phytopathology* 97: S37.
- Fessehaie, A., C.C. Block, L.M. Shepherd, and M.K. Misra. 2007. "Quantitative TaqMan Real-time PCR Assay for *Stenocarpella maydis*, the Causal Agent of Diplodia Ear and Stalk Rot of Maize." *Phytopathology* 97: S35.
- Fessehaie, A., C.C. Block, L.M. Shepherd, and M.K. Misra. 2007. "Evaluation of LNA, MGB and Non-modified DNA Probes to Improve the Detection Limit of TaqMan Real-time PCR Assay for *Pantoea stewartii* subsp *stewartii*." *Phytopathology* 97: S35.
- Fessehaie, A., C.C. Block, L.M. Shepherd, and M.K. Misra. 2007. "Duplex TaqMan real-time PCR Assay for Quantitative Detection of *Pantoea stewartii* subsp *stewartii* and *Stenocarpella maydis*." *Phytopathology* 97: S35.

Extension publications or popular articles

- Misra, M., D. Curry, Y. Shyy and K. Adam, 1996. "Seed by Seed," The Seed World, September pages 15-18.
- Panigrahi, S., M. K. Misra, and S. Wilson. 1991. "Fractal Geometry for Shape Analysis of Ear Corn Images." Iowa Seed Science, Vol. 12, No. 2, pp 10-13.
- Risse, J., M. Misra, A. D. Knapp, and C. Bern. 1990. "Conditioning Shriveled Soybean Seed." Iowa Seed Science. Vol. 12, No. 1, pp 1-2.
- Knapp, A., T. Gutormson, and M. Misra. 1990. "Seed Lot Sampling." **NCR-403. Blue ribbon award from the ASAE.**
- Knapp, A., M. Misra, N. Hartwig, L. Sweets, and D. McGee. 1989. Wheat Scab SSC-2
- Panigrahi, S., M. Misra, and Y. Shyy. 1989. "Color Image Acquisition of Corn Germplasm by Computer Vision." Iowa Seed Science, 11 (2):12-14.
- Misra, M., Y. Shyy, L. Baudet, and S. Marley. 1988. "Soybean Seed Handling." Iowa Seed News, 41: 9-10.
- Misra, M. 1988. "Curso internacional de capacitacion sobre tecnologia de produccion de semillas de maiz" (International Training Course on Production Technology of Seed Corn). Compiled the book, facilitated translation into Spanish and wrote the chapter on seed corn conditioning.
- McGee, D. C. and M. K. Misra. 1988. "Soybean Oil Application for Dust Suppression and Control of Storage Molds in Corn and Soybeans." Iowa Seed Science, 10 (1) pp.
- Ebner, W. C. and M. Misra. 1988. "Census of Seed Analysis Equipment." Annual Meeting of Association of Official Seed Analysts, pp 1-29.
- Balascio, C.C., M.K. Misra, and H.P. Johnson. 1987. "Stochastic Modelling of Seed Sorting on a Gravity Table." Iowa Seed Science, (9) 2:13-15.
- Misra, M., Y. Shyy, and Y. Chung. "Computerizing an Air-screen Cleaner." Iowa Seed Science, 8(2):8-11.

13. Misra, M., L. Baudet, and Y. Shyy. 1986. "Soybean Seed Handling." Iowa Seed Science, 8(1):5-7.
14. Misra, M. "Selecting a Bucket Elevator to Handle Seed." SSC-1, 1986.
15. Misra, M., L. Baudet, and D. Francois. 1985. "Removal of Soil Pods from Soybean Seeds." Iowa Seed Science, 7(2):11-12.
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2. Coordinated the production of the promotional videotape "Quality Seeds to Feed the World: The Seed Science Center." 1995. **The Communicator Award of Distinction.** (The Communicator is a national awards organization that recognizes outstanding work in the visual communications).
3. Misra, M., R. White, and Y. Shyy. 1990. "Basic Operation and Adjustments of a Forsberg Gravity Separator." Iowa State University Cooperative Extension Service.
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